**APPENDIX 2**

**Abbreviations**

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|  | **Abbreviation** |  |
|  | **AAOS** | Academy of Orthopedic Surgeons (AAOS) |
|  | **ABI** | autologous whole blood (ABI) |
|  | **ABT** | Allogeneic blood transfusion (ABT) |
|  | **ABT** | autologous blood transfusion (ABT) |
|  | **ABTD** | autologous blood transfusion drainage (ABTD) |
|  | **ACB** | adductor canal block (ACB) |
|  | **ACDF** | anterior cervical discectomy and fusion (ACDF) |
|  | **ACDF** | anterior cervical decompression and fusion (ACDF) |
|  | **ACI** | autologous chondrocyte implantation (ACI) treatments |
|  | **ACIM** | absorbable collagen implantation matrix (ACIM) |
|  | **ACL** | anterior cruciate ligament (ACL) |
|  | **AE** | adverse events (AE) |
|  | **AIBC** | antibiotic-impregnated bone cement (AIBC) |
|  | **AIBG** | autologous iliac crest bone graft (AIBG) |
|  | **AIMN** | antegrade intramedullary nailing (AIMN) |
|  | **AKP** | anterior knee pain (AKP) |
|  | **AMI** | acute myocardial infarction [AMI] |
|  | **AMSTAR** | Assessment of Multiple Systematic Reviews (AMSTAR) |
|  | **APM** | arthroscopic partial meniscectomy (APM) |
|  | **AR** | arthroplasty (AR) |
|  | **ASES** | American Shoulder and Elbow Surgeons (ASES) score |
|  | **ASP** | adjacent segment pathology (ASP) |
|  | **ASU/ ASUs** | avocado-soybean unsaponifiables (ASU/ASUs) |
|  | **AT** | arterial thrombosis (AT) |
|  | **BK/BKP** | balloon kyphoplasty (BK/ BKP) |
|  | **BMP(s)** | bone morphogenetic protein (BMP) |
|  | **BPB** | brachial plexus blocks (BPBs) |
|  | **BPs** | bisphosphonates (BPs) |
|  | **BS** | bioabsorbable interference screws (BS) |
|  | **BTX** | botulinum toxin (BTX) |
|  | **CA** | concomitant coracoacromial (CA) |
|  | **CBM** | Chinese Biomedicine Literature (CBM) |
|  | **CBPB** | Continuous brachial plexus block (CBPB) |
|  | **CDA** | cervical disc arthroplasty (CDA) |
|  | **CDDD** | cervical degenerative disc disease (CDDD) |
|  | **CLBP** | chronic low back pain (CLBP) |
|  | **CNKI** | China National Knowledge Infrastructure (CNKI) |
|  | **CNTKA** | computer-navigated total knee arthroplasty (CNTKA) |
|  | **COC or CoC** | ceramic-on-ceramic (COC) |
|  | **COP** | ceramic-on-polyethylene (COP) |
|  | **CoP/COP** | ceramic heads with a polyethylene liner (CoP) |
|  | **CP** | Cerebral palsy (CP) |
|  | **CPM** | continuous passive motion (CPM) |
|  | **CPNB** | Continuous peripheral nerve block (CPNB) |
|  | **CR** | Cervical Radiculopathy (CR) |
|  | **CR** | cruciate-retaining (CR) |
|  | **CRNMB** | clinically relevant non-major bleeding (CRNMB) |
|  | **CRP** | C-reactive protein (CRP) |
|  | **CS** | closed-suction (CS) |
|  | **CSD** | conventional suction drainage (CSD) |
|  | **CSI** | corticosteroid injections (CSI) |
|  | **CT** | conservative treatment (CT) |
|  | **CTDR** | cervical total disc replacement (CTDR) |
|  | **CTS** | carpal tunnel syndrome (CTS) |
|  | **DACF** | discectomy and anterior cervical fusion (DACF) |
|  | **DASH** | disabilities of the arm, shoulder and hand (DASH) |
|  | **DB** | double-bundle (DB) |
|  | **DDD** | degenerative disc diseases (DDD) |
|  | **DHS** | dynamic hip screw |
|  | **DHS** | dynamic hip screw (DHS) |
|  | **DMCF** | displaced midshaft clavicular fractures (DMCF) |
|  | **DPHF** | displaced proximal humeral fractures (DPHF) |
|  | **DPI** | distal interphalangeal (DPI) |
|  | **DRF** | distal radius fractures (DRF) |
|  | **DVT** | deep vein thrombosis (DVT) |
|  | **EA** | Electro-Acupuncture (EA) |
|  | **EA** | epidural anesthesia (EA) |
|  | **EACA** | epsilon aminocaproic acid (EACA) |
|  | **EBL** | estimated blood loss (EBL) |
|  | **ED** | endoscopic discectomy (ED) |
|  | **ED** | emergency department (ED) |
|  | **EF** | external fixation |
|  | **EKAM** | external knee adduction moment (EKAM) |
|  | **ESA** | Erythropoiesis-Stimulating Agents (ESAs) |
|  | **ESI** | Epidural Steroid Injections (ESI) |
|  | **ESWT** | extracorporeal shock wave therapy (ESWT) |
|  | **FB** | fixed-bearing (FB) |
|  | **FES** | Fat embolism syndrome (FES) |
|  | **FNB** | Femoral nerve block (FNB) |
|  | **GA** | general anesthesia (GA) |
|  | **GB** | gap balancing (GB) |
|  | **GN** | gamma nail (GN) |
|  | **GRADE** | Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach |
|  | **HA** | hip arthroplasty (HA) |
|  | **HA** | hemiarthroplasty (HA) |
|  | **HA** | hyaluronan/hylan (HA products) |
|  | **HA** | hyaluronic acid (HA) |
|  | **HA** | hydroxyapatite (HA) |
|  | **Hb** | Haemoglobin (Hb) |
|  | **HO** | heterotopic ossification (HO) |
|  | **HT** | hamstring tendon (HT) |
|  | **IA** | intraarticular (IA) |
|  | **IAL** | intra-articular lidocaine (IAL) |
|  | **ICB** | infraclavicular block (ICB) |
|  | **ICBG** | iliac crest bone graft (ICBG) |
|  | **IF** | internal fixation (IF) |
|  | **IKDC** | International Knee Documentation Committee [IKDC] |
|  | **IMN** | intramedullary nailing (IMN) |
|  | **IPD** | individual patient data (IPD) |
|  | **ISBs** | Interscalene nerve blocks (ISBs) |
|  | **IV** | intravenous (IV) |
|  | **IVAS** | intravenous analgesia with or without sedation (IVAS) |
|  | **KAAI** | knee adduction angular impulse (KAAI) |
|  | **KSPS** | knee society pain score (KSPS), |
|  | **KSS** | Knee Society knee Score (KSS) |
|  | **LA** | Local Anaesthetic (LA) |
|  | **LB** | liposome bupivacaine (LB) |
|  | **LBP** | low-back pain (LBP) |
|  | **LDDD** | lumbar degenerative disc disease (LDDD) |
|  | **LDH** | lubmar disc herniation (LDH) |
|  | **LIA** | Local Infiltration Analgesia (LIA) |
|  | **LIA** | local infiltration anesthesia (LIA) |
|  | **LIPUS** | low-intensity pulsed ultrasound (LIPUS) |
|  | **LLLT** | Low Level Laser Treatment (LLLT) |
|  | **LMWH** | low molecular weight heparins (LMWH) |
|  | **logRR** | logarithm of relative risks (logRR) |
|  | **LOS** | length of hospital stay (LOS) |
|  | **MB** | major bleeding (MB) |
|  | **MB** | mobile-bearing (MB) |
|  | **MCPI** | multimodal cocktail periarticular injection (MCPI) |
|  | **MD** | microdiscectomy (MD) |
|  | **MD** | microscopic discectomy (MD) |
|  | **MED** | microendoscopic discectomy / micro-endoscopic discectomy (MED) |
|  | **MI** | myocardial infarction (MI) |
|  | **MI** | mini-incision (MI) THA |
|  | **MID** | minimally invasive discectomy (MID) |
|  | **MIPO** | minimally invasive plate osteosynthesis (MIPO) |
|  | **MIS** | minimally invasive surgery (MIS) |
|  | **MOM-THA** | metal-on-metal total hip arthroplasty (MOM-THA) |
|  | **MoP** | Metal heads against a Polyethylene (MoP) |
|  | **MOP/ MOP-THA** | metal-on-polyethylene (MOP)/ metal-on-polyethylene total hip arthroplasty (MOP-THA) |
|  | **MR** | measured resection (MR) |
|  | **MS** | metal Interference screws (MS) |
|  | **MT** | mirror therapy (MT) |
|  | **MVIC** | maximum voluntary isometric contraction (MVIC) |
|  | **NA** | new oral anticoagulants (NAs) |
|  | **NACs** | new anticoagulants (NACs) |
|  | **NDI** | Neck Disability Index (NDI) |
|  | **NPD** | no patellar denervation (NPD) |
|  | **NSAIDs** | Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) |
|  | **OA** | osteoarthritis (OA) |
|  | **OAT** | osteochondral autograft transplantation (OAT) |
|  | **OD** | open discectomy (OD) |
|  | **ODI** | Oswestry Disability Index (ODI) |
|  | **ODI** | Oswestry dysfunctional index (ODI) |
|  | **ONS** | oral nutritional supplementation (ONS) |
|  | **ORIF** | open reduction and internal fixation (ORIF) |
|  | **OVCFs** | Osteoporotic Vertebral Compression Fractures (OVCFs) |
|  | **PAT** | post-operative auto-transfusion (PAT) |
|  | **PATD** | postoperative autotransfusion drain (PATD) |
|  | **PBC** | traditional bone cement (PBC) |
|  | **PCA** | patient-controlled analgesia (PCA) |
|  | **PCCP** | Percutaneous compression plate |
|  | **PCS** | Physical Component Summary (PCS) |
|  | **PD** | patellar denervation (PD) |
|  | **PE** | pulmonary embolism (PE) |
|  | **PEDro** | Physiotherapy Evidence Database (PEDro) |
|  | **PEMF** | Pulsed Electromagnetic Fields (PEMF) |
|  | **PF** | plate fixation (PF) |
|  | **PFNA** | proximal femoral nail anti-rotation (PFNA) |
|  | **PKP** | Percutaneous vertebroplasty (PKP) |
|  | **PLM** | phantom limb movement (PLM) |
|  | **PLP** | Phantom limb pain (PLP) |
|  | **PMDI** | periarticular multimodal drug injection (PMDI) |
|  | **PNB** | peripheral nerve block (PNB)/ peripheral nerve blockade (PNB) |
|  | **PNS** | peripheral nerve stimulator (PNS) |
|  | **PONV** | postoperative nausea and vomiting (PONV) |
|  | **pre-op** | Pre operative |
|  | **PRFK** | percutaneous reduction and fixation with Kirschner wires (PRFK) |
|  | **PRISMA** | Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) |
|  | **PRP** | platelet-rich plasma (PRP) |
|  | **PS** | posterior-stabilized (PS) |
|  | **PSF** | pedicle screw fixation (PSF) |
|  | **PSI** | Patient-specific instrumentation (PSI) |
|  | **PT** | patellar tendon (PT) |
|  | **PT** | physiotherapy (PT) |
|  | **PTI** | pin-track infection (PTI) |
|  | **PTUCD** | polyurethane on titanium unconstrained cervical disc (PTUCD) |
|  | **PVP** | percutaneous vertebroplasty (PVP) |
|  | **QALYs** | quality-adjusted life-years (QALYs) |
|  | **QoL** | Quality of Life (QoL) |
|  | **RA** | regional anaesthesia (RA) |
|  | **RCR** | rotator cuff repair (RCR) |
|  | **RCT** | randomised controlled trials (RCT) |
|  | **RCTs** | Randomized Controlled Trials (RCTs) |
|  | **rhBMP-2** | Recombinant human bone morphogenetic protein-2 (rhBMP-2) |
|  | **ROM** | range of motion (ROM) |
|  | **RR** | relative risk (RR) |
|  | **RRs** | Risk Ratios (RRs) |
|  | **RS** | Resurfacing arthroplasty (RS) |
|  | **SA** | systemic antibiotics (SA) |
|  | **SAD** | Subacromial Decompression (SAD) |
|  | **SAIS** | subacromial impingement syndrome (SAIS) |
|  | **SB** | single-bundle (SB) |
|  | **SD** | standard discectomy (SD) |
|  | **SFB** | sciatic-femoral nerve block (SFB) |
|  | **SHS** | sliding hip screw (SHS) |
|  | **SI** | standard incision (SI) THA |
|  | **SMD/SMDs** | standardized mean difference(s) (SMD/SMDs) |
|  | **SNB** | sciatic nerve block (SNB) |
|  | **SOC** | standard-of-care (SOC) |
|  | **SOR** | strength of recommendation (SOR) |
|  | **SR** | Systematic Review (SR) |
|  | **SS** | Short-stem (SS) prostheses |
|  | **SSFNB** | single-shot FNB (SSFNB)/ Femoral nerve blockade (FNB) |
|  | **SWT** | shock wave therapy (SWT) |
|  | **TA** | tranexamic acid (TA) |
|  | **TBL** | total blood loss (TBL) |
|  | **TDR** | total disc replacement (TDR) |
|  | **TE** | thromboembolism (TE) |
|  | **TEA** | tranexamic acid (TEA) |
|  | **TENS** | Transcutaneous Electrical Stimulation (TENS) |
|  | **THA** | total hip arthroplasty (THA) |
|  | **THRA** | total hip resurfacing arthroplasty (THRA) |
|  | **TJA** | total joint arthroplasty (TJA) |
|  | **TKA** | total knee arthroplasty (TKA) |
|  | **TKR** | Total knee replacement (TKR) |
|  | **TP** | transverse pinning (TP) |
|  | **TSA** | total shoulder arthroplasty (TSA) |
|  | **tx** | Treatment |
|  | **TXA** | tranexamic acid (TXA) |
|  | **UGI** | ultrasound-guided (UGI) |
|  | **UHF** | unfractionated heparin (UFH) |
|  | **UKA** | unicompartmental knee arthroplasty (UKA) |
|  | **US** | ultrasound (US) |
|  | **USA** | unilateral spinal anesthesia (USA) |
|  | **VAS** | Visual Analogue Scale (VAS) |
|  | **VCF** | vertebral compression fractures (VCF) |
|  | **VKA** | vitamin K antagonists (VKA) |
|  | **VKAs** | vitamin K antagonists (VKAs) |
|  | **Vs** | Versus |
|  | **VTE** | Venous Thromboembolism/ venous thromboembolic (VTE) |
|  | **WMDs** | Weighted mean differences (WMDs) |
|  | **WOMAC** | Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores |

**LowEx**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation Ref all hip & knee** | **Year** | **327** | **Hip Knee coding** | **coding** |
| Abdulkarim 2013 | Cementevde versus uncemented fixation in total hip replacement: A systematic review and meta-analysis of randomized controlled trials | We concluded in our review that cemented THR is similar if not superior to uncemented THR, and provides better short term clinical outcomes. Further research, improved methodology and longer follow up are necessary to better define specific subgroups of patients in whom the relative benefits of cemented and uncemented implant fixation can be clearly demonstrated. Conclusion: Cemented hip arthroplasty is similar if not superior to cementless fixation, and provide better short term clinical outcomes. Our findings summarize the best available evidence and provide important information for future research. | Surgery | Orthopedic Reviews 2013;5(1):33-44 2013 December 13 | 2013 |  | hip | arthroplasty |
| Agrawal 2011 | Patellar resurfacing in total knee arthroplasty | The existing literature shows that patellar resurfacing can reduce the risk of reoperation with no improvement in knee function or patient satisfaction compared to patients without patellar resurfacing. If it reduces, the incidence of anterior knee pain remains uncertain at present. | Surgery | Journal of Clinical Orthopaedics and Trauma December 2011;2(2):77-81 2011 December | 2011 |  | knee | arthroplasty |
| Aikeremujiang 2015 | Effects of general and epidural anesthesia on the formation of deep vein thrombosis after total knee arthroplasty: A meta-analysis | RESULTS AND CONCLUSION: There were 8 studies including 885 patients. The heterogeneity of the included studies was very low (I2=0, P=0.72). The combined OR was 0.25 (95% confidence interval: 0.18, 1.35), indicating that continuous epidural anesthesia in total knee arthroplasty could apparently reduce the possible formation of postoperative deep vein thrombosis. Because of lack of the changes in coagulation factors under general anesthesia and epidural anesthesia, the mechanism underlying epidural anesthesia to reduce the incidence of deep vein thrombosis deserves further investigations. Among patients with deep vein thrombosis, continuous epidural anesthesia could diminish the possible formation of deep vein thrombosis. Thus, epidural anesthesia should be used firstly for knee replacement in patients with high risk of deep vein thrombosis. | Medication | Chinese Journal of Tissue Engineering Research 2015;19(35):5735-5740  2015 | 2015 |  | knee | arthroplasty |
| Albrecht 2016 | The analgesic efficacy of local infiltration analgesia vs femoral nerve block after total knee arthroplasty: a systematic review and meta-analysis | This meta-analysis aims to compare both analgesic treatments for analgesia and functional outcomes after total knee arthroplasty. This meta-analysis was performed according to the PRISMA statement guidelines. The primary outcomes were cumulative i.v. morphine consumption, pain scores at rest and on movement on postoperative day one (analogue scale,0-10). Secondary outcomes included range of motion, quadriceps muscle strength, length of stay and rates of complications (neurologic events, cardiovascular events, falls and knee infections). Fourteen trials, including 1122 adult patients were identified. There was no difference in i.v. morphine consumption (mean difference: -2.0 mg; 95% CI: -4.9, 0.9 mg; I(2)=69%; P=0.19), pain scores at rest (mean difference: -0.1; 95% CI: -0.4, 0.3; I(2)=72%; P=0.80) and pain scores on movement (mean difference: 0.2; 95% CI: -0.5, 0.8; I(2)=80%; P=0.64) on postoperative day one (a negative mean difference favours local infiltration analgesia). The qualities of evidence for our primary outcomes were moderate according to the GRADE system. There were no clinical differences in functional outcomes or rates of complications. Complication rates were captured by three trials or fewer with exception of knee infection, which was sought by eight trials. Local infiltration analgesia provides similar postoperative analgesia after total knee arthroplasty to femoral nerve block. Although this meta-analysis did not capture any difference in rates of complications, the low number of trials that specifically sought these outcomes dictates caution. | Medication | Br J Anaesth May 2016;116(5):597-609  2016 May | 2016 |  | knee | arthroplasty |
| AlBuhairn 2008 | Antibiotic prophylaxis for wound infections in total joint arthroplasty : A systematic review | Conclusion: Antibiotic prophylaxis should be routine in joint replacement but the choice of agent should be made on the basis of cost and local availability. | Medication | Journal of Bone and Joint Surgery - Series B July 2008;90(7):915-919  2008 July | 2008 |  | both | arthroplasty |
| Alcelik 2012 | A comparison of outcomes with and without a tourniquet in total knee arthroplasty: a systematic review and meta-analysis of randomized controlled trials (Provisional abstract) | Ten studies were included in the meta-analysis. Of the 8 outcomes analyzed (surgery duration; total, intraoperative, and postoperative blood losses; deep vein thrombosis; pulmonary embolism; and minor/major complications), the total and intraoperative blood losses were less using a tourniquet. Minor complications were more common in the tourniquet group. The remaining outcomes showed no difference between the groups. Using a tourniquet may be beneficial, but long-term studies of outcome are needed. | Surgery | Journal of Arthroplasty 2012;27(3):331-340  2012 | 2012 |  | knee | arthroplasty |
| Alotaibi 2013 | The use of preoperative erythropoiesis-stimulating agents (ESAs) in patients who underwent knee or hip arthroplasty a meta-analysis of randomized clinical trials | Conclusion: ESAs offer an alternative blood conservation method to avoid allogeneic blood transfusion in patients undergoing hip or knee surgery. | Medication | Journal of Thrombosis and Haemostasis July 2013;11():807  2013 July | 2013 |  | knee | arthroplasty |
| Alsaleh 2013 | The use of preoperative erythropoiesis-stimulating agents (ESAs) in patients who underwent knee or hip arthroplasty: a meta-analysis of randomized clinical trials (Provisional abstract) | Pooled results of 26 trials with 3560 participants showed that the use of preoperative ESAs reduced ABT in patients undergoing hip or knee surgery [RR: 0.48, 95% CI: 0.38 to 0.60, P<0.00001]. Hemoglobin mean difference between ESA and control groups was 7.16 (g/L) [95% CI of 4.73 to 9.59, P=0.00001]. There was no difference in the risk of developing thromboembolism between ESA and control groups [RD: 0, 95 % CI: -1%-2%, P=0.95]. ESAs offer an alternative blood conservation method to avoid ABT in patients undergoing hip or knee surgery. | Medication | Journal of Arthroplasty 2013;28(9):1463-1472  2013 | 2013 |  | both | arthroplasty |
| Alshryda 2011 | Tranexamic acid in total knee replacement: a systematic review and meta-analysis | The current evidence from trials does not support an increased risk of deep-vein thrombosis (13 trials, 801 patients) or pulmonary embolism (18 trials, 971 patients) due to TXA administration. | Medication | J Bone Joint Surg Br Dec 2011;93(12):1577-85  2011 Dec | 2011 |  | knee | arthroplasty |
| Alshryda 2014 | A systematic review and meta-analysis of the topical administration of tranexamic acid in total hip and knee replacement | We conducted a systematic review and meta-analysis which included 14 randomised controlled trials (11 in knee replacement, two in hip replacement and one in both) which investigated the effect of topical TXA on blood loss and rates of transfusion. Topical TXA significantly reduced the rate of blood transfusion (total knee replacement: risk ratio (RR) 4.51; 95% confidence interval (CI): 3.02 to 6.72; p < 0.001 (nine trials, I(2) = 0%); total hip replacement: RR 2.56; 95% CI: 1.32 to 4.97, p = 0.004 (one trial)). The rate of thromboembolic events with topical TXA were similar to those found with a placebo. Indirect comparison of placebo-controlled trials of topical and intravenous TXA indicates that topical administration is superior to the intravenous route. In conclusion, topical TXA is an effective and safe method of reducing the need for blood transfusion after total knee and hip replacement. Further research is required to find its optimum dose for topical use. | Medication | Bone Joint J Aug 2014;96-b(8):1005-15  2014 Aug | 2014 |  | both | arthroplasty |
| Alves 2012 | Apixaban and rivaroxaban safety after hip and knee arthroplasty: a meta-analysis | Of the 160 screened publications, 12 clinical trials were included in which enoxaparin was the active control. For knee arthroplasty, apixaban was associated with significantly fewer major bleeding events (6496 patients, RR 0.56, 95% confidence interval [CI] 0.32-0.96) and fewer total bleeding events (6496 patients, RR 0.81, 95% CI 0.67-0.97). There were no significant differences in the incidence of major bleeding events (5699 patients, RR 1.40, 95% CI 0.56-3.52) or in the incidence of total bleeding events for rivaroxaban (5699 patients, RR 1.09, 95% CI 0.91-1.30). No differences were found when thromboprophylaxis after hip replacement was the case. Apixaban seems to be associated with a lower risk of the incidence of hemorrhagic events after total knee arthroplasty. For hip arthroplasty, no differences were found between the studied drugs. | Medication | J Cardiovasc Pharmacol Ther Sep 2012;17(3):266-76  2012 Sep | 2012 |  | both | arthroplasty |
| Andersen 2014 | Analgesic efficacy of local infiltration analgesia in hip and knee arthroplasty: a systematic review | Twenty-seven randomized controlled trials in 756 patients operated on with THA and 888 patients operated on with TKA were selected for inclusion in the review. In THA, no additional analgesic effect of LIA compared with placebo was reported in trials with low risk of bias when a multimodal analgesic regimen was administered perioperatively. Compared with intrathecal morphine and epidural analgesia, LIA was reported to have similar or improved analgesic efficacy. In TKA, most trials reported reduced pain and reduced opioid requirements with LIA compared with a control group treated with placebo/no injection. Compared with femoral nerve block, epidural or intrathecal morphine LIA provided similar or improved analgesia in the early postoperative period but most trials had a high risk of bias due to different systemic analgesia between groups. Overall, the use of wound catheters for postoperative administration of local anaesthetic was not supported in the included trials, and LOS was not related to analgesic efficacy. Despite the many studies of LIA, final interpretation is hindered by methodological insufficiencies in most studies, especially because of differences in use of systemic analgesia between groups. However, LIA provides effective analgesia in the initial postoperative period after TKA in most randomized clinical trials even when combined with multimodal systemic analgesia. In contrast, LIA may have limited additional analgesic efficacy in THA when combined with a multimodal analgesic regimen. Postoperative administration of local anaesthetic in wound catheters did not provide additional analgesia when systemic analgesia was similar and LOS was not related to use of LIA with a fast-track set-up. | Medication | Br J Anaesth Sep 2014;113(3):360-74  2014 Sep | 2014 |  | both | arthroplasty |
| Anwer 2016 | Effect of whole body vibration training on quadriceps musclestrength in individuals with knee osteoarthritis: a systematicreview and meta-analysis | 4 RCTs were included in this meta-analysis and systematic review for the purpose of comparing effects on quadriceps muscle strength after exercise therapy with and without whole-body vibration. Results demonstrated that the inclusion of whole body vibration did not significantly impact quadriceps muscle strength, as evidence by comparable results after 8-12 weeks of treatment. | Non Surgical Intervention | Physiotherapy 2016;():  2016 | 2016 |  | knee | osteoarthritis |
| Arirachakaran 2015 | Clinical outcomes after high-flex versus conventional total knee arthroplasty | Conclusion: This study suggests improvements in post-operative knee range of motion and knee scores in high-flex TKA implants when compared to conventional TKA implants; however, the difference was very small and therefore might not have any clinical impact. Therefore, conventional TKA can be used as a substitute. However, cost-effective analysis should be performed to make appropriate selections in the future. There are no statistically significant differences in terms of HSS, quality of life, complications and revisions between the groups. LEVEL OF EVIDENCE: I. | Surgery | Knee Surg Sports Trauma Arth 2015;():  2015 Jun | 2015 |  | knee | arthroplasty |
| Arirachakaran 2015 | Is unicompartmental knee arthroplasty (UKA) superior to total knee arthroplasty (TKA)? A systematic review and meta-analysis of randomized controlled trial | Conclusion: In short-term outcomes (5 years or less, with follow-up of 0-5 years), TKA had higher postoperative complications than UKA, but had lower revision rates. There was only one study that reported long-term survivorship (more than 5 years, with follow-up of 5-15 years). Further research that assesses long-term survivorship is necessary to better evaluate UKA and TKA in the treatment of unicompartmental knee osteoarthritis. | Surgery | Eur J Orthop Surg Traumatol Jul 2015;25(5):799-806  2015 Jul | 2015 |  | knee | arthroplasty |
| Arnold 2016 | Lateral Wedge Insoles for Reducing Biomechanical Risk Factors for Medial Knee Osteoarthritis Progression: A Systematic Review and Meta-Analysis | Conclusion: The outcomes of interest included biomechanical markers associated with OA disease progression, such as first peak of the external knee adduction moment (EKAM), second peak EKAM, the area under the EKAM curve, and the knee adduction angular impulse (KAAI). Results demonstrated that treatment with lateral wedged insoles resulted in significant reduction in first peak of the external knee adduction moment (EKAM), second peak EKAM, and the knee adduction angular impulse (KAAI) when baseline measurements were compared to post-treatment values, and when post-treatment values were compared to patients own shoe (no insole) or a neutral insole. | Non Surgical Intervention | Arthritis Care Res 2016;():  2016 | 2016 |  | knee | osteoarthritis |
| Arrich 2005 | Intra-articular hyaluronic acid for the treatment of osteoarthritis of the knee: systematic review and meta-analysis | Analysis of all studies demonstrated significant effects of hyaluronic acid injections at 2-6weeks for pain at rest, and 10-14 weeks and 22-30 weeks for pain during activity. No significant effect was observed for functional measures. Sensitivity analysis of only high-quality studies demonstrated no significant effect of hyaluronic acid for any outcome at 2-6 weeks or 10-14 weeks. | Medication | CMAJ 2005;():  2005 | 2005 |  | knee | osteoarthritis |
| Arroll 2004 | Corticosteroid injections for osteoarthritis of the knee: meta-analysis. | Conclusion: Corticosteroid injections resulted in a favourable outcome for symptom improvement and a significant reduction in pain over the short term (2 weeks). Symptom improvement at 16-24 weeks favoured corticosteroid injection but this was based on only 2 studies. Additional trials using homogenous outcome measures are needed to add to the body of evidence. | Medication | BMJ 2004;():  2004 | 2004 |  | knee | osteoarthritis |
| Aryal 2015 | Thromboprophylaxis with apixaban and the risk of pulmonary embolism in patients undergoing knee replacement surgery | Conclusion: Apixaban was found to be associated with lower risk of symptomatic DVT and bleeding compared to enoxaparin when used for thromboprophylaxis in patients undergoing knee and hip replacement surgeries. However, it was associated with higher risk of PE in patients undergoing knee replacement. | Medication | J Community Hosp Intern Med Perspect 2015;5(4):27889  2015 | 2015 |  | knee | arthroplasty |
| Avouac 2010 | Efficacy of joint lavage in knee osteoarthritis: Meta-analysis of randomized controlled studies | Conclusions: This meta-analysis of RCTs investigating joint lavage for knee OA suggests that at 3 months, (i) joint lavage alone does not provide significant improvement in pain or function and (ii) the combination of joint lavage and IA steroid injection is no more efficacious than lavage alone. | Surgery | Rheumatology February 2010;49(2):334-340  2010 February | 2010 |  | knee | osteoarthritis |
| Banerjee 2014 | Systematic review of high-volume multimodal wound infiltration in total knee arthroplasty | Although better pain relief in the immediate postoperative period with wound infiltration is gained after TKA, there is no definite evidence that this leads to a reduction in opiate consumption, the achievement of early milestones, or a reduction in hospital stay. The roles of individual agents in achieving pain relief and the use of percutaneous wound catheter for postoperative doses are also unclear. There are few reports of complications, including falls and delayed mobilization, when femoral nerve blocks are used. Wound infiltration analgesia should be used at the preference of the surgeon and anesthetist provided regular review of their practice is undertaken to identify any untoward side effects. Further randomized trials with sufficient sample size comparing each outcome, including pain scores, opiate consumption, and length of hospital stay, should be undertaken. | Medication | Orthopedics June 2014;37(6):403-412 2014 June | 2014 |  | knee | arthroplasty |
| Bannuru 2009 | Therapeutic trajectory of hyaluronic acid versus corticosteroids in the treatment of knee osteoarthritis: a systematic review and meta-analysis | 7 randomized controlled trials (RCTs) were included in this systematic review and meta-analysis comparing conservative treatment methods of intra-articular hyaluronic acid injections and corticosteroid injections. Pain scores were pooled at 2, 4, 8, 12, and 26 weeks post-injection. In early follow-up (2 weeks), treatment with corticosteroid injections resulted in lower pain wehn compared to treatment with hyaluronic acid injections. From 4-8 weeks, treatment displayed similar efficacy. At 12 weeks and later, hyaluronic acid injections demonstrated significantly lower pain scores compared to corticosteroid injections. | Medication | Arthritis Rheum 2009;():  2009 | 2009 |  | knee | osteoarthritis |
| Bannuru 2014 | Relative efficacy of hyaluronic acid in comparison with NSAIDs for knee osteoarthritis: a systematic review and meta-analysis | 5 randomized controlled trials were included in this meta-analysis investigating the comparative efficacy between intra-articular hyaluronic acid injections and oral non-steroidal anti-inflammatory drugs in the treatment of symptomatic knee osteoarthritis. Data was pooled from a total of 712 patients treated with either modality, with outcome data available for results on pain, function, stiffness, and adverse events. No significant differences were noted in any of the analyses conducted for the outcomes of interest. | Medication | Semin Arthritis Rheum 2014;():  2014 | 2014 |  | knee | osteoarthritis |
| Bannuru 2015 | Comparative effectiveness of pharmacologic interventions for knee osteoarthritis: a systematic review and network meta-analysis | The aim of this study was to assess and compare the efficacy of current pharmacologic treatments for primary knee osteoarthritis. Treatments such as intra-articular corticosteroids, intra-articular hyaluronic acid, acetaminophen, naproxen, ibuprofen, diclofenac, and celecoxib and oral and intra-articular placebos were compared based on their effect on pain, function, and stiffness. Results indicated that all interventions were significantly more favourable than oral placebo for pain outcomes. In addition, with the exception of intra-articular corticosteroids, all interventions were significantly superior to oral placebo with regards to functional outcomes. Naproxen, ibuprofen, diclofenac, and celecoxib were found to be superior treatments for knee stiffness, although most treatments led to similar effects. | Medication | Ann Intern Med 2015;():  2015 | 2015 |  | knee | osteoarthritis |
| Batterham 2011 | Systematic review and meta-analysis comparing land and aquatic exercise for people with hip or knee arthritis on function, mobility and other health outcomes | The pooled results suggested that the efficacy of aquatic exercises seemed to be similar to that of land based exercise, and may represent an alternative method of management in this population of patients. | Physio/Rehab | BMC Musculoskelet Disord 2011;():  2011 | 2011 |  | both | osteoarthritis |
| Bellamy 2006 | Intraarticular corticosteroid for treatment of osteoarthritis of the knee | AUTHORS' CONCLUSIONS: The short-term benefit of IA corticosteroids in treatment of knee OA is well established, and few side effects have been reported. Longer term benefits have not been confirmed based on the RevMan analysis. The response to HA products appears more durable. In this review, some discrepancies were observed between the RevMan 4.2 analysis and the original publication. These are likely the result of using secondary rather than primary data and the statistical methods available in RevMan 4.2. Future trials should have standardised outcome measures and assessment times, run longer, investigate different patient subgroups, and clinical predictors of response (those associated with inflammation and structural damage). | Medication | Cochrane Database Syst Rev 2006;():  2006 | 2006 |  | knee | osteoarthritis |
| Bellamy 2006 | Viscosupplementation for the treatment of osteoarthritis of the knee | Overall, the aforementioned analyses support the use of the HA class of products in the treatment of knee OA. | Medication | Cochrane Database of Systematic Reviews 2006;(2): John Wiley & Sons, Ltd  2006 | 2006 |  | knee | osteoarthritis |
| Bjordal 2007 | Short-term efficacy of pharmacotherapeutic interventions in osteoarthritic knee pain: A meta-analysis of randomised placebo-controlled trials | Opioid therapy, oral NSAID, topical NSAID, steroid injections, paracetamol, glucosamine sulphate, and chondroitin sulphate were evaluated in this study. When assessed in comparison to placebo, corticosteroid injections provided the greatest pain relief over the first 4 weeks, having a maximal effect at 1.5 weeks. However, when the maximal effects of these pharmacotherapeutic interventions were assessed in reference to a patient-centered threshold for clinical relevance, none of the treatments fully exceeded a threshold for a minimal clinically important improvement. Corticosteroid injection was the only treatment to provide a slight improvement during the first 4 weeks. | Medication | Eur J Pain. 2007;():  2007 | 2007 |  | knee | osteoarthritis |
| Bjordal 2007 | Short-term efficacy of physical interventions in osteoarthritic knee pain. A systematic review and meta-analysis of randomised placebo-controlled trials | Results indicated that the optimal doses of TENS, EA and LLLT appear to offer short-term pain relief for knee OA. | Physio/Rehab | BMC Musculoskelet Disord 2007;(): 2007 | 2007 |  | knee | osteoarthritis |
| Black 2009 | The clinical effectiveness of glucosamine and chondroitin supplements in slowing or arresting progression of osteoarthritis of the knee: a systematic review and economic evaluation | CONCLUSIONS: There was evidence that glucosamine sulphate shows some clinical effectiveness in the treatment of OA of the knee. No trial data came from the UK and caution should be exercised in generalising the findings to the UK health-care setting. Cost-effectiveness was not conclusively demonstrated. There was evidence to support the potential clinical impact of glucosamine sulphate. The value of information analysis identified three research priorities: QoL, structural outcomes and knee arthroplasty. The biological mechanism of glucosamine sulphate and chondroitin remains uncertain and, in particular, the proposal that the active substance may be sulphate should be explored further. | Medication | Health Technol Assess Nov 2009;13(52):1-148 2009 Nov | 2009 |  | knee | osteoarthritis |
| Bo 2014 | Mobile bearing or fixed bearing? A meta-analysis of outcomes comparing mobile bearing and fixed bearing bilateral total knee replacements | CONCLUSIONS: Based on this meta-analysis we are unable to detect the superiority of MB as compared to FB. More randomized trials with a larger sample size and longer follow-up are needed to evaluate these two kinds of prosthesis. LEVEL OF EVIDENCE: Therapeutic Level II. | Surgery | Knee Mar 2014;21(2):374-81  2014 Mar | 2014 |  | knee | arthroplasty |
| Borzio 2016 | Barbed sutures in total hip and knee arthroplasty: what is the evidence? A meta-analysis | CONCLUSIONS: In randomized controlled trials, barbed sutures are consistently associated with shorter wound closure time, which also corresponds to cost savings, even when the higher cost of these sutures is taken into account. There was no significant difference in the odds of experiencing either minor or major complications between patients in whom barbed sutures versus standard sutures were used for wound closure. Current evidence supports continued use of these sutures. LEVEL OF EVIDENCE: Level I. | Surgery | Int Orthop Feb 2016;40(2):225-31  2016 Feb | 2016 |  | both | arthroplasty |
| Brown 2009 | Venous Thromboembolism Prophylaxis After Major Orthopaedic Surgery: A Pooled Analysis of Randomized Controlled Trials | A pooled analysis of RCTs supports the use of aspirin for VTE prophylaxis after major orthopaedic surgery. © 2009. | Medication | Journal of Arthroplasty September 2009;24(6 SUPPL.):77-83  2009 September | 2009 |  | Not specified | not specified |
| Calvisi 2009 | Resurfacing versus nonresurfacing the patella in total knee arthroplasty: a critical appraisal of the available evidence | The evidence suggests that patellar resurfacing would reduce the risk of anterior knee pain, as well as the risk of patella-related reoperation. Furthermore, patients not undergoing patella resurfacing would experience more knee pain during stair climbing and be less satisfied with surgery. No significant difference in range of motion can be expected with or without patellar resurfacing. Importantly, methodological limitations were observed in all retrieved studies and evidences about potential adverse events related to patellar resurfacing are presently undetermined. | Surgery | Arch Orthop Trauma Surg Sep 2009;129(9):1261-70  2009 Sept | 2009 |  | knee | arthroplasty |
| Cao 2010 | Rivaroxaban versus enoxaparin for thromboprophylaxis after total hip or knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSIONS: Rivaroxaban was more effective than the recommended dose of enoxaparin and had a similar safety profile for thromboprophylaxis after hip and knee arthroplasty. | Medication | Eur J Clin Pharmacol Nov 2010;66(11):1099-108  2010 Nov | 2010 |  | both | arthroplasty |
| Chan 2014 | Femoral nerve blocks for acute postoperative pain after knee replacement surgery | Authors' conclusions: Following TKR, FNB (with or without concurrent treatments including PCA opioid) provided more effective analgesia than PCA opioid alone, similar analgesia to epidural analgesia and less nausea/vomiting compared with PCA alone or epidural analgesia. The review also found that continuous FNB provided better analgesia compared with single-shot FNB. RCTs were insufficient to allow definitive conclusions on the comparison between FNB and local infiltration analgesia or oral analgesia. | Medication | Cochrane Database of Systematic Reviews 2014;(5):John Wiley & Sons, Ltd  2014 | 2014 |  | knee | arthroplasty |
| ChaoZeng 2013 | Single-Dose Intra-Articular Morphine After Arthroscopic Knee Surgery: A Meta-Analysis of Randomized of Placebo-Controlled Studies | The evidence presented in this study demonstrated that morphine after arthroscopic knee surgery resulted in reduced pain, reduced need for supplementary analgesics, and lengthened time before first request for supplementary analgesic. Side effects were comparable between the morphine and control groups. | Medication | Biochim Biophys Acta. 2013;():  2013 | 2013 |  | knee | arthroplasty |
| Chen 2012 | Comparison of the effectiveness and safety of topical versus intravenous tranexamic acid in primary total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSIONS: Compared with intravenous administration TXA, topical administration TXA exhibits comparable effectiveness and safety in terms of reducing blood loss during TKA. Due to the poor quality of the included studies, more high-quality RCTs are needed to identify the optimal method and dose of TXA after TKA. | Medication | J Orthop Surg Res Jan 19 2017;12(1):11  2017 Jan 19 | 2012 |  | knee | arthroplasty |
| Chen 2012 | Meta analysis on the minimally invasive incision versus conventional incision for total hip arthroplasty. [Chinese] | A total of 14 related papers were included, Meta analysis indicated that minimally invasive incision for total hip arthroplasty could reduce the duration of operation, the amount of intraoperative blood loss, and the amount of total blood loss when compared with conventional incision, but the rate of complications had no difference. As for the aspect of hip function after total hip arthroplasty, the Harris score of minimally invasive incision was better than that of the conventional incision within one year. The hip function was better in the minimally invasive incision for less blood loss, duration of operation, hospital stay and less on-bed time. | Surgery | Chinese Journal of Tissue Engineering Research 2012;16(35):6503-6507  2012 | 2012 |  | hip | arthroplasty |
| Chen 2012 | Patellar resurfacing versus nonresurfacing in total knee arthroplasty: a meta-analysis of randomised controlled trials | CONCLUSIONS: The available evidence indicates that patellar resurfacing reduces the risk of reoperation after total knee arthroplasty. Patellar resurfacing patients may make a difference in long-term follow-up (five or more 5 years) of Knee Society scores. In other aspects, the benefit of patellar resurfacing is limited. Additionally, more carefully and scientifically designed randomised controlled trials are required to further prove the claim. | Surgery | Int Orthop Jun 2013;37(6):1075-83  2013 Jun | 2012 |  | knee | arthroplasty |
| Cheng 2010 | Does minimally invasive surgery improve short-term recovery in total knee arthroplasty? | CONCLUSIONS: MIS leads to faster recovery than conventional surgery with similar rates of component malalignment but is associated with more frequent delayed wound healing and infections. Potential benefits in long-term survival rate and functional improvement require additional investigation. Level of Evidence Level II, therapeutic study (systematic review). | Surgery | Clin Orthop Relat Res Jun 2010;468(6):1635-48  2010 Jun | 2010 |  | knee | arthroplasty |
| Cheng 2013 | Comparison of fixed- and mobile-bearing total knee arthroplasty with a mean five-year follow-up: A meta-analysis | Nine trials, studying 1,821 knees, were eligible for data extraction and meta-analysis. The Knee Society score and the maximum knee flexion demonstrated no difference between the FB and MB groups (P=0.47 and P=0.72, respectively). Similarly, no difference was revealed between the groups for radiological outcomes or general health results. An increased number of high-quality RCTs with long-term follow-ups are required to validate the results. | Surgery | Exp Ther Med Jul 2013;6(1):45-51  2013 Jul | 2013 |  | knee | arthroplasty |
| Cheng 2014 | No clinical benefit of gender-specific total knee arthroplasty | INTERPRETATION: Gender-specific prostheses do not appear to confer any bene fi t in terms of clinician- and patient-reported outcomes for the female knee. | Surgery | Acta Orthop Aug 2014;85(4):415-21  2014 Aug | 2014 |  | knee | arthroplasty |
| Cheng 2014 | Operative versus conservative treatment for patellar dislocation: a meta-analysis of 7 randomized controlled trials | CONCLUSION: The results suggest a difference in outcomes between the treatment strategies. However the limited number of studies and high risk of inherent bias indicate that future studies involving more patients in better-designed randomized controlled trials will be required. | Surgery | Diagn Pathol Mar 18 2014;9():60  2014 Mar 18 | 2014 |  | knee | not specified |
| Christensen 2008 | Symptomatic efficacy of avocadoesoybean unsaponifiables (ASU) in osteoarthritis (OA) patients: a meta-analysis of randomized controlled trials | CONCLUSIONS: Based on the available evidence, patients may be recommended to give ASU a chance for e.g., 3 months. Meta-analysis data support better chances of success in patients with knee OA than in those with hip OA. | Medication | Osteoarthr cartilage 2008;():  2008 | 2008 |  | both | osteoarthritis |
| Clark 2015 | Total hip replacement and surface replacement for the treatment of pain and disability resulting from end-stage arthritis of the hip (review of technology appraisal guidance 2 and 44): Systematic review and economic evaluation | Conclusions: Compared with THR, revision rates for RS were higher, mean costs for RS were higher and mean QALYs gained were lower; RS was dominated by THR. Similar results were obtained in the deterministic and probabilistic analyses and for all age and sex groups THR was almost 100% cost-effective at any willingness-to-pay level. Revision rates for all types of THR were low. Category A THR (cemented components with a polyethylene-on-metal articulation) was more cost-effective for older age groups. However, across all age-sex groups combined, the mean cost for category E THR (cemented components with a polyethylene-on-ceramic articulation) was slightly lower and the mean QALYs gained were slightly higher. Category E therefore dominated the other four categories. Certain types of THR appeared to confer some benefit, including larger femoral head sizes, use of a cemented cup, use of a cross-linked polyethylene cup liner and a ceramic-on-ceramic as opposed to a metal-on-polyethylene articulation. Further RCTs with long-term follow-up are needed. | Surgery | Health Technology Assessment 2015;19(10):1-712  2015 | 2015 |  | hip | arthroplasty |
| Cohen 2012 | The efficacy and safety of pharmacological prophylaxis of venous thromboembolism following elective knee or hip replacement: systematic review and network meta-analysis | The present systematic review was conducted to assess the efficacy and safety of apixaban versus other anticoagulants, for the prevention of venous thromboembolism (VTE) following total hip replacement (THR) and total knee replacement (TKR) surgery. No significant differences were observed in bleeding outcomes between treatments. The novel anticoagulants apixaban, rivaroxaban, and dabigatran demonstrated similar or improved efficacy and similar safety compared with current therapies in this indication. | Medication | Clin Appl Thromb Hemost Nov 2012;18(6):611-27  2012 Nov | 2012 |  | both | arthroplasty |
| Coppola 2009 | Is physical therapy more beneficial than unsupervised home exercise in treatment of post surgical knee disorders? A systematic review | Ten studies, all randomized control trials, were found to be applicable to our review. Using the PEDro scale all studies were considered at least moderate in quality. Many of the studies had designs that biased the home exercise group, providing supervision similar to that provided by outpatient physical therapy. In select young and healthy population with few co morbidities supervised physical therapy is no more beneficial than a home exercise program following relatively simple knee surgical procedures (arthroscopic meniscetomy). However there is a lack of evidence regarding older populations with co morbidities or for more complicated knee surgical procedures (ACL reconstruction, Total Knee Arthroplasty) prohibiting a conclusion at this time for these populations and/or these procedures. | Physio/Rehab | Knee Jun 2009;16(3):171-5  2009 Jun | 2009 |  | knee | not specified |
| Coulter 2013 | Physiotherapist-directed rehabilitation exercises in the outpatient or home setting improve strength, gait speed and cadence after elective total hip replacement: a systematic review | CONCLUSION: Physiotherapy rehabilitation improves hip abductor strength, gait speed and cadence in people who have been discharged from hospital after total hip replacement. Physiotherapist-directed rehabilitation exercises appear to be similarly effective whether they are performed unsupervised at home or supervised by a physiotherapist in an outpatient setting. | Physio/Rehab | J Physiother Dec 2013;59(4):219-26  2013 Dec | 2013 |  | hip | arthroplasty |
| Cui 2015 | The efficacy of steroid injection in total knee or hip arthroplasty | CONCLUSIONS: The current evidence suggests that steroid injection in TKA/THA provides short-term advantages in pain relief and antiemetic effects. The optimal dose and long-term effects of steroid injection still require numerous studies. LEVEL OF EVIDENCE: II. | Medication | Knee Surg Sports Traumatol Arthrosc Aug 2015;23(8):2306-14  2015 Aug | 2015 |  | both | arthroplasty |
| Cui 2016 | Intra-articular bupivacaine after joint arthroplasty: a systematic review and meta-analysis of randomised placebo-controlled studies | CONCLUSIONS: The administration of IA bupivacaine after joint arthroplasty is effective for pain relief without increasing adverse effects. | Medication | BMJ Open Jul 12 2016;6(7):e011325  2016 Jul 12 | 2016 |  | both | arthroplasty |
| Dai 2012 | Meta-analysis of the outcomes of patella resurfacing in total knee arthroplasty. [Chinese] | Results and Conclusion: A total of 18 randomized controlled trials of 7 075 patients were selected (3 463 in the resurfacing group and 3 612 in the non-resurfacing group). Meta-analysis showed that there was no significant difference of the incidence of anterior knee pain between resurfacing group and non-resurfacing group (RR=0.150, 95%CI: 0.129-0.185, P > 0.05). Compared with non-resurfacing group, the reoperation rates more than 5 years in the resurfacing group was decreased (RR=0.135, 95%CI:0.118-0.166, P < 0.05). There was no significant difference of the functional scores between two groups (WMD=-0.144, 95%CI: -1.122-2.109, P > 0.05). It indicates that there is no significant difference in the outcome of total knee arthroplasty with or without patellar resurfacing, so more usage of national registry joint replacement data should be encouraged to provide the basis for the identification of whether the patellar resurfacing should be performed during total knee arthroplasty. | Surgery | Chinese Journal of Tissue Engineering Research 2012;16(39):7283-7287  2012 | 2012 |  | knee | arthroplasty |
| deAlvarengaYoshida 2012 | New anticoagulants for venous thromboembolism prophylaxis in major orthopedic surgeries. A systematic review of randomized controlled trials | Conclusions: The results of primary efficacy were favorable to fondaparinux compared to enoxaparin, but associated with a higher bleeding rate. Significant heterogeneity did not allow consistent conclusions as to the superiority of rivaroxaban for primary efficacy. The remaining anticoagulants presented primary efficacy non-inferior to enoxaparin. Symptomatic DVT was less frequent in the studies with rivaroxaban, and dabigatran was associated with a lower frequency of ALT elevation compared to enoxaparin. Apixaban and bemiparin had outcomes similar to those of enoxaparin, but results were based only upon one study each. | Medication | Jornal Vascular Brasileiro March 2012;11(1):1-2  2012 March | 2012 |  | hip | arthroplasty |
| Devitt 2016 | Surgical treatments of cartilage defects of the knee: Systematic review of randomised controlled trials | Conclusions: Based on the evidence from this systematic review no single treatment can be recommended for the treatment of knee cartilage defects. This highlights the need for further RCTs, preferably patient-blinded, using an appropriate reference treatment or a placebo procedure. | Surgery | Knee. 2016;22():  2016 | 2016 |  | knee | not specified |
| Dias 2013 | The effectiveness of postoperative physical therapy treatment in patients who have undergone arthroscopic partial meniscectomy: systematic review with meta-analysis | CONCLUSION: Physical therapy associated with home exercises seems to be effective in improving patient-reported knee function and range of motion in patients post-arthroscopic meniscectomy, although the included randomized controlled trials were classified from moderate to high risk of bias and should be interpreted with caution. LEVEL OF EVIDENCE: Therapy, level 1a-. | Physio/Rehab | J Orthop Sports Phys Ther 2013;43(8):560–576. Epub 11 June 2013 | 2013 |  | knee | not specified |
| Drescher 2014 | Aspirin versus anticoagulation for prevention of venous thromboembolism major lower extremity orthopedic surgery: a systematic review and meta-analysis | CONCLUSION: Compared with anticoagulation, aspirin may be associated with higher risk of DVT following hip fracture repair, although bleeding rates were substantially lower. Aspirin was similarly effective after lower extremity arthroplasty and may be associated with lower bleeding risk. | Medication | J Hosp Med Sep 2014;9(9):579-85  2014 Sep | 2014 |  | both | arthroplasty |
| Ettema 2008 | Prevention of venous thromboembolism in patients with immobilization of the lower extremities: a meta-analysis of randomized controlled trials | CONCLUSIONS: Our findings indicate that thromboprophylaxis with LMWH for immobilization of the lower extremities reduces the risk of VTE. This benefit is achieved with no excess bleeding | Medication | J Thromb Haemost Jul 2008;6(7):1093-8 2008 Jul | 2008 |  | Not specified | not specified |
| Fan 2015 | Circumferential electrocautery of the patella in primary total knee replacement without patellar replacement: a meta-analysis and systematic review | Six randomized controlled trials, with a total of 776 knees, were included in this meta-analysis to assess the effects of circumpatellar electrocautery on patient outcomes following total knee replacement. Pain, the Oxford Knee Score, range of motion, and complications were among the outcomes assessed. Pooled analyses demonstrated no difference in anterior knee pain or incidence of complications between groups treated and not treated with circumpatellar electrocautery, although functional outcomes (including WOMAC, Patellar scores, and postoperative range of motion) were significantly benefited in those who received circumpatellar electrocautery. | Surgery | Sci Rep 2015;():  2015 | 2015 |  | knee | arthroplasty |
| Fan 2015 | The Comparison of Local Infiltration Analgesia with Peripheral Nerve Block following Total Knee Arthroplasty (TKA): A Systematic Review with Meta-Analysis | In this paper, we systematically reviewed randomized clinical trails (RCTs) comparing LIA with peripheral nerve block (PNB) to verify the efficacy and safety of LIA. During the analysis, we strictly filtered papers and chose ones that had fewer disturbance variables. We also analyzed the heterogeneity. We conclude that when compared with PNB, pain control with LIA is at least comparable. | Medication | J Arthroplasty Sep 2015;30(9):1664-71,  2015 Sep | 2015 |  | knee | arthroplasty |
| Fang 2015 | Efficacy of Intra-articular Local Anesthetics in Total Knee Arthroplasty | The study findings showed that pain relief after TKA was significantly better with intra-articular local anesthetic than with placebo. | Medication | Orthopedics Jul 01 2015;38(7):e573-81  2015 Jul 01 | 2015 |  | knee | arthroplasty |
| Feng 2015 | Oral direct factor Xa inhibitor versus enoxaparin for thromboprophylaxis after hip or knee arthroplasty: Systemic review, traditional meta-analysis, dose-response meta-analysis and network meta-analysis. | Results demonstrated that in general, direct oral factor Xa inhibitors were more effective in preventing VTE, and that their anticoagulant effect did not necessarily correspond with a significant increase in postoperative complications. | Medication | Thromb Res 2015;():  2015 | 2015 |  | both | arthroplasty |
| Findlay 2016 | Non-resurfacing techniques in the management of the patella at total knee arthroplasty: A systematic review and meta-analysis | CONCLUSIONS: We conclude that there is no significant difference in KSS for differing non-resurfacing patellar techniques, but further trials using patellofemoral specific scores may better demonstrate superior efficacy of specific classes of patella intervention, by virtue of greater sensitivity for patellofemoral pain and dysfunction. LEVEL OF EVIDENCE: I. | Surgery | Knee Mar 2016;23(2):191-7  2016 Mar | 2016 |  | knee | arthroplasty |
| Florez-Garcia 2016 | Efficacy and safety of home-based exercises versus individualized supervised outpatient physical therapy programs after total knee arthroplasty: a systematic review and meta-analysis | CONCLUSION: Short-term improvements in physical function and knee ROM do not clearly differ between outpatient physiotherapy and home-based exercise regimes in patients after primary TKA; however, this conclusion is based on a meta-analysis with high heterogeneity. LEVEL OF EVIDENCE: I. | Physio/Rehab | Knee Surg Sports Traumatol Arthrosc Jul 11 2016;():  2016 Jul 11 | 2016 |  | knee | arthroplasty |
| Forster 2016 | Anticoagulants (extended duration) for prevention of venous thromboembolism following total hip or knee replacement or hip fracture repair | Authors' conclusions: Moderate quality evidence suggests extended-duration anticoagulants to prevent VTE should be considered for people undergoing hip replacement surgery, although the benefit should be weighed against the increased risk of minor bleeding. Further studies are needed to better understand the association between VTE and extended-duration oral anticoagulants in relation to knee replacement and hip fracture repair, as well as outcomes such as distal and proximal DVT, reoperation, wound infection and healing. | Medication | Cochrane Database of Systematic Reviews 2016;(3): John Wiley & Sons, Ltd 2016 | 2016 |  | both | arthroplasty |
| Fu 2011 | Patellar resurfacing in total knee arthroplasty for osteoarthritis: a meta-analysis | CONCLUSION: The available evidence indicates that patellar resurfacing reduce the risk of reoperation after total knee arthroplasty for osteoarthritis. Not resurfacing the patella might be considered a reasonable option, but patients must accept the increased risk of reoperation for which the quantitative evidence-based synthesis is mild. Based on the evidence provided by this study and those previously published ones, the authors do not now resurface the patella as a matter of routine for patients having a primary total knee arthroplasty for osteoarthritis. | Surgery | Knee Surg Sports Traumatol Arthrosc Sep 2011;19(9):1460-6 2011 Sep | 2011 |  | knee | arthroplasty |
| Fu 2012 | Alignment outcomes in navigated total knee arthroplasty: a meta-analysis | CONCLUSION: Meta-analysis indicates significant improvement in alignment of the limb and the component position with use of computer navigation system. Its clinical benefits are unclear and remain to be defined on a larger scale randomized controlled trials with long-term follow-up. LEVEL OF EVIDENCE: Therapeutic study (Systematic review of Level-I studies with inconsistent results), Level II. | Surgery | Knee Surg Sports Traumatol Arthrosc Jun 2012;20(6):1075-82 2012 Jun | 2012 |  | knee | arthroplasty |
| Fu 2013 | Use of intravenous tranexamic acid in total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSION: TA is beneficial for patients undergoing TKA, which can significantly reduce total blood loss, postoperative blood loss, transfusion rate, and transfusion volume. Meanwhile TA is recommended to reduce deep vein thrombosis and pulmonary embolism following TKA. | Medication | Chin J Traumatol 2013;16(2):67-76  2013 | 2013 |  | knee | arthroplasty |
| Fu 2015 | No clinical benefit of high-flex total knee arthroplasty. A meta-analysis of randomized controlled trials | No significant difference was observed between the two designs regarding postoperative range of flexion, clinical scores, quality of life outcomes, or complication rate. Moreover, the advantage of high-flex implants for patients with high preoperative range remained not statistically significant and high-flex design in NexGen system showed a marginal improvement in the postoperative range of flexion. Based on current findings, high-flex prosthesis did not appear to confer any benefit as compared to standard prosthesis. | Surgery | J Arthroplasty Apr 2015;30(4):573-9  2015 Apr | 2015 |  | knee | arthroplasty |
| Fu 2015 | No difference in mechanical alignment and femoral component placement between patient-specific instrumentation and conventional instrumentation in TKA | Results of pooled analyses demonstrated no significant differences in accurate restoration of the mechanical axis, or in the incidence of outliers of the femoral component in either the coronal, sagittal, or transverse planes. PSI was associated with a significant higher incidence of outliers of the tibial component in both the coronal and sagittal planes. | Surgery | Knee Surg Sports Trauma Arth 2015;():  2015 | 2015 |  | knee | arthroplasty |
| Fu 2016 | Comparing efficacy and safety of 2 methods of tranexamic acid administration in reducing blood loss following total knee arthroplasty: A meta-analysis | Conclusion: Topical TXA has similar efficacy for blood loss control to IV TXA without sacrificing safety in TKA. However, the dose of topical TXA and IV TXA is different, thus, optimal timing and dose of TXA are still needed to explore the maximum effect of TXA. | Medication | Medicine (United States) 2016;95(50):e5583  2016 | 2016 |  | knee | arthroplasty |
| Fu 2016 | Postoperative leg position following total knee arthroplasty influences blood loss and range of motion: a meta-analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis indicated that the postoperative flexion position of the leg in TKA was effective and safe, significantly decreasing total blood loss, hidden blood loss and blood transfusion requirement. In addition, the postoperative range of motion is significantly improved by the flexion position of the leg. | Surgery | Curr Med Res Opin 2016;32(4):771-8  2016 | 2016 |  | knee | arthroplasty |
| Gandhi 2009 | Computer navigation in total hip replacement: a meta-analysis | We conclude that navigation in hip arthroplasty improves the precision of acetabular cup placement by decreasing the number of outliers from the desired alignment. | Surgery | Int Orthop Jun 2009;33(3):593-7  2009 Jun | 2009 |  | knee | arthroplasty |
| Gandhi 2011 | Complications after minimally invasive total knee arthroplasty as compared with traditional incision techniques: a meta-analysis | The primary objective of our meta-analysis was to compare the incidence of complications between minimally invasive surgery and standard total knee arthroplasty (TKA) approaches. We reviewed randomized controlled trials comparing minimally invasive TKA to standard TKA. After testing for publication bias and heterogeneity, the data were aggregated by random effects modeling. Our primary outcome was the number of complications. Our secondary outcomes were alignment outliers, Knee Society Function scores, and Knee Society Knee scores. The combined odds ratios for complications for the minimally invasive surgery group and alignment outliers were 1.58 (95% confidence interval, 1.01-2.47; P < .05) and 0.79 (95% confidence interval, 0.34-1.82; P = .58), respectively. The standard difference in means for Knee Society scores was no different between groups. Minimally invasive knee surgery should be approached with caution. | Surgery | J Arthroplasty Jan 2011;26(1):29-35  2011 Jan | 2011 |  | knee | arthroplasty |
| Gandhi 2013 | Tranexamic acid and the reduction of blood loss in total knee and hip arthroplasty: a meta-analysis | CONCLUSIONS: TXA should be considered for routine use in primary knee and hip arthroplasty to decrease blood loss. | Medication | May 07 2013;6():184  2013 May 07 | 2013 |  | both | arthroplasty |
| Gao 2016 | Adductor Canal Block versus Femoral Nerve Block for Analgesia after Total Knee Arthroplasty: A Systematic Review and Meta-analysis | DISCUSSION: ACB may achieve faster mobilization ability recovery for patients after TKA without a reduction in analgesia when compared to FNB in the early postoperative period. However, due to the variations in the included studies, additional studies are needed to validate these conclusions. | Medication | Clin J Pain Jun 17 2016;():  2016 Jun 17 | 2016 |  | knee | arthroplasty |
| Geng 2016 | Meta-analysis of the effects of knee flexion on blood loss after TKA | Conclusion: This meta-analysis suggested that postoperative flexion of knee on patients after TKA could reduce blood loos in terms of CBL, HBL and DBL, and also promote ROM in short-term postoperative period without increased incidence of complications. However, it could not promote ROM in long-term postoperative period. | Surgery | International Journal of Clinical and Experimental Medicine 20 Dec 2016;9(11):20790-20800  2016 20 Dec | 2016 |  | knee | arthroplasty |
| Gerrard 2017 | Meta-analysis of epidural analgesia versus peripheral nerve blockade after total knee joint replacement | Conclusions: PNB is as effective as epidural analgesia for postoperative pain management in patients undergoing TKR. Moreover, it is associated with significantly lower postoperative complications. ACB appears to be an effective PNB with similar analgesic effect to FNB after TKR. Future RCTs may provide better evidence regarding knee range of motion, length of hospital stay, and neurological complications. | Medication | European Journal of Orthopaedic Surgery and Traumatology 01 Jan 2017;27(1):61-72  2017 01 Jan | 2017 |  | knee | arthroplasty |
| Godwin 2009 | Intra-articular steroid injections for painful knees. Systematic review with meta-analysis. | There were no differences in adverse events between corticosteroid and placebo injections. | Medication | Can Fam Physician 2009;():  2009 | 2009 |  | knee | not specified |
| Gomez-Outes 2011 | New oral anticoagulants for thromboprophylaxis after total hip or knee replacement: A meta-analysis and indirect treatment comparisons | There were no differences on the net clinical endpoint between the different anticoagulants in direct or indirect comparisons (data not shown). A higher efficacy of the new anticoagulant was generally associated to a higher bleeding tendency. When balancing efficacy and safety, no significant differences were found between the different anticoagulants. | Medication | Basic and Clinical Pharmacology and Toxicology October 2011;109():34  2011 October | 2011 |  | both | arthroplasty |
| Goosen 2009 | Porous-coated femoral components with or without hydroxyapatite in primary uncemented total hip arthroplasty: a systematic review of randomized controlled trials (Structured abstract) | This meta-analysis demonstrates neither clinical nor radiologic benefits on the application of a hydroxyapatite coating on a femoral component in uncemented primary total hip arthroplasty. | Surgery | Archives of Orthopaedic and Trauma Surgery 2009;129(9):1165-1169 2009 | 2009 |  | hip | arthroplasty |
| Gosling 2015 | Implant wear in total hip arthroplasty: A systematic review and meta-analysis of metal on polyethylene versus ceramic on polyethylene components | There were no differences in the amount of linear or volumetric wear between the CoP or MoP. There was a confirmation of other studies that there was a higher rate (but non-significant) of linear and volumetric wear using a smaller head irrespective of the tribology. Joint Registry data confirms that the revision rates of CoP are lower than MoP THAs (despite a younger average patient cohort). The reason for that is unknown, but this meta-analysis suggests that polyethylene particulate wear and associated osteolysis may not be the most important cause. Further investigation is necessary to explain the differences between these two bearing surfaces to aid surgeon choice of bearing materials. | Surgery | HIP International November 2015;25():S26  2015 November | 2015 |  | hip | arthroplasty |
| Goyal 2016 | Does Patient-Specific Instrumentations Improve Short-Term Functional Outcomes After Total Knee Arthroplasty? A Systematic Review and Meta-Analysis | CONSLUSION: Current literature is insufficient to address whether there is a benefit of PSI in total knee arthroplasty in terms of improvement in functional outcomes. | Non Surgical Intervention | J Arthroplasty Oct 2016;31(10):2173-80  2016 Oct | 2016 |  | knee | arthroplasty |
| Grape 2016 | The analgesic efficacy of sciatic nerve block in addition to femoral nerve block in patients undergoing total knee arthroplasty: a systematic review and meta-analysis | Twelve randomized controlled trials were included in this meta-analysis evaluating the effect of an additional sciatic nerve block to either a femoral nerve block or lumbar plexus block on analgesic outcome in total knee arthroplasty. The addition of a sciatic nerve block led to pain scores that were significantly lower over the first 12 hours postoperatively, and analgesic consumption that was significantly lower over the first 48 hours postoperatively when compared to groups treated with just femoral nerve block or lumbar plexus block alone. | Medication | Anaesthesia 2016;():  2016 | 2016 |  | knee | arthroplasty |
| Guerra 2015 | Early mobilization of patients who have had a hip or knee joint replacement reduces length of stay in hospital: a systematic review | CONCLUSION: Early mobilization post hip or knee joint replacement surgery can result in a reduced length of stay of about 1.8 days. Trials that reported these positive results showed that early mobilization can be achieved within 24 hours of operation. This positive gain was achieved without an increase in negative outcomes. | Physio/Rehab | Clin Rehabil Sep 2015;29(9):844-54  2015 Sep | 2015 |  | both | arthroplasty |
| Haien 2013 | Post-operative auto-transfusion in total hip or knee arthroplasty: a meta-analysis of randomized controlled trials | FINDINGS AND CONCLUSION: To our knowledge, this is the first meta-analysis to compare the clinical results between PAT and a control in joint replacement patients. This meta-analysis has proven that the use of a PAT reinfusion system reduced significantly the demand for ABT, the number of patients who require ABT and the cost of hospitalization after total knee and hip arthroplasty. This study, together with other previously published data, suggests that PAT drains are beneficial. Larger, sufficiently powered studies are necessary to evaluate the presumed reduction in the incidence of infection as well as DVT after joint arthroplasty with the use of PAT. | Surgery | PLoS One 2013;8(1):e55073  2013 | 2013 |  | both | arthroplasty |
| Hamilton 2016 | A Meta-Analysis on the Use of Gabapentinoids for the Treatment of Acute Postoperative Pain Following Total Knee Arthroplasty | CONCLUSIONS: On the basis of this meta-analysis, we found no evidence to support the routine use of gabapentinoids in the management of acute pain following total knee arthroplasty. LEVEL OF EVIDENCE: Therapeutic Level I. | Medication | J Bone Joint Surg Am Aug 17 2016;98(16):1340-50  2016 Aug 17 | 2016 |  | knee | arthroplasty |
| Han 2016 | The use of gabapentin in the management of postoperative pain after total hip arthroplasty: a meta-analysis of randomised controlled trials | CONCLUSION: The administration of gabapentin is effective in decreasing postoperative narcotic consumption and the VAS score. | Medication | J Orthop Surg Res Jul 12 2016;11(1):79  2016 Jul 12 | 2016 |  | hip | arthroplasty |
| Han 2016 | The use of gabapentin in the management of postoperative pain after total knee arthroplasty A PRISMA-compliant meta-analysis of randomized controlled trials | In summary, the administration of gabapentin was effective in decreasing postoperative narcotic consumption and the incidence of pruritus. There was a high risk of selection bias and a higher heterogeneity of knee flexion range in this analysis. More high-quality large randomized controlled trials with long follow-up period are necessary for proper comparisons of the efficacy and safety of gabapentin with placebo. | Medication | Medicine (United States) 2016;95 (23) (no pagination)(e3883):  2016 | 2016 |  | knee | arthroplasty |
| Hanna 2016 | Topical versus intravenous administration of tranexamic acid in primary total hip arthroplasty: A systematic review and meta-analysis of randomized controlled trials | Topical TA is an effective and safe method to reduce blood loss and the rate of transfusion following primary THA. It has comparative effectiveness to IV administration with slightly less post-operative thromboembolic complications. Larger and better-designed RCTs are required to establish the optimum dosage and regimen for topical use. | Medication | Orthopedic Reviews 19 Sep 2016;8(3):75-79 2016 19 Sep | 2016 |  | hip | arthroplasty |
| Harvey 2010 | Continuous passive motion following total knee arthroplasty in people with arthritis | AUTHORS' CONCLUSIONS: The effects of continuous passive motion on knee range of motion are too small to justify its use. There is weak evidence that continuous passive motion reduces the subsequent need for manipulation under anaesthesia. | Physio/Rehab | Cochrane Database Syst Rev Mar 17 2010;(3):Cd004260  2010 Mar 17 | 2010 |  | knee | arthroplasty |
| Harvey 2014 | Continuous passive motion following total knee arthroplasty in people with arthritis | AUTHORS' CONCLUSIONS: CPM does not have clinically important effects on active knee flexion ROM, pain, function or quality of life to justify its routine use. It may reduce the risk of manipulation under anaesthesia and risk of developing adverse events although the quality of evidence supporting these findings are very low and low, respectively. The effects of CPM on other outcomes are unclear. | Physio/Rehab | Cochrane Database Syst Rev Feb 06 2014;(2):Cd004260  2014 Feb 06 | 2014 |  | knee | arthroplasty |
| He 2011 | [A meta-analysis for the efficacy and safety of tourniquet in total knee arthroplasty]. [Chinese] | The tourniquet for total knee arthroplasty can reduce intraoperative blood loss, but can not reduce total blood loss and the number of blood transfusions transfusion, can not improve operative efficiency, can not shorten the hospitalization time and promote the knee joint functional recovery. Furthermore the tourniquet increases the probability of occurrence on deep vein thrombosis, wound infection, hematoma and ecchymosis knee, it also causes knee swelling and thigh pain. It suggests minimize to use tourniquet in total knee arthroplasty. | Surgery | Zhonghua wai ke za zhi [Chinese journal of surgery] 1 Jun 2011;49(6):551-557 2011 1 Jun | 2011 |  | knee | arthroplasty |
| He 2015 | Efficacy and safety of tranexamic acid in bilateral total knee replacement: A meta-analysis and systematic review | CONCLUSIONS: The intravenous use of TXA in patients undergoing simultaneous bilateral TKA is effective and safe and results in significantly reduced estimated blood loss and transfusion rates. No significant difference was observed in the incidence of side effects. Due to the limitations in the evidence quality of current meta-analyses, well-conducted, larger, high-quality randomized controlled trials (RCTs) are required. | Medication | Medical Science Monitor 24 Nov 2015;21():3634-3642 2015 24 Nov | 2015 |  | knee | arthroplasty |
| Henao 2013 | Rivaroxaban versus low weight heparins for venous thromboembolism prophylaxis after major hip and knee arthroplasty: Systematic review and metaanalysis | Conclusion: Rivaroxaban thromboprophylaxis in major hip and knee arthroplasty is more effective than enoxaparin and as safe as the latter. | Medication | Iatreia 2013;26(2):136-152  2013 | 2013 |  | both | arthroplasty |
| Hepper 2009 | The efficacy and duration of intra-articular corticosteroid injection for knee osteoarthritis: A systematic review of level I studies | We concluded that intra-articular corticosteroids reduce knee pain for at least 1 week and that intraarticular corticosteroid injection is a short-term treatment of a chronic problem. | Medication | Journal of the American Academy of Orthopaedic Surgeons October 2009;17(10):638-646  2009 October | 2009 |  | knee | osteoarthritis |
| Hetaimish 2012 | Meta-analysis of navigation vs conventional total knee arthroplasty | This meta-analysis demonstrates that navigated TKA provides significant improvement in prosthesis alignment. | Surgery | J Arthroplasty Jun 2012;27(6):1177-82  2012 Jun | 2012 |  | knee | arthroplasty |
| Hong 2016 | Comparison between autologous blood transfusion drainage and closed-suction drainage/no drainage in total knee arthroplasty: a meta-analysis | CONCLUSIONS: Autologous blood transfusion drainage offers a safe and efficient alternative to CS/no drainage with a lower blood transfusion rate. Future large-volume high-quality RCTs with extensive follow-up will affirm and update this system review. | Surgery | BMC Musculoskelet Disord Aug 01 2016;17():142 2016 Aug 01 | 2016 |  | knee | arthroplasty |
| Hoogma 2015 | Effects of adductor canal block on postoperative outcome in total knee arthroplasty: A systematic review | Conclusion: Recent studies show a trend towards adequate analgesia with early sparing of quadriceps strength and enhanced ambulation ability. This might reduce LOS as demonstrated by one RCT. Further RCTs specifically addressing hard outcome parameters are warranted. | Medication | Regional Anesthesia and Pain Medicine September-October 2015;1)():e88 2015 September-October | 2015 |  | knee | arthroplasty |
| Hu 2009 | A comparison of regional and general anaesthesia for total replacement of the hip or knee: a meta-analysis | Regional anaesthesia therefore seems to improve the outcome of patients undergoing total hip or knee replacement. | Medication | J Bone Joint Surg Br Jul 2009;91(7):935-42 2009 Jul | 2009 |  | both | arthroplasty |
| Hu 2015 | Ceramic-on-ceramic versus ceramic-on-polyethylene bearing surfaces in total hip arthroplasty | This meta-analysis resulted in no sufficient evidence to identify any clinical or radiographic advantage of COC vs COP bearing surfaces in the short- to mid-term follow-up period. Long-term follow-up is required for further evaluation. | Surgery | Orthopedics Apr 2015;38(4):e331-8 2015 Apr | 2015 |  | hip | arthroplasty |
| Hu 2015 | Comparison of ceramic-on-ceramic to metal-on-polyethylene bearing surfaces in total hip arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSIONS: Generally, despite more squeaking and intraoperative implant fracture, our findings support the use of COC bearing surface which has lower rates of revision, osteolysis and radiolucent line, aseptic loosening, and dislocation compared with MOP. | Surgery | J Orthop Surg Res Feb 03 2015;10():22 2015 Feb 03 | 2015 |  | hip | arthroplasty |
| Huang 2011 | Apixaban versus enoxaparin in patients with total knee arthroplasty. A meta-analysis of randomised trials | In conclusion, apixaban is non-inferior to subcutaneous enoxaparin when used for the same duration, with considerable advantage regarding safety profile of major bleeding after TKA. | Medication | Thromb Haemost Feb 2011;105(2):245-53 2011 Feb | 2011 |  | knee | arthroplasty |
| Huang 2013 | Meta-analysis of temporary versus no clamping in TKA | No significant difference was identified between the 2 practices regarding postoperative range of motion, wound-related complications, and deep vein thrombosis. More randomized controlled trials are needed to provide robust evidence and to definitively determine which practice is most effective in reducing postoperative blood loss. | Surgery | Orthopedics Jul 2013;36(7):543-50 2013 Jul | 2013 |  | knee | arthroplasty |
| Huang 2014 | The use of tranexamic acid to reduce blood loss and transfusion in major orthopedic surgery: a meta-analysis | CONCLUSIONS: TXA significantly reduced blood loss and blood transfusion requirements in patients undergoing orthopedic surgery, and did not appear to increase the risk of DVT. | Medication | J Surg Res Jan 2014;186(1):318-27 2014 Jan | 2014 |  | Not specified | not specified |
| Huang 2015 | A systematic review and meta-analysis of the use of antifibrinolytic agents in total hip arthroplasty | CONCLUSIONS: Our meta-analysis demonstrated that antifibrinolytic agents significantly reduce blood loss and blood transfusion requirements while not increasing the risk of DVT in patients undergoing total hip arthroplasty. | Medication | Hip Int Nov-Dec 2015;25(6):502-9 2015 Nov-Dec | 2015 |  | hip | arthroplasty |
| Huang 2015 | Timing of Tourniquet Release in Total Knee Arthroplasty | The results showed tourniquet release before wound closure for hemostasis could significantly increase not only the total measured blood loss but also the calculated blood loss in patients treated with TKA, regardless of fixation type. With proper control of the amount of pressure (less than 293 mm Hg) and the duration of application (less than 150 minutes), tourniquet release after wound closure can reduce blood loss in patients treated with primary TKA without increasing the risk of complications. | Surgery | Orthopedics Jul 01 2015;38(7):445-51 2015 Jul 01 | 2015 |  | knee | arthroplasty |
| Huang 2017 | Meta-analysis of gap balancing versus measured resection techniques in total knee arthroplasty | CONCLUSION: This study suggests that GB may provide better radiographic and clinical outcomes than MR when used to determine mechanical rotation in TKAs. | Surgery | Bone Joint J Feb 2017;99-b(2):151-158 2017 Feb | 2017 |  | knee | arthroplasty |
| Huisman 2009 | Enoxaparin vs. dabigatran etexilate or rivaroxaban for thromboprophylaxis after hip or knee arthroplasty | Conclusion: In patients undergoing hip or knee arthroplasty, enoxaparin and dabigatran showed similar rates of efficacy and bleeding. Enoxaparin was less effective than rivaroxaban but had a lower risk of bleeding. These results may have important implications for the choice of prophylactic agent in major joint arthroplasty. | Medication | Journal of Thrombosis and Haemostasis July 2009;7 (S2)():1070 2009 July | 2009 |  | both | arthroplasty |
| Huisman 2010 | Enoxaparin versus dabigatran or rivaroxaban for thromboprophylaxis after hip or knee arthroplasty: Results of separate pooled analyses of phase III multicenter randomized trials | CONCLUSIONS: In patients undergoing hip or knee arthroplasty, enoxaparin and dabigatran showed similar rates of efficacy and bleeding. Enoxaparin was less effective than rivaroxaban but had a lower risk of bleeding. These results may have important implications for the choice of prophylactic agent in major joint arthroplasty. | Medication | Circ Cardiovasc Qual Outcomes Nov 2010;3(6):652-60 2010 Nov | 2010 |  | both | arthroplasty |
| Huo 2016 | Short-stem prostheses in primary total hip arthroplasty: A meta-analysis of randomized controlled trials | CONCLUSION: SS prostheses achieve the same clinical and radiological outcomes as conventional implants, and were superior in terms of reducing thigh pain. But whether the postoperative thigh pain applied in 2nd-generation cementless prosthesis still needs further large-scale multicenter studies with longer follow-up to confirm. | Surgery | Medicine (Baltimore) Oct 2016;95(43):e5215 2016 Oct | 2016 |  | hip | arthroplasty |
| Jevsevar 2015 | Viscosupplementation for Osteoarthritis of the Knee: A Systematic Review of the Evidence | CONCLUSIONS: Meta-analysis of only the double-blinded, sham-controlled trials with at least sixty patients did not show clinically important differences of HA treatment over placebo. When all literature was added to the analysis, the overall effect was greater but was biased toward stronger treatment effects because of the influence of nonblinded or improperly blinded trials. | Medication | J Bone Joint Surg Am Dec 16 2015;97(24):2047-60 2015 Dec 16 | 2015 |  | knee | Osteoarthritis |
| Ji 2015 | Effect of preoperative cyclooxygenase-2 inhibitor for postoperative pain in patients after total knee arthroplasty: a meta-analysis. [Chinese] | CONCLUSION: The current evidence indicated that preoperative administration of COX-2inhibitor can effectively improve the effect of postoperative analgesia, reduce the consumption of morphine and lessen the incidence of pruritus. Due to the limited quantity of the included studies and the evidence with limited strength,further high-quality RCTs are needed to verify the aforementioned conclusion. | Medication | Zhongguo gu shang = China journal of orthopaedics and traumatology 01 Sep 2015;28(9):838-845 2015 01 Sep | 2015 |  | knee | arthroplasty |
| Jia 2016 | No difference in clinical outcomes after total knee arthroplasty between patellar eversion and non-eversion | CONCLUSIONS: Based on the current evidence, patellar eversion during TKA could not definitely lead to inferior postoperative outcomes. Patellar eversion and patellar non-eversion could achieve similar clinical outcomes. LEVEL OF EVIDENCE: Systematic review and meta-analysis, Level I. | Surgery | Knee Surg Sports Traumatol Arthrosc Jan 2016;24(1):141-7 2016 Jan | 2016 |  | knee | arthroplasty |
| Jiang 2013 | The efficacy of periarticular multimodal drug injection for postoperative pain management in total knee or hip arthroplasty | Ultimately, 21 studies were included in the analysis. Pooled results showed that the PMDI group had better pain relief, less opioid consumption, larger range of motion, and lower rates of nausea and vomiting than the placebo group. No significant difference was seen in regard to the length of hospital stay between the two groups. In conclusion, PMDI should be recommended for the pain management after TKA or THA. | Medication | J Arthroplasty Dec 2013;28(10):1882-7 2013 Dec | 2013 |  | both | arthroplasty |
| Jiang 2015 | Does Arthroplasty Provide Better Outcomes Than Internal Fixation At Mid- and Long-term Followup? A Meta-analysis | CONCLUSIONS: Based on our results, we found that compared with internal fixation, arthroplasty may result in a lower rate of subsequent reoperation at mid- and long-term followup, and better mid-term functional recovery. Future studies should investigate the mid- and long-term results of THAs compared with hemiarthroplasty. | Surgery | Clin Orthop Relat Res Aug 2015;473(8):2672-9 2015 Aug | 2015 |  | hip | arthroplasty |
| Jiang 2015 | No Superiority of High-Flexion vs Standard Total Knee Arthroplasty: An Update Meta-Analysis of Randomized Controlled Trials | The results do not support the proposition that high flexion knee prostheses provide substantial clinical advantages over standard knee prostheses. | Surgery | J Arthroplasty Jun 2015;30(6):980-6 2015 Jun | 2015 |  | knee | arthroplasty |
| Jiang 2016 | Analgesic Efficacy of Adductor Canal Block in Total Knee Arthroplasty: A Meta-analysis and Systematic Review | Our results suggest that, compared with saline, ACB decreases analgesic consumption and offers short-term advantages in terms of pain relief. Compared with FNB, ACB was associated with better ability to ambulate and quadriceps strength. | Medication | Orthop Surg Aug 2016;8(3):294-300 2016 Aug | 2016 |  | knee | arthroplasty |
| Jiang 2016 | Posterior Cruciate Ligament Retention versus Posterior Stabilization for Total Knee Arthroplasty: A Meta-Analysis | CONCLUSIONS: There are no clinically relevant differences between CR and PS TKA in terms of clinical, functional, radiological outcome, and complications, while PS TKA is superior to CR TKA in respects of ROM, while whether this superiority matters or not in clinical practice still needs further investigation and longer follow-up. | Surgery | PLoS One 2016;11(1):e0147865 2016 | 2016 |  | knee | arthroplasty |
| Jiang 2016 | The comparison of telerehabilitation and face-to-face rehabilitation after total knee arthroplasty: A systematic review and meta-analysis | Discussion Telerehabilitation should be recommended for patients after TKA because of its comparable pain control and better improvement of functional recovery as compared to face-to-face rehabilitation. | Physio/Rehab | J Telemed Telecare Jan 01 2016;():1357633x16686748 2016 Jan 01 | 2016 |  | knee | arthroplasty |
| Jiang 2017 | Impact of flexion versus extension of knee position on outcomes after total knee arthroplasty: a meta-analysis | CONCLUSION: Positioning the knee in flexion in the early postoperative stage was associated with significantly lesser CBL, lesser HBL, decreased requirement for blood transfusion and better ROM at least in the early postoperative period, which may contribute to early rehabilitation. However, no significant difference was found in ROM at 6 weeks. | Surgery | Arch Orthop Trauma Surg Feb 2017;137(2):257-265 2017 Feb | 2017 |  | knee | arthroplasty |
| Jimenez-Almonte 2016 | Is Local Infiltration Analgesia Superior to Peripheral Nerve Blockade for Pain Management After THA: A Network Meta-analysis | CONCLUSIONS: Using the novel statistical network meta-analysis approach, we found no differences between local infiltration analgesia and peripheral nerve blocks in terms of analgesia or opioid consumption 24 hours after THA; there was a suggestion of a slight advantage to peripheral nerve blocks based on rank-order analysis, but the effect size in question is likely not large. Given the slight difference between interventions, clinicians may choose to focus on other factors such as cost and intervention-related complications when debating which analgesic treatment to use after THA. LEVEL OF EVIDENCE: Level I, therapeutic study. | Medication | Clin Orthop Relat Res Feb 2016;474(2):495-516 2016 Feb | 2016 |  | hip | arthroplasty |
| Jin 2015 | Effect of saphenous nerve block for postoperative pain on knee surgery: A meta-analysis | To conclude, this meta-analysis suggests that saphenous nerve block has an advantage in pain relief both at an active flexion of knee and at rest after knee surgery. Further studies are still wanted to validate these conclusions. | Medication | International Journal of Clinical and Experimental Medicine 30 Jan 2015;8(1):368-376 2015 30 Jan | 2015 |  | knee | not specified |
| Jones 2006 | Are short femoral nails superior to the sliding hip screw? A meta-analysis of 24 studies involving 3,279 fractures | Results from this analysis indicated that intramedullary nails lead to increased fixation failure and rate of re-operation compared to the sliding hip screws in all fracture types. | Surgery | Int Orthop 2006;(): 2006 | 2006 |  | hip | arthroplasty |
| Kakkos 2012 | Combined (mechanical and pharmacological) modalities for the prevention of venous thromboembolism in joint replacement surgery | We conclude that the addition of intermittent mechanical leg compression augments the efficacy of anticoagulation in preventing DVT in patients undergoing both knee and hip replacement. Further research on the role of combined modalities in thromboprophylaxis in joint replacement and in other high-risk situations, such as fracture of the hip, is warranted. | Medication | J Bone Joint Surg Br Jun 2012;94(6):729-34 2012 Jun | 2012 |  | both | arthroplasty |
| Kan 2016 | Tanezumab for Patients with Osteoarthritis of the Knee: A Meta-Analysis | Results demonstrated that patients who were given tanezumab had significantly improved pain, function, and global assessment scores when compared to the placebo group. However, significant increases in therapy discontinuation due to adverse effects, development of abnormal peripheral sensation, and peripheral neuropathy were also observed. | Medication | PLoS One 2016;(): 2016 | 2016 |  | knee | Osteoarthritis |
| Kanchanatawan 2016 | Short-term outcomes of platelet-rich plasma injection for treatment of osteoarthritis of the knee | Conclusion: In short-term outcomes (≤1 year), PRP injection has improved functional outcomes (WOMAC total scores, IKDC score and EQ-VAS) when compared to HA and placebo, but has no statistically significant difference in adverse events when compared to HA and placebo. This study suggests that PRP injection is more efficacious than HA injection and placebo in reducing symptoms and improving function and quality of life. It has the potential to be the treatment of choice in patients with mild-to-moderate OA of the knee who have not responded to conventional treatment. Level of evidence: I. | Medication | Knee Surgery, Sports Traumatology, Arthroscopy 2016;24(5):1665-1677 2016 | 2016 |  | knee | Osteoarthritis |
| Keijsers 2015 | Local infiltration analgesia following total knee arthroplasty: effect on post-operative pain and opioid consumption-a meta-analysis | Pooled analyses demonstrated significantly lower pain and opioid consumption among LIA-treated groups compared to placebo-treated groups at 24 hours postoperatively, but not at 48 hours. Heterogeneity in LIA protocols limit the results of the current analysis. | Medication | Knee Surg Sports Trauma Arth 2015;(): 2015 | 2015 |  | knee | arthroplasty |
| Khan 2008 | Multidisciplinary rehabilitation programmes following joint replacement at the hip and knee in chronic arthropathy | CONCLUSIONS: Based on the heterogeneity and the low quality of the included trials that precluded pooled meta-analysis, there is silver level evidence that following hip or knee joint replacement, early multidisciplinary rehabilitation can improve outcomes at the level of activity and participation. The optimal intensity, frequency and effects of rehabilitation over a longer period and associated social costs need further study. Future research should focus on improving methodological and scientific rigour of clinical trials, and use of standardised outcome measures, so that results can be pooled for statistical analysis. | Physio/Rehab | Cochrane Database Syst Rev Apr 16 2008;(2):Cd004957 2008 Apr 16 | 2008 |  | both | arthroplasty |
| Kim 2014 | Practical issues for the use of tranexamic acid in total knee arthroplasty: a systematic review | CONCLUSION: Surgeons can consider incorporating the use of TNA to their blood-saving protocols in TKA without serious concern of adverse events but need to adopt optimal doses, timings, and routes of TNA administrations. | Medication | Knee Surg Sports Traumatol Arthrosc Aug 2014;22(8):1849-58 2014 Aug | 2014 |  | knee | arthroplasty |
| Kuang 2016 | Efficacy of perioperative celecoxib use in primary total knee and hip arthroplasty: A meta-analysis | Conclusions: Celecoxib can decrease the postoperative pain and reduce opioid consumption, as well as increasing knee joint motion. The use of celecoxib is worthy of recommendation as a standard analgesic protocol for pain treatment after TKA and THA. | Medication | International Journal of Clinical and Experimental Medicine 30 May 2016;9(5):7719-7728 2016 30 May | 2016 |  | both | arthroplasty |
| Kuzyk 2011 | Cross-linked versus conventional polyethylene for total hip replacement: a meta-analysis of randomised controlled trials | A search of the literature identified 194 potential studies, of which 12 met the inclusion criteria. All reported a significant reduction in radiological wear for cross-linked polyethylene. The pooled mean differences for linear rate of wear, three-dimensional linear rate of wear, volumetric wear rate and total linear wear were all significantly reduced for cross-linked polyethylene. The follow-up was not long enough to show a difference in the need for revision surgery. | Surgery | J Bone Joint Surg Br May 2011;93(5):593-600 2011 May | 2011 |  | hip | arthroplasty |
| Kwok 2015 | Does Pre-Operative Physiotherapy Improve Outcomes in Primary Total Knee Arthroplasty? - A Systematic Review | Results show that there is little evidence that pre-operative physiotherapy brings about significant improvements in patient outcome scores, lower limb strength, pain, range of movement and hospital length of stay following total knee arthroplasty. The overall quality of the studies was moderate to poor, mostly due to the small sample sizes. Copyright | Physio/Rehab | Journal of Arthroplasty 01 Sep 2015;30(9):1657-1663 2015 01 Sep | 2015 |  | knee | arthroplasty |
| Laporte 2012 | Is clinically relevant non-major bleeding a good surrogate endpoint for major bleeding? Validation in meta-analyses of randomized clinical trials in major orthopedic surgery, venous thromboembolic treatment and atrial fibrillation | Discussion: These analyses provide only modest support for considering CRNMB an acceptable surrogate for MB neither in prevention of VTE after major orthopedic surgery, nor in the treatment of acute VTE. It could be acceptable in AF patients, but further investigations are needed with analyses by strata. | Medication | Fundamental and Clinical Pharmacology April 2012;26():26 2012 April | 2012 |  | Not specified | not specified |
| Laporte 2014 | Indirect comparison meta-analysis of two enoxaparin regimens in patients undergoing major orthopaedic surgery. Impact on the interpretation of thromboprophylactic effects of new anticoagulant drugs | In conclusion, when interpreting the benefit-risk ratio of new anticoagulant drugs versus enoxaparin for thromboprophylaxis after major orthopaedic surgery, the apparently greater efficacy but higher bleeding risk of the twice-daily 3,000 anti-Xa IU enoxaparin regimen compared to the once-daily 4,000 anti-Xa IU regimen should be taken into account. | Medication | Thromb Haemost Sep 02 2014;112(3):503-10 2014 Sep 02 | 2014 |  | Not specified | not specified |
| Li 2009 | Hydroxyapatite Coated Femoral Stems in Primary Total Hip Arthroplasty | CONCLUSIONS: This meta-analysis demonstrates that the use of HA-coated femoral stems in primary THA has no clinical or radiological benefits. | Surgery | Int J Surg. 2009;(): 2009 | 2009 |  | hip | arthroplasty |
| Li 2009 | Patellar resurfacing versus non-resurfacing in totol knee arthroplasty: A systematic review. [Chinese] | Conclusion: The outcome identified is re-operations for patellofemoral problems. The resurfaced patella performs better, and we find an increased relative risk for re-operation when the patella is left un-resurfaced. No differences are observed between the two groups for the prevalence of postoperative anterior knee pain, and the improvement in HSS knee score. Further well-designed and large-scale RCTs are required to determine the effects of patellar resurfacing and non-resurfacing on these outcomes. | Surgery | Chinese Journal of Evidence-Based Medicine 2009;9(10):1060-1066 2009 | 2009 |  | knee | arthroplasty |
| Li 2011 | Systematic review of patellar resurfacing in total knee arthroplasty | The existing evidence indicates that patellar resurfacing can reduce the risk of reoperation with no improvement in postoperative knee function or patient satisfaction over total knee arthroplasty without patellar resurfacing. Whether it can decrease the incidence of anterior knee pain remains uncertain. | Surgery | Int Orthop Mar 2011;35(3):305-16 2011 Mar | 2011 |  | knee | arthroplasty |
| Li 2012 | Apixaban versus enoxaparin for thromboprophylaxis after total hip or knee arthroplasty: a meta-analysis of randomized controlled trials (Structured abstract) | CONCLUSIONS: Apixaban was more effective than recommended dose of enoxaparin and had a similar safety profile for thromboprophylaxis after hip and knee arthroplasty. But more evidence, especially well designed head-to-head RCTs, is needed to confirm the superior efficacy of apixaban. | Medication | Chinese Medical Journal 2012;125(13):2339-2345 2012 | 2012 |  | both | arthroplasty |
| Li 2012 | Comparison of complications in single-incision minimally invasive THA and conventional THA | According to the meta-analysis, no significant statistical difference was observed in complication rates in no more than 3 postoperative years (odds ratio=1.06; 95% confidence interval, 0.69 to 1.63; P=.79), in Harris Hip Scores in no more than 2 postoperative years (weighted mean difference=0.71; 95% confidence interval, -3.09 to 4.51; P=.71), and in WOMAC scores at 6 weeks postoperatively (weighted mean difference=-0.55; 95% confidence interval, -3.54 to 2.44; P=.72) between single-incision minimally invasive THA and conventional THA. Therefore, single-incision minimally invasive THA is not superior to conventional THA in early postoperative recovery, hip function, and complication rate. | Surgery | Orthopedics Aug 01 2012;35(8):e1152-8 2012 Aug 01 | 2012 |  | hip | arthroplasty |
| Li 2013 | [Comparing hydroxyapatite coated versus non hydroxyapatite coated femoral stems in primary total hip arthroplasty: a meta analysis of randomized controlled trial]. [Chinese] | CONCLUSIONS: There are no clinical and radiological benefits in the use of HA coating femoral stems in Primary THA, there is not enough evidence prove the HA can reduce the incidence postoperative thigh pain. | Surgery | Zhonghua wai ke za zhi [Chinese journal of surgery] 01 Jul 2013;51(7):645-650 2013 01 Jul | 2013 |  | hip | arthroplasty |
| Li 2013 | Hydroxyapatite-coated femoral stems in primary total hip arthroplasty: a meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSIONS: This meta-analysis demonstrates that the use of HA-coated femoral stems in primary THA has no clinical or radiological benefits. | Surgery | International Journal of Surgery 2013;11(6):477-482 2013 | 2013 |  | hip | arthroplasty |
| Li 2014 | Comparison between autologous blood transfusion drainage and no drainage/closed-suction drainage in primary total hip arthroplasty: a meta-analysis | CONCLUSIONS: Autologous blood transfusion drainage and no drainage/closed-suction drainage have similar clinical efficacy and safety in primary THA with regard to clinical outcomes and complication rates. | Surgery | Arch Orthop Trauma Surg Nov 2014;134(11):1623-31 2014 Nov | 2014 |  | hip | arthroplasty |
| Li 2014 | Evidence-based computer-navigated total hip arthroplasty: an updated analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis demonstrated computer-navigated THA was a more favorable method for placing the acetabular component and decreased the number of acetabular cups implanted outside the desired range of alignment. More high-quality RCTs were needed to support the evidence. | Surgery | Eur J Orthop Surg Traumatol May 2014;24(4):531-8 2014 May | 2014 |  | hip | arthroplasty |
| Li 2014 | Non-continuous versus continuous wound drainage after total knee arthroplasty: a meta-analysis | CONCLUSION: The existing evidence indicates that non-continuous drainage can achieve less haemoglobin loss (especially the four- to six-hour drain clamping) and postoperative visible blood loss with no increased risk of postoperative complications compared with continuous drainage. | Surgery | Int Orthop Feb 2014;38(2):361-71 2014 Feb | 2014 |  | knee | arthroplasty |
| Li 2014 | Patellar denervation in total knee arthroplasty without patellar resurfacing and postoperative anterior knee pain: a meta-analysis of randomized controlled trials (Provisional abstract) | Five randomized controlled trials (RCTs) with 572 patients and 657 knees were eligible for this meta-analysis. Our results showed that PD was associated with less AKP, lower visual analogue scale (VAS), higher patellar scores and better knee function compared with no patellar denervation (NPD). Complications did not differ significantly between the two groups. The existing evidence indicates that PD may be a better approach, as it improves both anterior knee pain and knee function after TKA. Future multi-center randomized controlled studies with large sample sizes are required to verify the current findings. | Surgery | Journal of Arthroplasty 2014;29(12):2309-2313 2014 | 2014 |  | knee | arthroplasty |
| Li 2014 | Posterior cruciate-retaining versus posterior stabilized total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSION: Posterior cruciate-retaining and posterior stabilized TKA have similar clinical outcomes with regard to knee function, postoperative knee pain and the other complications. Prosthesis survivorship for both posterior cruciate-retaining and posterior stabilized TKA is satisfactory, and there are no differences between them at short- and middle-term follow-up. LEVEL OF EVIDENCE: II. | Surgery | Knee Surg Sports Traumatol Arthrosc Mar 2014;22(3):556-64 2014 Mar | 2014 |  | knee | arthroplasty |
| Li 2015 | A meta-analysis of minimally invasive and conventional medial parapatella approaches for primary total knee arthroplasty | CONCLUSION: The preliminary results indicate that the MIS approach provides an alternative to the conventional approach, with earlier rehabilitation but no malpositioning or severe complications. Wound-healing problems can be treated easily and effectively, and the risk also decreases as surgeons become more experienced, and more user-friendly instruments are invented. Potential benefits in medium- and long-term outcomes require larger, multicentre and well-conducted RCTs to confirm. LEVEL OF EVIDENCE: Therapeutic study, Level II. | Surgery | Knee Surg Sports Traumatol Arthrosc Jul 2015;23(7):1971-85 2015 Jul | 2015 |  | knee | arthroplasty |
| Li 2015 | Comparison of complications in one-stage bilateral total knee arthroplasty with and without drainage | CONCLUSION: The current evidences confirm that both drainage and non-drainage have similar clinical value in one-stage bilateral TKA. However, the conclusion should be used with caution due to the limitations of the current study. | Surgery | J Orthop Surg Res Jan 14 2015;10():3 2015 Jan 14 | 2015 |  | knee | arthroplasty |
| Li 2015 | Do patients really gain outcome benefits when using the high-flex knee prostheses in total knee arthroplasty? A meta-analysis of randomized controlled trials | We found no statistically significant difference between the two designs in terms of ROM, knee scores (KSS, HSS, WOMAC, and SF-36), patients' satisfaction and complications. Hence there is currently no evidence to confirm that the use of high-flex prostheses in short-term is superior to the standard prostheses after total knee arthroplasty. | Surgery | J Arthroplasty Apr 2015;30(4):580-6 2015 Apr | 2015 |  | knee | arthroplasty |
| Li 2015 | Fibrin sealant before wound closure in total knee arthroplasty reduced blood loss: a meta-analysis | 7 randomized controlled trials, including 408 knees, were selected for meta-analysis to determine the safety and efficacy of fibrin sealant for managing blood loss in patients undergoing total knee arthroplasty. Results indicated that the use of fibrin sealant significantly reduced drainage volume, the incidence of blood transfusion and wound haematoma, and hemaglobin decline as compared to a control group. No significant differences were noted in complications, mean number of transfusion units, mean calculated blood loss, hospital stay, or range of motion. | Surgery | Knee Surg Sports Trauma Arth 2015;(): 2015 | 2015 |  | knee | arthroplasty |
| Li 2015 | Patients achieved greater range of movement when using high-flexion implants | CONCLUSIONS: The preliminary results indicate that the NexGen LPS-Flex prosthesis provides an alternative to the NexGen LPS prosthesis, with greater range of motion and without severe complications or radiographic outcomes. The clinical advantages were not shown in the KSS or the HSS. Thus, the selection of a high-flexion prosthesis should depend on the characteristics of the patient, particularly high motivation and poor preoperative ROM. The potential benefits in the medium- and long-term outcomes require confirmation by larger, multicenter and well-conducted RCTs. LEVEL OF EVIDENCE: Therapeutic study, Level I. | Surgery | Knee Surg Sports Traumatol Arthrosc Jun 2015;23(6):1598-609 2015 Jun | 2015 |  | knee | not specified |
| Li 2015 | Standard versus high-flexion posterior stabilized total knee prostheses | No statistical difference was found between the 2 prosthesis types in complications, involving 21 cases in the standard group and 14 cases in the high-flexion group. The current findings confirm that high-flexion posterior-stabilized total knee prostheses are not superior to standard prostheses in terms of ROM, flexion angle, knee scores, or complications with 5 years or less of follow-up. | Surgery | Orthopedics Mar 2015;38(3):e206-12 2015 Mar | 2015 |  | knee | not specified |
| Li 2016 | Adductor canal block provides better performance after total knee arthroplasty compared with femoral nerve block: a systematic review and meta-analysis | CONCLUSION: ACB provide better ambulation ability, faster functional recovery and better pain control at rest after TKA compared to FNB. The use of ACB post TKA is worthy of being recommended to replace FNB as a standard analgesic protocol for pain treatment after TKA. | Medication | Int Orthop May 2016;40(5):925-33 2016 May | 2016 |  | knee | arthroplasty |
| Li 2016 | Combined femoral and sciatic nerve block versus femoral and local infiltration anesthesia for pain control after total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSIONS: SNB may provide earlier anesthesia effects than LIA when combined femoral nerve block (FNB); however, there were no differences in morphine use, active knee flexion, and PONV between the groups. The LIA group spent less time under anesthesia, suggesting that LIA may offer a practical and potentially safer alternative to SNB. | Medication | J Orthop Surg Res Dec 07 2016;11(1):158 2016 Dec 07 | 2016 |  | knee | arthroplasty |
| Li 2016 | Home-Based Compared with Hospital-Based Rehabilitation Program for Patients Undergoing Total Knee Arthroplasty for Osteoarthritis: A Systematic Review and Meta-analysis of Randomized Controlled Trials | CONCLUSION: Home-based rehabilitation after primary TKA was comparable to hospital-based rehabilitation and thus is a significant alternative for patients. | Physio/Rehab | Am J Phys Med Rehabil Aug 30 2016;(): 2016 Aug 30 | 2016 |  | knee | arthroplasty |
| Li 2016 | Intrathecal morphine verse femoral nerve block for pain control in total knee arthroplasty: A meta-analysis from randomized control trials | CONCLUSIONS: Femoral nerve block provides equal postoperative pain control compared with intrathecal morphine following total knee arthroplasty, although there were fewer side effects in the FNB groups. In contrast, FNB was performed with an additional procedure and required a special apparatus. Both methods are effective at pain control following TKA. | Medication | Int J Surg Aug 2016;32():89-98 2016 Aug | 2016 |  | knee | arthroplasty |
| Li 2016 | Osteochondral autograft transplantation or autologous chondrocyte implantation for large cartilage defects of the knee: a meta-analysis | 5 randomized controlled trials (Level II) investigating large cartilage defects of the knee were included in this meta-analysis. The purpose of this study was to compare the osteochondral autograft transplantation (OAT) and autologous chondrocyte implantation (ACI) treatments to determine whether a superior method exists. Findings of this analysis indicated that there are no significant differences between OAT and ACI treatments for postoperative function outcomes when followed-up for at least one year. | Surgery | Cell Tissue Bank 2016;(): 2016 | 2016 |  | knee | not specified |
| Li 2016 | Topical use of topical fibrin sealant can reduce the need for transfusion, total blood loss and the volume of drainage in total knee and hip arthroplasty: A systematic review and meta-analysis of 1489 patients | Conclusion The topical use of fibrin sealant can effectively reduce the need for transfusion, total blood loss and the volume of drainage without increasing the rate of infection. | Medication | International Journal of Surgery 01 Dec 2016;Part A. 36():127-137 2016 01 Dec | 2016 |  | both | arthroplasty |
| Li 2017 | Combined use of intravenous and topical versus intravenous tranexamic acid in primary total knee and hip arthroplasty: a meta-analysis of randomised controlled trials | CONCLUSIONS: Combined administration of tranexamic acid (TXA) in patients with total knee and hip arthroplasty was associated with significantly reduced total blood loss, transfusion requirements, postoperative haemoglobin decline and length of stay compared to single application alone but was not associated with prolonged operation time. Moreover, no adverse effects, such as superficial infection, deep vein thrombus (DVT) or pulmonary embolism (PE), were associated with TXA. We suggest that combined administration of TXA demonstrated excellent clinical efficacy and safety in patients with total knee and hip arthroplasty. More importantly, well-designed studies with larger sample size are needed to provide further reliable evidence for the combined use of TXA. | Medication | J Orthop Surg Res Feb 02 2017;12(1):22 2017 Feb 02 | 2017 |  | both | arthroplasty |
| Lieberman 2017 | Pulmonary Embolism Rates Following Total Hip Arthroplasty With Prophylactic Anticoagulation: Some Pulmonary Emboli Cannot Be Avoided | CONCLUSION: Although the PE rate was low, it was consistent throughout the 17 years spanning these RCTs, which excluded patients with significant morbidity. These results suggest that even healthy THA patients receiving aggressive anticoagulation still have a risk for PE, and the "never event" designation requires reassessment. | Medication | J Arthroplasty Mar 2017;32(3):980-986 2017 Mar | 2017 |  | hip | arthroplasty |
| Lin 2012 | Bisphosphonates for periprosthetic bone loss after joint arthroplasty: a meta-analysis of 14 randomized controlled trials | CONCLUSIONS: The overall moderate evidence from the RCTs confirmed the significantly short-term and middle-term efficacy of BPs on periprosthetic bone loss after joint arthroplasty. To obtain a better efficacy, the second and the third generation of BPs may be the choice. | Medication | Osteoporos Int Jun 2012;23(6):1823-34 2012 Jun | 2012 |  | both | arthroplasty |
| Liu 2011 | Comparison of the minimally invasive and standard medial parapatellar approaches for total knee arthroplasty: systematic review and meta-analysis | Data from 15 randomized controlled trials evaluating standard mini-subvastus (SV), mini-madvastus (MV) and/or traditional medial parapatellar (MP) approaches were examined to determine the most effective method of treatment for patients undergoing total knee arthroplasty (TKA). The pooled analyses demonstrated that MP had longer wait times and poorer quadriceps strength, compared to SV, and presented with more blood loss, and more number of days to straight-leg raise compared to either SV of MV. MV patients exhibited better results for ROM compared to MP patients at 6 months and there was no difference at 1 year between MP and SV for ROM. | Surgery | J Int Med Res 2011;(): 2011 | 2011 |  | knee | arthroplasty |
| Liu 2014 | Surgical approaches in total knee arthroplasty: a meta-analysis comparing the midvastus and subvastus to the medial peripatellar approach | The meta-analysis suggested that, when compared with the medial parapatellar approach, the midvastus approach showed better outcomes in pain and knee range of motion at postoperative 1-2weeks but also was associated with longer operative time; the subvastus approach showed better outcomes in knee range of motion at postoperative 1week, straight leg raise and lateral retinacular release. | Surgery | J Arthroplasty Dec 2014;29(12):2298-304 2014 | 2014 |  | knee | arthroplasty |
| Liu 2015 | The role of perioperative oral nutritional supplementation in elderly patients after hip surgery | CONCLUSION: Based on the evidence available, this meta-analysis is consistent with the hypothesis that perioperative ONS can help elderly patients recover after hip surgery and reduce complications. | Medication | Clin Interv Aging 2015;10():849-58 2015 | 2015 |  | hip | arthroplasty |
| Lo 2003 | Intra-articular hyaluronic acid in treatment of knee osteoarthritis: a meta-analysis | A total of 22 randomized controlled trials were included in the meta-analysis investigating the effect of hyaluronic acid on pain in the treatment of knee osteoarthritis. Data was sampled from a total of 2949 patients across all trials. The results demonstrated a small, but significant, effect size when intra-articular hyaluronic acid was compared to placebo for pain severity. An analysis of only studies which featured a low-molecular-weight hyaluronic acid product demonstrated an even smaller, but still statistically significant, effect size. Publication bias was detected, and the clinical relevance of the findings and effect sizes was unknown. | Medication | JAMA 2003;(): 2003 | 2003 |  | knee | Osteoarthritis |
| Louw 2013 | Preoperative education addressing postoperative pain in total joint arthroplasty: review of content and educational delivery methods | CONCLUSIONS: Preoperative education centered on a biomedical model of anatomy and pathoanatomy as well as procedural information has limited effect in reducing postoperative pain after THA and TKA surgeries. Preoperative educational sessions that aim to increase patient knowledge of pain science may be more effective in managing postoperative pain. | Non Surgical Intervention | Physiother Theory Pract Apr 2013;29(3):175-94 2013 Apr | 2013 |  | both | arthroplasty |
| Luo 2010 | Mobile-bearing versus fixed-bearing in total knee arthroplasty: A systematic review. [Chinese] | The results showed that no significant differences on clinical results and complications compared mobile bearing prosthesis with fixed-bearing prosthesis in TKA, we advise that more evidences should be needed for supporting the outcomes, and both types of prosthesis can get well results in clinical trial. | Surgery | Journal of Clinical Rehabilitative Tissue Engineering Research 26 Mar 2010;14(13):2281-2284 2010 26 Mar | 2010 |  | knee | arthroplasty |
| Luo 2012 | Posterior cruciate substituting versus posterior cruciate retaining total knee arthroplasty prostheses: a meta-analysis | CONCLUSION: The findings indicate there were no significant statistical differences in knee scores, radiological outcomes, and complications between the two types of implants. Statistically significant difference in postoperative ROM was found between the two groups, but no clinical difference. | Surgery | Knee Aug 2012;19(4):246-52 2012 Aug | 2012 |  | knee | arthroplasty |
| Ma 2009 | Efficacy and safety of postoperative non-steroidal antiinflammatory drugs therapy in patients following total hip arthroplasty: A meta analysis. [Chinese] | RESULTS AND CONCLUSION: A total of 13 randomized controlled trials totaling 4706 participants were included. The result of meta analysis showed that low dose aspirin did not significantly affect the incidence of heterotopic bone formation (HBF) [RR=0.99, 95%CI (0.87, 1.14) rather than medium to high dose NSAIDs [RR=0.44, 95%CI (0.30, 0.64), there was no significant difference between two group in hip pain and physical function, the incidence of HBF was 16.0% in NSAID-group and 11.1% in 7 Gy group. Apart from low dose aspirin, medium to high doses of postoperative NSAIDs produce a substantial reduction in the incidence of HBF at the cost of minor high gastrointestinal side effect. Limited evidence showed there were no significant differences between the groups for improvements in hip pain and physical function, 7 Gy fraction is more effective than use of NSAID. | Medication | Journal of Clinical Rehabilitative Tissue Engineering Research 24 Dec 2009;13(52):10223-10226 2009 24 Dec | 2009 |  | hip | arthroplasty |
| Macfarlane 2009 | Does regional anaesthesia improve outcome after total hip arthroplasty? A systematic review | There is insufficient evidence from RCTs alone to conclude if anaesthetic technique influenced mortality, cardiovascular morbidity, or the incidence of DVT and PE when using thromboprophylaxis. Blood loss may be reduced in patients receiving RA rather than GA for THA. Our review suggests that there is no difference in duration of surgery in patients who receive GA or RA. Compared with systemic analgesia, regional analgesia can reduce postoperative pain, morphine consumption, and nausea and vomiting. Length of stay is not reduced and rehabilitation does not appear to be facilitated by RA or analgesia for THA. | Medication | British Journal of Anaesthesia September 2009;103(3):335-345 2009 September | 2009 |  | hip | arthroplasty |
| Mannan 2016 | Favourable rotational alignment outcomes in PSI knee arthroplasty: A Level 1 systematic review and meta-analysis | Six randomized controlled trials, including a total of 506 patients, were selected for inclusion into this meta-analysis investigating the effect of patient-specific instrumentation (PSI) of rotational alignment of components following total knee arthroplasty. Sufficient data was available to pool for the incidence of femoral component rotational outliers, defined as deviation from planned rotational alignment exceeding 3 degrees. The result, after addressing a unit-of-analysis error in the primary analysis that was discussed with the authors of the publication, was a non-significant difference in femoral rotational outliers between PSI and conventional instrumentation cohorts. Tibial rotational alignment was reported in only one included study, and demonstrated no significant difference in mean rotational alignment of the tibial component between groups. | Surgery | Knee 2016;(): 2016 | 2016 |  | knee | arthroplasty |
| Mantha 2011 | Oral factor Xa inhibitors vs. enoxaparin for thromboprophylaxis after joint replacement surgery: A meta-analysis | Conclusions: Rivaroxaban and apixaban seem to have equivalent efficacy for the prevention of symptomatic VTE in joint replacement surgery; overall, oral factor Xa inhibitors appear superior to daily enoxaparin. Rivaroxaban might be associated with a higher risk of major or clinically significant non-major bleeding than apixaban; this could be due to administration of rivaroxaban earlier after the surgery. | Medication | Journal of Thrombosis and Haemostasis July 2011;9():189 2011 July | 2011 |  | both | arthroplasty |
| Mao 2016 | The efficacy of preoperative administration of gabapentin/pregabalin in improving pain after total hip arthroplasty: a meta-analysis | CONCLUSIONS: On the basis of the current meta-analysis, gabapentin or pregabalin can decrease the cumulative morphine consumption and decrease the occurrence of nausea; however, further trials are needed to assess the efficacy of pain control by gabapentin or pregabalin. | Medication | BMC Musculoskelet Disord Aug 30 2016;17(1):373 2016 Aug 30 | 2016 |  | hip | arthroplasty |
| Markar 2012 | Transfusion drains versus suction drains in total knee replacement: meta-analysis | CONCLUSION: The results of our study highlight both likely clinical and economic benefits within total knee replacement surgery. The clinical benefits of autologous transfusion drains in the total knee replacement surgery suggested by this meta-analysis include a reduced requirement for post-operative blood transfusion and a shorter length of hospital stay. However, further large-scale high-powered randomized controlled trials are recommended to further elucidate subtle effects of autologous drains on post-operative outcome following total knee replacement. LEVEL OF EVIDENCE: II. | Surgery | Knee Surg Sports Traumatol Arthrosc Sep 2012;20(9):1766-72 2012 Sep | 2012 |  | knee | arthroplasty |
| Marques 2014 | Local anaesthetic infiltration for peri-operative pain control in total hip and knee replacement: Systematic review and meta-analyses of short- and long-term effectiveness | Conclusions: Local anaesthetic infiltration is effective in reducing short-term pain and hospital stay in patients receiving THR and TKR. Studies should assess whether local anaesthetic infiltration can prevent long-term pain. Enhanced pain control with additional analgesia through a catheter should be weighed against a possible infection risk. | Medication | BMC Musculoskeletal Disorders 05 Jul 2014;15 (1) (no pagination)(220): 2014 05 Jul | 2014 |  | both | arthroplasty |
| Marshall 2014 | Hip resurfacing versus total hip arthroplasty: a systematic review comparing standardized outcomes | Data from 236 studies (17 RCTS) was pooled to investigate the adverse events, revision rates, and reoperation rates associated with metal-on-metal hip resurfacing prostheses compared to total hip arthroplasty (THA) devices. The evidence presented in this analysis suggested that MoMs were revised significantly earlier than THA devices. Revisions and reoperations were more common for MoM than for THA per 1000 person-years, and this difference was consistent with 3 of 4 national joint replacement registries. Dislocations, infection/sepsis, and femoral neck fractures were more frequent with THA than with MoM. Secondary analyses of the outcomes of interest were conducted with discontinued devises removed from the calculations, and these results indicated variable results. | Surgery | Clin Orthop Relat Res 2014;(): 2014 | 2014 |  | hip | arthroplasty |
| Martin 2011 | Therapeutic potential of apixaban in the prevention of venous thromboembolism in patients undergoing total knee replacement surgery | CONCLUSION: Apixaban is a promising new agent awaiting regulatory approval for its use in thromboprophylaxis after TKA. | Medication | Curr Med Res Opin Nov 2011;27(11):2123-31 2011 Nov | 2011 |  | knee | arthroplasty |
| Meena 2017 | Topical versus intravenous tranexamic acid in total knee arthroplasty | CONCLUSION: Topical TXA has a similar efficacy to IV-TXA in reducing total blood loss, drain output, transfusion rate and haemoglobin drop without any increase in thromboembolic complications. | Medication | J Orthop Surg (Hong Kong) Jan 2017;25(1):2309499016684300 2017 Jan | 2017 |  | knee | arthroplasty |
| Mehin 2010 | Does the new generation of high-flex knee prostheses improve the post-operative range of movement? A meta-analysis | A new generation of knee prostheses has been introduced with the intention of improving post-operative knee flexion. In order to evaluate whether this goal has been achieved we performed a systematic review and meta-analysis. Analysis of these trials suggested that no clinically relevant or statistically significant improvement was obtained in flexion with the 'high-flex' prostheses. The weighted mean difference was 2.1degree (95% confidence interval -0.2 to +4.3; p = 0.07). | Surgery | Journal of Bone and Joint Surgery - Series B October 2010;92(10):1429-1434 2010 October | 2010 |  | knee | not specified |
| Miller 2013 | US-Approved Intra-Articular Hyaluronic Acid Injections are Safe and Effective in Patients with Knee Osteoarthritis: Systematic Review and Meta-Analysis of Randomized, Saline-Controlled Trials | 29 randomized, saline-controlled studies were included in this meta-analysis to compare the effects of hyaluronic acid to saline solution in osteoarthritis patients. Pain and function were both improved compared to pretest assessments at 4-13 months and 14-26 months. Pain and function results were also significantly better in patients who received hyaluronic acid injections compared to the patients who were administered a saline solution. Adverse events were comparable between groups. | Medication | Clin Med Insights Arthritis Musculoskelet Disord. 2013;(): 2013 | 2013 |  | knee | Osteoarthritis |
| MinnsLowe 2007 | Effectiveness of physiotherapy exercise after knee arthroplasty for osteoarthritis: systematic review and meta-analysis of randomised controlled trials | CONCLUSIONS: Interventions including physiotherapy functional exercises after discharge result in short term benefit after elective primary total knee arthroplasty. Effect sizes are small to moderate, with no long term benefit. | Physio/Rehab | BMJ Oct 20 2007;335(7624):812 2007 Oct 20 | 2007 |  | knee | arthroplasty |
| Morshed 2007 | Comparison of cemented and uncemented fixation in total hip replacement: a meta analysis | Use of cemented versus un-cemented implant fixation in total hip arthroplasty (THA) has long been an area of debate. Although cemented components have long had unsurpassed prosthesis survival rate, more and more THAs are being performed with un-cemented components. The current systematic review and meta analysis compared the pros and cons to cemented versus un-cemented fixation to determine which has a better overall performance. The study found that although the performance of un-cemented components is improving, cemented fixation continues to be unparalleled. | Surgery | Acta Orthop 2007;(): 2007 | 2007 |  | hip | arthroplasty |
| Moskal 2016 | Meta-analysis of Intravenous Tranexamic Acid in Primary Total Hip Arthroplasty | Sixteen randomized controlled trials (RCTs) were included in this meta-analysis evaluating the efficacy and safety of intravenous tranexamic acid in total hip arthroplasty. All included trials were placebo controlled. Results demonstrated significantly lower blood loss - including intraoperative blood loss, postoperative blood loss, and total blood loss - and transfusion rate with IV TXA versus placebo. The incidence of deep vein thrombosis was significantly higher following administration of IV TXA, but no significant differences between IV TXA and placebo were found for the rate of pulmonary embolism. | Medication | Orthopaedics 2016;(): 2016 | 2016 |  | hip | arthroplasty |
| Mu 2009 | A systematic review of radiological outcomes of highly cross-linked polyethylene versus conventional polyethylene in total hip arthroplasty | This preliminary result suggests that highly cross-linked polyethylene has significantly less wear than conventional polyethylene. | Surgery | Int Orthop. 2009;(): 2009 | 2009 |  | hip | arthroplasty |
| Neumann 2012 | Oral direct Factor Xa inhibitors versus low-molecular-weight heparin to prevent venous thromboembolism in patients undergoing total hip or knee replacement: a systematic review and meta-analysis | CONCLUSION: Compared with LMWH, lower doses of oral factor Xa inhibitors can achieve a small absolute risk reduction in symptomatic deep venous thrombosis without increasing bleeding. | Medication | Ann Intern Med May 15 2012;156(10):710-9 2012 May 15 | 2012 |  | both | arthroplasty |
| Ni 2014 | Press-fit cementless acetabular fixation with and without screws | CONCLUSION: There is no significant difference between cementless acetabular fixation for THA with and without screws in revisions, migration or osteolysis. | Surgery | Int Orthop Jan 2014;38(1):7-12 2014 Jan | 2014 |  | hip | arthroplasty |
| Ni 2015 | Cryotherapy on postoperative rehabilitation of joint arthroplasty | CONCLUSIONS: Cryotherapy appears effective in these selected patients after joint arthroplasty. The benefits of cryotherapy on blood loss after joint arthroplasty were obvious. However, the subgroup analysis indicated that cryotherapy did not decreased blood loss after THA. Cryotherapy did not increase the risk of adverse effect. Cryotherapy decreased pain at the second day of postoperative, but did not decreased pain at the first and third day of postoperative. LEVEL OF EVIDENCE: II. | Surgery | Knee Surg Sports Traumatol Arthrosc Nov 2015;23(11):3354-61 2015 Nov | 2015 |  | Not specified | arthroplasty |
| Nieto 2012 | Dabigatran, Rivaroxaban and Apixaban versus Enoxaparin for thomboprophylaxis after total knee or hip arthroplasty: Pool-analysis of phase III randomized clinical trials | Conclusions: Overall, NAs showed more efficacy and same safety when compared to the recommended dose of enoxaparin after THR and TKR. There are little differences in efficacy and bleeding risk among NAs and the type of prophylaxis that should be analysed further. | Medication | Thrombosis Research August 2012;130(2):183-191 2012 August | 2012 |  | both | arthroplasty |
| Ning 2016 | Rivaroxaban for thromboprophylaxis after total hip or knee arthroplasty: a meta-analysis with trial sequential analysis of randomized controlled trials | Rivaroxaban was more beneficial than enoxaparin for preventing symptomatic DVT but increased the risk of major bleeding. According to the TSA results, more evidence is needed to verify the risk of major bleeding with rivaroxaban. | Medication | Sci Rep Mar 29 2016;6():23726 2016 Mar 29 | 2016 |  | both | arthroplasty |
| Okoro 2012 | An appraisal of rehabilitation regimes used for improving functional outcome after total hip replacement surgery | 15 randomised controlled trials were identified of which 11 were centre-based, 2 were home based and 2 were trials comparing home and centre based interventions. The use of a progressive resistance training (PRT) programme led to significant improvement in muscle strength and function if the intervention was carried out early (< 1 month following surgery) in a centre (6/11 centre-based studies used PRT), or late (> 1 month following surgery) in a home based setting (2/2 home based studies used PRT). In direct comparison, there was no difference in functional measures between home and centre based programmes (2 studies), with PRT not included in the regimes prescribed. A limitation of the majority of these intervention studies was the short period of follow up. Centre based program delivery is expensive as high costs are associated with supervision, facility provision, and transport of patients. Early interventions are important to counteract the deficit in muscle strength in the affected limb, as well as persistent atrophy that exists around the affected hip at 2 years post-operatively. Studies of early home-based regimes featuring PRT with long term follow up are needed to address the problems currently associated with rehabilitation following THR. | Physio/Rehab | Sports Medicine, Arthroscopy, Rehabilitation, Therapy and Technology 07 Feb 2012;4 (1) (no pagination)(5): 2012 07 Feb | 2012 |  | hip | arthroplasty |
| Pakvis 2010 | No evidence for superior fixation of cemented sockets. A review of randomized controlled trials | Conclusion: Although our search could not provide evidence for the superiority of either cemented or cementless acetabular fixation, the long term follow-up studies reported in literature are providing us with data that cementless acetabular fixation is a good alternative to cemented fixation of the socket. | Surgery | HIP International July-September 2010;20 (3)():404 2010 July-September | 2010 |  | hip | arthroplasty |
| Pan 2016 | The efficacy and safety of autologous blood transfusion drainage in patients undergoing total knee arthroplasty: a meta-analysis of 16 randomized controlled trials | CONCLUSION: This meta-analysis suggests that ABTD is a safe and effective method that yields a lower blood transfusion rate and fewer units transfused per patient in TKA compared with CSD. | Surgery | BMC Musculoskelet Disord Nov 02 2016;17(1):452 2016 Nov 02 | 2016 |  | knee | arthroplasty |
| Pathak 2015 | Meta-analysis on efficacy and safety of new oral anticoagulants for venous thromboembolism prophylaxis in overweight and obese postarthroplasty patients | Our study suggests that a fixed-dose regimen of dabigatran might be ineffective in severe obesity. However, apixaban at the currently recommended dose seems to be superior to LMWH in obese patients with noninferior bleeding risk. | Medication | Blood Coagul Fibrinolysis Sep 2015;26(6):635-42 2015 Sep | 2015 |  | Not specified | arthroplasty |
| Paul 2010 | Femoral nerve block improves analgesia outcomes after total knee arthroplasty: a meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSIONS: SSFNB or continuous FNB (plus PCA) was found to be superior to PCA alone for postoperative analgesia for patients having total knee arthroplasty. The impact of adding a sciatic block or continuous FNB to a SSFNB needs to be studied further. | Medication | Anesthesiology 2010;113(5):1144-1162 2010 | 2010 |  | knee | arthroplasty |
| Pavlou 2011 | Patellar resurfacing in total knee arthroplasty: does design matter? A meta-analysis of 7075 cases | CONCLUSIONS: No evidence was found to suggest that either patellar resurfacing or the prosthetic design affects the clinical outcome of a total knee arthroplasty. The higher incidence of reoperations in the non-resurfacing group may be attributed to the fact that secondary patellar resurfacing adds a surgical option for the treatment of anterior knee pain following total knee arthroplasty, thus artificially increasing the rate of reoperations in the non-resurfacing group. | Surgery | J Bone Joint Surg Am Jul 20 2011;93(14):1301-9 2011 Jul 20 | 2011 |  | knee | arthroplasty |
| Pawaskar 2016 | Do autologous blood transfusion systems reduce allogeneic blood transfusion in total knee arthroplasty? | CONCLUSION: This meta-analysis demonstrates that the use of auto-transfusion systems is a cost-effective method to reduce the need for and quantity of allogenic transfusion in elective total knee arthroplasty. LEVEL OF EVIDENCE: Level I. | Medication | Knee Surg Sports Traumatol Arthrosc Apr 16 2016;(): 2016 Apr 16 | 2016 |  | knee | arthroplasty |
| Pei 2016 | Intravenous versus topical tranexamic acid in primary total hip replacement: A meta-analysis | Conclusion: The topical and intravenous administrations of TXA have a similar effect on the decrease of blood loss without an increased risk of complications (DVT, PE, and wound infection). Intravenous TXA administration may have a maximum efficacy. Topical TXA administration may be preferred in patients who with high risk of thromboembolic events. However, larger, high-quality RCTs are required to explore the optimal regimen, dosage, timing still in the future in order to recommend TXA widespread use in total joint arthroplasty. | Medication | Medicine (United States) 2016;95(50):e5573 2016 | 2016 |  | hip | arthroplasty |
| Peng 2015 | Comparison of the quadriceps-sparing and subvastus approaches versus the standard parapatellar approach in total knee arthroplasty: A meta-analysis of randomized controlled trials Orthopedics and biomechanics | Conclusions: The current evidence showed that, when compared with the standard parapatellar approach, the quadriceps-sparing approach was associated with better outcomes in KSS and VAS but required a longer operative time, and the subvastus approach was associated with better outcomes in VAS, ROM, straight leg raise and lateral retinacular release. | Surgery | BMC Musculoskeletal Disorders 31 Oct 2015;16 (1) (no pagination)(327): 2015 31 Oct | 2015 |  | knee | arthroplasty |
| Petersen 2015 | The Treatment of Non-Traumatic Meniscus Lesions | CONCLUSION: For most patients with non-traumatic meniscus lesions, surgical and non-surgical treatments seem to be of equal value; only one of the six included trials revealed lower pain and symptom scores after arthroscopic partial meniscectomy. In multiple trials, however, the crossover analysis showed that non-surgical treatment fails for some patients. These patients may benefit from arthroscopic partial meniscectomy. Further trials are needed to better define this subgroup of patients. | Surgery | Dtsch Arztebl Int Oct 16 2015;112(42):705-13 2015 Oct 16 | 2015 |  | knee | not specified |
| Pilling 2012 | Patellar resurfacing in primary total knee replacement: a meta-analysis | CONCLUSIONS: Patients who underwent patellar resurfacing experienced anterior knee pain and satisfaction with the arthroplasty procedure that were equivalent to those experienced by patients whose patella was not resurfaced; however, these patients underwent significantly fewer additional surgical procedures. Further long-term follow-up of modern prostheses in randomized studies measuring outcome with a patella-specific score is needed. | Surgery | J Bone Joint Surg Am Dec 19 2012;94(24):2270-8 2012 Dec 19 | 2012 |  | knee | arthroplasty |
| Qu 2011 | Metal-on-metal or metal-on-polyethylene for total hip arthroplasty: a meta-analysis of prospective randomized studies | CONCLUSIONS: This analysis found insufficient evidence to identify any clinical advantage of MOM-THA compared with MOP-THA. Although cobalt and chromium concentrations were elevated after MOM-THA, there were no significant differences in total complication rates (including all-case mortality) between the two groups in the short- to mid-term follow-up period. The MOM bearing option for THA should be used with caution | Surgery | Arch Orthop Trauma Surg Nov 2011;131(11):1573-83 2011 Nov | 2011 |  | hip | arthroplasty |
| Quinn 2015 | The use of postoperative suction drainage in total knee arthroplasty: a systematic review | RESULTS: There is no significant difference between the individuals who receive a drain and those who do not across any of the measures examined. CONCLUSION: The finding raises the possibility that drains are not required to assist in recovery following TKA. | Surgery | Int Orthop Apr 2015;39(4):653-8 2015 Apr | 2015 |  | knee | arthroplasty |
| Rama 2007 | Timing of tourniquet release in knee arthroplasty. Meta-analysis of randomized, controlled trials | CONCLUSIONS: Early tourniquet release for hemostasis increases the blood loss associated with primary knee arthroplasty. However, tourniquet release after wound closure can increase the risk of early postoperative complications requiring another operation. Well-conducted large studies are needed to further explore the risk of early postoperative complications associated with late tourniquet release in knee arthroplasty. LEVEL OF EVIDENCE: Therapeutic Level II. | Surgery | J Bone Joint Surg Am Apr 2007;89(4):699-705 2007 Apr | 2007 |  | knee | arthroplasty |
| Restrepo 2007 | Safety of Simultaneous Bilateral Total Knee Arthroplasty: A Meta-Analysis | Results from the analysis indicated that simultaneous bilateral total knee replacement had a higher risk of pulmonary and cardiac complications as well as mortality compared to the staged bilateral or unilateral total knee replacement procedures. | Surgery | J Bone Joint Surg 2007;(): 2007 | 2007 |  | knee | arthroplasty |
| Rutjes 2012 | Viscosupplementation for osteoarthritis of the knee: a systematic review and meta-analysis | CONCLUSION: In patients with knee osteoarthritis, viscosupplementation is associated with a small and clinically irrelevant benefit and an increased risk for serious adverse events. | Non Surgical Intervention | Ann Intern Med Aug 07 2012;157(3):180-91 2012 Aug 07 | 2012 |  | knee | osteoarthritis |
| Sadabad 2016 | Efficacy of Platelet-Rich Plasma versus Hyaluronic Acid for treatment of Knee Osteoarthritis: A systematic review and meta-analysis. | The results of this meta-analysis demonstrated low-quality evidence that PRP provided favourable results in comparison to HA for patients with knee osteoarthritis (SMD -0.75 [95%CI -1.33 to -0.18]; p=0.010; I^2=93%). Nevertheless, it is unknown if this difference is clinically relevant. | Medication | Electron Physician 2016;(): 2016 | 2016 |  | knee | osteoarthritis |
| Salazar 2010 | Direct thrombin inhibitors versus vitamin K antagonists or low molecular weight heparins for prevention of venous thromboembolism following total hip or knee replacement | CONCLUSIONS: Direct thrombin inhibitors are as effective in the prevention of major venous thromboembolism in THR or TKR as LMWH and vitamin K antagonists. However, they show higher mortality and cause more bleeding than LMWH. No severe hepatic complications were reported in the analysed studies. Use of ximelagatran is not recommended for VTE prevention in patients who have undergone orthopedic surgery. More studies are necessary regarding dabigatran. | Medication | Cochrane Database Syst Rev Apr 14 2010;(4):Cd005981 2010 Apr 14 | 2010 |  | both | arthroplasty |
| Seangleulur 2016 | The efficacy of local infiltration analgesia in the early postoperative period after total knee arthroplasty: A systematic review and meta-analysis | CONCLUSION: LIA is effective for acute pain management after TKA. Intraoperative peri-articular but not intra-articular injection may be helpful in pain control up to 24 h. The use of postoperative intra-articular catheter placement is still inconclusive. The benefit of LIA as an adjunctive treatment to regional anaesthesia was not demonstrated. | Medication | Eur J Anaesthesiol Nov 2016;33(11):816-831 2016 Nov | 2016 |  | knee | arthroplasty |
| Shang 2016 | Combined intravenous and topical tranexamic acid versus intravenous use alone in primary total knee and hip arthroplasty: A meta-analysis of randomized controlled trials | CONCLUSIONS: Based on our study, Combined use of intravenous and topical TXA is more effective than intravenous TXA alone in primary total knee or hip arthroplasty without increasing the risk of thromboembolic complications. Further high quality studies with more patients are needed in future studies. | Medication | Int J Surg Dec 2016;36(Pt A):324-329 2016 Dec | 2016 |  | both | arthroplasty |
| Shemshaki 2015 | One step closer to sparing total blood loss and transfusion rate in total knee arthroplasty: a meta-analysis of different methods of tranexamic acid administration | CONCLUSION: This study showed that TXA leads to significant reductions in TBL and the rate of allogeneic transfusions. Generally, no significant difference was detected between IA and IV administration of TXA; however, more studies with focus on safety and efficacy are warranted. | Medication | Arch Orthop Trauma Surg Apr 2015;135(4):573-88 2015 Apr | 2015 |  | knee | arthroplasty |
| Shen 2014 | Does cross-linked polyethylene decrease the revision rate of total hip arthroplasty compared with conventional polyethylene? A meta-analysis | CONCLUSIONS: The current limited evidence suggests that cross-linked polyethylene significantly reduced the radiological wear compared with conventional polyethylene at midterm follow-up periods. However, there is no evidence that cross-linked polyethylene had an advantage over conventional polyethylene in terms of reducing osteolysis or wear-related revision. Nevertheless, future long-term RCTs on this topic are needed. KEY FINDINGS: Cross-linked polyethylene significantly reduced radiological wear but not osteolysis or wear-related revision in comparison to conventional polyethylene at midterm follow-up periods. LEVEL OF EVIDENCE: Level I, systematic review of level I studies. | Surgery | Orthop Traumatol Surg Res Nov 2014;100(7):745-50 2014 Nov | 2014 |  | hip | arthroplasty |
| Si 2015 | Is a ceramic-on-ceramic bearing really superior to ceramic-on-polyethylene for primary total hip arthroplasty? A systematic review and meta-analysis of randomised controlled trials | CONCLUSIONS: There appears to be no clear evidence favouring the use of either a CoC or CoP bearing surfaces in primary THA, further studies with high-quality and longer term follow-up to provide more evidence on this topic are still required. | Surgery | Hip Int May-Jun 2015;25(3):191-8 2015 May-Jun | 2015 |  | hip | arthroplasty |
| Si 2016 | No clear benefit or drawback to the use of closed drainage after primary total knee arthroplasty: a systematic review and meta-analysis | CONCLUSIONS: There appears to be no clear benefit or drawback to the use of closed drainage after primary TKA. Improving the use of closed drainage might provide better outcomes. | Surgery | BMC Musculoskelet Disord Apr 26 2016;17():183 2016 Apr 26 | 2016 |  | knee | arthroplasty |
| Singh 2015 | Does local infiltration analgesia (LIA) provide clinically effective analgesia in the postoperative period for patients undergoing total knee arthroplasty? A systematic review and metaanalysis | Discussion LIA reduces short-term pain compared to placebo and provides improved early postoperative pain relief compared to FNB but this is reversed by the first postoperative day. Future research should focus on uniform assessment and long-term follow-up of pain and function. | Medication | Regional Anesthesia and Pain Medicine. Conference: 40th Annual Regional Anesthesia and Acute Pain Medicine Meeting of the American Society of Regional Anesthesia and Pain Medicine, ASRA 2015;40(5): 2015 | 2015 |  | knee | arthroplasty |
| Smith 2011 | Meta-analysis and systematic review of clinical outcomes comparing mobile bearing and fixed bearing total knee arthroplasty | The results of this study found no significant differences between clinical outcomes of Mobile bearing (MB) and fixed bearing (FB) TKA. | Surgery | J Arthroplasty Dec 2011;26(8):1205-13 2011 Dec | 2011 |  | knee | arthroplasty |
| Sobieraj 2012 | Comparative effectiveness of low-molecular-weight heparins versus other anticoagulants in major orthopedic surgery: a systematic review and meta-analysis | CONCLUSION: According to moderate-to-high strength of evidence, LMWH prophylaxis provides additional benefits with less harm compared with UFH. With predominantly moderate strength of evidence, the balance of benefits to harms for factor Xa inhibitors or DTIs compared with LMWHs seems favorable. With predominantly low-to-moderate strength of evidence, the known benefits in total DVT and distal DVT with LMWHs versus VKAs may not be sufficient to counteract the increased risk of bleeding. | Medication | Pharmacotherapy Sep 2012;32(9):799-808 2012 Sep | 2012 |  | both | arthroplasty |
| Sobieraj 2012 | Prolonged versus standard-duration venous thromboprophylaxis in major orthopedic surgery a systematic review | Conclusion: Prolonged prophylaxis decreases the risk for venous thromboembolism, PE, and DVT while increasing the risk for minor bleeding in patients undergoing total hip replacement. Primary Funding Source: Agency for Healthcare Research and Quality. | Medication | Annals of Internal Medicine 2012;156(10):720-727 2012 | 2012 |  | hip | arthroplasty |
| Sobieraj 2013 | Comparative effectiveness of combined pharmacologic and mechanical thromboprophylaxis versus either method alone in major orthopedic surgery: A systematic review and meta-analysis | Conclusions. The risk of DVT was decreased with the use of combination prophylaxis versus pharmacologic prophylaxis alone in patients undergoing total hip replacement or total knee replacement. However, due to primarily insufficient evidence for most outcomes evaluated, the balance of benefits to harms of combined pharmacologic and mechanical prophylaxis versus either strategy alone cannot be determined in patients undergoing major orthopedic surgery. | Medication | Pharmacotherapy March 2013;33(3):275-283 2013 March | 2013 |  | both | arthroplasty |
| Song 2016 | Compressive cryotherapy versus cryotherapy alone in patients undergoing knee surgery: a meta-analysis | CONCLUSION: Current evidence suggests that compressive cryotherapy is beneficial to patients undergoing knee surgery at the early rehabilitation stage. At the last stage, the effectiveness of compressive cryotherapy and cryotherapy alone were found to be similar. | Surgery | Springerplus 2016;5(1):1074 2016 | 2016 |  | knee | not specified |
| Souzdalnitski 2014 | Ketamine in perioperative analgesia for knee surgeries: Review of evidence from randomized controlled trials | The majority of the studies confirmed that the utilization of ketamine in perioperative analgesia was associated with lower pain scores, reduced opioid use, improved knee joint mobility, and an increase in patient tolerance for physical therapy and rehabilitation. The techniques for ketamine administration and dosing varied significantly, which may explain the inconsistencies between the reports. In addition, some of the studies, even those of high quality, used nitrous oxide in both the study and control groups. Nitrous oxide has NMDA receptor antagonist properties, as does ketamine. None of the studies reported whether patients were taking methadone, dextromethorphan, memantine, or magnesium sulfate, which are NMDA receptor antagonists too. | Medication | Techniques in Regional Anesthesia and Pain Management 2014;18(4):130-136 2014 | 2014 |  | knee | not specified |
| Souzdalnitski 2015 | Ketamine as an adjunct for perioperative pain management for patients undergoing knee surgery | Discussion The data from the published clinical trials in this first qualitative outcome based analysis suggest that ketamine administration in patients undergoing knee surgery is associated with reduction of pain and improvement of functional status. | Medication | Regional Anesthesia and Pain Medicine. Conference: 14th Annual Pain Medicine Meeting of the American Society of Regional Anesthesia and Pain Medicine, ASRA 2015;41(2): 2015 | 2015 |  | knee | not specified |
| Souzdalnitski 2015 | Platelet rich plasma and knee surgery outcomes | CONCLUSIONS: The data from the published clinical trials in this first qualitative outcome-based analysis suggests that PRP and/or related autologous products in patients undergoing knee surgery may provide beneficial effects in reducing pain and improving the functional status and quality of life. The outcomes appeared to be dependent on techniques for autologous product preparations | Medication | Regional Anesthesia and Pain Medicine. Conference: 14th Annual Pain Medicine Meeting of the American Society of Regional Anesthesia and Pain Medicine, ASRA 2015;41(2): 2015 | 2015 |  | knee | not specified |
| Squizzato 2015 | Post-operative arterial thrombosis with non-vitamin K antagonist oral anticoagulants after total hip or knee arthroplasty | In conclusion, in RCTs of pharmacological VTE prophylaxis in patients undergoing THR or TKR, there was no difference in the incidence of post-operative AT among patients treated with NOACs, compared to those treated with enoxaparin. | Medication | Thromb Haemost Aug 2015;114(2):237-44 2015 Aug | 2015 |  | both | arthroplasty |
| Sukeik 2010 | Tranexamic acid in total hip replacements: A meta-analysis | Discussion and conclusion: TXA appears effective and safe in reducing blood loss and allogeneic blood transfusion in primary THR. | Medication | HIP International July-September 2010;20 (3)():345 2010 July-September | 2010 |  | hip | arthroplasty |
| Sukeik 2011 | Systematic review and meta-analysis of the use of tranexamic acid in total hip replacement | We identified 11 clinical trials which were suitable for detailed extraction of data. There were no trials that used TXA in revision THR. A total of seven studies (comprising 350 patients) were eligible for the blood loss outcome data. The use of TXA reduced intra-operative blood loss by a mean of 104 ml (95% confidence interval (CI) -164 to -44, p = 0.0006, heterogeneity I(2) 0%), postoperative blood loss by a mean of 172 ml (95% CI -263 to -81, p = 0.0002, heterogeneity I(2) 63%) and total blood loss by a mean of 289 ml (95% CI -440 to -138, p < 0.0002, heterogeneity I(2) 54%). TXA led to a significant reduction in the proportion of patients requiring allogeneic blood transfusion (risk difference -0.20, 95% CI -0.29 to -0.11, p < 0.00001, I(2) 15%). There were no significant differences in deep-vein thrombosis, pulmonary embolism, infection rates or other complications among the study groups. | Medication | J Bone Joint Surg Br Jan 2011;93(1):39-46 2011 Jan | 2011 |  | hip | arthroplasty |
| Sun 2013 | Intraarticular clonidine versus morphine for analgesia after arthroscopic knee surgery: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: Four randomized clinical trials including 156 patients were included. The results of the Meta analysis showed: 1 Visual analogue scale scores: there was no difference between intraarticular clonidine and morphine on the visual analogue scale scores at 1, 2, 4, 6, 12 and 24 hours after intraarticular; 2 Effective analgesia: intraarticular clonidine could provide longer effective analgesia than morphine [mean difference (MD)=200.34, 95% confidence interval (CI)(177.67, 223.00), P < 0.01]; 2Rate of postoperative analgesic requirements: there was no significant difference of the rate of postoperative analgesic requirements between the two drugs relative risk (RR)=1.05, 95%CI(0.67, 1.65), P=0.83]; 4The incidence of side effects had no significant differences. The current evidence shows that there is no difference between intraarticular rejection of clonidine and morphine on the pain intensity and the rate of postoperative analgesic requirements, but intraarticular clonidine provides longer effective analgesia, and the incidence of side effects is similar. Yet more randomized clinical trials with large sample size are required to explore the question clearly. | Medication | Chinese Journal of Tissue Engineering Research 22 Jan 2013;17(4):750-754 2013 22 Jan | 2013 |  | knee | arthroplasty |
| Sun 2014 | Intra-articular clonidine for post-operative analgesia following arthroscopic knee surgery: a systematic review and meta-analysis | CONCLUSIONS: A single dose of intra-articular clonidine has a definite analgesic effect, but the analgesic effect is mild and short lasting, which is just for 4 h after injection, and intra-articular clonidine alone could not provide sufficient post-operative analgesia following arthroscopic knee surgery. Post-operative hypotension may be the side effect that should be paid the most attention in the ambulatory setting. LEVEL OF EVIDENCE: II. | Medication | Knee Surg Sports Trauma Arth 2014;22(9):2076-84 2014 | 2014 |  | knee | arthroplasty |
| Sun 2015 | Single administration of intra-articular bupivacaine in arthroscopic knee surgery: a systematic review and meta-analysis | CONCLUSIONS: Current evidence shows that the use of single-administration IA bupivacaine is effective for postoperative pain management in patients undergoing arthroscopic knee surgery, with satisfactory short-term safety. Low-dose administration of IA bupivacaine 0.5% combined with epinephrine adjuvant in clinical practice should be performed. Additional high-quality RCTs with longer follow-up periods are required to examine the safety of single-administration IA bupivacaine. | Medication | BMC Musculoskelet Disord Feb 10 2015;16():21 2015 Feb 10 | 2015 |  | knee | arthroplasty |
| Tan 2013 | A meta-analysis of the effectiveness and safety of using tranexamic acid in primary unilateral total knee arthroplasty | CONCLUSIONS: Intravenous TEA could significantly reduce perioperative blood loss and blood transfusion requirements following primary unilateral TKA. Its application is not associated with increased risk of venous thromboembolisms or other adverse events. | Medication | J Surg Res Oct 2013;184(2):880-7 2013 Oct | 2013 |  | knee | arthroplasty |
| Tasker 2010 | Meta-analysis of low molecular weight heparin versus placebo in patients undergoing total hip replacement and post-operative morbidity and mortality since their introduction | CONCLUSION: Clinically relevant VTEs are a rare complication following THR. The lower risk of VTE narrows the risk benefit of potent pharmacological thromboprophylaxis. We do not support their use in patients undergoing THR without additional thromboembolic risk factors. | Medication | Hip Int Jan-Mar 2010;20(1):64-74 2010 Jan-Mar | 2010 |  | hip | arthroplasty |
| Teng 2014 | Periarticular multimodal drug injection in total knee arthroplasty | CONCLUSIONS: The current evidence suggests that periarticular multimodal drug injection in TKA provides short-term advantages in pain relief, straight leg raise and postoperative complications. | Medication | Knee Surg Sports Traumatol Arthrosc Aug 2014;22(8):1949-57 2014 Aug | 2014 |  | knee | arthroplasty |
| Thornley 2015 | A Systematic Review of the Evidence for Post-operative Antibiotic Prophylaxis in Primary Total Hip and Knee Arthroplasty | 26 randomized controlled trials were included in this systematic review to determine the efficacy of postoperative antibiotic prophylaxis following total knee or hip arthroplasty. This review also looked to also assess the current recommendations by orthopaedic associations on the topic of postoperative antibiotic administration. Evidence from included trials supported the use of perioperative antibiotics, but not postoperative administration. Current recommendations by the American Academy of Orthopaedic Surgeons (AAOS), the British Orthopaedic Association (BOA), and New Zealand Orthopaedic Association (NZOA) suggest postoperative antibiotic administration for a duration of no more than 24-36 hours postoperatively. | Medication | CMAJ Open 2015;(): 2015 | 2015 |  | both | arthroplasty |
| Thornley 2015 | Postoperative antibiotic prophylaxis in total hip and knee arthroplasty: a systematic review and meta-analysis of randomized controlled trials | INTERPRETATION: The available evidence did not show efficacy of postoperative antibiotic prophylaxis for the prevention of surgical-site infections in patients undergoing total hip or knee arthroplasty. Multicentred RCTs are likely to have an important impact on the confidence in the effect estimate and to change the estimate itself. | Medication | CMAJ Open Jul-Sep 2015;3(3):E338-43 2015 Jul-Sep | 2015 |  | both | arthroplasty |
| Tie 2016 | Effects of Tourniquet Release on Total Knee Arthroplasty | This study investigated the clinical outcomes of early and late tourniquet release (tourniquet release after cementing the prosthesis vs tourniquet release after wound closure and pressure dressing) in total knee arthroplasty (TKA). The study was conducted by searching PubMed, Embase, Web of Science, and Cochrane Central databases for articles on randomized controlled trials comparing early and late tourniquet release in primary TKA that were published from 1966 to March 2015. Relevant data were extracted, and the Physiotherapy Evidence Database (PEDro) Scale was used to assess the methodologic quality. Stata software (StatCorp, College Station, Texas) was used to perform a meta-analysis. Sixteen articles were included with a total of 1073 patients and 1097 knees. For blood loss, there were no significant differences between the 2 groups in calculated blood loss, decrease in hemoglobin level, drop in hematocrit level, and measured postoperative blood loss, although total measured blood loss and postoperative blood transfusion rate were significantly higher in the early tourniquet release group than in the late tourniquet release group. No statistical differences were found for operative time and incidence of deep venous thrombosis (DVT) between the 2 groups. Wound complication rate in the early tourniquet release group was significantly lower than in the late tourniquet release group. Primary TKA with early tourniquet release is similar to TKA with late tourniquet release regarding perioperative blood loss, operative time, and incidence of DVT. Early tourniquet release reduced the incidence of wound complications compared with late tourniquet release. [ | Surgery | Orthopedics Jul 01 2016;39(4):e642-50 2016 Jul 01 | 2016 |  | knee | arthroplasty |
| Tisi 2014 | Type of incision for below knee amputation | AUTHORS' CONCLUSIONS: There is no evidence to show a benefit of one type of incision over another. However, in the presence of wet gangrene a two-stage procedure leads to better primary stump healing compared to a one-stage procedure. The choice of amputation technique can, therefore, be a matter of surgeon preference taking into account factors such as previous experience of a particular technique, the extent of non-viable tissue, and the location of pre-existing surgical scars. | Surgery | Cochrane Database Syst Rev Apr 08 2014;(4):Cd003749 2014 Apr 08 | 2014 |  | knee | not specified |
| Tran 2015 | Local infiltration anesthesia with steroids in total knee arthroplasty: A systematic review of randomized control trials | This systematic review explores the functional outcomes of randomized control trials that have compared the use of LIA with and without steroids during TKA. Five studies with 412 patients met the inclusion criteria, 228 received local infiltration anesthesia with steroids (LIAS) and 184 received local infiltration anesthesia without steroids (LIAWS). The use of LIAS in management of postoperative TKA pain has been shown to decrease the length of hospital stay, time required to achieve straight leg raise, and pro-inflammatory signals in patients. Although there is no overwhelming data to suggest LIAS improves postoperative TKA pain, current literature does support its effectiveness in producing other favorable surgical outcomes. | Medication | J Orthop Oct 2015;12(Suppl 1):S44-50 2015 Oct | 2015 |  | knee | arthroplasty |
| Trojian 2016 | AMSSM scientific statement concerning viscosupplementation injections for knee osteoarthritis: importance for individual patient outcomes | Osteoarthritis (OA) is a disabling disease that produces severe morbidity reducing physical activity. Our position statement on treatment of knee OA with viscosupplementation injection (hyaluronic acid, HA) versus steroid (intra-articular corticosteroids, IAS) and placebo (intra-articular placebo, IAP) is based on the evaluation of treatment effect by examining the number of participants within a treatment arm who met the Outcome Measures in Rheumatoid Arthritis Clinical Trials-Osteoarthritis Research Society International (OMERACT-OARSI) criteria, which is different and more relevant than methods used in other reviews which examined if the average change across the treatment groups were clinically different. We performed a systematic literature search for all relevant articles from 1960 to August 2014 in the MEDLINE, EMBASE and Cochrane CENTRAL. We performed a network meta-analysis (NMA) of the relevant literature to determine if there is a benefit from HA as compared with IAS and IAP. 11 papers met the inclusion criteria from the search strategy. On NMA, those participants receiving HA were 15% and 11% more likely to respond to treatment by OMERACT-OARSI criteria than those receiving IAS or IAP, respectively (p<0.05 for both). In the light of the aforementioned results of our NMA, the American Medical Society for Sport Medicine recommends the use of HA for the appropriate patients with knee OA. | Medication | Br J Sports Med Jan 2016;50(2):84-92 2016 Jan | 2016 |  | knee | osteoarthritis |
| vanBodegom-Vos 2015 | Cell Salvage in Hip and Knee Arthroplasty: A Meta-Analysis of Randomized Controlled Trials | CONCLUSIONS: Looking at all trials, cell salvage still significantly reduced the RBC exposure rate and the volume of RBCs transfused in both THA and TKA. However, in trials published more recently (2010 to 2012), cell salvage reduced neither the exposure rate nor the volume of RBCs transfused in THA and TKA, most likely explained by changes in blood transfusion management. | Surgery | J Bone Joint Surg Am Jun 17 2015;97(12):1012-21 2015 Jun 17 | 2015 |  | both | arthroplasty |
| VanJonbergen 2010 | Isolated patellofemoral osteoarthritis: A systematic review of treatment options using the GRADE approach | Results We extracted data from 44 articles. The best available evidence for treatment of isolated patellofemoral osteoarthritis is sparse and of generally low methodological quality. Nonoperative treatment using physiotherapy (GRADE: high quality, weak recommendation for use), taping (GRADE: moderate quality, weak recommendation for use), or injection therapy (GRADE: very low quality, weak recommendation for use) may result in short-term relief. Joint-preserving surgical treatment may result in insufficient, unpredictable, or only short-term improvement (GRADE: low quality, weak recommendation against use). Total knee replacement with patellar resurfacing results in predictable and good, durable results (GRADE: low quality, weak recommendation for use). Outcome after patellofemoral arthroplasty in selected patients is good to excellent (GRADE: low quality, weak recommendation for use). Interpretation Methodologically good quality comparative studies, preferably using a patient-relevant outcome instrument, are needed to establish the optimal treatment strategy for patients with isolated patellofemoral osteoarthritis. | Surgery | Acta Orthopaedica April 2010;81(2):199-205 2010 April | 2010 |  | knee | osteoarthritis |
| Vasileiadis 2011 | COX-2 inhibitors for the prevention of heterotopic ossification after THA | COX-2 inhibitors do not prevent heterotopic ossification after THA significantly better than conventional NSAIDs, while they are advantageous regarding side effects. | Medication | Orthopedics 2011;34(6): 2011 | 2011 |  | hip | arthroplasty |
| Vavken 2011 | Modeling the "minimally invasive surgery effect" in total joint replacement | CONCLUSION: Our analysis provides strong evidence for an intrinsic "MIS effect" in total joint replacement. However, most effect sizes seem too small to have much clinical meaning. | Surgery | Surg Innov Sep 2011;18(3):268-78 2011 Sep | 2011 |  | Not specified | arthroplasty |
| Venker 2012 | Safety and efficacy of new anticoagulants for the prevention of venous thromboembolism after hip and knee arthroplasty | CONCLUSIONS: With the possible exception of apixaban, new anticoagulants that lower the risk of VTE, increase the risk of bleeding. Similarly, new anticoagulants that lower the risk of bleeding, raise the risk of VTE. | Medication | Pharmacotherapy October 2012;32 (10)():e290 2012 October | 2012 |  | both | arthroplasty |
| Voigt 2011 | Cemented all-polyethylene and metal-backed polyethylene tibial components used for primary total knee arthroplasty: a systematic review of the literature and meta-analysis of randomized controlled trials involving 1798 primary total knee implants | CONCLUSION: A less expensive all-polyethylene component as part of a total knee arthroplasty has results equivalent to those obtained with a cemented metal-backed tibial component. Using a total knee implant with a cemented all-polyethylene tibial component could save the healthcare system substantial money while obtaining equivalent results to more expensive cemented designs and materials. | Surgery | J Bone Joint Surg Am Oct 05 2011;93(19):1790-8 2011 Oct 05 | 2011 |  | knee | arthroplasty |
| Voigt 2011 | Hydroxyapatite (HA) coating appears to be of benefit for implant durability of tibial components in primary total knee arthroplasty | INTERPRETATION: In patients > 65 years of age, an HA-coated tibial implant may provide better durability than other forms of tibial fixation. Larger trials should be undertaken comparing the long-term durability, function, and adverse events of HA-coated implants with those of other porous-coated tibial implants in younger, more active OA patients. | Surgery | Acta Orthop Aug 2011;82(4):448-59 2011 Aug | 2011 |  | knee | arthroplasty |
| Voigt 2012 | Cemented all-polyethylene acetabular implants vs other forms of acetabular fixation. A systematic review and meta-analysis of randomized controlled trials (Provisional abstract) | Two independent reviewers collected the data from 6 randomized controlled trials. Appropriate statistical analysis was performed. There was no statistical difference in regard to the outcomes at various time points (≤3, 4-8, and ≥10 years) in the 907 implants evaluated. There does, however, appear to be a trend toward abject failure with cemented all-polyethylene acetabular component implants consistent with findings of increased radiolucencies more than 10 years out. The issue of increased radiolucencies over time and failure with these types of implants bears closer scrutiny. | Surgery | Journal of Arthroplasty 2012;27(8):1544-1553.e10 2012 | 2012 |  | hip | arthroplasty |
| Voigt 2015 | Systematic review and meta-analysis of randomized controlled trials of antibiotics and antiseptics for preventing infection in people receiving primary total hip and knee prostheses | Thirty (30) RCTs examined the effects of antibiotic and antiseptic prophylaxis on infections after primary total hip arthroplasty (THA) (total of 11,597 participants) and total knee arthroplasty (TKA) (total of 6,141 participants). For THA, preoperative systemic intravenous (i.v.) antibiotic prophylaxis may be effective in reducing the incidence of infection after THA from 6 months to >/=5 years. For TKA, there is no RCT evidence that antibiotics and/or antiseptics have any effect on infection rate. Preoperative systemic antibiotic prophylaxis in primary THA may be effective at reducing infection rate. There is no evidence that timing, route of administration, or concentration levels have an effect on reducing infections, adverse events, or costs in THA or TKA. Many of the trials included in this study were published in the 1980s and 1990s. Thus, it would be important to replicate a number of them based on current patient demographics and incidence of bacterial resistance. | Medication | Antimicrob Agents Chemother Nov 2015;59(11):6696-707 2015 Nov | 2015 |  | both | arthroplasty |
| Voorn 2016 | Erythropoietin to reduce allogeneic red blood cell transfusion in patients undergoing total hip or knee arthroplasty | Conclusion: Erythropoietin is effective in both hip and knee arthroplasty and can be considered as safe. However, the decision to use erythropoietin on a routine base should be balanced against its costs, which may be relatively high. | Medication | Vox Sanguinis 01 Oct 2016;111(3):219-225 2016 01 Oct | 2016 |  | both | arthroplasty |
| Wallis 2011 | Pre-operative interventions (non-surgical and non-pharmacological) for patients with hip or knee osteoarthritis awaiting joint replacement surgery - a systematic review and meta-analysis | Conclusion: Low to moderate evidence from mostly small RCTs demonstrated that pre-operative interventions, particularly exercise, reduce pain for patients with hip and knee osteoarthritis prior to joint replacement, and exercise with education programs may improve activity after hip replacement. | Non Surgical Intervention | Osteoarthritis and Cartilage December 2011;19(12):1381-1395 2011 December | 2011 |  | both | osteoarthritis |
| Wandel 2010 | Effects of glucosamine, chondroitin, or placebo in patients with osteoarthritis of hip or knee: network meta-analysis | 10 randomized control trials (3803 patients) were incorporated in this meta-analysis to assess the capability of chondroitin and glucosamine to effectively treat hip and knee osteoarthritis by comparing differences in pain and minimal joint space width between chondroitin, glucosamine, and placebo. Results of this study revealed chondroitin, glucosamine, or a combination of both, did not reduce joint pain or impact narrowing of joint space. | Medication | BMJ 2010;(): 2010 | 2010 |  | both | osteoarthritis |
| Wang 2013 | A systematic review and meta-analysis of antibiotic-impregnated bone cement use in primary total hip or knee arthroplasty | CONCLUSION: This meta-analysis had proven that the prophylactic use of AIBC could lower the deep infection rate in primary TJA, while AIBC did not show an improvement in reducing the superficial infection rate compared with the control. More sufficiently powered studies would be required to further evaluate the efficacy and safety of AIBC for primary TJA. | Surgery | PLoS One 2013;8(12):e82745 2013 | 2013 |  | both | arthroplasty |
| Wang 2014 | Is fibrin sealant effective and safe in total knee arthroplasty? A meta-analysis of randomized trials | In conclusion, the present meta-analysis indicates that the use of fibrin sealant was effective and safe as a hemostatic therapy for patients with TKA. | Surgery | J Orthop Surg Res May 16 2014;9():36 2014 May 16 | 2014 |  | knee | arthroplasty |
| Wang 2014 | Meta-analysis of limb and prosthesis alignment restoration after navigated total knee arthroplasty versus conventional total knee arthroplasty | RESULTS AND CONCLUSION: 19 randomized controlled trials involving 2 654 cases (3 392 knees) were included in this study. Meta-analysis showed that, the limb alignment restoration post computer-assisted navigation was significantly better than traditional total knee arthroplasty (3°, P < 0.000 01 and 2°, P=0.000 8). The 3° of femoral prosthesis coronal angle deviation post computer-assisted navigation was significantly superior to traditional total knee arthroplasty (P=0.002), while the 2° deviation had no significant difference between the two surgeries (P=0.290). The 3° deviation of femoral prosthesis sagittal angle post computer-assisted navigation was significantly better than traditional total knee arthroplasty (P=0.040); however, the 2° deviation had no significant difference between the two surgeries (P=0.950). 3° and 2°tibial prosthesis coronal angle deviation post computer-assisted navigation was significantly superior to traditional total knee arthroplasty (3°, P=0.030); the 2° deviation had no significant difference between the two surgeries (P=0.260). Computer-assisted navigation has better limb alignment, femoral and tibial prosthesis alignment 3° deviation than the traditional total knee arthroplasty, but the 2° deviation of femoral prosthesis coronal angle, femoral prosthesis sagittal angle, and tibial prosthesis sagittal angle had no significant difference between the two surgeries. © 2014 Journal of Clinical Rehabilitative Tissue Engineering Research. | Surgery | Chinese Journal of Tissue Engineering Research 2014;18(35):5707-5714 2014 | 2014 |  | knee | arthroplasty |
| Wang 2015 | Single-dose intra-articular bupivacaine plus morphine after knee arthroscopic surgery: a meta-analysis of randomised placebo-controlled studies | CONCLUSIONS: The administration of single-dose intra-articular bupivacaine plus morphine after knee arthroscopic surgery is effective for pain relief, and its short-term side effects remain similar to saline placebo. | Medication | BMJ Open Jun 15 2015;5(6):e006815 2015 Jun 15 | 2015 |  | knee | arthroplasty |
| Wang 2016 | Topical versus intravenous tranexamic acid in total knee arthroplasty: a meta-analysis of randomized controlled trials | Conclusion: Our meta-analysis of 16 RCTs revealed that both topical TXA and intravenous TXA are effective in reducing blood loss and transfusion rates in patients who underwent TKA. | Medication | International Orthopaedics 11 Nov 2016;():1-10 2016 11 Nov | 2016 |  | knee | arthroplasty |
| Wang 2017 | Adductor canal block versus femoral nerve block for total knee arthroplasty: a meta-analysis of randomized controlled trials | Femoral nerve blocks (FNB) can provide effective pain relief but result in quadriceps weakness with increased risk of falls following total knee arthroplasty (TKA). Adductor canal block (ACB) is a relatively new alternative providing pure sensory blockade with minimal effect on quadriceps strength. The meta-analysis was designed to evaluate whether ACB exhibited better outcomes with respect to quadriceps strength, pain control, ambulation ability, and complications. PubMed, Embase, Web of Science, Wan Fang, China National Knowledge Internet (CNKI) and the Cochrane Database were searched for RCTs comparing ACB with FNB after TKAs. Of 309 citations identified by our search strategy, 12 RCTs met the inclusion criteria. Compared to FNB, quadriceps maximum voluntary isometric contraction (MVIC) was significantly higher for ACB, which was consistent with the results regarding quadriceps strength assessed with manual muscle strength scale. Moreover, ACB had significantly higher risk of falling versus FNB. At any follow-up time, ACB was not inferior to FNB regarding pain control or opioid consumption, and showed better range of motion in comparison with FNB. ACB is superior to the FNB regarding sparing of quadriceps strength and faster knee function recovery. It provides pain relief and opioid consumption comparable to FNB and is associated with decreased risk of falls. | Medication | Sci Rep Jan 12 2017;7():40721 2017 Jan 12 | 2017 |  | knee | arthroplasty |
| Wei 2014 | Single-dose intra-articular bupivacaine after knee arthroscopic surgery: a meta-analysis of randomized placebo-controlled studies | CONCLUSIONS: On the basis of the currently available literature, single-dose intra-articular bupivacaine was shown to be significantly better than placebo at relieving pain after knee arthroscopic surgery. More high-quality randomized controlled trials with long follow-up are highly required for examining the safety of single-dose intra-articular bupivacaine. Besides, routine use of single-dose intra-articular bupivacaine is still an effective way for pain management after knee arthroscopic surgery. | Medication | Knee Surg Sports Traumatol Arthrosc Jul 2014;22(7):1517-28 2014 Jul | 2014 |  | knee | arthroplasty |
| Wei 2015 | The effectiveness and safety of tranexamic acid in total hip or knee arthroplasty: a meta-analysis of 2720 cases | CONCLUSION: To our knowledge, this meta-analysis is more powerful and persuasive than any other published before. It suggests that the use of TXA reduced the risk of blood loss and the need for allogeneic blood transfusion significantly, without apparent increased risk of DVT or PE complications. | Medication | Transfus Med Jun 2015;25(3):151-62 2015 Jun | 2015 |  | both | arthroplasty |
| Wu 2013 | Efficacies of different preparations of glucosamine for the treatment of osteoarthritis: a meta-analysis of randomised, double-blind, placebo-controlled trials | 19 double-blind, placebo-controlled randomized controlled trials were included in this meta-analysis investigating the effect of glucosamine sulfate and glucosamine hydrochloride in the treatment of knee or hip osteoarthritis. Results indicated that neither preparation had a significant effect for pain reduction. Functional recovery appeared to be improved with glucosamine sulfate, specifically after 6 months of follow-up. Functional recovery was not examined in trials investigating the effect of glucosamine hydrochloride. | Medication | Int J Clin Pract 2013;(): 2013 | 2013 |  | both | osteoarthritis |
| Wu 2015 | Is tranexamic acid clinically effective and safe to prevent blood loss in total knee arthroplasty? A meta-analysis of 34 randomized controlled trials | 34 randomized controlled trials (2,594 patients) were used in this meta-analysis analyzing the safety and efficacy of tranexamic acid (TXA) in patients undergoing primary total knee arthroplasty (TKA). Pooled results demonstrated intravenous (IV) and intraarticular (IA) use of TXA significantly reduced total blood loss, postoperative blood loss, hemoglobin (Hb) loss, and blood transfusion without increasing the risk of deep vein thrombosis (DVT) or other adverse effects. | Medication | Eur J Orthop Surg Traumatol 2015;(): 2015 | 2015 |  | knee | arthroplasty |
| Wu 2016 | Liposome bupivacaine for pain control after total knee arthroplasty: a meta-analysis | CONCLUSIONS: Based on the current meta-analysis, LB as a novel anesthetic formulation administration following TKA demonstrated better pain control; however, the sample size was limited, and further RCTs are needed to identify the effects of LB after TKA. | Medication | J Orthop Surg Res Jul 22 2016;11(1):84 2016 Jul 22 | 2016 |  | knee | arthroplasty |
| Wu 2017 | Effect of different postoperative limb positions on blood loss and range of motion in total knee arthroplasty: An updated meta-analysis of randomized controlled trials | CONCLUSION: This meta-analysis suggests that mild- and high-flexion positions have similar efficacy in reducing total blood loss. In addition, subgroup analysis indicates that the mild-flexion position is superior in decreasing hidden blood loss compared with high-flexion; the high-flexion position is superior to mild-flexion in reducing transfusion requirements and improving postoperative ROM. Thus, the use of the high-flexion position is a viable option to reduce blood loss in patients following primary TKA without increasing the risk of wound-related infection, DVT or PE. | Surgery | Int J Surg Jan 2017;37():15-23 2017 Jan | 2017 |  | knee | arthroplasty |
| Wyles 2015 | There Are No Differences in Short- to Mid-term Survivorship Among Total Hip-bearing Surface Options: A Network Meta-analysis | CONCLUSIONS: Current published evidence does not support survivorship differences among commonly used bearing surfaces in patients younger than age 65 years undergoing THA at short- to mid-term followup. Long-term RCT data will be needed to determine if a survivorship benefit is realized in younger, more active patients over time. LEVEL OF EVIDENCE: Level I, therapeutic study. | Surgery | Clin Orthop Relat Res Jun 2015;473(6):2031-41 2015 Jun | 2015 |  | hip | not specified |
| Xie 2015 | A Single-Dose Intra-Articular Morphine plus Bupivacaine versus Morphine Alone following Knee Arthroscopy: A Systematic Review and Meta-Analysis | CONCLUSION: The present study suggested that the administration of single-dose intra-articular morphine plus bupivacaine provided better pain relief during the immediate period (0-2h), and lengthened the time interval before the first request for analgesic rescue without increasing the short-term side effects when compared with morphine alone. LEVEL OF EVIDENCE: Level I, meta-analysis of Level I studies. | Medication | PLoS One 2015;10(10):e0140512 2015 | 2015 |  | knee | arthroplasty |
| Xie 2015 | Does patellar denervation reduce post-operative anterior knee pain after total knee arthroplasty? | CONCLUSION: The best currently available evidence suggests that patellar denervation can significantly reduce anterior knee pain incidence and improve early clinical outcomes after TKA. However, after a prolonged period of follow-up, this advantage seems to disappear. Even so, the use of patellar denervation in primary TKA is recommended because it is safe and produces good early clinical outcomes. LEVEL OF EVIDENCE: Therapeutic study, Level II. | Surgery | Knee Surg Sports Traumatol Arthrosc Jun 2015;23(6):1808-15 2015 Jun | 2015 |  | knee | arthroplasty |
| Xie 2015 | Is postoperative cell salvage necessary in total hip or knee replacement? A meta-analysis of randomized controlled trials | CONCLUSION: The results strengthen the fact that postoperative cell salvage is effective and safe to reduce the rate of transfusion after TKR and THR. As the relatively poor methodological quality and heterogeneity, further research is needed to confirm its safety and cost-effectiveness. | Surgery | Int J Surg Sep 2015;21():135-44 2015 Sep | 2015 |  | both | arthroplasty |
| Xie 2016 | Postoperative autotransfusion drain after total hip arthroplasty: a meta-analysis of randomized controlled trials | Our findings suggest that PATD is effective in reducing the rate of allogenic transfusion. However, the included studies are inadequately powered to conclusively determine the safety of this technique. | Surgery | Sci Rep Jul 01 2016;6():27461 2016 Jul 01 | 2016 |  | hip | arthroplasty |
| Xie 2016 | The efficacy and safety of postoperative retransfusion drain following total hip arthroplasty: a Meta-analysis. [Chinese] | CONCLUSIONS: PRD in reducing requirement of blood transfusion following THA is effective and safe when compared with ordinary vacuum drainage, but the benefit is not found when compared with no drainage.And more robust evidence is needed to confirm this result. | Surgery | Zhonghua wai ke za zhi [Chinese journal of surgery] 01 Feb 2016;54(2):108-113 2016 01 Feb | 2016 |  | hip | arthroplasty |
| Xu 2013 | Mini-incision versus standard incision total hip arthroplasty regarding surgical outcomes: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: Although no definite overall conclusion can be arrived at on whether MI THA is superior to SI THA, posterior MI THA clearly result in a significant decrease in surgical duration, blood loss and hospital stay. It seems to be a safe minimally invasive surgical procedure without increasing the risk of component malposition or complications. | Surgery | PLoS One 2013;8(11):e80021 2013 | 2013 |  | hip | arthroplasty |
| Xu 2014 | Efficacy and safety of single-dose local infiltration of analgesia in total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSIONS: The current evidence shows that the use of single-dose LIA is effective for postoperative pain management in TKA patients, with satisfactory short-term safety. More high-quality RCTs with long-term follow-ups are required for examining the long-term safety of single-dose LIA. LEVEL OF EVIDENCE: I, II. | Medication | Knee Jun 2014;21(3):636-46 2014 Jun | 2014 |  | knee | arthroplasty |
| Xu 2014 | Minimally invasive midvastus versus standard parapatellar approach in total knee arthroplasty: a meta-analysis of randomized controlled trials | CONCLUSION: This meta-analysis found that compared with the standard parapatellar approach, the mini-midvastus approach had early advantages in the VAS and ROM, but had the disadvantage in the operative time. LEVEL OF EVIDENCE: Therapeutic study Level I. | Surgery | PLoS One 2014;9(5):e95311 2014 | 2014 |  | knee | arthroplasty |
| Xu 2015 | Topical administration of tranexamic acid in total hip arthroplasty: A meta-analysis of Randomized Controlled Trials | Topical administration of TXA could significantly reduce total blood loss and transfusion requirements in primary THA, without increased thromboembolic complications. | Medication | Drug Discov Ther Jun 2015;9(3):173-7 2015 Jun | 2015 |  | hip | arthroplasty |
| Xue 2009 | Selective COX-2 inhibitor versus nonselective COX-1 and COX-2 inhibitor in the prevention of heterotopic ossification after total hip arthroplasty: a meta-analysis of randomised trials | Four randomized controlled trials, with 808 patients, were included in this meta-analysis to compare selective COX-2 inhibitors and nonselective NSAIDs in preventing heterotopic ossification (HO) after total hip arthoplasty. Selective COX-2 inhibitors appear to be as effective as NSAIDs but considering the gastrointestinal side-effects of non-selective NSAIDs, selective COX-2 inhibitors are recommended. However, further high-quality evidence is still needed to confirm these findings. | Medication | Int Orthop 2009;(): 2009 | 2009 |  | hip | arthroplasty |
| Xue 2011 | Selective COX-2 inhibitor versus nonselective COX-1 and COX-2 inhibitor in the prevention of heterotopic ossification after total hip arthroplasty: a meta-analysis of randomised trials (Structured abstract) | Considering the gastrointestinal side effects of nonselective NSAIDs, we recommend selective COX-2 inhibitors for the prevention of HO after THA. However, future well-designed, randomised controlled trials are still needed to further confirm our results. | Medication | International Orthopaedics 2011;35(1):3-8 2011 | 2011 |  | hip | arthroplasty |
| Yan 2016 | Comparison of local infiltration and epidural analgesia for postoperative pain control in total knee arthroplasty and total hip arthroplasty: A systematic review and meta-analysis | Nine trials involving 537 patients met the inclusion criteria. LIA provides better pain relief and larger range of motion in TKA patients compared to epidural analgesia at the late postoperative period. No significant difference was observed in regard to the length of stay and complications. The current evidence shows that the use of local infiltration is effective for postoperative pain management in TKA patients. More high-quality randomized controlled trials with long-term follow-up are required for examining the long-term efficacy and safety of local infiltration. | Medication | Bosn J Basic Med Sci Nov 10 2016;16(4):239-246 2016 Nov 10 | 2016 |  | knee | arthroplasty |
| Yang 2011 | Efficacy and safety of iron supplementation for the elderly patients undergoing hip or knee surgery: a meta-analysis of randomized controlled trials | Six studies (855 patients) were identified to investigate the therapeutic effects of iron supplementation for elderly patients undergoing hip or knee surgery. These patients were found to have increased hemoglobin levels following iron supplementation. However, there were no significant differences on the length of hospital stay, morbidity, 1 month mortality, infection rate, the rate and volume of allogeneic blood transfusions, and the adverse drug effects between patients who received additional iron and those without. Therefore, iron supplementation was found to be safe and effective in treating anemia for elderly patients undergoing hip or knee surgery. | Medication | J Surg Res 2011;(): 2011 | 2011 |  | both | not specified |
| Yang 2011 | Rivaroxaban versus enoxaparin for prevention of deep venous thrombosis after major orthopedic operation: A systematic review | Conclusion Rivaroxaban is effective in preventing deep venous thrombosis after major orthopedic operation and can significantly reduce the risk of postoperative deep vein thrombosis. | Medication | Chinese Journal of Evidence-Based Medicine 2011;11(8):940-945 2011 | 2011 |  | Not specified | not specified |
| Yang 2012 | Effectiveness and safety of tranexamic acid in reducing blood loss in total knee arthroplasty: a meta-analysis | CONCLUSIONS: The meta-analysis shows that the use of tranexamic acid for patients undergoing total knee arthroplasty is effective and safe for the reduction of blood loss. | Medication | J Bone Joint Surg Am Jul 03 2012;94(13):1153-9 2012 Jul 03 | 2012 |  | knee | arthroplasty |
| Yang 2013 | Analgesia after arthroscopic surgery: Randomly controlled Meta-analysis on intra-articular injection of bupivacaine placebo. [Chinese] | Results and Conclusion: Eighteen studies (n=934) were included (461 cases in bupivacaine group and 473 cases in the placebo control group). The Meta-analysis results showed the visual analog scale score of the bupivacaine group was lower than that of the placebo control group (weighted mean difference: -1.39, 95% confidence interval: -2.17 to -0.61, P < 0.000 01), and the number of patients required supplementary analgesia was less than the placebo control group (relative risk: 0.84, 95% confidence interval: 0.62 to 1.66, P=0.010). The time from first supplementary analgesia to postoperative intra-articular injection in the bupivacaine group was longer that in the placebo control group (weighted mean difference: 157.72, 95% confidence interval: 16.43 to 299.01, P < 0.000 01). There was no significant difference in the incidence of side effect between two groups (relative risk: 0.64, 95% confidence interval: 0.29 to 1.44, P=0.48). On the basis of the currently available literature, the intra-articular of bupivacaine after arthroscopic surgery can significantly relieve pain without increasing the adverse reactions when compared with the placebo control group. | Medication | Chinese Journal of Tissue Engineering Research 27 Aug 2013;17(35):6306-6313 2013 27 Aug | 2013 |  | Not specified | arthroplasty |
| Yang 2014 | Bipolar sealer not superior to standard electrocautery in primary total hip arthroplasty: a meta-analysis | CONCLUSION: The available evidence suggests that the use of bipolar sealer was not superior to standard electrocautery in patients undergoing primary THA. The use of bipolar sealer is not recommended in primary THA. | Surgery | J Orthop Surg Res Oct 10 2014;9():92 2014 Oct 10 | 2014 |  | hip | arthroplasty |
| Yang 2015 | Single-dose intra-articular bupivacaine plus morphine versus bupivacaine alone after arthroscopic knee surgery: a meta-analysis of randomized controlled trials | Conclusions: On the basis of the currently available literature, this study is the first to suggest that single-dose intra-articular bupivacaine plus morphine was shown to be significantly better than bupivacaine alone at relieving post-operative pain after arthroscopic knee surgery without increasing the short-term side effects. Routine use of single-dose intra-articular bupivacaine plus morphine is an effective way for pain management after arthroscopic knee surgery. Level of evidence: II. | Medication | Knee Surgery, Sports Traumatology, Arthroscopy 2015;(): 2015 | 2015 |  | knee | arthroplasty |
| Yang 2016 | Patellar non-eversion in primary TKA reduces the complication rate | CONCLUSION: The patellar non-eversion approach offers a shorter length of hospitalization and lower incidence of postoperative complications, but requires more operative time. The merits of patellar non-eversion for recovery of knee function remain controversial, and more high-quality RCTs are needed to draw clear conclusions. In general, avoidance of patellar eversion is recommended when exposing the knee joint for TKA. | Surgery | Knee Surg Sports Traumatol Arthrosc Mar 2016;24(3):921-30 2016 Mar | 2016 |  | knee | arthroplasty |
| Yi 2014 | The use of pneumatic tourniquet in total knee arthroplasty: a meta-analysis | Conclusions: Our results indicate that tourniquet application could reduce surgical time, intraoperative blood loss and total blood loss, but increases postoperative total blood loss. With respect to postoperative complications, DVT and surgical site infection rates are relatively augmented in the tourniquet group. Background: Pneumatic tourniquet use in total knee arthroplasty (TKA) is always a controversial issue. The aim of the present study is to assess the effectiveness and safety of its use in patients receiving primary unilateral TKA, and to explore the most safe and effective protocols. Materials and methods: This review was based on cochrane methodology for conducting meta-analysis. Only randomized controlled trials (RCTs) were eligible for this study. The participants were adults who had undergone primary unilateral TKA. The Review Manager Database (RevMan version 5.0, The Cochrane Collaboration 2008) was used to analyze the dates of the selected studies. | Surgery | Archives of Orthopaedic and Trauma Surgery 19 Sep 2014;134(10):1469-1476 2014 19 Sep | 2014 |  | knee | arthroplasty |
| Yin 2014 | A meta-analysis of tranexamic acid to reduce blood loss in total hip arthroplasty. [Chinese] | RESULTS AND CONCLUSION: A total of 16 randomized controlled trials involving 884 patients were included. Meta-analysis results showed that, tranexamic acid reduced total blood loss of patients after total hip arthroplasty, by a mean of 261.42 mL (95%CI-334.25 to-188.59, P < 0.000 01), intraoperative blood loss by a mean of 135.04 mL (95%CI-223.31 to-46.77, P < 0.01) and postoperative blood loss by a mean of 159.70 mL (95%CI-217.06 to-102.34, P < 0.000 01). Tranexamic acid also led to a significant reduction in transfusion requirements (RR 0.46, 95%CI 0.36 to 0.59, P < 0.000 01). There was no significant difference in the risk of deep vein thrombosis between the two groups. Tranexamic acid significantly reduces blood loss and blood transfusion requirements in patients undergoing total hip arthroplasty, and cannot increase the risk of deep vein thrombosis. | Medication | Chinese Journal of Tissue Engineering Research 2014;18(17):2752-2757 2014 | 2014 |  | hip | arthroplasty |
| Yin 2014 | Local infiltration analgesia for postoperative pain after hip arthroplasty: a systematic review and meta-analysis | The results suggest that LIA can be used for controlling pain after HA because of its efficacy in reducing pain scores and thus can reduce analgesic consumption on the first day without increased risk of AEs. PERSPECTIVE: This is the first pooled database meta-analysis to assess the analgesic effects and safety of LIA in controlling pain after HA. The derived information offers direct evidence that LIA can be used for patients undergoing HA because of its ability to reduce pain scores and analgesic consumption without any additional AEs. | Medication | J Pain Aug 2014;15(8):781-99 2014 Aug | 2014 |  | hip | arthroplasty |
| Yin 2015 | Is there any difference in survivorship of total hip arthroplasty with different bearing surfaces? A systematic review and network meta-analysis | CONCLUSIONS: The present evidence indicated the similar performance in survivorship among CoC, CoPc, CoPxl and MoPxl bearing implants, and that all likely have superiority compared with the MoM and MoPc bearing implants in THA procedures. Long-term RCT data are required to confirm these conclusions and better inform clinical decisions. | Surgery | Int J Clin Exp Med 2015;8(11):21871-85 2015 | 2015 |  | hip | arthroplasty |
| Yip 2010 | The effect of continuous passive motion on range of motion after total knee arthroplasty-a systematic review | Conclusion: Evidence appraised has shown that CPM did increase ROM for patients post TKA. However, a difference of 2.87 degrees in active knee flexion is probably too small to be clinically significant. There is a need to review the routine use of CPM for patients post TKA. | Physio/Rehab | Proceedings of Singapore Healthcare June 2010;19():S29 2010 June | 2010 |  | knee | arthroplasty |
| Yoshida 2006 | Ximelagatran versus warfarin for prophylaxis of venous thromboembolism in major orthopedic surgery: Systematic review of randomized controlled trials | Conclusions: Ximelagatran appears to be more effective than warfarin when used in higher dosages (36 mg b.i.d.), but at the expense of increased frequency of ALT elevation during the follow-up period. | Medication | Sao Paulo Medical Journal November 2006;124(6):355-361 2006 November | 2006 |  | Not specified | not specified |
| Yoshida 2013 | Systematic review of randomized controlled trials of new anticoagulants for venous thromboembolism prophylaxis in major orthopedic surgeries, compared with enoxaparin | Conclusions: NACs can be considered alternatives to conventional thromboprophylaxis regimens in patients undergoing elective major orthopedic surgery, depending on clinical characteristics and cost-effectiveness. The knowledge of some differences concerning efficacy or safety profile, pointed out in this systematic review, along with the respective limitations, may be useful in clinical practice. | Medication | Annals of Vascular Surgery April 2013;27(3):355-369 2013 April | 2013 |  | Not specified | not specified |
| Yu 2015 | Safety and Efficacy of Tranexamic Acid in Total Knee Arthroplasty | CONCLUSIONS: This meta-analysis demonstrates that the application of TA in TKA could decrease total blood loss and transfusion rate. On the other hand, the application of TA is not associated with high incidence of DVT or other adverse events. TA should be taken into account in routine use in primary knee arthroplasty to benefit the patients. | Medication | Med Sci Monit Oct 14 2015;21():3095-103 2015 Oct 14 | 2015 |  | knee | arthroplasty |
| Yuan 2015 | A meta-analysis of countious femoral nerve block versus continuous epidural analgesia after total knee arthroplasty. [Chinese] | RESULTS AND CONCLUSION: A total of 12 randomized controlled trials (4 English articles and 8 Chinese articles) involving 680 patients were included. There were 343 patients with countious femoral nerve block and 337 patients with continuous epidural analgesia. Meta-analysis results revealed that no significant differences in visual analog scale scores were detected between the countious femoral nerve block and continuous epidural analgesia groups at 6, 12, 24 and 48 hours after total knee arthroplasty. However, compared with the continuous epidural analgesia group, countious femoral nerve block could decrease the incidences of nausea/vomiting (RR=0.36, 95% CI: 0.21 0.63, P=0.003), urine retention (RR=0.08, 95% CI: 0.04 0.16, P < 0.001) and dizziness (RR=0.24, 95% CI: 0.06 0.99, P=0.05). These results indicate that compared with epidural analgesia, countious femoral nerve block after total knee arthroplasty provided a strong analgesia effect, contributed to early functional training, had less adverse reactions, and was a safe and effective analgesic method. | Medication | Chinese Journal of Tissue Engineering Research 2015;19(35):5728-5734 2015 | 2015 |  | knee | arthroplasty |
| Yuan 2016 | The combined effect of administration of intravenous and topical tranexamic acid on blood loss and transfusion rate in total knee arthroplasty: Combined tranexamic acid for TKA | CONCLUSIONS: Compared with placebo or the single-dose TXA, the combined use of IV and IA TXA provided significantly better results with respect to all outcomes related to post-operative blood loss without increasing the risk of thromboembolic complications in TKA.Cite this article: Z. F. Yuan, H. Yin, W. P. Ma, D. L. Xing. The combined effect of administration of intravenous and topical tranexamic acid on blood loss and transfusion rate in total knee arthroplasty: combined tranexamic acid for TKA. | Medication | Bone Joint Res Aug 2016;5(8):353-61 2016 Aug | 2016 |  | knee | arthroplasty |
| Yuan 2016 | The use of bisphosphonate in the treatment of osteonecrosis of the femoral head: a meta-analysis of randomized control trials | CONCLUSIONS: The current analysis does not support the use of bisphosphonates for ONFH. As potential serious adverse effects are associated with these drugs, only limited use can be recommended. | Medication | Osteoporos Int Jan 2016;27(1):295-9 2016 Jan | 2016 |  | hip | not specified |
| Yue 2015 | Effect of Topical Tranexamic Acid in Reducing Bleeding and Transfusions in TKA | Twelve trials with a total of 1179 knees were included. The results revealed that the application of topical TXA in TKA significantly reduced total blood loss by a mean of 280.65 mL and reduced transfusions without increasing the risks of deep venous thrombosis and pulmonary embolism. Topical TXA also reduced postoperative drain output by a mean of 194.59 mL and lowered postoperative hemoglobin drop by a mean of 0.66 g/dL. In addition, subgroup analysis showed that high-concentration TXA may be better at reducing bleeding and transfusions than low-concentration TXA. Therefore, the authors concluded that topical TXA can effectively reduce bleeding and transfusion rate in TKA without increasing the risk of deep venous thrombosis and pulmonary embolism, and high-concentration (20 mg/mL or more) topical TXA is recommended. | Medication | Orthopedics May 2015;38(5):315-24 2015 May | 2015 |  | knee | arthroplasty |
| Yun 2015 | Local infiltration analgesia versus femoral nerve block in total knee arthroplasty: a meta-analysis | DISCUSSION: LIA may be the better choice in the pain management of TKA for it could achieve fast pain relief and is easier to perform than FNB for patients with TKA. LEVEL OF EVIDENCE: Level II, meta-analysis and systematic review. | Medication | Orthop Traumatol Surg Res Sep 2015;101(5):565-9 2015 Sep | 2015 |  | knee | arthroplasty |
| Zamora 2013 | Systematic review of computer-navigated total knee arthroplasty | CONCLUSIONS: At present, it is unclear whether the significant improvements shown in radiological outcomes after CNTKA translate to measurable clinical benefits. Although an assumption could be made that an improvement in post-operative alignment should lead to an improvement in patient-related outcomes, the available literature did not clearly show this. Further, long-term trials are required to address this issue. | Surgery | ANZ J Surg Jan 2013;83(1-2):22-30 2013 Jan | 2013 |  | knee | arthroplasty |
| Zan 2015 | No difference in clinical outcome between patella eversion and lateral retraction in total knee arthroplasty: a systemic review and meta-analysis | CONCLUSIONS: Patella eversion could decrease the duration of the surgery; nevertheless, the length of skin incision was longer; no significant difference was found on other measurements, especially the quadriceps strength and complications which were concerned. Patella eversion and patella lateral retraction could achieve similar clinical outcomes. LEVEL OF EVIDENCE: Systematic review and meta-analysis, Level I. | Surgery | Knee Surg Sports Traumatol Arthrosc Jun 2015;23(6):1791-8 2015 Jun | 2015 |  | knee | arthroplasty |
| Zan 2015 | Releasing of Tourniquet Before Wound Closure or not in Total Knee Arthroplasty: A Meta-Analysis of Randomized Controlled Trials | The results of this analysis demonstrated that removal of the pneumatic tourniquet prior to wound closure significantly increased blood loss, although it lowered the risk of complications among patients when compared to tourniquet removal following wound closure. | Surgery | J Arthroplasty 2015;(): 2015 | 2015 |  | knee | arthroplasty |
| Zeng 2011 | A systematic review assessing the effectiveness of alendronate in reducing periprosthetic bone loss after cementless primary THA | This systematic review suggests that alendronate has a beneficial effect with regard to preservation of periprosthetic bone short-term after cementless THA. However, the studies could not provide enough evidence that the positive effect noted in the early postoperative period is maintained long-term. A longer follow-up with a larger number of participants is needed to confirm the outcome of cementless THA patients treated with alendronate. | Medication | Orthopedics Apr 11 2011;34(4): 2011 Apr 11 | 2011 |  | hip | arthroplasty |
| Zeng 2015 | Comparison between 200 mg QD and 100 mg BID oral celecoxib in the treatment of knee or hip osteoarthritis | Pooled results demonstrated no significant difference between the 200â€‰mg QD and 100â€‰mg BID group in terms of pain intensity and function improvement. However, 100 mg BID oral celecoxib is preferred over the 200 mg QD oral celecoxib dosage regimen due to lower risk of abdominal pain and lower incidence of skin adverse effects. | Medication | Sci Rep 2015;(): 2015 | 2015 |  | both | osteoarthritis |
| Zeng 2015 | Extramedullary versus intramedullary tibial alignment technique in total knee arthroplasty: A meta-analysis of randomized controlled trials | The aim of this study was to establish whether the use of an extramedullary or intramedullary tibial cutting guide leads to superior mechanical leg axis and implant positioning. A meta-analysis of six randomized controlled trials including 350 knees was performed. For the mechanical axis, frontal tibial component angle and tibial slope, there were no significant differences in the mean values or the number of outliers (+/-3 degrees ) between the extramedullary and intramedullary groups. A reduced tourniquet time was associated with the intramedullary guide. No significant difference in the complication rate was noted between the two groups. Neither extramedullary nor intramedullary tibial alignment was more accurate in facilitating the tibial cut. Use of an intramedullary guide results in a shorter tourniquet time and exhibits a similar complication rate as the extramedullary guide. | Surgery | Clinics (Sao Paulo) Oct 2015;70(10):714-9 2015 Oct | 2015 |  | knee | arthroplasty |
| Zhai 2009 | Systematic review of patellar resurfacing or nonresurfacing in total knee arthroplasty. [Chinese] | Conclusion: The long-term rate of reoperations in total knee arthroplasty performed with patellar resurfacing was lower than that without patellar resurfacing. There were no significant differences in the terms of prevalence of postoperative anterior knee pain, patient satisfaction, and the improvement in various knee scores between the resurfaced and the nonresurfaced groups. The results of this systematic review should be explained prudently because of some limitations of included trials. For more reliable conclusions, more trials with high quality on methodology are needed. | Surgery | Journal of Clinical Rehabilitative Tissue Engineering Research 26 Mar 2009;13(13):2547-2552 2009 26 Mar | 2009 |  | knee | arthroplasty |
| Zhang 2011 | Clinical efficacies of resurfacing and non-resurfacing patella in total knee arthroplasty for osteoarthritis: A meta-analysis | Conclusion: Patellar resurfacing can not reduce the incidence of anterior knee pain, revision rate, or reoperation rate in patients undergoing primary TKA, and therefore can not contribute to a better outcome in these patients. | Surgery | Academic Journal of Second Military Medical University 2011;32(5):504-509 2011 | 2011 |  | knee | arthroplasty |
| Zhang 2012 | [Closed suction drainage or non-drainage for total knee arthroplasty: a meta-analysis]. [Chinese] | Based on the current evidence, no obvious advantage is demonstrated for closed suction drainage, in comparison with non-drainage for TKA. | Surgery | Zhonghua wai ke za zhi [Chinese journal of surgery] Dec 2012;50(12):1119-1125 2012 Dec | 2012 |  | knee | arthroplasty |
| Zhang 2012 | The effect of tranexamic acid on blood loss and use of blood products in total knee arthroplasty: a meta-analysis | CONCLUSION: Meta-analysis indicates that TXA may reduce post-operative, total blood loss and transfusion in patients undergoing TKA. TXA led to a significant reduction in the proportion of patients requiring blood transfusion. LEVEL OF EVIDENCE: Therapeutic study (Systematic review of Level I studies with inconsistent results), Level II. | Medication | Knee Surg Sports Traumatol Arthrosc Sep 2012;20(9):1742-52 2012 Sep | 2012 |  | knee | arthroplasty |
| Zhang 2013 | Do patients benefit from tourniquet in arthroscopic surgeries of the knee? | CONCLUSIONS: There is insufficient evidence to support the hypothesis that patients would benefit from routinely applying a tourniquet. The use of a tourniquet did not show any advantage to arthroscopic procedures. LEVEL OF EVIDENCE: Therapeutic randomized controlled trials, Level I. | Surgery | Knee Surg Sports Traumatol Arthrosc May 2013;21(5):1125-30 2013 May | 2013 |  | knee | arthroplasty |
| Zhang 2013 | Hip surface replacement and total hip arthroplasty: Meta-analysis on the efficacy. [Chinese] | Results and Conclusion: Ten randomized controlled trials were included. Results of Meta-analysis showed that there were no significant differences in operation time, intraoperative blood loss, 1 year postoperative Harris score, 1 year postoperative University of California at LosAngeles hip function score and serum levels of cobalt and chromium ion at 2 years after replacement between hip surface replacement and total hip arthroplasty. The average acetabulum anteversion angle in the hip surface replacement group was greater than that in the total hip arthroplasty group. The results indicate that there was no significant difference in the short-term follow-up between hip surface replacement and total hip arthroplasty, but the long-term effect needs to be evaluated with higher quality and larger sample clinical randomized controlled trials. | Surgery | Chinese Journal of Tissue Engineering Research 2013;17(26):4872-4879 2013 | 2013 |  | knee | arthroplasty |
| Zhang 2013 | Total hip arthroplasty versus total hip resurfacing arthroplasty for osteoarthritis: A meta-analysis. [Chinese] | Conclusion Current evidence shows that, THA brings greater improvements of femoral offset than THRA, and no significant differences between the two groups were found in the other indicators. | Surgery | Chinese Journal of Evidence-Based Medicine 2013;13(8):978-984 2013 | 2013 |  | hip | arthroplasty |
| Zhang 2014 | A meta-analysis for the efficacy and safety of drainage after primary total knee arthroplasty. [Chinese] | Conclusion: Non-routine placement of drainage after primary uncomplicated TKA may be preferred. However, for extensive release and primary orthopedics, drainage is still necessary. And a surgeon should weigh its pros and cons. | Surgery | National Medical Journal of China 05 Aug 2014;94(29):2282-2285 2014 05 Aug | 2014 |  | knee | arthroplasty |
| Zhang 2014 | Effects of the timing of tourniquet release in cemented total knee arthroplasty: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: Tourniquet release before wound closure for hemostasis might reduce the rate of complications, but it could not limit overall blood loss. The current evidences are not enough to indicate that tourniquet release before wound closure is superior to its release after wound closure in cemented TKA. | Surgery | J Orthop Surg Res Dec 03 2014;9():125 2014 Dec 03 | 2014 |  | knee | arthroplasty |
| Zhang 2014 | Safety and efficacy of intra-articular injection of tranexamic acid in total knee arthroplasty | In all, intra-articular tranexamic acid significantly reduced total blood loss, drainage, reduction of hemoglobin, and the need for transfusion without increasing the incidence of deep venous thrombosis and pulmonary embolism. Intra-articular tranexamic acid is safe and efficacious in TKA. | Medication | Orthopedics Sep 2014;37(9):e775-82 2014 Sep | 2014 |  | knee | arthroplasty |
| Zhang 2014 | The effects of a tourniquet used in total knee arthroplasty: a meta-analysis | CONCLUSIONS: TKA without a tourniquet was superior to TKA with a tourniquet in thromboembolic events and the other related complications. There were no significant differences between the two groups in the actual blood loss. TKA with a tourniquet might hinder patients' early postoperative rehabilitation exercises. | Surgery | J Orthop Surg Res Mar 06 2014;9(1):13 2014 Mar 06 | 2014 |  | knee | arthroplasty |
| Zhang 2015 | Effectiveness and safety of the posterior approach with soft tissue repair for primary total hip arthroplasty: a meta-analysis | DISCUSSION: Our meta-analysis included data from more studies than were previously available and demonstrated that the use of soft tissue repair and without it in posterior approach to total hip arthroplasty are similar in safety. Using repair resulted in a lower dislocation rate and higher Harris hip score than without repair. LEVELS OF EVIDENCE: Level 2 meta-analysis of low-powered prospective randomised trial. | Surgery | Orthop Traumatol Surg Res Feb 2015;101(1):39-44 2015 Feb | 2015 |  | hip | arthroplasty |
| Zhang 2015 | Indwelling versus Intermittent Urinary Catheterization following Total Joint Arthroplasty: A Systematic Review and Meta-Analysis | CONCLUSIONS: Based on the results of the meta-analysis, indwelling urinary catheterization, removed 24-48 h postoperatively, was superior to intermittent catheterization in preventing POUR. Furthermore, indwelling urinary catheterization with removal 24 to 48 hours postoperatively did not increase the risk of UTI. In patients with multiple risk factors for POUR undergoing total joint arthroplasty of lower limb, the preferred option should be indwelling urinary catheterization removed 24-48 h postoperatively. LEVEL OF EVIDENCE: Level I. | Non Surgical Intervention | PLoS One 2015;10(7):e0130636 2015 | 2015 |  | Not specified | arthroplasty |
| Zhang 2015 | Sciatic-femoral nerve block versus unilateral spinal anesthesia for outpatient knee arthroscopy: a meta-analysis | CONCLUSION: SFB provided faster bladder function recovery and faster discharging from hospital, hence it could be a good alternative to USA for outpatient knee arthroscopy. | Medication | Minerva Anestesiol Dec 2015;81(12):1359-68 2015 Dec | 2015 |  | knee | arthroplasty |
| Zhang 2016 | Effects of therapeutic ultrasound on pain, physical functions and safety outcomes in patients with knee osteoarthritis: a systematic review and meta-analysis. | The pooled results of this meta-analysis indicated that therapeutic ultrasound significantly reduced pain and improved function compared to sham treatment. Additionally, few adverse events associated with the use of therapeutic ultrasound occurred among the ten included trials | Non Surgical Intervention | Clin Rehabil 2016;(): 2016 | 2016 |  | knee | osteoarthritis |
| Zhang 2016 | Is patellar denervation necessary in total knee arthroplasty without patellar resurfacing? | CONCLUSION: This meta-analysis showed that PD in TKAs without patellar resurfacing, compared with NPD, could prevent the incidence of post-operative AKP and improve clinical outcome in KSS and post-operative ROM. Based on the above results, PD was a safe procedure with no significant complications and revision or re-operations. LEVEL OF EVIDENCE: Therapeutic study, Level II. | Surgery | Knee Surg Sports Traumatol Arthrosc Aug 2016;24(8):2541-9 2016 Aug | 2016 |  | knee | arthroplasty |
| Zhang 2017 | Combined use of intravenous and topical versus intravenous tranexamic acid in primary total joint arthroplasty: A meta-analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis indicated that comparing with only intravenous tranexamic acid, combined use of intravenous and topical tranexamic acid can significantly reduce blood loss and transfusion rate in primary total joint arthroplasty without increasing the risk of thrombotic complications. Therefore, we suggest that tranexamic acid should be intravenously combined with topically administered in primary total joint arthroplasty. | Medication | Int J Surg Feb 2017;38():15-20 2017 Feb | 2017 |  | Not specified | arthroplasty |
| Zhang 2017 | Local anesthetic infusion pump for pain management following total knee arthroplasty: a meta-analysis | CONCLUSION: Based on the current meta-analysis, we found no evidence to support the routine use of local anesthetic infusion pump in the management of acute pain following TKA. More RCTs are still need to identify the pain control effects and optimal dose and speed of local anesthetic pain pump. | Medication | BMC Musculoskelet Disord Jan 23 2017;18(1):32 2017 Jan 23 | 2017 |  | knee | arthroplasty |
| Zhao 2015 | Effect of bisphosphonates in preventing femoral periprosthetic bone resorption after primary cementless total hip arthroplasty: a meta-analysis | CONCLUSION: Bisphosphonates seem to decrease early femoral periprosthetic bone resorption after primary cementless THA. Drug efficacy was found to be long-standing in the main load-bearing zones. | Medication | J Orthop Surg Res May 13 2015;10():65 2015 May 13 | 2015 |  | hip | arthroplasty |
| Zhao 2015 | Efficacy of steroid addition to multimodal cocktail periarticular injection in total knee arthroplasty: a meta-analysis | CONCLUSION: For patients undergoing TKA, the addition of steroids to MCPI improved the analgesic effect and was proved to be highly safe. The duration of time required to perform straight-leg raising and length of hospital stay was significantly reduced. However, MCPI with steroids neither increased the early postoperative range of motion (ROM) or the long-term ROM of knee, nor did it reduce the postoperative drainage. However, the best results are acquired in patients without any altered immunological status. | Medication | J Orthop Surg Res May 22 2015;10():75 2015 May 22 | 2015 |  | knee | arthroplasty |
| Zhao 2016 | Hylan G-F 20 Versus Low Molecular Weight Hyaluronic Acids for Knee Osteoarthritis: A Meta-Analysis | Twenty randomized controlled trials (RCTs) were included in a meta-analysis and systematic review comparing pain, treatment-emergent adverse events, and function between Hylan G-F 20 injections and low-molecular-weight hyaluronic acid (LMWHA) injections for knee osteoarthritis. No significant differences between products were observed in pain overall or the incidence of treatment-emergent related adverse events. When subgrouped based on follow-up time, significantly lower pain scores were observed favouring Hylan G-F 20 from 5-12 weeks, though no significant differences were observed in at other follow-up time periods. | Medication | BioDrugs 2016;(): 2016 | 2016 |  | knee | osteoarthritis |
| Zhao 2016 | The comparison of adductor canal block with femoral nerve block following total knee arthroplasty: a systematic review with meta-analysis | CONCLUSIONS: The present study suggests that TKA patients who receive ACB can achieve similar or even better recovery of quadriceps strength and mobilization ability than those treated with FNB. Taken as a whole, ACB may be a better analgesia strategy after TKA at present. | Medication | J Anesth Oct 2016;30(5):745-54 2016 Oct | 2016 |  | knee | arthroplasty |
| Zhao-Yu 2014 | Reduced blood loss after intra-articular tranexamic acid injection during total knee arthroplasty: a meta-analysis of the literature | CONCLUSIONS: The present meta-analysis indicated that intra-articular injection of TXA in patients undergoing TKA may reduce total blood loss and the need for blood transfusions, particularly when a high dosage of TXA is used (>/=30 mg/ml), without any increase in the risk of post-operative DVT. LEVEL OF EVIDENCE: II. | Medication | Knee Surg Sports Traumatol Arthrosc Dec 2014;22(12):3181-90 2014 Dec | 2014 |  | knee | arthroplasty |
| Zhou 2013 | Do we really need closed-suction drainage in total hip arthroplasty? A meta-analysis | CONCLUSIONS: Our results of the comparison between closed-suction drainage and no drainage in THA have indicated that the routine use of closed-suction drainage for elective total hip arthroplasty may be of more harm than benefit. | Surgery | Int Orthop Nov 2013;37(11):2109-18 2013 Nov | 2013 |  | hip | arthroplasty |
| Zhou 2013 | Do we really need tranexamic acid in total hip arthroplasty? A meta-analysis of nineteen randomized controlled trials | CONCLUSIONS: The data from this meta-analysis indicate that intravenous tranexamic acid may reduce blood loss and transfusion need in patients undergoing total hip arthroplasty without increasing the risk of complications. However, high-quality randomized controlled trials are required to validate the results. | Medication | Arch Orthop Trauma Surg Jul 2013;133(7):1017-27 2013 Jul | 2013 |  | hip | arthroplasty |
| Zhou 2016 | Single-dose intra-articular ropivacaine after arthroscopic knee surgery decreases post-operative pain without increasing side effects: a systematic review and meta-analysis | Conclusions: Single-dose intra-articular ropivacaine administered at the end of arthroscopic knee surgery provides effective pain relief in the immediate and early post-operative periods without increasing short-term side effects. | Medication | Knee Surg Sports Traumatology, Arthroscopy 2016;24(5):1651-1659  2016 | 2016 |  | knee | arthroplasty |
| Zufferey 2006 | Do antifibrinolytics reduce allogeneic blood transfusion in orthopedic surgery? | Results suggest a dose-effect relation with tranexamic acid. Epsilon-aminocaproic acid was not efficacious. Unfortunately, data were too limited for any conclusions regarding safety. Although the results suggest that aprotinin and tranexamic acid significantly reduce allogeneic erythrocyte transfusion, further evaluation of safety is required before recommending the use of antifibrinolytics in orthopedic surgery. | Medication | Anesthesiology Nov 2006;105(5):1034-46 2006 Nov | 2006 |  | Not specified | not specified |

**Trauma**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation Ref all #** | **Year** | **149** | **coding** |
| Aikeremujiang 2015 | Comparison of anterior and posterior approaches for thoracolumbar burst fracture: A meta-analysis on cobb angle loss, frankel grading improvement and vertebral height loss. [Chinese] | RESULTS AND CONCLUSION: Finally 18 randomized controlled trials with a total of 925 patients were included. There were 459 cases in anterior approach group and 466 cases in posterior approach group. The anterior approach cost 36.47 minutes longer than posterior approach and the blood loss in the anterior approach group was 432.58 mL more than the posterior approach group. Compared with the posterior approach group, the loss of Cobb angle was 3.41degree lower, the improvement of Frankel grading was 0.33degree higher, and the loss of vertebral height was 1.76 mm lower in the anterior approach group. There were significant differences in the operative time, total blood loss, loss of Cobb angle, improvement in Frankel grading and loss of vertebral height between the anterior and posterior surgical approaches (P < 0.01). Although the anterior approach has disadvantages such as long operative time, more intraoperative blood loss, and high technical requirement, the good short-term and long-term results make it worthwhile to apply for the treatment of thoracolumbar burst fractures. | Surgery | Chinese Journal of Tissue Engineering Research 22 Jan 2015;19(4):634-641  2015 22 Jan | 2015 |  | spine # |
| Alcalá-Cerra 2014 | Orthosis for thoracolumbar burst fractures without neurologic deficit: A systematic review of prospective randomized controlled trials | Conclusion and Recommendation: The current evidence suggests that orthosis could not be necessary when TL burst fractures without neurologic deficit are treated conservatively. However, due to limitations related with number and size of the included studies, more RCTs with high quality are desirable for making recommendations with more certainty. | Surgery | Journal of Craniovertebral Junction and Spine 2014;5(1):25-32  2014 | 2014 |  | spine # |
| Anderson 2013 | Meta-analysis of vertebral augmentation compared with conservative treatment for osteoporotic spinal fractures | This meta-analysis provides strong evidence in favor of cement augmentation in the treatment of symptomatic VCF fractures. © 2013 American Society for Bone and Mineral Research. | Surgery | Journal of Bone and Mineral Research February 2013;28(2):372-382  2013 February | 2013 |  | spine # |
| Anonymous 2010 | Percutaneous vertebroplasty for treatment of painful osteoporotic vertebral compression fractures: An evidence-based analysis | See article....5 RCTs were identified. Of these, two compared vertebroplasty with sham procedure, two compared vertebroplasty with conservative treatment, and one compared vertebroplasty with balloon kyphoplasty. Randomized Controlled Trials: Recently, the results of two blinded randomized placebo-controlled trials of percutaneous vertebroplasty were reported. These trials, providing the highest quality of evidence available to date, do not support the use of vertebroplasty in patients with painful osteoporotic vertebral compression fractures. Based on the results of these trials, vertebroplasty offer no additional benefit over usual care and is not risk free. | Surgery | Ontario Health Technology Assessment Series October 2010;10(19):1-45 2010 October | 2010 |  | spine # |
| Auais 2012 | Extended Exercise Rehabilitation After Hip Fracture Improves Patients' Physical Function: A Systematic Review and Meta-Analysis | The results of the meta-analysis and systematic review indicate that an extended exercise rehabilitation program improves knee extension strength, balance, physical performance based tests, the Timed Up and Go test, and fast gait speed when compared with a standard rehabilitation program for patients with hip fractures. | Physio/Rehab | Phys Ther 2012;():  2012 | 2012 |  | hip # |
| Aviles 2016 | Conservative versus operative treatment for thoracolumbar burst fractures without neurologic deficit | We concluded that operative treatment may decrease the risk of neurologic impairment, but in turn, could increase the risk of general complications. It is unclear whether there are differences in pain reduction, improvement in function and quality of life, need for subsequent surgery or radiographic progression of kyphosis in both groups. | Surgery | Medwave Mar 15 2016;16 Suppl 1():e6383  2016 Mar 15 | 2016 |  | spine # |
| Azegami 2011 | Cemented versus uncemented hemiarthroplasty for hip fractures: a systematic review of randomized controlled trials (Provisional abstract) | Our meta-analysis has shown that there is good evidence that the use of cement during hemiarthroplasty will reduce the amount of residual hip pain and also allow better restoration of function. There is no evidence of significant adverse effects of cement on mortality or other complications encountered. These observations apply to older designs, and there is a need for randomised trials comparing hydroxyapatite-coated modern stems with cemented prostheses. | Surgery | HIP International 2011;21(5):509-517  2011 | 2011 |  | hip # |
| Bajammal 2008 | The Use of Calcium Phosphate Bone Cement in Fracture Treatment- A Meta-Analysis of Randomized Trials | Conclusion: The use of calcium phosphate bone cement for the treatment of fractures in adult patients is associated with a lower prevalence of pain at the fracture site in comparison with the rate in controls (patients managed with no graft material). Loss of fracture reduction is also decreased in comparison with that in patients managed with autogenous bone graft. | Surgery | J Bone Joint Surg Am Jun 2008;90(6):1186-96  2008 Jun | 2008 |  | not specified |
| Barrera 2013 | Thromboprophylaxis for trauma patients | AUTHORS' CONCLUSIONS: We did not find evidence that thromboprophylaxis reduces mortality or PE in any of the comparisons assessed. However, we found some evidence that thromboprophylaxis prevents DVT. Although the strength of the evidence was not high, taking into account existing information from other related conditions such as surgery, we recommend the use of any DVT prophylactic method for people with severe trauma. | Medication | Cochrane Database Syst Rev Mar 28 2013;(3):Cd008303  2013 Mar 28 | 2013 |  | not specified |
| Bederman 2009 | Do corticosteroids reduce the risk of fat embolism syndrome in patients with long-bone fractures? A meta-analysis | Conclusion: Evidence suggests that corticosteroids may be beneficial in preventing FES and hypoxia but not mortality in patients with long-bone fractures. The risk of infection is not increased with the use of corticosteroids. However, methodological limitations of these trials necessitate a large confirmatory randomized trial. | Medication | Can J Surg. 2009;():  2009 | 2009 |  | not specified |
| Bhandari 2009 | Gamma nails revisited: Gamma nails versus compression hip screws in the management of intertrochanteric fractures of the hip: A meta-analysis | CONCLUSIONS: Our meta-analysis of randomized trials suggests that previous concerns about increased femoral shaft fracture risk with Gamma nails have been resolved with improved implant design and improved learning curves with the device. Earlier meta-analyses and randomized trials should be interpreted with caution in light of more recent evidence. © 2009 Lippincott Williams & Wilkins, Inc. | Surgery | Journal of Orthopaedic Trauma 2009;23(6):460-464  2009 | 2009 |  | hip # |
| Bouza 2015 | Safety of balloon kyphoplasty in the treatment of osteoporotic vertebral compression fractures in Europe: a meta-analysis of randomized controlled trials | Conclusions: The safety profile and associated complications of balloon kyphoplasty shown in this analysis, based on the evidence provided by existing randomized controlled trials, can be of help to the practicing clinician who must contrast them with the potential benefits of the technique. These data represent an important step towards a balanced evaluation of the intervention though, a better reporting and more reliable data on long-term assessment of potential sequelae are needed. | Surgery | European Spine Journal 2015;24(4):715-723  2015 | 2015 |  | spine # |
| Buijze 2010 | Surgical compared with conservative treatment for acute nondisplaced or minimally displaced scaphoid fractures: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: Based on primary studies with limited methodological quality, this study suggests that surgical treatment is favorable for acute nondisplaced and minimally displaced scaphoid fractures with regard to functional outcome and time off work; however, surgical treatment engenders more complications. Thus, the long-term risks and short-term benefits of surgery should be carefully weighed in clinical decision-making. | Surgery | J Bone Joint Surg Am Jun 2010;92(6):1534-44  2010 Jun | 2010 |  | wrist/hand # |
| Burgers 2012 | Total hip arthroplasty versus hemiarthroplasty for displaced femoral neck fractures in the healthy elderly: a meta-analysis and systematic review of randomized trials (Provisional abstract) | CONCLUSIONS: Total hip arthroplasty for displaced femoral neck fractures in the fit elderly may lead to higher patient-based outcomes but has higher dislocation rates compared with hemiarthroplasty. Further high-quality randomized clinical trails are needed to provide robust evidence and to definitively answer this clinical question. | Surgery | International Orthopaedics 2012;36(8):1549-1560  2012 | 2012 |  | hip # |
| Busse 2009 | Low intensity pulsed ultrasonography for fractures: systematic review of randomised controlled trials | CONCLUSION: Evidence for the effect of low intensity pulsed ultrasonography on healing of fractures is moderate to very low in quality and provides conflicting results. Although overall results are promising, establishing the role of low intensity pulsed ultrasonography in the management of fractures requires large, blinded trials, directly addressing patient important outcomes such as return to function. | Non Surgical Intervention | BMJ (Clinical research ed.) 2009;338():b351  2009 | 2009 |  | not specified |
| Carneiro 2013 | Physical therapy in the postoperative of proximal femur fracture in elderly. literature review | Conclusion: Physical therapy has an important role in functional recovery of the elderly. Level of Evidence I, Systematic Review RCTs (Study results were homogenous). | Physio/Rehab | Acta Ortopedica Brasileira 2013;21(3):175-178  2013 | 2013 |  | hip # |
| Carroll 2011 | Hemiarthroplasty and total hip arthroplasty for treating primary intracapsular fracture of the hip: a systematic review and cost-effectiveness analysis | CONCLUSIONS: THA appears to be more cost-effective than HA. It is likely that THA will be associated with increased costs in the initial 2-year period, but lower longer-term costs, owing to potentially lower revision rates. However, these longer-term costs have not been modelled. The capacity and experience of surgeons to perform THA have not been explored and these would need to be addressed at local level were THA to become recommended for active, elderly patients in whom THA is not contraindicated. Further studies examining the impact of surgeon experience on performing the two procedures may offer more robust evidence on outcomes | Surgery | Health Technol Assess Oct 2011;15(36):1-74  2011 Oct | 2011 |  | hip # |
| Chang 2015 | Effects of Antibiotic Prophylaxis in Patients with Open Fracture of the Extremities: A Systematic Review of Randomized Controlled Trials | CONCLUSIONS: Results of randomized controlled trials performed to date provide evidence that antibiotic prophylaxis reduces subsequent infection and that courses as short as one day are as effective as courses of three to five days, although the evidence warrants only low to moderate confidence. Given current practice, a large, multicenter, low risk of bias, randomized controlled trial enrolling representative populations and addressing the duration of antibiotics may be the next optimum step in investigation. LEVEL OF EVIDENCE: Therapeutic Level I. See Instructions for Authors for a complete description of levels of evidence. | Medication | JBJS Rev Jun 09 2015;3(6): 2015 Jun 09 | 2015 |  | not specified |
| Chapelle 2011 | Prevention of thromboembolic events in traumatologic surgery: A meta-analysis of randomized trials | Conclusions: A potential benefit of thromboprophylaxis with LMWHs in traumatologic surgery was shown, especially in moderate risk traumatologic surgeries. | Medication | Journal of Thrombosis and Haemostasis July 2011;9():398-399 2011 July | 2011 |  | not specified |
| Chaudhry 2015 | Are Volar Locking Plates Superior to Percutaneous K-wires for Distal Radius Fractures? A Meta-analysis | CONCLUSIONS: Despite the small number of studies and the limitations inherent in a meta-analysis, we found that volar locking plates show better DASH scores at 3- and 12-month followups compared with K-wires for displaced distal radius fractures in adults; however, these differences were small and unlikely to be clinically important. Further research is required to better delineate if there are specific radiographic, injury, or patient characteristics that may benefit from volar locking plates in the short term and whether there are any differences in long-term outcomes and complications. LEVEL OF EVIDENCE: Level I, therapeutic study. | Surgery | Clin Orthop Relat Res Sep 2015;473(9):3017-27  2015 Sep | 2015 |  | wrist/hand # |
| Chen 2013 | Plate internal fixation versus external fixator for the treatment of unstable distal radius fractures: A Meta-analysis | Results and Conclusion: A total of 9 literatures, involving totally 524 patients were included, 286 patients in the internal fixation group and 238 patients in the external fixator group. There was no significant difference in grip strength between internal fixation group and the external fixator group. The results of Meta-analysis showed that the internal fixation group was better than the external fixator group in the aspects of disabilities of arm, shoulder & hand score, complications rate, infection rate, deformity rate and ulnar variance rate at 3 months and 1 year after treatment. The results indicate that the plate internal fixation is better than external fixator in the treatment of unstable distal radius fractures, but the large sample, double-blind, and high quality randomized controlled trials are still needed to identify the results. | Surgery | Chinese Journal of Tissue Engineering Research 24 Sep 2013;17(39):6962-6969  2013 24 Sep | 2013 |  | wrist/hand # |
| Chen 2014 | Unilateral versus bilateral balloon kyphoplasty in the treatment of osteoporotic vertebral compression fractures | The unilateral approach resulted in pain relief and vertebral height and kyphotic angle restoration comparable with that of bilateral kyphoplasty. The unilateral approach should be considered an effective option for the treatment of osteoporotic vertebral compression fractures. | Surgery | Orthopedics 01 Sep 2014;37(9):e828-e835  2014 01 Sep | 2014 |  | spine # |
| Chen 2015 | Comparative efficacy and tolerability of three treatments in old people with osteoporotic vertebral compression fracture: a network meta-analysis and systematic review | CONCLUSIONS: PVP may be the best way to relieve pain, CT might lead to the lowest incidence of new fractures and BK might had the lowest risk of all-cause discontinuation in old people with osteoporotic vertebral compression fracture. More large-scale and longer duration of follow-up studies are needed. | Surgery | PLoS One 2015;10(4):e0123153  2015 | 2015 |  | spine # |
| Clifton 2008 | Closed suction surgical wound drainage after hip fracture surgery: a systematic review and meta-analysis of randomised controlled trials | There was no statistically significant difference in the occurrence of wound healing complications, re-operations or requirement for blood transfusion between drained and un-drained wounds. All other outcomes reported failed to show any benefit from the use of drains. Further randomised trials are required and until they have been undertaken the efficacy of closed surgical drainage systems in hip fracture surgery is unknown. | Surgery | Int Orthop Dec 2008;32(6):723-7  2008 Dec | 2008 |  | hip # |
| Cui 2011 | Internal versus external fixation for unstable distal radius fractures: an up-to-date meta-analysis | CONCLUSIONS: We suggest that the final results are significant and there is some evidence supporting the use of open reduction and internal fixation. | Surgery | Int Orthop Sep 2011;35(9):1333-41  2011 Sep | 2011 |  | wrist/hand # |
| Dai 2011 | Meta-analysis comparing arthroplasty with internal fixation for displaced femoral neck fracture in the elderly | CONCLUSIONS: Compared with internal fixation, arthroplasty can not only reduce the surgical revision, but also decrease the incidence of complications, and does not increase mortality. The present meta-analysis shows that there is an evidence base to support arthroplasty as a primary treatment for displaced femoral neck fractures in the elderly. | Surgery | Surg Res Jan 2011;165(1):68-74  2011 Jan | 2011 |  | hip # |
| Dai 2015 | Bone Morphogenetic Protein for the Healing of Tibial Fracture: A Meta-Analysis of Randomized Controlled Trials | CONCLUSION: Study on acute tibial fractures suggests that BMP is more effective that controls, for bone union and for decreasing the rate of surgical revision to achieve union. For the treatment of tibial fracture nonunion, BMP leads to similar results to as autogenous bone grafting. Finally, well-designed RCTs of BMP for tibial fracture treatment are also needed. | Surgery | PLoS One 2015;10(10):e0141670 2015 | 2015 |  | foot/ankle/leg # |
| Devji 2015 | Operative versus nonoperative interventions for common fractures of the clavicle: a meta-analysis of randomized controlled trials | INTERPRETATION: Current evidence does not support the routine use of internal fixation for the treatment of displaced midshaft clavicle fractures. Complication rates were high regardless of the treatment approach. | Surgery | CMAJ Open Oct-Dec 2015;3(4):E396-405  2015 Oct-Dec | 2015 |  | clavicle/arm # |
| Diong 2016 | Structured exercise improves mobility after hip fracture: a meta-analysis with meta-regression | CONCLUSIONS AND IMPLICATIONS: Structured exercise produced small improvements on overall mobility after hip fracture. Interventions that included progressive resistance training and were delivered in other settings were more effective, although the latter may have been confounded by duration of intervention | Physio/Rehab | Br J Sports Med Mar 2016;50(6):346-55  2016 Mar | 2016 |  | hip # |
| DJin 2013 | Plating versus intramedullary nailing for distal tibial fracture: A meta-analysis | 4 randomized control trials were included in this meta-analysis to compare plating and intramedullary nailing (IMN) in the treatment of distal tibial fractures. Malunion was significantly reduced in the plating group compared to the IMN group, but nonunion, delayed union and incidence of infections were similar these treatment options. | Surgery | Dis Colon Rectum. 2013;():  2013 | 2013 |  | foot/ankle/leg # |
| Dunn 2016 | The Boxer's Fracture: Splint Immobilization Is Not Necessary | 5 randomized controlled trials (RCTs), with a total of 215 patients, were included in this systematic review to determine if there are benefits to reduction and splint or cast immobilization to fractures of the fifth metacarpal neck (or more commonly known as boxer's fractures). Analysis of the included studies indicated that splint or cast immobilization yields no benefits in range of motion, strength, or any other measured outcomes when compared to soft wrap or buddy taping treatment without reduction. On the contrary, majority of trials favoured soft wrap intervention for range of motion and strength improvements compared to splint or cast immobilization. | Non Surgical Intervention | Orthopaedics 2016;():  2016 | 2016 |  | wrist/hand # |
| Esposito 2013 | External fixation versus open reduction with plate fixation for distal radius fractures: a meta-analysis of randomised controlled trials | CONCLUSIONS: ORIF with plate fixation provides lower DASH scores, better restoration of radial length and reduced infection rates as compared to external fixation for treatment of distal radius fractures. | Surgery | Injury Apr 2013;44(4):409-16  2013 Apr | 2013 |  | wrist/hand # |
| Foote 2015 | Which Surgical Treatment for Open Tibial Shaft Fractures Results in the Fewest Reoperations? A Network Meta-analysis | CONCLUSION: Current evidence suggests that intramedullary nailing may be superior to other fixation strategies for open tibial shaft fractures. Use of unreamed nails over reamed nails also may be advantageous in the setting of open fractures, but this remains to be confirmed. Unfortunately, these conclusions are based on trials that have had high risk of bias and poor precision. Larger and higher-quality head-to-head randomized controlled trials are required to confirm these conclusions and better inform clinical decision-making. LEVEL OF EVIDENCE: Level I, therapeutic study. | Surgery | Clin Orthop Relat Res Jul 2015;473(7):2179-92 2015 Jul | 2015 |  | foot/ankle/leg # |
| Fu 2014 | Surgical versus conservative treatment for displaced proximal humeral fractures in elderly patients: A meta-analysis | Conclusion: Despite the small improvement of QoL, surgical treatments did not significantly improve the functional outcome including Constant score and DASH. Instead, surgical treatment for displaced proximal humeral fractures in elderly patients led to higher incidence of postoperative complications. | Surgery | International Journal of Clinical and Experimental Medicine 30 Dec 2014;7(12):4607-4615  2014 30 Dec | 2014 |  | hip # |
| Gao 2012 | Which is the best alternative for displaced femoral neck fractures in the elderly?: A meta-analysis | CONCLUSIONS: Arthroplasty can reduce the risk of major complications and the incidence of reoperation compared with internal fixation, and provide better pain relief and function, but it does not reduce mortality. LEVEL OF EVIDENCE: Level II, prognostic study. | Surgery | Clin Orthop Relat Res Jun 2012;470(6):1782-91  2012 Jun | 2012 |  | hip # |
| Giovannini 2016 | Intramedullary nailing versus external fixation in Gustilo type III open tibial shaft fractures: a meta-analysis of randomised controlled trials | IMN was associated with lower rates of infection and fracture healing problems; the differences between the two approaches for "other complications" were not significant. The data indicate that IMN is the treatment of choice for Gustilo type III fractures. | Surgery | Strategies Trauma Limb Reconstr Apr 2016;11(1):1-4  2016 Apr | 2016 |  | foot/ankle/leg # |
| Goh 2009 | Meta-analysis Comparing Total Hip Arthroplasty With Hemiarthroplasty in the Treatment of Displaced Neck of Femur Fracture | Considering the more favorable long-term outcomes in THA patients, we conclude that there may be a case to offer THA as the primary treatment of these patients. | Surgery | J Arthroplasty 2009;():  2009 | 2009 |  | hip # |
| Guo 2015 | Surgical versus non-surgical treatment for vertebral compression fracture with osteopenia: a systematic review and meta-analysis | CONCLUSION: Compared to conservative treatment, surgical treatment was more effective in decreasing pain in the short,mid and long terms. However, no significant mid- and long-term differences in physical function and quality of life was observed. Little good evidence is available for surgical treatment compared with that for sham procedure. PV and BK are currently used to treat VCFs with osteopenia, with little difference in treatment effects. Evidence of better quality and from a larger sample size is required before a recommendation can be made. SYSTEMATIC REVIEW REGISTRATION: http://www.crd.york.ac.uk/PROSPERO PROSPERO registration number: CRD42013005142. | Surgery | PLoS One 2015;10(5):e0127145  2015 | 2015 |  | spine # |
| Hagen 2012 | Bone graft substitutes for the treatment of traumatic fractures of the extremities | CONCLUSIONS: The current evidence is insufficient to evaluate entirely the use of different bone graft substitutes for fracture treatment. From a medical point of view, BMP-2 is a viable alternative for treatment of open fractures of the tibia, especially in cases where bone grafting is not possible. Autologous bone grafting is preferable comparing to the use of OP-1. Possible advantages of CaP cements and composites containing bone marrow over autogenous bone grafting should be taken into account in clinical decision making. The use of the hydroxyapatite material and allograft bone chips compared to autologous bone grafts cannot be recommended. From a health economic perspective, the use of BMP-2 in addition to standard care without bone grafting is recommended as cost-saving in patients with high-grade open fractures (Gustilo-Anderson grade IIIB). Based on the current evidence no further recommendations can be made regarding the use of bone graft substitutes for the treatment of fractures. To avoid legal implications, use of bone graft substitutes outside their approved indications should be avoided. | Surgery | GMS Health Technol Assess 2012;8():Doc04  2012 | 2012 |  | not specified |
| Hannemann 2014 | The effects of low-intensity pulsed ultrasound and pulsed electromagnetic fields bone growth stimulation in acute fractures: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: Current evidence from randomized trials is insufficient to conclude a benefit of PEMF or LIPUS bone growth stimulation in reducing the incidence of nonunions when used for treatment in acute fractures. However, our systematic review and meta-analysis suggest that PEMF or LIPUS can be beneficial in the treatment of acute fractures regarding time to radiological and clinical union. PEMF and LIPUS significantly shorten time to radiological union for acute fractures undergoing non-operative treatment and acute fractures of the upper limb. Furthermore, PEMF or LIPUS bone growth stimulation accelerates the time to clinical union for acute diaphyseal fractures. | Non Surgical Intervention | Arch Orthop Trauma Surg Aug 2014;134(8):1093-106 2014 Aug | 2014 |  | not specified |
| Hartmann 2017 | Femoral nerve block versus intravenous fentanyl in adult patients with hip fractures - a systematic review | CONCLUSION: The use of femoral nerve block can reduce the level of pain and the need for additional analgesia. There are less adverse systemic events associated with this and the procedure itself does not offer greater risks. More studies are required for further conclusions. | Medication | Braz J Anesthesiol Jan - Feb 2017;67(1):67-71 2017 Jan - Feb | 2017 |  | hip # |
| He 2011 | Artificial femoral head replacement versus dynamic hip screws in elderly intertrochanteric fracture: A meta analysis | Results indicate that artificial femoral head replacement would not increase the operation time and bleeding amounts, but would shorten the hospitalization time and weight-bearing time, reduce the complication rate and improve the function. Artificial femoral head replacement is recommended in treating elderly intertrochanteric fracture due to its obvious superiority. | Surgery | Journal of Clinical Rehabilitative Tissue Engineering Research March 2011;15(13):2371-2375 2011 March | 2011 |  | hip # |
| He 2012 | Meta-analysis comparing total hip arthroplasty with hemiarthroplasty in the treatment of displaced femoral neck fractures in patients over 70 years old | CONCLUSIONS: The significant differences in outcomes suggest that THA is a valuable treatment option for active elderly hip fracture individuals. However, patients who are older, impaired or institutionalized benefit from HA. | Surgery | Chin J Traumatol 2012;15(4):195-200 2012 | 2012 |  | hip # |
| Hill 2014 | Is intramedullary nailing more effective than non-operative treatment in adults with displaced middle-third clavicle fractures? | CONCLUSIONS: Further, high-quality research, ideally in the form of well-designed, multi-centre RCTs is required to allow acceptable implementation of IMN of middle-third clavicle fractures into widespread practice. However, early results demonstrate that in young patients with displaced middle-third clavicle fractures, who are motivated to return to work, IMN provides superior functional results and should be considered. However, the importance of considering each patient individually as to their suitability for each management option, before coming to an informed decision with the patient rather than having a blanket approach to MTCF is essential. LEVEL OF EVIDENCE: Level 1. | Surgery | J Orthop Traumatol Sep 2014;15(3):155-64 2014 Sep | 2014 |  | clavicle/arm # |
| Hoang-Kim 2009 | Functional assessment in patients with osteoporotic wrist fractures treated with external fixation: a review of randomized trials | Patients with osteoporosis often report fractures of the wrist, and in the elderly, treatment consists of external fixation. The purpose of this systematic review was to describe functional outcomes for patients over 50 years of age. Common measures including wrist range of movement, and grip strength were used in the evaluation. Inconsistencies between studies did not allow for a comparison to be made between techniques. | Surgery | Arch Orthop Trauma Surg 2009;(): 2009 | 2009 |  | wrist/hand # |
| Hohmann 2016 | Minimally invasive plating versus either open reduction and plate fixation or intramedullary nailing of humeral shaft fractures: a systematic review and meta-analysis of randomized controlled trials | CONCLUSION: Current evidence indicates the MIPO approach has better clinical outcomes with a lower rate of complications compared with alternative surgical techniques. However, the results of this meta-analysis are limited by problems inherent in the primary studies, including poor reporting of randomization protocols, as well as possible attrition bias and reporting bias, of the primary studies. Future publications may therefore change the trend of the pooled estimate in either direction. | Surgery | J Shoulder Elbow Surg Oct 2016;25(10):1634-42 2016 Oct | 2016 |  | clavicle/arm # |
| Howard 2015 | A Systematic Review and Meta-analysis of the Outcomes of Operative vs. Nonoperative Management of Distal Radius Fractures in Patients > 50 | Results indicated that operative management may improve radiographic outcomes; however, the majority of functional outcomes were comparable between operative and nonoperative management types. | Surgery | NULL 2015;(): 2015 | 2015 |  | wrist/hand # |
| Huang 2013 | Proximal femoral nail versus dynamic hip screw fixation for trochanteric fractures: a meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSION: PFN fixation shows the same effectiveness as DHS fixation in the parameters measured. | Surgery | Scientific World Journal 2013;2013(2):805805 2013 | 2013 |  | hip # |
| Huang 2014 | Is helical blade superior to screw design in terms of cut-out rate for elderly trochanteric fractures? A meta-analysis of randomized controlled trials | CONCLUSIONS: Blade group required less operation time and fluoroscopy time than that of screw group treating trochanteric fractures in the elderly, but the differences observed could be biased due to grouping and other limitations. Outcomes of cut-out complication, other complications, position of implant and post-operative function were similar between two groups. | Surgery | Eur J Orthop Surg Traumatol Dec 2014;24(8):1461-8 2014 Dec | 2014 |  | hip # |
| Ibrahim 2011 | Surgical versus nonsurgical treatment of acute minimally displaced and undisplaced scaphoid waist fractures: pairwise and network meta-analyses of randomized controlled trials | CONCLUSIONS: Although surgical treatment is favored in terms of fracture union in our pairwise meta-analysis, this did not reach statistical significance, but was associated with a significantly increased risk of complications. The cumulative evidence at present does not support routine surgical treatment, and aggressive conservative management should remain the mainstay for scaphoid waist fractures. | Surgery | J Hand Surg Am Nov 2011;36(11):1759-1768.e1 2011 Nov | 2011 |  | wrist/hand # |
| Ji 2014 | Hip arthroplasty and internal fixation for the repair of femoral neck fracture in the elderly patients: A meta-analysis of reoperation and complications | These data suggested that the long-term reoperation rate and incidence of main complications were obviously higher in internal fixation compared with hip arthroplasty for femoral neck fracture in the elderly, and no significant difference in 1-year and 2-year mortality after the surgery was detectable between the two methods. Clinical recommended hip arthroplasty in the repair of femoral neck fracture in the elderly. | Surgery | Chinese Journal of Tissue Engineering Research 2014;18(31):5044-5049 2014 | 2014 |  | hip # |
| Jia 2015 | Unipolar versus bipolar hemiarthroplasty for displaced femoral neck fractures: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: Based on the current evidence, BH is not superior to UH in terms of surgical information and postoperative results. Despite similar or better clinical outcomes compared with UH, BH with a higher cost could not decrease long-term acetabular erosion rate. | Surgery | J Orthop Surg Res Jan 24 2015;10():8 2015 Jan 24 | 2015 |  | hip # |
| Jiang 2008 | No advantages of Gamma nail over sliding hip screw in the management of peritrochanteric hip fractures: a meta-analysis of randomized controlled trials | CONCLUSIONS: It seemed that there were no obvious advantages of Gamma nail fixation over SHS fixation in treating peritrochanteric fractures. | Surgery | Disabil Rehabil 2008;30(7):493-7 2008 | 2008 |  | hip # |
| Kong 2014 | Operative versus nonoperative treatment for displaced midshaft clavicular fractures: a meta-analysis of randomized clinical trials | CONCLUSIONS: Operative treatment provided a significantly better functional outcome, a lower rate of nonunion and malunion, but was accompanied with a higher rate of adverse events. However, the results should be interpreted with caution and further large-scale, well-designed RCTs on this topic are still needed. | Surgery | Arch Orthop Trauma Surg Nov 2014;134(11):1493-500 2014 Nov | 2014 |  | clavicle/arm # |
| Lam 2010 | Systematic review shows lowered risk of nonunion after reamed nailing in patients with closed tibial shaft fractures | There is no agreement whether reaming prior to IMN insertion would reduce the nonunion rate. We aimed to compare the nonunion rate between reamed and unreamed IMN in patients with tibial shaft fractures. A systematic search was conducted in Pubmed, Embase, and the Cochrane Library. The selected publications were: (1) randomised controlled trials; (2) comparing the nonunion rate; (3) in patients with tibial shaft fractures; (4) treated with either reamed or unreamed IMN. Seven studies that satisfied the criteria were identified. They showed that reamed IMN led to reduction of nonunion rate compared to unreamed IMN in closed tibial shaft fractures (risk difference ranging 7.0-20%, number needed to treat ranging 5-14), while the difference between compared treatments for open tibial shaft fractures was not clinically relevant. The evidence showed a consistent trend of reduced nonunion rate in closed tibial shaft fracture treated with reamed compared to unreamed IMN. | Surgery | Injury 2010;41(7):671-5 2010 | 2010 |  | foot/ankle/leg # |
| Li 2008 | Plating versus intramedullary nailing of humeral shaft fractures in adults: A systematic review. [Chinese] | Conclusion: Intramedullary nailing may increase the incidence of shoulder impingement. The rates of re-operation, non-union, deep infection, iatrogenic radial nerve injury and internal fixation failure are similar between plating and intramedullary nailing. Further well-designed and large-scale randomized controlled trials are required to determine the effects of plating and intramedullary nailing on these outcomes. | Surgery | Chinese Journal of Evidence-Based Medicine 2008;8(8):662-667 2008 | 2008 |  | clavicle/arm # |
| Li 2009 | Surgical or conservative treatment for acute nondisplaced scaphoid fractures in adults: A systematic review | Conclusion: Compared with conservative treatment for adult acute nondisplaced scaphoid fractures, surgical treatment could decrease the time of returning to work or participation in sports, decrease the time of union, and improve grip strength. But it does not improve the wrist motion or decrease the complications. Because of the small sample size, this conclusion should further tested using well-designed, large scale RCTs. | Surgery | Chinese Journal of Evidence-Based Medicine 2009;9(8):844-848 2009 | 2009 |  | wrist/hand # |
| Li 2013 | Comparison of unipedicular and bipedicular percutaneous kyphoplasty for treating osteoporotic vertebral compression fractures: a meta-analysis | CONCLUSIONS: This meta-analysis comparing unipedicular and bipedicular PKP demonstrated no significant differences regarding VAS, ODI, radiographic outcomes, or complications. Considering the longer operation time and radiation exposure with bipedicular PKP, we recommend unipedicular PKP over bipedicular PKP for treating OVCFs. | Surgery | Chin Med J (Engl) Oct 2013;126(20):3956-61 2013 Oct | 2013 |  | spine # |
| Li 2013 | Internal fixation versus nonoperative treatment for displaced 3-part or 4-part proximal humeral fractures in elderly patients: a meta-analysis of randomized controlled trials | Three randomized control trials with a total of 130 patients were pooled in this meta-analysis to compare non-operative treatment methods versus open reduction and internal fixation for proximal humerus fractures in the elderly. No differences were found in Constant Scores, nonunion rate, risk of avascular necrosis of the humeral head or osteoarthritis. The results of this study do not encourage the surgical treatment for older patients with fractures of the proximal humerus. | Surgery | PLoS One 2013;(): 2013 | 2013 |  | clavicle/arm # |
| Li 2013 | Absorbable implants versus metal implants for the treatment of ankle fractures: A meta-analysis | Absorbable implants used in ankle fractures rarely require reoperation and result in similar functional outcomes and complications compared with metal implants. These characteristics make them efficient and reasonably safe for the treatment of ankle fractures. | Surgery | Experimental and Therapeutic Medicine May 2013;5(5):1531-1537 2013 May | 2013 |  | foot/ankle/leg # |
| Li 2013 | Cemented versus uncemented hemiarthroplasty for femoral neck fractures in elderly patients: a meta-analysis | CONCLUSIONS: Compared with uncemented hemiarthroplasty, the existing evidence indicates that cemented hemiarthroplasty can achieve better hip function, lower residual pain and less implant-related complications with no increased risk of mortality, cardiovascular and cerebrovascular complications, general complications, local complications and reoperation rate in treating elderly patients with femoral neck fractures. | Surgery | PLoS One 2013;8(7):e68903 2013 | 2013 |  | hip # |
| Li 2014 | Timing of the initiation of bisphosphonates after surgery for fracture healing: a systematic review and meta-analysis of randomized controlled trials | Conclusions: Early administration of BPs after surgery did not appear to delay fracture healing time either radiologically or clinically. Furthermore, according to the changes in BMD and bone turnover markers, the anti-resorptive efficacy of BPs given immediately after surgical repair should positively affect the rate of subsequent fractures. Summary: We performed a systematic review and meta-analysis of randomized clinical trials. Early administration of bisphosphonates (BPs) after surgery did not appear to delay fracture healing time either radiologically or clinically. Furthermore, the anti-resorptive efficacy of BPs given immediately after surgical repair should positively affect the rate of subsequent fractures. Introduction: Bisphosphonates (BPs) are widely used in the prophylaxis and treatment of osteoporosis. However, early administration of BPs after surgical repair of a fracture may limit the reserve capacity of bone to heal. The aim of this review and meta-analysis was to analyze the benefits and adverse effects of early administration of BPs and give recommendations regarding when BPs should be utilized. Methods: We identified randomized controlled trials comparing the early administration of BPs to placebo, delayed BP treatment, or no therapy in adult patients after surgery. The search was performed in PubMed, the Cochrane Library, and Embase. | Medication | Osteoporosis International 2014;26(2):431-441 2014 | 2014 |  | not specified |
| Li 2015 | Results of Vertebral Augmentation Treatment for Patients of Painful Osteoporotic Vertebral Compression Fractures: A Meta-Analysis of Eight Randomized Controlled Trials | Pain scores, spinal functional outcomes, and quality of life were all significantly in favor of the percutaneous vertebral augmentation groups up to 1 year post-operatively in comparison to conventional treatment. Subgroup analysis indicated that percutaneous vertebral augmentation in fractures less than 3 months old would cause greater pain relief. | Surgery | PLoS One 2015;(): 2015 | 2015 |  | spine # |
| Li 2016 | Reamed versus unreamed intramedullary nailing for the treatment of femoral fractures: A meta-analysis of prospective randomized controlled trials | CONCLUSION: Reamed intramedullary nailing is correlated with shorter time to union and lower rates of delayed-union, nonunion, and reoperation. Reamed intramedullary nailing did not increase blood loss or the rates of ARDS, implant failure, and mortality compared to unreamed intramedullary nailing. Therefore, the treatment of femoral fractures using reamed intramedullary nailing is recommended. | Surgery | Medicine (Baltimore) Jul 2016;95(29):e4248 2016 Jul | 2016 |  | hip # |
| Li 2017 | Intramedullary and extramedullary fixations for the treatment of unstable femoral intertrochanteric fractures: a meta-analysis of prospective randomized controlled trials | CONCLUSION: Our meta-analysis of 11 prospective randomized controlled trials suggested: no obvious discrepancies were found in adverse events, operative time, blood transfusion, and hospital stay between intramedullary and extramedullary fixations. Given the better results of intramedullary fixation in terms of functional scores and blood loss, we recommend the intramedullary fixation technique in treating unstable femoral intertrochanteric fractures. Large multi-center RCTs, which focused on unstable femoral intertrochanteric fractures, are needed to evaluate the efficiency of alternative internal fixation strategies in the future. | Surgery | Int Orthop Feb 2017;41(2):403-413 2017 Feb | 2017 |  | hip # |
| Liang 2015 | Efficacies of surgical treatments based on Harris hip score in elderly patients with femoral neck fracture | CONCLUSIONS: The current network meta-analysis results suggest that IF is the superlative surgical procedure for femoral neck fracture patients, and IF significantly improves the HHS in femoral neck fracture patients. | Surgery | Int J Clin Exp Med 2015;8(5):6784-93 2015 | 2015 |  | hip # |
| Liao 2012 | A meta-analysis of total hip arthroplasty and hemiarthroplasty outcomes for displaced femoral neck fractures | CONCLUSIONS: Total hip arthroplasty is associated with better functional outcome and lower reoperation rate than hemiarthroplasty in treatment of displaced femoral neck fractures in the elderly patients. | Surgery | Arch Orthop Trauma Surg Jul 2012;132(7):1021-9 2012 Jul | 2012 |  | hip # |
| Li-hai 2015 | Volar locking plate versus external fixation for the treatment of unstable distal radial fractures: a meta-analysis of randomized controlled trials | 6 randomized controlled trials were included in the meta-analysis comparing the efficacy of closed reduction and external fixation (EF) with volar locking plate (VLP) fixation in the management of unstable distal radius fractures. Clinical outcomes, radiological outcomes, and complications were pooled over the first 12 months postoperatively. Pooled results favoured volar locked plating for 3-month functional recovery through patient-reported measures, grip strength, and range of motion. However, no significant differences in pain or function were observed between fixation methods at 12 months, with the exception of outcome on the Disabilities of the Arm, Shoulder, and Hand (DASH), which continued to favour VLP fixation. Reoperation rate was significantly higher following volar plating compared to external fixation. | Surgery | J Surg Res 2015;(): 2015 | 2015 |  | wrist/hand # |
| Liu 2013 | Comparing pain reduction following vertebroplasty and conservative treatment for osteoporotic vertebral compression fractures: a meta-analysis of randomized controlled trials | CONCLUSION: PVP has some value for relieving pain; however, the possibility of a placebo effect should be considered. PVP has gained acceptance as a complementary treatment when conservative management has failed before its benefits have been fully understood. More large scale, double blinded, controlled trials are necessary in order to quantify the pain relief afforded by PVP more precisely. | Surgery | Pain Physician Sep-Oct 2013;16(5):455-64 2013 Sep-Oct | 2013 |  | spine # |
| Liu 2014 | Therapeutic effect and safety of elastic intramedullary nail versus plate fixation in repair of fracture of forearm: A meta-analysis | RESULTS AND CONCLUSION: A total of 7 randomized controlled trials involving 468 cases were included. The results of meta-analyses showed that compared with plate fixation group, effective rate was higher in the titanium elastic nail group (P < 0.000 1), the time of fracture healing was shorter (P < 0.000 01), and the hospitalization time was shorter (P < 0.000 01). In the aspect of adverse reactions, incidence of refracture (P=0.03) and breakage of internal fixation (P=0.03) was significantly lower. These indicated that compared with plate fixation, titanium elastic nail can improve the total effective rate, shorten the time of fracture healing on X-ray and the hospitalization time, at the same time, can effectively reduce the complications of refracture and breakage of internal fixation. | Surgery | Chinese Journal of Tissue Engineering Research 2014;18(26):4248-4253 2014 | 2014 |  | wrist/hand # |
| Liu 2014 | Meta-analysis of randomised controlled trials comparing unipolar with bipolar hemiarthroplasty for displaced femoral-neck fractures | CONCLUSIONS: Unipolar and bipolar HA achieved similar clinical outcomes in patients with displaced femoral-neck fractures. | Surgery | Int Orthop Aug 2014;38(8):1691-6 2014 Aug | 2014 |  | hip # |
| Liu 2015 | Proximal femoral nail anti-rotation and dynamic hip screw in repair of intertrochanteric fracture in the elderly: A meta-analysis | CONCLUSION: In the end, we used 9 literatures, which contained 858 patients of intertrochanteric fractures in the elderly. The time of publication was from 2011 to 2015, and all of them were published in Chinese. The results of Meta-analysis showed that, compared with dynamic hip screw, proximal femoral nail anti-rotation in the treatment of intertrochanteric fractures in the elderly could effectively reduce operation time, blood loss, hospital stays, fracture healing time, length of incision and the time of walking after the operation was earlier, and it could obtain better recovery of hip function. We can point out that compared with dynamic hip screw, proximal femoral nail anti-rotation has certain advantages in the treatment of intertrochanteric fractures in the elderly. In some conditions, the patients and the hospitals can give priority to choose the proximal femoral nail anti-rotation in the treatment of intertrochanteric fractures in the elderly. © 2015, Journal of Clinical Rehabilitative Tissue Engineering Research. All rights reserved. | Surgery | Chinese Journal of Tissue Engineering Research 2015;19(44):7202-7208 2015 | 2015 |  | hip # |
| Liu 2015 | Intramedullary versus extramedullary fixation in the management of subtrochanteric femur fractures: A meta-analysis | Conclusion: In conclusion, our meta-analysis suggests that there was no significant difference in intraoperative data, postoperative complications, wound infection, hospital stay days or final outcome measures between intramedullary and extramedullary internal fixation. However, a significant decrease occurred in the rate of fracture fixation complications for patients treated with intramedullary internal fixation, especially in elderly patients. Some differences were not significant, but the treatment of elderly subtrochanteric femur fractures using intramedullary internal fixation is recommended. | Surgery | Clinical Interventions in Aging 28 Apr 2015;10():803-811 2015 28 Apr | 2015 |  | hip # |
| Liu 2015 | Protective Effect of Surgery Against Early Subtalar Arthrodesis in Displaced Intra-articular Calcaneal Fractures: A Meta-Analysis | The results showed that surgical treatment was superior to nonsurgical treatment in protection against early subtalar arthrodesis in displaced intra-articular calcaneal fractures (Z = 5.600, P < 0.001).Surgery offers protection against early subtalar arthrodesis in displaced intra-articular calcaneal fractures. | Surgery | Medicine (Baltimore) Nov 2015;94(45):e1984-0 2015 Nov | 2015 |  | foot/ankle/leg # |
| Long 2016 | Percutaneous compression plate versus dynamic hip screw for treatment of intertrochanteric hip fractures: A overview of systematic reviews and update meta-analysis of randomized controlled trials | CONCLUSIONS: PCCP is recommended to treat intertrochanteric hip fractures as an alternative minimally invasive method. More high-quality, randomized controlled trials that are adequately powered are needed to further evaluate the efficacy of PCCP and DHS. | Surgery | Int J Surg Sep 2016;33 Pt A():1-7 2016 Sep | 2016 |  | hip # |
| Luo 2012 | Systematic review of cemented versus uncemented hemiarthroplasty for displaced femoral neck fractures in older patients | The available evidence suggested that compared with uncemented hemiarthroplasty, cemented hemiarthroplasty in treating the elderly with displaced femoral neck fractures was not associated with a higher risk of mortality, reoperation and complications but can reduce the risk of residual pain and provide better functional results. | Surgery | Archives of Orthopaedic and Trauma Surgery April 2012;132(4):455-463 2012 April | 2012 |  | hip # |
| Luo 2016 | Operative Versus Nonoperative Treatment for Displaced Intra-Articular Calcaneal Fractures: A Meta-Analysis of Randomized Controlled Trials | The current evidence is still insufficient to ascertain whether operative treatment is superior to nonoperative treatment for displaced intra-articular calcaneal fractures. Operative treatment can reduce the risk of late subtalar arthrodesis but is associated with a greater risk of complications. The small sample size and the great heterogeneity of the included studies made it difficult to draw conclusions regarding some of the combined results. Furthermore, more high-quality, randomized controlled trials with long-term follow-up data on this issue are required to provide evidence for surgeons to make an informed decision. | Surgery | J Foot Ankle Surg Jul-Aug 2016;55(4):821-8 2016 Jul-Aug | 2016 |  | foot/ankle/leg # |
| Ma 2014 | Proximal femoral nails antirotation, Gamma nails, and dynamic hip screws for fixation of intertrochanteric fractures of femur: A meta-analysis | DISCUSSION: PFNA should be a priority choice for treatment of intertrochanteric fractures with minimal rate of fixation failure, less blood loss and shorter length of hospital stay. DHS has distinct advantages over Gamma nail with lower rate of plant-related complications and should be preferred device for intertrochanteric fractures. However, owing to the low quality evidence currently available, more high-quality RCTs are needed to confirm these findings. LEVEL OF EVIDENCE: Level II | Surgery | Orthop Traumatol Surg Res Dec 2014;100(8):859-66 2014 Dec | 2014 |  | hip # |
| Mafi 2014 | Orthopaedic approaches to proximal humeral fractures following trauma | This systematic review of literature compares the surgical treatment of proximal humeral fractures with their conservative management, by evaluating the available randomised controlled trials on this topic. | Surgery | Open Orthop J 2014;8():437-41 2014 | 2014 |  | clavicle/arm # |
| Mak 2010 | Evidence-based guidelines for the management of hip fractures in older persons: An update | Conclusions: Significant changes in recommendations have been made, particularly in relation to surgery, rehabilitation and tertiary prevention. Hip fracture should be treated according to the most up-to-date evidence to achieve the best possible outcomes and optimal use of limited resources. | Surgery | Medical Journal of Australia 04 Jan 2010;192(1):37-41 2010 04 Jan | 2010 |  | hip # |
| Mao 2014 | Operative versus nonoperative treatment in complex proximal humeral fractures | Six randomized control trials were included in the meta-analysis investigating the efficacy between operative and nonoperative treatment for complex 3- and 4-part humeral fractures. Overall, outcomes were similar between operative and nonoperative treatment, with few differences noted in functional outcome up to 24 months. Operative management required more additional surgery than did nonoperative treatment, and implants demonstrated a significant rate of penetration into joint spaces. Upon sub-group analyses for these findings, differences were in large part due to open reduction and internal fixation; hemiarthroplasty in the subgroup analyses was found to be statistically similar to nonoperative treatment. | Surgery | Orthopaedics 2014;(): 2014 | 2014 |  | clavicle/arm # |
| Mao 2015 | Comparison of Surgical versus Non-Surgical Treatment of Displaced 3- and 4-Part Fractures of the Proximal Humerus: A Meta-Analysis | CONCLUSIONS: Surgical treatment of displaced, multi-fragment fractures of the proximal humerus did not improve shoulder functional outcome, based on the Constant-Murley Score, when compared with conservative and non-surgical treatments. However, health-related QoL was significantly improved with surgical treatment compared with conservative treatment. | Surgery | J Invest Surg 2015;28(4):215-24 2015 | 2015 |  | clavicle/arm # |
| Mattie 2016 | Comparing Percutaneous Vertebroplasty and Conservative Therapy for Treating Osteoporotic Compression Fractures in the Thoracic and Lumbar Spine: A Systematic Review and Meta-Analysis | CONCLUSIONS: Up to 1 year postoperatively, the effect of PVP exceeded the effect of conservative therapy with respect to pain relief in patients with osteoporotic compression fractures. The effect size was significant and close to the minimal clinically important difference. | Surgery | J Bone Joint Surg Am Jun 15 2016;98(12):1041-51 2016 Jun 15 | 2016 |  | spine # |
| McKee 2012 | Operative versus nonoperative care of displaced midshaft clavicular fractures: a meta-analysis of randomized clinical trials | CONCLUSIONS: Operative treatment provided a significantly lower rate of nonunion and symptomatic malunion and an earlier functional return compared with nonoperative treatment. However, there is little evidence at present to show that the long-term functional outcome of operative intervention is significantly superior to nonoperative care. | Surgery | J Bone Joint Surg Am Apr 18 2012;94(8):675-84 2012 Apr 18 | 2012 |  | clavicle/arm # |
| Meena 2016 | Review Article: Operative versus nonoperative treatment for displaced intraarticular calcaneal fracture: a meta-analysis of randomised controlled trials | We reviewed 8 randomised controlled trials that compared operative and non-operative treatment for displaced intra-articular calcaneal fractures. Patients with operative treatment were more likely to resume pre-injury work (relative risk [RR]=0.60, p=0.04), had fewer problems when wearing shoes (RR=0.42, p=0.0004), and had a higher physical component summary score of SF-36 (difference in means=6.75, p<0.0001) but a higher complication rate (RR=1.74, p=0.0005). | Surgery | J Orthop Surg (Hong Kong) Dec 2016;24(3):411-416 2016 Dec | 2016 |  | foot/ankle/leg # |
| Metcalfe 2016 | Prophylactic antibiotics in open distal phalanx fractures: systematic review and meta-analysis | Four randomized controlled trials (353 fractures) were suitable for meta-analysis. There was no statistically significant difference between rates of superficial infection in the two groups. This finding persisted when only the two most recent and highest quality trials were included. There were no reported cases of osteomyelitis in the pooled dataset, despite patients with 164 fractures not receiving antibiotics. These results fail to show any effect of prophylactic antibiotics on the rate of superficial infections following open distal phalanx fractures. The focus of treatment should be on prompt irrigation and debridement rather than administration of prophylactic antibiotics. | Medication | J Hand Surg Eur Vol May 2016;41(4):423-30 2016 May | 2016 |  | wrist/hand # |
| Moschinski 2017 | Drug-based pain management for people with dementia after hip or pelvic fractures: a systematic review | CONCLUSION: People with dementia do not seem to receive the same amount of opioid analgesics after hip fracture as people without cognitive impairment. There is need to enhance pain assessment and management for these patients. Future research should pay more attention to the use of the appropriate items for assessing cognitive impairment and pain in people with dementia. TRIAL REGISTRATION: This systematic review was registered at Prospero ( CRD42016037309 ); on 11 April 2016, and the systematic review protocol was published (Syst Rev. 5(1):1, 2016). | Medication | BMC Geriatr Feb 14 2017;17(1):54 2017 Feb 14 | 2017 |  | hip # |
| Mosseri 2016 | Meta-Analysis of a Complex Network of Non-Pharmacological Interventions: The Example of Femoral Neck Fracture | CONCLUSIONS: In older women with displaced femoral neck fractures, arthroplasty (hemiarthroplasty (HA) and THA) is the most effective treatment in terms of risk of revision surgery. LEVEL OF EVIDENCE: Network Meta-Analysis, Level 1. | Non Surgical Intervention | PLoS One 2016;11(1):e0146336 2016 | 2016 |  | hip # |
| Ning 2014 | Cemented versus uncemented hemiarthroplasty for displaced femoral neck fractures: an updated meta-analysis | CONCLUSIONS: The available evidence suggested there was no significant difference between uncemented and cemented hemiarthroplasty in treating displaced femoral neck fractures. | Surgery | Eur J Orthop Surg Traumatol Jan 2014;24(1):7-14 2014 Jan | 2014 |  | hip # |
| O'Malley 2011 | Hip fracture management, before and beyond surgery and medication: a synthesis of the evidence | CONCLUSION: Multidisciplinary medical management of patients with hip fractures is being improved within the hospital environment resulting in earlier discharge with decreased morbidity. There is evidence to show the benefits to patients with hip fractures from peripheral modalities within the hospital; however unless resident in a facility, multidisciplinary management is not clearly of benefit. | Non Surgical Intervention | Arch Orthop Trauma Surg Nov 2011;131(11):1519-27 2011 Nov | 2011 |  | hip # |
| Ouyang 2013 | Plate versus intramedullary nail fixation in the treatment of humeral shaft fractures: an updated meta-analysis | CONCLUSIONS: On the basis of current evidence, both plating and nailing can achieve a similar treatment effect on humeral shaft fractures, but plating may reduce the occurrence of shoulder problems. Randomized controlled trials with larger sample sizes using appropriate blinding methods are needed to confirm these findings. LEVEL OF EVIDENCE: Level II, Meta-analysis of prospective comparative trials. | Surgery | J Shoulder Elbow Surg Mar 2013;22(3):387-95 2013 Mar | 2013 |  | clavicle/arm # |
| Pei 2015 | Proximal femoral nail antirotation versus artificial femoral head replacement for intertrochanteric fracture in the elderly: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: Totally 37 clinical controlled trials with 3 216 patients were recruited. Meta-analysis results showed that compared with femoral head replacement, proximal femoral nail antirotation was at a disadvantage in postoperative out-of-bed time, length of stay and joint function in the early stage. No significant difference in complication and mortality was detected between proximal femoral nail antirotation and femoral head replacement. However, proximal femoral nail antirotation had some advantages such as short operation time, small trauma, and less intraoperative blood loss, and showed good midterm and long-term outcomes of joint function. | Surgery | Chinese Journal of Tissue Engineering Research 2015;19(44):7193-7201 2015 | 2015 |  | hip # |
| Qiao 2015 | A meta-analysis of proximal femoral nail anti-rotation, dynamic hip screw and total hip arthroplasty for intertrochanteric fractures in the elderly. [Chinese] | RESULTS AND CONCLUSION: Twelve randomized controlled trials with 1 454 patients were included. Significant differences in mean operation time, intraoperative blood loss, X-ray exposure time, postoperative complication rate, and postoperative bed time were detected between the proximal femoral nail anti-rotation and dynamic hip screw groups (P < 0.05). Significant differences in length of hospital stays, postoperative complication rate, and postoperative bed time were observed between the proximal femoral nail anti-rotation and total hip arthroplasty groups (P < 0.05). Significant differences in postoperative complication rate, postoperative bed time, and Harris hip scores were detectable between the dynamic hip screw and total hip arthroplasty groups (P < 0.05). These data confirm that proximal femoral nail anti-rotation was apparently better than dynamic hip screw and total hip arthroplasty in operation time, intraoperative blood loss, length of hospital stays, postoperative complication rate, and postoperative bed time. Dynamic hip screw was better than proximal femoral nail anti-rotation in X-ray exposure time. Total hip arthroplasty was better than dynamic hip screw and proximal femoral nail anti-rotation in length of hospital stays, postoperative complication rate and postoperative bed time. | Surgery | Chinese Journal of Tissue Engineering Research 2015;19(31):5057-5064 2015 | 2015 |  | hip # |
| Qiu 2015 | The comparative risk of developing postoperative complications in patients with distal radius fractures following different treatment modalities | Our results revealed that compared to DRF patients treated with bridging external fixation, marked differences in pin-track infection (PTI) rate were found in patients treated with plaster fixation, volar plating, and dorsal and volar plating. Cluster analysis showed that plaster fixation is associated with the lowest probability of postoperative complication in DRF patients. Plaster fixation is associated with the lowest risk for postoperative complications in DRF patients, when compared to six other common DRF surgical methods examined. | Surgery | Sci Rep Nov 09 2015;5():15318 2015 Nov 09 | 2015 |  | wrist/hand # |
| Rabi 2015 | Operative vs non-operative management of displaced proximal humeral fractures in the elderly: A systematic review and meta-analysis of randomized controlled trials | CONCLUSION: There is moderate quality evidence to suggest that there is no difference in functional outcomes between the two treatments. Further high quality randomized controlled trials are required to determine if certain subgroup populations benefit from surgical management. | Surgery | World J Orthop Nov 18 2015;6(10):838-46 2015 Nov 18 | 2015 |  | clavicle/arm # |
| Rehn 2014 | Operative versus nonoperative treatment of displaced midshaft clavicle fractures in adults: a systematic review | CONCLUSIONS: It seems like operative intervention leads to fewer nonunions at the cost of an increase in minor complications compared to nonoperative treatment. However, the effects of operation on functional outcome remains controversial. High quality evidence is currently sparse supporting either operative or nonoperative treatment on displaced midshaft clavicle fractures in adults. | Surgery | Eur J Orthop Surg Traumatol Oct 2014;24(7):1047-53 2014 Oct | 2014 |  | clavicle/arm # |
| Riddell 2016 | Use of Femoral Nerve Blocks to Manage Hip Fracture Pain among Older Adults in the Emergency Department: A Systematic Review | The findings of this systematic review indicated favourable outcomes for pain and reduce analgesic use with femoral nerve block treatment compared to standard care with opioids and/or placebo control. | Medication | CJEM 2016;(): 2016 | 2016 |  | hip # |
| Rogmark 2006 | Primary arthroplasty is better than internal fixation of displaced femoral neck fractures: a meta-analysis of 14 randomized studies with 2,289 patients | INTERPRETATION: Primary arthroplasty should be used in most patients with displaced femoral neck fracture. The healthy, lucid individual, 70-80 years old, should be given a total hip arthroplasty. The older, impaired or institutionalized patient would benefit from a hemiarthroplasty | Surgery | Acta Orthop Jun 2006;77(3):359-67 2006 Jun | 2006 |  | hip # |
| Sabharwal 2016 | Trials based on specific fracture configuration and surgical procedures likely to be more relevant for decision making in the management of fractures of the proximal humerus: Findings of a meta-analysis | CONCLUSION: This meta-analysis has demonstrated that differences in the type of fracture and surgical treatment result in outcomes that are distinct from those generated from analysis of all types of fracture and surgical treatments grouped together. This has important implications for clinical decision making and should highlight the need for future trials to adopt more specific inclusion criteria. Cite this article: S. Sabharwal, N. K. Patel, D. Griffiths, T. Athanasiou, C. M. Gupte, P. Reilly. Trials based on specific fracture configuration and surgical procedures likely to be more relevant for decision making in the management of fractures of the proximal humerus: Findings of a meta-analysisBone Joint Res 2016;5:470-480. DOI: 10.1302/2046-3758.510.2000638. | Surgery | Bone Joint Res Oct 2016;5(10):470-480 2016 Oct | 2016 |  | clavicle/arm # |
| Shen 2015 | Comparison of operative and non-operative treatment of acute undisplaced or minimally-displaced scaphoid fractures: a meta-analysis of randomized controlled trials | CONCLUSION: Acute undisplaced or minimally-displaced scaphoid fractures demonstrate faster recovery with operative treatment; however, the current meta-analysis does not provide evidence supporting the routine use of operative treatment for all acute undisplaced or minimally-displaced scaphoid fractures. | Surgery | PLoS One 2015;10(5):e0125247 2015 | 2015 |  | wrist/hand # |
| Slobogean 2008 | Single- versus multiple-dose antibiotic prophylaxis in the surgical treatment of closed fractures: a meta-analysis | CONCLUSIONS: In the setting of closed long bone fractures, the pooled results failed to demonstrate superiority of multiple-dose prophylaxis over a single-dose strategy. The pooled estimates suggest that surgical wound infections are relatively rare events and that any potential difference in infection rates between prophylaxis strategies is likely quite small. However, because the confidence interval surrounding the pooled risk ratio spans 1.0 by such a large amount, we are unable to definitively recommend a preferred dosing regimen to prevent surgical wound infections. Although future research is required to ensure our prophylaxis decisions continue to be evidence based and cost-effective, it is unlikely that a single clinical trial will be able to provide the answer. The use of other quantitative methods, such as cost-effectiveness analysis, may be helpful in modeling an optimal prophylaxis strategy. | Medication | J Orthop Trauma Apr 2008;22(4):264-9 2008 Apr | 2008 |  | not specified |
| Smith 2016 | Does Open Reduction and Internal Fixation versus Primary Arthrodesis Improve Patient Outcomes for Lisfranc Trauma? A Systematic Review and Meta-analysis | CONCLUSIONS: The surgeon should consider the increased risk of hardware removal along with its associated morbidity and discuss this with the patient preoperatively when considering ORIF of Lisfranc injuries. Because no new trials have been performed since 2012, further randomized controlled trials will be needed improve our understanding of these interventions. LEVEL OF EVIDENCE: Level I, therapeutic study. | Surgery | Clin Orthop Relat Res Jun 2016;474(6):1445-52 2016 Jun | 2016 |  | foot/ankle/leg # |
| Snyder 2012 | Does low-intensity pulsed ultrasound reduce time to fracture healing? A meta-analysis | Five randomized, placebo-controlled trials were included in this meta-analysis investigating the efficacy of low-intensity pulsed ultrasound (LIPUS) in accelerating fracture healing. The primary outcome was time to radiographic healing while the incidence of various adverse events was a secondary endpoint. Meta-analysis demonstrated a significantly lower time to radiographic healing in LIPUS-treated groups compared to placebo-treated groups. Subgroup analyses of studies including exclusively nonoperatively managed fractures, exclusively operatively managed fractures, and exclusively tibial fractures did not find statistically significant differences between LIPUS and placebo. | Non Surgical Intervention | Am J Orthop 2012;(): 2012 | 2012 |  | not specified |
| Song 2015 | Operative vs. nonoperative treatment for comminuted proximal humeral fractures in elderly patients: a current meta-analysis | CONCLUSION: Compared with operative treatment for closed comminuted proximal humeral fractures in elderly patients, conservative treatment can effectively reduce the risk of additional surgeries and complications. However, there is no statistical difference between operative and nonoperative treatment in terms of clinical outcomes. | Surgery | Acta Orthop Traumatol Turc 2015;49(4):345-53 2015 | 2015 |  | clavicle/arm # |
| Song 2015 | Comparison of conservative and operative treatment for distal radius fracture: a meta-analysis of randomized controlled trials | CONCLUSION: Surgical treatment seems to be more effective distal radius fracture compared with conservative treatment when the radiographic outcomes were analyzed, and no significant differences were deteched in the functional outcomes and complication rate. | Surgery | Int J Clin Exp Med 2015;8(10):17023-35 2015 | 2015 |  | wrist/hand # |
| Sun 2016 | Comparison of unilateral and bilateral percutaneous vertebroplasty for osteoporotic vertebral compression fractures: a systematic review and meta-analysis | Fourteen randomized controlled trials were included in this meta-analysis comparing clinical and surgical results between unilateral and bilateral percutaneous vertebroplasty. Clinical results demonstrated no significant differences in pain or disability scores between techniques. Surgical results demonstrated a significantly shorter operative time and lower volume of cement injection with unilateral versus bilateral percutaneous vertebroplasty, while the incidence of cement leakage did not significantly differ between techniques. | Surgery | J Orthop Surg Res 2016;(): 2016 | 2016 |  | spine # |
| Sun 2016 | Can Unilateral Kyphoplasty Replace Bilateral Kyphoplasty in Treatment of Osteoporotic Vertebral Compression Fractures? A Systematic Review and Meta-analysis | CONCLUSION: Both unilateral kyphoplasty and bilateral kyphoplasty are safe and effective treatments for OVCFs. However, when operative time, cement volume, cement leakage, short-term general health, radiation dose, and hospitalization costs are taken into consideration, unilateral kyphoplasty may be the better choice. Yet, more high-quality RCTs with long-term follow-up are still required to make the final conclusion.Key words: Kyphoplasty, unilateral approach, bilateral approach, osteoporotic vertebral compression fractures, meta-analysis. | Surgery | Pain Physician Nov-Dec 2016;19(8):551-563 2016 Nov-Dec | 2016 |  | spine # |
| Vu 2006 | Clinical inquiries. What is the most effective management of acute fractures of the base of the fifth metatarsal? | For acute Jones' fractures in recreationally active patients, early intramedullary screw fixation results in lower failure rates and shorter times to both clinical union and return to sports than non-weightbearing short leg casting (strength of recommendation [SOR]: A, based on 2 randomized controlled trials [RCT]). Non-weightbearing short leg casting achieves union in 56% to 100% of patients but can require prolonged casting (SOR: B, based on 2 prospective cohorts and multiple retrospective, follow-up studies). Stress fractures were not included in this review. For avulsion fractures of the fifth metatarsal tuberosity, a soft Jones' dressing allows earlier return to pre-injury levels of activity than rigid short leg casting (SOR: B, based on a lower-quality RCT). | Surgery | J Fam Pract Aug 2006;55(8):713-7 2006 Aug | 2006 |  | foot/ankle/leg # |
| Walenkamp 2013 | Functional outcome in patients with unstable distal radius fractures, volar locking plate versus external fixation: a meta-analysis | Three randomized clinical trials were included in this meta-analysis which compared open reduction and internal fixation (ORIF) with volar locking plates to bridging external fixation in the treatment of unstable distal radius fractures. Disabilities of the Arm, Shoulder and Hand (DASH) scores at 3, 6, and 12 months were significantly better in patients who received ORIF. There was no significant difference between treatments for complication rates. | Surgery | Strategies Trauma Limb Recon 2013;(): 2013 | 2013 |  | wrist/hand # |
| Walker 2007 | Low-intensity pulsed ultrasound and pulsed electromagnetic field in the treatment of tibial fractures: A systematic review | Conclusions: The studies we included in our review were of generally high methodologic quality. The evidence suggests that LIPUS may speed healing of acute tibial fractures. Comparison studies of these modalities are needed to guide treatment of fractures sustained by athletic individuals. | Non Surgical Intervention | Journal of Athletic Training October/December 2007;42(4):530-535 2007 October/December | 2007 |  | foot/ankle/leg # |
| Wang 2009 | Arthroplasty or internal fixation for displaced femoral neck fractures: which is the optimal alternative for elderly patients? A meta-analysis | The results showed that compared to internal fixation arthroplasty led to significantly fewer surgical complications at two and five years postoperatively and reduced the incidence of reoperation at one, two and five years postoperatively (P < 0.001). However, arthroplasty was associated with greater risk of deep wound infection, longer operating time and greater operative blood loss. Arthroplasty substantially increased the risk of reoperation following deep wound infection (P < 0.05). For mortality, there was increased postoperative risk for arthroplasty compared with internal fixation, but there was no statistically significant difference between the two groups at the different follow-up times. For pain at one year postoperatively, the result showed no statistically significant difference. | Surgery | Int Orthop. 2009;(): 2009 | 2009 |  | hip # |
| Wang 2012 | Systematic review of reamed intramedullary nailing versus unreamed intramedullary nailing for femoral shaft fractures in adult patients | The Meta-analysis showed that compared with unreamed intramedullary nailing, reamed intramedullary nailing for femoral shift fractures could reduce the nonunion rate (RR=0.20, 95% CI 0.07-0.82, P = 0.02), re-operation rate (RR=0.25, 95% CI 0.11-0.59, P = 0.002) and delayed healing rate (RR=0.30, 95%CI 0.14-0.64, P = 0.002), for the fixation failure rate (RR = 0.68, 95% CI 0.28-1.70, P = 0.41), mortality rate (RR 0.94, 95% CI 0.19-4.58, P = 0.94) and incidence rate of respiratory distress syndrome (RR 1.53, 95% CI 0.37-6.32, P = 0.78) had no significant statistical difference. It is indicated that reamed intramedullary nailing has better clinical effects than unreamed intramedullary nailing for femoral shaft fracture in the adults. | Surgery | Chinese Journal of Tissue Engineering Research 2012;16(26):4812-4816 2012 | 2012 |  | hip # |
| Wang 2013 | Open reduction and internal fixation versus external fixation for unstable distal radial fractures: a meta-analysis | CONCLUSION: Regarding surgical fixation of unstable distal radius fractures, ORIF yields significantly better subjective outcome (DASH scores) the first year after operation, restoration of anatomic volar tilt, and forearm flexion and extension at the end of the follow-up period. However, EF results in higher incidence of infection compared to ORIF. ORIF is equal to EF for either grip strength, or range of motion of the injured wrist, or incidence of malunion or median nerve dysfunction at the end of the follow-up period. LEVEL OF EVIDENCE: Level II. Therapeutic study. | Surgery | Orthop Traumatol Surg Res May 2013;99(3):321-31 2013 May | 2013 |  | wrist/hand # |
| Wang 2015 | Plate Versus Intramedullary Fixation Care of Displaced Midshaft Clavicular Fractures: A Meta-Analysis of Prospective Randomized Controlled Trials | Seven randomized controlled trials involving 421 patients were included. Compared to intramedullary nailing fixation, plate fixation had a relatively longer mean surgical time and a trend towards a faster functional improvement during the first 6 months after surgery; apart from this, the pooled results revealed no significant differences in functional scores after 6 months postoperatively, complication rate and patients' satisfaction between plate fixation and intramedullary fixation.Our results demonstrated that these 2 methods were comparable and safe in the treatment of displaced midshaft clavicle fractures. We advocate both techniques for the treatment of displaced midshaft clavicle fractures, and the superior surgical technique was those that the surgeon was originally trained to perform. | Surgery | Medicine (Baltimore) Oct 2015;94(41):e1792 2015 Oct | 2015 |  | clavicle/arm # |
| Wang 2015 | Comparison of bipolar hemiarthroplasty and total hip arthroplasty for displaced femoral neck fractures in the healthy elderly: a meta-analysis | CONCLUSIONS: For healthy elderly patients with displaced FNFs, treatment with BHA led to better outcomes regarding dislocation rate, while THA was better regarding acetabular erosion rate and reoperation rate. When comparing BHA with THA, there were no significant differences in other important outcomes such as Harris Hip Score, infection rate, general complications, and 1-year mortality. Further high-quality RCTs are needed to provide robust evidence and evaluate the treatment options. | Surgery | BMC Musculoskelet Disord Aug 28 2015;16():229 2015 Aug 28 | 2015 |  | hip # |
| Wang 2016 | Is intramedullary nailing better than the use of volar locking plates for fractures of the distal radius? A meta-analysis of randomized controlled trials | Five randomized controlled trials (RCTs) were included in this systematic review and meta-analysis comparing clinical, functional, and radiographic outcomes between volar locking plates (VLP) and intramedullary nails (IMN) in the management of distal radius fractures. Additionally, the incidence of postoperative development of carpal tunnel syndrome was compared between techniques. No significant differences in pooled Disabilities of the Arm, Shoulder, and Hand scores or Gartland-Werley scores, range of motion in any direction, or radiographic variables. There was a significantly lower incidence of postoperative carpal tunnel syndrome development observed with intramedullary nails versus volar locking plates. | Surgery | J Hand Surg Eur Vol 2016;(): 2016 | 2016 |  | wrist/hand # |
| Wang 2017 | Comparison of effects of seven treatment methods for distal radius fracture on minimizing complex regional pain syndrome | Conclusions: Our findings suggest that compared with bridging external fixation, K-wire fixation, dorsal plating, volar plating, dorsal and volar plating, plaster fixation and non-bridging external fixation might be the better treatment methods to reduce the risk of CRPS in DRF patients. | Surgery | Archives of Medical Science February 2017;13(1):163-173 2017 February | 2017 |  | wrist/hand # |
| Wei 2012 | Recombinant human BMP-2 for the treatment of open tibial fractures | Recombinant human bone morphogenetic protein-2 added to intramedullary nail fixation of open tibial fractures could reduce the frequency of secondary interventions and total health care costs. For reamed patients, adding rhBMP-2 reduced treatment failure. This analysis supports the clinical efficacy of rhBMP-2/ACS for the treatment of these severe fractures. | Surgery | Orthopedics Jun 2012;35(6):e847-54 2012 Jun | 2012 |  | foot/ankle/leg # |
| Wu 2015 | Injured vertebra pedicle screw fixation and cross-segment pedicle screw fixation for thoracolumbar fracture: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: By sc reening, a total of 14 clinical controlled trials were selected, including 956 patients. Meta-analysis results showed that postoperative Cobb angle was improved significantly in the vertebral pedicle screw group than in the cross-segment pedicle screw fixation group (OR=-2.72, 95%CI: -3.08--2.35, P < 0.01). Correction rate of the vertebral height was higher in the vertebral pedicle screw group than in the cross-segment pedicle screw fixation group (OR=7.45, 95%CI:6.94-7.97, P < 0.01). The failure rate was lower in the vertebral pedicle screw group than in the cross-segment pedicle screw fixation group (OR=0.12, 95%CI: 0.05- 0.27, P < 0.01). Results verify that postoperative Cobb angle improved significantly after the injured vertebrae pedicle screw and cross-segment pedicle screw fixation for thoracolumbar fractures. The height was obviously corrected and fewer complications were caused such as implant failure. The fixation effect was good. | Surgery | Chinese Journal of Tissue Engineering Research 28 May 2015;19(22):3604-3608 2015 28 May | 2015 |  | spine # |
| Wu 2016 | Percutaneous Reduction and Fixation with Kirschner Wires versus Open Reduction Internal Fixation for the Management of Calcaneal Fractures: A Meta-Analysis | Eighteen RCTs provided the data from 1407 patients. PRFK was associated with a lower risk of surgical wound complications, and ORIF with better post-operative function, angle of Gissane, calcaneal height, and calcaneal width. There were no statistically significant differences between the techniques with regards to post-operative Bohler's angle. PRFK does not provide a substantive advantage over ORIF for the treatment of calcaneal fractures in adults. PRFK may, however, yield comparable functional outcomes to ORIF for closed Sanders type II calcaneal fractures but with less complication related to surgical wound healing. | Surgery | Sci Rep Jul 26 2016;6():30480 2016 Jul 26 | 2016 |  | foot/ankle/leg # |
| Xie 2013 | Comparison of internal and external fixation of distal radius fractures: a meta-analysis of randomized controlled trials (Provisional abstract) | INTERPRETATION: For surgical treatment of distal radius fractures, IF yields better functional outcomes, forearm supination, restoration of anatomic volar tilt and radial inclination, and fewer minor complications. The patients who received IF using volar locking plates for the treatment of distal radius recovered more quickly than did patients who received EF. | Surgery | Acta Orthopaedica 2013;84(3):286-291 2013 | 2013 |  | wrist/hand # |
| Xie 2015 | The Incidence of New Vertebral Fractures Following Vertebral Augmentation: A Meta-Analysis of Randomized Controlled Trials | Seven randomized controlled trial studies were selected from the literature. The studies include 871 patients, 436 of whom received PVA treatment and the rest received conservative treatment. Combined analysis of the 7 studies showed that the numbers of new vertebral fractures in the 2 groups are not significantly different. Six studies reported the numbers of new adjacent fractures. Considering the heterogeneity among the studies, 2 subgroups were formed. The 5 studies in the European group showed that the incidence of new adjacent fractures in the PVA-treated group is higher than that in the conservatively treated group, and the difference is statistically significant. The one study in the Asian group showed no significant difference between the incidences of adjacent fractures in the 2 groups. PVA treatment does not increase the incidence of new vertebral fractures. Most studies reported that PVA increases the incidence of adjacent fractures, yet it is rarely stated that both PVA and conservative treatment lead to the same incidence of adjacent fractures. | Surgery | Medicine (Baltimore) Sep 2015;94(37):e1532 2015 Sep | 2015 |  | spine # |
| Xie 2015 | Operative versus non-operative treatment in complex proximal humeral fractures: a meta-analysis of randomized controlled trials | No statistical differences were found between operative and non-operative treatment in CS scores at 12 mo (months) [MD 1.06 95 % CI (-3.51, 5.62)] and 24 mo [MD -0.61 95 % CI (-5.87, 4.65)]. There are also no statistical differences between operative and non-operative treatment in DASH scores at 12 mo [MD -4.51 95 % CI (-13.49, 4.47)] and 24 mo [MD -7.43 95 % CI (-16.14, 1.27)]. Statistical differences were found between operative and non-operative treatment in total complication rates [RR 1.55, 95 % CI (1.24, 1.94)]. Statistical differences in EQ-5D at 24 mo [MD 0.15, 95 % CI (0.05, 0.24)] were found between operative and non-operative treatment but no statistical differences were found in ED-5D at 12 mo [MD 0.08, 95 % CI (-0.01, 0.17)], 15D at 12 mo [MD 0.02, 95 % CI (-0.68, 0.73)] and 15D at 24 mo [MD 0.02, 95 % CI (-0.07, 0.83)]. Operative treatments did not significantly improve the functional outcome and healthy-related quality of life in elderly patients. Instead, Operative treatment for CPHFs led to higher incidence of postoperative complications. | Surgery | Springerplus 2015;4():728 2015 | 2015 |  | clavicle/arm # |
| Xu 2013 | Should displaced midshaft clavicular fractures be treated surgically? A meta-analysis based on current evidence | CONCLUSIONS: The available evidence suggests that the operative treatment for DMCF is associated with a lower rate of nonunion, malunion and complication than nonoperative treatment. This study supports traditional primary operative treatment for DMCF in active adults. | Surgery | Eur J Orthop Surg Traumatol Aug 2013;23(6):621-9 2013 Aug | 2013 |  | clavicle/arm # |
| Xue 2010 | Reamed and unreamed intramedullary nailing for the treatment of open and closed tibial fractures: a subgroup analysis of randomised trials | In conclusion, our study recommended reamed nails for the treatment of closed tibial fractures. But the choice for open tibial fractures remains uncertain. | Surgery | Int Orthop Dec 2010;34(8):1307-13 2010 Dec | 2010 |  | foot/ankle/leg # |
| Yang 2014 | Implant fixation versus conservative treatment for clavicle fractures: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: Six randomized controlled trials were included, including 570 patients. Meta-analysis results demonstrated that for clavicle fractures, implant fixation could decrease nonunion rate [RR=0.16, 95%CI(0.07, 0.38), P < 0.000 1], malunion rate [RR=0.15, 95%CI(0.07, 0.34), P < 0.000 01], delayed union rate [RR=0.20, 95%CI(0.06, 0.70), P=0.01] and the incidence of residual pain at 1 year after treatment [RR=0.24, 95%CI(0.12, 0.51), P=0.000 2], could elevate Constant Score [MD=3.68, 95%CI(1.61, 5.76), P=0.000 5]. However, it was not concluded that fixation could reduce the incidence of neurological complications [RR=0.63, 95%CI(0.06, 0.70), P=0.22]. It is suggested that implant fixation for clavicle fractures obtained good clinical effects. However, due to the disadvantages of the included literatures, we still needed high-quality multicenter randomized controlled trials to further verify conclusions, and should pay more attention on patients' individual conditions when the therapeutic methods for clavicle fractures were selected in the clinic. | Surgery | Chinese Journal of Tissue Engineering Research 28 May 2014;18(22):3567-3573 2014 28 May | 2014 |  | clavicle/arm # |
| Yang 2015 | Bipolar versus unipolar hemiarthroplasty for displaced femoral neck fractures in the elder patient: a systematic review and meta-analysis of randomized trials | CONCLUSIONS: Both bipolar and unipolar hemiarthroplasty for the treatment of elderly patient suffering displaced femoral neck fracture achieve similar and satisfy clinical outcome in short-term follow-up. Unipolar hemiarthroplasty seems to be a more cost-effectiveness option for elderly patient. | Surgery | Eur J Orthop Surg Traumatol Apr 2015;25(3):425-33 2015 Apr | 2015 |  | hip # |
| Yang 2015 | A systematic review on unilateral versus bilateral kyphoplasty for osteoporotic vertebral compression fractures. [Chinese] | RESULTS AND CONCLUSION: Eight randomized controlled trials involving 507 patients and 656 vertebral bodies were involved in the result analysis. The results showed that, there was no bone cement leakage between the two groups; preoperative visual analog scale score (WMD=-0.05, P=0.58) at short-term follow-up (< 3 months) (WMD=-0.02, P=0.25) and long-term follow-up (> 12 months) (WMD=0.08, P=0.64) also showed no significant differences between the two groups. Oswestry disability index at short-term follow-up (WMD=0.13, P= 0.73) and long-term follow-up (WMD=0.05, P= 0.98) in the two groups had no statistical significance. This meta-analysis showed significant difference in the bone cement volume and operating time, and the unilateral approach was better than bilateral approach. Radiographic findings showed that preoperative and postoperative kyphosis angle and restoration rate were not statistically different between the two groups. This meta-analysis comparing unilateral and bilateral percutaneous kyphoplasty for the treatment of osteoporotic vertebral compression fractures demonstrates no significant differences regarding the visual analog scale scores, radiographic outcomes and complications. Considering the operation time and radiation exposure, we recommend unilateral percutaneous kyphoplasty. | Surgery | Chinese Journal of Tissue Engineering Research 19 Feb 2015;19(8):1306-1312 2015 19 Feb | 2015 |  | spine # |
| Yang 2016 | Comparison of hemiarthroplasty versus internal fixation in treatment of displaced femoral neck fracture: A meta-analysis | RCTs that investigated the effectiveness or complications between both groups and provided sufficient data of interest were included in this meta-analysis. 14 RCTs fulfilled inclusion and exclusion criteria and were included in this meta-analysis, with 1270 participants in the IF group and 1425 in the HA group. Patients were followed up for at least one year in all the studies. Compared to IF, HA is a better alternative for treatment of displaced femoral neck fracture in the elderly, with reduced major complications and reoperations, better hip pain relief and favorable hip function in the long run. There were no statistically significant differences between the groups in the incidence of wound infection, deep vein thrombosis, pulmonary embolism, haematoma, pressure sores, cerebrovascular accident, respiratory infection and urinary tract infection. HA has more advantages than IF for treatment of displaced femoral neck fracture, and could be a better alternative if surgery was indicated. This definitive conclusion could help surgeons in making evidence-based decisions when selecting an optimal fixation pattern. | Surgery | International Journal of Clinical and Experimental Medicine 30 Aug 2016;9(8):15017-15025 2016 30 Aug | 2016 |  | hip # |
| Ye 2014 | Arthroplasty versus Internal Fixation for Displaced Intracapsular Femoral Neck Fracture in the Elderly: Systematic Review and Meta-analysis of Short- and Long-term Effectiveness | CONCLUSIONS: Based on our analysis, we recommend that AR should be used as the primary treatment for displaced intracapsular femoral neck fractures in the elderly. However, IF may be appropriate for those who are very frail. | Surgery | Eur Spine J Sep 2014;23(9):1918-26 2014 Sep | 2014 |  | hip # |
| Yin 2014 | Unipedicular versus bipedicular percutaneous kyphoplasty for treating osteoporotic vertebral compression fractures: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: A total of seven randomized controlled trials were collected. Results of statistical analysis showed that visual analogus scale scores were decreased in both groups, but no significant difference was detected [RR= -0.08, 95%CI(-0.05, -0.21), P=0.21]. There was no significant difference in Cobb angle change [RR= -0.07, 95%CI(-0.16, -1.47), P=0.93]. No significant difference in the average recovered height of vertebral bodies was detected [RR= -1.76, 95%CI(-4.21, -0.69), P=0.16]. Operation time was shorter in unipedicular percutaneous kyphoplasty than in bipedicular percutaneous kyphoplasty [RR= -23.99, 95%CI(-26.01, -21.97), P < 0.000 01]. These data indicated that compared with bipedicular percutaneous kyphoplasty, unipedicular percutaneous kyphoplasty could effectively reduce the operation time. However, no significant difference in visual analogus scale scores, Cobb angle change and the average recovered height of vertebral bodies was visible in statistical analysis in both groups. | Surgery | Chinese Journal of Tissue Engineering Research 23 Jul 2014;18(31):5030-5035 2014 23 Jul | 2014 |  | spine # |
| Yu 2012 | Total hip arthroplasty versus hemiarthroplasty for displaced femoral neck fractures: Meta-analysis of randomized trials hip | Conclusions: Despite more dislocations, THA can benefit patients with displaced femoral neck fractures with a lower reoperation rate and higher functional scores. | Surgery | Clinical Orthopaedics and Related Research August 2012;470(8):2235-2243 2012 August | 2012 |  | hip # |
| Yu 2014 | Reamed or unreamed intramedullary nailing for tibial fractures: a meta-analysis | CONCLUSION: There is no significant difference in the reamed and unreamed intramedullary nailing for the treatment of tibial fractures, but our result recommends reamed nails for the treatment of closed tibial fractures for their lower fixation failure rate. | Surgery | Chin J Traumatol 2014;17(4):229-34 2014 | 2014 |  | foot/ankle/leg # |
| Yu 2015 | Internal fixation treatments for intertrochanteric fracture: a systematic review and meta-analysis of randomized evidence | The relative effects of internal fixation strategies for intertrochanteric fracture after operation remain uncertain. We conducted a systematic review and meta-analysis of randomized controlled trials (RCTs) to address this important issue. We searched PubMed, EMBASE and CENTRAL for RCTs that compared different internal fixation implants in patients with intertrochanteric fracture at 6-month follow-up or longer. We ultimately included 43 trials enrolling 6911 patients; most trials were small in sample sizes and events. Their risk of bias was generally unclear due to insufficient reporting. Because of these, no statistically significant differences were present from most of the comparisons across all the outcomes, and no definitive conclusions can be made. However, a number of trials compared two commonly used internal fixation strategies, gamma nail (GN) and sliding hip screw (SHS). There is good evidence suggesting that, compared to SHS, GN may increase the risk of cut out (OR = 1.87, 95% CI, 1.08 to 3.21), re-operation (OR = 1.61, 95% CI, 1.02 to 2.53), intra-operative (OR = 3.14, 95% CI, 1.34 to 7.35) and later fractures (OR = 3.67, 95% CI, 1.37 to 9.83). Future randomized trials or observational studies that are carefully designed and conducted are warranted to establish the effects of alternative internal fixation strategies for intertrochanteric fracture. | Surgery | Sci Rep Dec 11 2015;5():18195 2015 Dec 11 | 2015 |  | hip # |
| Yu 2016 | Internal fixation vs conservative treatment for displaced distal radius fractures: A meta-analysis of randomized controlled trials | CONCLUSION: Very few clinical differences were found between results of internal fixation and conservative treatment for displaced distal radius fractures. Best course of of treatment must be determined based on concrete conditions. | Surgery | Ulusal Travma ve Acil Cerrahi Dergisi May 2016;22(3):239-241 2016 May | 2016 |  | wrist/hand # |
| Zeng 2012 | Treatment of trochanteric fractures with proximal femoral nail antirotation or dynamic hip screw systems: a meta-analysis | CONCLUSION: The use of PFNA for treatment of trochanteric fractures was found to be superior to DHS in terms of the duration of surgery, intraoperative blood loss, and rates of fixation failure and overall complications. | Surgery | J Int Med Res 2012;40(3):839-51 2012 | 2012 |  | hip # |
| Zeng 2012 | [Meta-analysis of proximal femoral nail anti-rotation versus dynamic hip screw in the treatment of trochanteric fractures] | CONCLUSION: PFNA for intertrochanteric fractures is superior to DHS in regards to the mean duration of surgery, mean intra-operative blood loss, the rate of post-operative complication, and the rate of post-operative fixation failure. But there is not enough evidence to show any difference between PFNA and DHS in regards to the mean duration of hospital, the mean duration of fracture healing, the rate of post-operative fracture, the rate of post-operative coxa vara, the rate of postoperative superficial wound infection, the rate of other post-operative complications or the Harris score after surgery. | Surgery | Zhong Nan Da Xue Xue Bao Yi Xue Ban Jun 2012;37(6):606-15 2012 Jun | 2012 |  | hip # |
| Zhai 2015 | Systematic review of dynamic hip plate and proximal femoral intramedullary nail fixation for intertrochanteric fracture in adults | CONCLUSION: 4 757 trial participants with 4 748 fractures were included in the 31 published trials. There was no significant difference in the length of surgery, reoperation rate, cut-out of the implant from the femoral head, non-union of the fracture, wound infection and postoperative hip pain between the two groups (P > 0.05) between dynamic hip plate and proximal femoral intramedullary nail fixation. Compared with dynamic hip plate fixation, proximal femoral intramedullary nail fixation had less blood loss and significantly higher rate of femoral shaft fractures (P=0.003). Experimental findings show that, in treatment of intertrochanteric fracture, intramedullary nail fixation is associated with significantly lower blood loss. However, the risk of femoral shaft fracture is increased compared with dynamic plate fixation. There were no differences in length of surgery, cut-out of the implant from the femoral head, non-union of the fracture, reoperation rate, wound infection and postoperative hip pain. The results of this systematic review should be explained prudently because of some limitations of included trials. To obtain more reliable conclusions, large-scale randomized controlled trials of strict design, uniform index and long-term follow-up are needed. | Surgery | Chinese Journal of Tissue Engineering Research 2015;19(22):3595-3603 2015 | 2015 |  | hip # |
| Zhang 2014 | Arthroplasty versus joint preservation for displaced 3- and 4-part proximal humeral fractures: A meta-analysis. [Chinese] | CONCLUSION: Seven articles with 320 patients (165 patients undergoing joint preservation and 155 patients receiving arthroplasty) were accepted in this mete-analysis and all of them were high-quality English researches by modified Jadad Scale. Meta-analysis results displayed that the random-effects mean Constant score across all types was 55.9 (95%CI: 50.7-61.1; P < 0.001). Constant score was higher in the joint preservation group than in the arthroplasty group (P < 0.01). The study displayed significant heterogeneity (I2=88%, Q statistic=107.6, Q=13; P < 0.001). In the meta-analysis, Constant scores were decreased with increasing rate of male to female and rate of tuberosity resorption. These results suggested that 3-or 4-part proximal humeral fractures demonstrate improved Constant scores when treated with joint-preserving options compared with arthroplasty. Moreover, age, fracture pattern, gender ratio and complication rate are significant predictors of the Constant score. Given the observed heterogeneity and variance in treatment techniques in the included studies, more randomized controlled trial studies are needed to definitively recommend joint-preserving techniques versus arthroplasty for treatment of 3- or 4-part proximal humeral fractures. | Surgery | Chinese Journal of Tissue Engineering Research 2014;18(26):4241-4247 2014 | 2014 |  | clavicle/arm # |
| Zhang 2014 | Percutaneous compression plate versus dynamic hip screw for treatment of intertrochanteric Hip fractures: a meta-analyse of five randomized controlled trials | CONCLUSIONS: The PCCP was associated with reduced blood loss and less transfusion need, but similar to DHS in other respects. Owing to the limitations of this systematic review, more high-quality RCTs are still needed to assess the clinical efficiency of PCCP. | Surgery | ScientificWorldJournal 2014;2014():512512 2014 | 2014 |  | hip # |
| Zhang 2015 | Retrograde versus antegrade intramedullary nailing for femoral fractures: a meta-analysis of randomized controlled trials | CONCLUSIONS: Both retrograde and antegrade intramedullary nailing produced high union rates. We found no significant difference in union rate between the retrograde nailing group and the antegrade nailing group for femoral fractures | Surgery | Curr Med Res Opin 2015;31(10):1897-902 2015 | 2015 |  | hip # |
| Zhang 2016 | Operative Versus Nonoperative Treatment of Displaced Intra-Articular Calcaneal Fractures: A Meta-Analysis of Randomized Controlled Trials | CONCLUSIONS: This meta-analysis documented that when surgery was performed correctly, better shoe wear and improved walking ability could be expected. These outcomes seemed to be based on the surgeon's ability to obtain an acceptable reduction. Benefits were tempered by the increase in wound complications associated with this intervention. LEVEL OF EVIDENCE: Therapeutic Level II. See Instructions for Authors for a complete description of levels of evidence. | Surgery | J Orthop Trauma Mar 2016;30(3):e75-81 2016 Mar | 2016 |  | foot/ankle/leg # |
| Zhao 2014 | Outcome of hemiarthroplasty and total hip replacement for active elderly patients with displaced femoral neck fractures: a meta-analysis of 8 randomized clinical trials | As a whole, total hip arthroplasty appeared to be favoured over hemiarthroplasty in this population. | Surgery | PLoS One 2014;(): 2014 | 2014 |  | hip # |
| Zhao 2015 | Comparison of Risk of Carpal Tunnel Syndrome in Patients with Distal Radius Fractures After 7 Treatments | CONCLUSIONS Our network meta-analysis provides evidence that dorsal plating fixation significantly decreases the risk of CTS and could be the method of choice in DRF patients. | Surgery | Med Sci Monit Sep 22 2015;21():2837-44 2015 Sep 22 | 2015 |  | wrist/hand # |
| Zhao 2015 | Intramedullary nail versus plate fixation for humeral shaft fractures: a systematic review of overlapping meta-analyses | The best available evidence suggested that the differences between intramedullary nail and plate fixation were not significant in fracture union, radial nerve injury, and infection. But intramedullary nail significantly increased the risk of shoulder complications (shoulder impingement and restriction of shoulder movement) and reoperation.We concluded that plate fixation is superior to intramedullary nail for the treatment of humeral shaft fractures. | Surgery | Medicine (Baltimore) Mar 2015;94(11):e599 2015 Mar | 2015 |  | clavicle/arm # |
| Zhou 2015 | Unipolar versus bipolar hemiarthroplasty for displaced femoral neck fractures in elderly patients | Unipolar and bipolar HA achieved similar clinical outcomes in patients with displaced femoral neck fractures. | Surgery | Orthopedics November 2015;38(11):697-702 2015 November | 2015 |  | hip # |
| Zhu 2015 | Management of the mid-shaft clavicle fractures using plate fixation versus intramedullary fixation: an updated meta-analysis | CONCLUSIONS: If the surgery is indicated, intramedullary fixation has more advantages than plate fixation for treatment of mid-shaft clavicular fracture. This definitive conclusion could aid surgeons in making evidence-based decisions when selecting an optimal fixation pattern. | Surgery | Int Orthop Feb 2015;39(2):319-28 2015 Feb | 2015 |  | clavicle/arm # |
| Zong 2015 | Meta-analysis for dorsally displaced distal radius fracture fixation: volar locking plate versus percutaneous Kirschner wires | CONCLUSION: ORIF with VLP fixation provided lower DASH scores and reduced total postoperative complications, most specifically lowering the risk for postoperative superficial infection compared to K-wire fixation over a 1-year follow-up period. However, superficial pin track infections do not cause clinical debility in the vast majority of cases. Thus, the claim of reduced superficial infection rate may not be clinically important. The only reasonable conclusion that can be drawn is that at present, there is insufficient data even on our meta-analysis to help the clinician make an informed choice. | Surgery | J Orthop Surg Res Jul 15 2015;10():108 2015 Jul 15 | 2015 |  | wrist/hand # |
| Zong 2016 | Treatments for the fifth metacarpal neck fractures: A network meta-analysis of randomized controlled trials | In conclusion, current evidence suggested that conservative treatment is the optimum treatment for the fifth metacarpal neck fractures because of reduced total complication rates. Moreover, the TP with K-wires is the worst option with highly total complication rates. PF and AIMN therapy should be considered as the first-line choices. Larger and higher-quality randomized controlled trials are required to confirm these conclusions and better inform clinical decision-making. | Surgery | Medicine (United States) 2016;95 (11) (no pagination)(e3059): 2016 | 2016 |  | wrist/hand # |

**Spine**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation** | **Year** | **101** | **coding** |
| Agarwal 2009 | Osteoinductive bone graft substitutes for lumbar fusion: A systematic review - Clinical article | Conclusion: Recombinant human BMP-2 may be an effective alternative to AIBG in lumbar fusion. Data are limited for other bone graft substitutes. | Surgery | Journal of Neurosurgery: Spine December 2009;11(6):729-740  2009 December | 2009 |  | spine |
| Anderson-Smits 2016 | A comparative analysis of secondary surgeries of six total cervical disc arthroplasty devices to cervical arthrodesis at 5-years | Conclusion: Pooled long-term follow-up data from the 7 US-approved randomized clinical trials evaluating C-TDR demonstrate significantly non-inferior (or reduced) rates of both early and long-term secondary surgery up to 5 years post-operatively. C-TDR reached significantly different rates of revision as early as 6 months postoperatively, compared to the ACDF control group. | Surgery | Pharmacoepidemiology and Drug Safety August 2016;25():64  2016 August | 2016 |  | neck |
| Aragonés 2015 | Polyurethane on titanium unconstrained disc arthroplasty versus anterior discectomy and fusion for the treatment of cervical disc disease: a review of level I–II randomized clinical trials including clinical outcomes | Conclusions: According to this review, PTUCD arthroplasty showed a global superiority to ACDF in clinical outcomes. The impact of both surgical techniques on the cervical spine (radiological spine deterioration and/or complications) was more severe in patients undergoing ACDF. However, the rate of revision surgeries at any cervical level was equivalent for ACDF and PTUCD arthroplasty. | Surgery | European Spine Journal 2015;24(12):2735-2745  2015 | 2015 |  | neck |
| Bartels 2010 | No justification for cervical disk prostheses in clinical practice: a meta-analysis of randomized controlled trials | Conclusion: A clinical benefit for the cervical disk prosthesis is not proven. Because none of the studies were blinded, bias of the patient or researcher is a probable explanation for the differences found. Therefore, these costly devices should not be used in daily clinical practice. | Surgery | Neurosurgery Jun 2010;66(6):1153-60; discussion 1160  2010 Jun | 2010 |  | neck |
| Bicket 2015 | Epidural injections in prevention of surgery for spinal pain: systematic review and meta-analysis of randomized controlled trials | 26 randomized controlled trials were included in this systematic review and meta-analysis to determine if epidural steroid injections (ESI) have surgery-sparing effect in patients with low back pain. The results of this study varied. One trial that evaluated secondary surgery as a primary outcome indicated that ESI reduced the need for surgery. However, pooled results from a number of studies at both short- (<1 year, 5 studies) and mid-term (>1 year, 16 studies) follow-up provided moderate quality evidence that there are no significant differences in the rate of secondary surgery between ESI and control groups. A non-significant trend towards a decreased need for surgery among patients who had received ESI was observed in the short-term analysis. | Medication | Spine J 2015;15(2):348-362 2015 | 2015 |  | neck |
| Boselie 2013 | Arthroplasty versus fusion in single-level cervical degenerative disc disease: A cochrane review | Conclusion. There is low to moderate quality evidence that results are consistently in favor of arthroplasty, often statistically significant. However, differences in effect size were invariably small and not clinically relevant for all primary outcomes. © 2013, Lippincott Williams & Wilkins. | Surgery | Spine 01 Aug 2013;38(17):E1096-E1107  2013 01 Aug | 2013 |  | neck |
| Boyles 2011 | Effectiveness of manual physical therapy in the treatment of cervical radiculopathy: a systematic review | Conclusion: Although a definitive treatment progression for treating CR has not been developed a general consensus exists within the literature that using manual therapy techniques in conjunction with therapeutic exercise is effective in regard to increasing function, as well as AROM, while decreasing levels of pain and disability. High quality RCTs featuring control groups are necessary to establish clear and effective protocols in the treatment of CR | Physio/Rehab | J Man Manip Ther Aug 2011;19(3):135-42  2011 Aug | 2011 |  | neck |
| Bracken 2012 | Steroids for acute spinal cord injury | Authors' conclusions: High-dose methylprednisolone steroid therapy is the only pharmacologic therapy shown to have efficacy in a phase three randomized trial when administered within eight hours of injury. One trial indicates additional benefit by extending the maintenance dose from 24 to 48 hours, if start of treatment must be delayed to between three and eight hours after injury. There is an urgent need for more randomized trials of pharmacologic therapy for acute spinal cord injury. | Medication | Cochrane Database of Systematic Reviews 2012;(1): John Wiley & Sons, Ltd  2012 | 2012 |  | spine |
| Brox 2008 | Systematic review of back schools, brief education, and fear-avoidance training for chronic low back pain | CONCLUSIONS: Consistent recommendations are given for brief education in the clinical setting, and fear-avoidance training should be considered as an alternative to spinal fusion, and back schools may be considered in the occupational setting. The discordance between reviews can be attributed differences in inclusion criteria and application of evidence rules. | Physio/Rehab | Spine J Nov-Dec 2008;8(6):948-58  2008 Nov-Dec | 2008 |  | back |
| Bryans 2014 | Evidence-based guidelines for the chiropractic treatment of adults with neck pain | CONCLUSIONS: Interventions commonly used in chiropractic care improve outcomes for the treatment of acute and chronic neck pain. Increased benefit has been shown in several instances where a multimodal approach to neck pain has been used. | Physio/Rehab | J Manipulative Physiol Ther Jan 2014;37(1):42-63  2014 Jan | 2014 |  | neck |
| Burkus 2015 | Comparison of dibotermin alfa with autograft for single-level lumbar interbody arthrodesis using pooled individual patient data and meta-analysis | Conclusion: The data provide convincing evidence of a favourable benefit/risk balance for dibotermin alfa/ACIM as a substitute for autograft in single-level lumbar interbody fusion using CE-marked interbody devices or allograft spacers in adults with degenerative disc disease who have had at least 6 months of nonoperative treatment. | Surgery | European Spine Journal September 2015;1)():S688-S689  2015 September | 2015 |  | spine |
| Bydon 2014 | Lumbar fusion versus non-operative management for treatment of discogenic low back pain: a systematic review and meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSIONS: Despite the significant improvement in ODI in the lumbar fusion groups in 3 studies, pooled data revealed no significant difference when compared with the nonoperative group. Although there was an overall improvement of 7.39 points in the ODI in favor of lumbar fusion, it is unclear that this change in ODI would lead to a clinically significant difference. Prospective randomized trials comparing a specific surgical technique versus a structured physical therapy program may improve evidence quality. Until then, either operative intervention by lumbar fusion or nonoperative management and physical therapy remain 2 acceptable treatment methods for intractable low back pain. | Surgery | Journal of Spinal Disorders and Techniques 2014;27(5):297-304  2014 | 2014 |  | back |
| Chang 2014 | The safety and efficacy of minimally invasive discectomy: a meta-analysis of prospective randomised controlled trials | CONCLUSIONS: Based on available evidence, MID results in less suffering for patients during the hospital course with a similar clinical efficacy compared to SD. This makes MID a promising procedure for patients with LDH; however, to popularise it greater effort is required to reduce disc herniation recurrence. | Surgery | Int Orthop Jun 2014;38(6):1225-34 2014 Jun | 2014 |  | neck |
| Chaparro 2013 | Opioids compared to placebo or other treatments for chronic low-back pain | Authors' conclusions: There is some evidence (very low to moderate quality) for short-term efficacy (for both pain and function) of opioids to treat CLBP compared to placebo. The very few trials that compared opioids to non-steroidal anti-inflammatory drugs (NSAIDs) or antidepressants did not show any differences regarding pain and function. The initiation of a trial of opioids for long-term management should be done with extreme caution, especially after a comprehensive assessment of potential risks. There are no placebo-RCTs supporting the effectiveness and safety of long-term opioid therapy for treatment of CLBP. | Medication | Cochrane Database of Systematic Reviews 2013;(8): John Wiley & Sons, Ltd 2013 | 2013 |  | back |
| Chaparro 2014 | Opioids compared with placebo or other treatments for chronic low back pain: An update of the cochrane review | CONCLUSION: There is evidence of short-term efficacy (moderate for pain and small for function) of opioids to treat CLBP compared with placebo. The effectiveness and safety of long-term opioid therapy for treatment of CLBP remains unproven. | Medication | Spine 01 Apr 2014;39(7):556-563  2014 01 Apr | 2014 |  | back |
| Cheriyan 2013 | Efficacy of tranexamic acid and aminocaproic acid on bleeding in spine surgery: A meta-analysis | CONCLUSIONS: TXA reduces surgical bleeding and transfusion requirements in patients undergoing spine surgery. Evidence on the efficacy of EACA is weak. Neither antifibrinolytic appears to increase incidence of TE, PE or MI. | Medication | Spine Journal September 2013;1)():S81  2013 September | 2013 |  | spine |
| Cheriyan 2015 | Efficacy of tranexamic acid on surgical bleeding in spine surgery: a meta-analysis | CONCLUSIONS: Tranexamic acid reduces surgical bleeding and transfusion requirements in patients undergoing spine surgery. Tranexamic acid does not appear to be associated with an increased incidence of pulmonary embolism, DVT, or MI. | Medication | Spine J Apr 01 2015;15(4):752-61  2015 Apr 01 | 2015 |  | spine |
| Chou 2009 | Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: An evidence-based clinical practice guideline from the American pain society | CONCLUSION: Recommendations on use of interventional diagnostic tests and therapies, surgery, and interdisciplinary rehabilitation are presented. Due to important trade-offs between potential benefits, harms, costs, and burdens of alternative therapies, shared decision-making is an important component of a number of the recommendations. | Surgery | Spine 01 May 2009;34(10):1066-1077  2009 01 May | 2009 |  | back |
| Chou 2009 | Surgery for low back pain: A review of the evidence for an American pain society clinical practice guideline | CONCLUSION: Surgery for radiculopathy with herniated lumbar disc and symptomatic spinal stenosis is associated with short-term benefits compared to nonsurgical therapy, though benefits diminish with long-term follow-up in some trials. For nonradicular back pain with common degenerative changes, fusion is no more effective than intensive rehabilitation, but associated with small to moderate benefits compared to standard nonsurgical therapy. | Surgery | Spine 2009;34(10):1094-1109  2009 | 2009 |  | back |
| Chow 2009 | Efficacy of low-level laser therapy in the management of neck pain: a systematic review and meta-analysis of randomised placebo or active-treatment controlled trials | INTERPRETATION: We show that LLLT reduces pain immediately after treatment in acute neck pain and up to 22 weeks after completion of treatment in patients with chronic neck pain. | Non Surgical Intervention | Lancet 2009;28(6):1581-1589 2009 01 Nov | 2009 |  | neck |
| Chuter 2014 | The effectiveness of shoe insoles for the prevention and treatment of low back pain: a systematic review and meta-analysis of randomised controlled trials | 11 trials were included in this meta-analysis and systematic review. The purpose of this analysis was to determine whether foot orthoses were effective in mitigating low back pain (LBP). Findings indicated that patients using shoe insoles were comparable in pain mitigation and prevention compared to individuals that did not use shoe insoles. | Non Surgical Intervention | BMC Musculoskelet Disord 2014;():  2014 | 2014 |  | back |
| Cong 2016 | A meta-analysis of endoscopic discectomy versus open discectomy for symptomatic lumbar disk herniation | CONCLUSIONS: From the existing outcomes, ED surgery could be viewed as a sufficient and safe supplementation and alternative to standard open discectomy. The cost-effectiveness analyses still remain unproved from the existing data. More independent high-quality RCTs using sufficiently large sample sizes with cost-effectiveness analyses are needed. | Surgery | Eur Spine J Jan 2016;25(1):134-43  2016 Jan | 2016 |  | spine |
| Cui 2009 | [Meta-analysis of lumbar posterolateral fusion versus circumferential fusion in the treatment of the lumbar disease] | CONCLUSIONS: To compare with the posterolateral fusion, the circumferential fusion can increase the fusion rate and reduce the re-operation rate, but it can also increase the complication rate and the blood loss. More high quality large-scale randomized controlled trials are required. | Surgery | Zhonghua Wai Ke Za Zhi Sep 15 2009;47(18):1374-8  2009 Sep 15 | 2009 |  | spine |
| Dahm 2010 | Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica | Moderate quality evidence shows that patients with acute LBP may experience small benefits in pain relief and functional improvement from advice to stay active compared to advice to rest in bed; patients with sciatica experience little or no difference between the two approaches. Low quality evidence suggests little or no difference between those who received advice to stay active, exercises or physiotherapy. Further research is very likely to have an important impact on the estimate of effect and is likely to change our confidence in it. | Non Surgical Intervention | Cochrane Database of Systematic Reviews 2010;(6): John Wiley & Sons, Ltd 2010 | 2010 |  | back |
| Dasenbrock 2012 | The efficacy of minimally invasive discectomy compared with open discectomy: a meta-analysis of prospective randomized controlled trials | The results from the analysis show that both open and minimally invasive discectomy is effective in the short and long-term improvement of leg pain, for patients suffering from lumbar radiculopathy. | Surgery | J Neurosurg Spine 2012;():  2012 | 2012 |  | spine |
| Ding 2016 | Total disc replacement versus fusion for lumbar degenerative disc disease: a systematic review of overlapping meta-analyses | Conclusions: There is discord in results from meta-analyses that assessed TDR and fusion for LDDD. According to this systematic review of overlapping meta-analyses comparing TDR and fusion for LDDD, the current best available evidence suggests that TDR may be an effective technique for the treatment of selected patients with LDDD, and is at least equal to lumbar fusion in the short term. However, considering that disadvantages may appear after years, spine surgeons should be cautions about performing TDR on a large scale. | Surgery | European Spine Journal 23 Jul 2016;():1-10  2016 23 Jul | 2016 |  | spine |
| Fernandez 2016 | Surgery or physical activity in the management of sciatica: a systematic review and meta-analysis | Conclusion: There are indications that surgery is superior to physical activity-based interventions in reducing pain and disability for disc herniation at short-term follow-up only; but high-quality evidence in this field is lacking (GRADE). For spondylolisthesis and spinal stenosis, surgery is superior to physical activity up to greater than 2 years follow-up. Results should guide clinicians and patients when facing the difficult decision of having surgery or engaging in active care interventions. PROSPERO registration number : CRD42013005746. Copyright © 2015, Springer-Verlag Berlin Heidelberg. | Surgery | European Spine Journal 01 Nov 2016;25(11):3495-3512 2016 01 Nov | 2016 |  | back |
| Gao 2013 | A meta-analysis comparing the results of cervical disc arthroplasty with anterior cervical discectomy and fusion (ACDF) for the treatment of symptomatic cervical disc disease | CONCLUSIONS: The meta-analysis revealed that anterior cervical discectomy and fusion was associated with shorter operative times and less blood loss compared with arthroplasty. Other outcomes after arthroplasty (length of hospital stay, clinical indices, range of motion at the operated level, adverse events, and secondary surgical procedures) were superior or equivalent to the outcomes after anterior cervical discectomy and fusion. | Surgery | J Bone Joint Surg Am Mar 20 2013;95(6):555-61 2013 Mar 20 | 2013 |  | neck |
| Gao 2015 | An updated meta-analysis comparing artificial cervical disc arthroplasty (CDA) versus anterior cervical discectomy and fusion (ACDF) for the treatment of cervical degenerative disc disease (CDDD) | Conclusions. Findings of the present meta-analysis indicated that CDA was an effective and safe surgical procedure for the treatment of one-level CDDD, and CDA was found to be more superior than ACDF in terms of VAS neck and arm pain, neurological success, range of motion at the operated level, and secondary surgical procedures. | Surgery | Spine 2015;40(23):1816-1823 2015 | 2015 |  | neck |
| GarciaCosta 2011 | Meta-analysis of randomized clinical trials comparing discectomy and anterior cervical fusion with a cervical prosthesis in degenerative disc disease | Conclusions: The cervical disc prosthesis is a valid alternative to DACF in surgery for degenerative cervical disc disease. | Surgery | European Spine Journal November 2011;20 (11)():2086 2011 November | 2011 |  | neck |
| Gebremariam 2012 | Evaluation of treatment effectiveness for the herniated cervical disc: a systematic review | CONCLUSION: No evidence for effectiveness of conservative treatment compared with surgery was found. Although there is moderate evidence for the effectiveness of some surgical interventions, no unequivocal evidence for the superiority of 1 particular surgical treatment was found. Worldwide, most patients receive supplementary implants; however, cervical discectomy without graft may be preferred because of similar outcomes, lower costs, and possibly a lower risk of adjacent-level disease. More high-quality RCTs using validated outcome measures (including adjacent level disease) are needed. | Surgery | Spine (Phila Pa 1976) Jan 15 2012;37(2):E109-18 2012 Jan 15 | 2012 |  | neck |
| Gill 2010 | Improvement in efficacy and safety outcomes after cervical arthroplasty versus standard anterior cervical disectomy and fusion (ACDF) surgeries: A meta-analysis of published RCTS | CONCLUSIONS: A formal pooled analysis of 2-year RCT data demonstrates clinically significant improvements in efficacy and safety outcomes in CDDD patients who have undergone arthroplasty versus standard fusion. | Surgery | Value in Health November 2010;13 (7)():A302 2010 November | 2010 |  | neck |
| He 2016 | Microendoscopic discectomy versus open discectomy for lumbar disc herniation: a meta-analysis | Conclusions: Microendoscopic discectomy, which requires a demanding learning curve, may be a safe and effective alternative to conventional open discectomy for patients with lumbar disc herniation. | Surgery | European Spine Journal 01 May 2016;25(5):1373-1381 2016 01 May | 2016 |  | spine |
| Hevia 2015 | Bryan disc arthroplasty versus anterior cervical discectomy and fusion for the treatment of cervical disc disease. A review of level I-II randomized clinical trials including clinical outcomes | Conclusions: This review of evidence level I-II RCTs comparing clinical and radiological outcomes of patient undergoing Bryan arthroplasty or ACDF indicated a global superiority of the Bryan disc. The impact of both surgical techniques on the cervical spine (radiological spine deterioration and/or complications) was more severe in patients undergoing ACDF. However, the rate of revision surgeries at any cervical level was equivalent for ACDF and Bryan arthroplasty. These data suggest that even though the loss of motion has a determinant influence in the development of degenerative changes in ACDF cases, these kinematic factors do not imply a higher rate of symptomatic adjacent segment degeneration requiring surgery. | Surgery | European Spine Journal September 2015;1)():S720 2015 September | 2015 |  | neck |
| Hu 2016 | Mid- to Long-Term Outcomes of Cervical Disc Arthroplasty versus Anterior Cervical Discectomy and Fusion for Treatment of Symptomatic Cervical Disc Disease: A Systematic Review and Meta-Analysis of Eight Prospective Randomized Controlled Trials | CONCLUSIONS: This meta-analysis showed that cervical disc arthroplasty was superior over anterior discectomy and fusion for the treatment of symptomatic cervical disc disease in terms of overall success, NDI success, neurological success, implant/surgery-related serious adverse events, secondary procedure, functional outcomes, patient satisfaction and recommendation, and superior adjacent segment degeneration. | Surgery | PLoS One 2016;11(2):e0149312 2016 | 2016 |  | neck |
| Jacobs 2011 | Surgery versus conservative management of sciatica due to a lumbar herniated disc: A systematic review | Randomised controlled trials of adults with lumbar radicular pain, which evaluated at least one clinically relevant outcome measure (pain, functional status, perceived recovery, lost days of work) were included. Two authors assessed risk of bias according to Cochrane criteria and extracted the data. In total, five studies were identified, two of which with a low risk of bias. One study compared early surgery with prolonged conservative care followed by surgery if needed; three studies compared surgery with usual conservative care, and one study compared surgery with epidural injections. Data were not pooled because of clinical heterogeneity and poor reporting of data. One large low-risk-of-bias trial demonstrated that early surgery in patients with 6-12 weeks of radicular pain leads to faster pain relief when compared with prolonged conservative treatment, but there were no differences after 1 and 2 years. Another large low-risk-of-bias trial between surgery and usual conservative care found no statistically significant differences on any of the primary outcome measures after 1 and 2 years. Future studies should evaluate who benefits more from surgery and who from conservative care. | Surgery | European Spine Journal April 2011;20(4):513-522 2011 April | 2011 |  | spine |
| Jacobs 2011 | Systematic review of anterior interbody fusion techniques for single- and double-level cervical degenerative disc disease | CONCLUSION: When fusion of the motion segment is considered to be the working mechanism for pain relief and functional improvement, iliac crest autograft appears to be the golden standard. When ignoring fusion rates and looking at complication rates, a cage as a golden standard has a weak evidence base over iliac crest autograft, but not over discectomy. | Surgery | Spine (Phila Pa 1976) Jun 15 2011;36(14):E950-60 2011 Jun 15 | 2011 |  | neck |
| Jacobs 2013 | Evidence for surgery in degenerative lumbar spine disorders | For most of the comparisons, no significant and/or clinically relevant differences between interventions were identified. In general, surgery is only indicated for relief of leg pain in clear indications such as disc herniation, spondylolisthesis or spinal stenosis. | Surgery | Best Practice and Research: Clinical Rheumatology October 2013;27(5):673-684 2013 October | 2013 |  | spine |
| Jiang 2010 | Effectiveness and safety of cervical total disc replacement for single symptomatic single-level cervical degenerative disc disease: A systematic review | Conclusion: The evidence indicates that compared with ACDF, TDR could improve neurological status, reduce secondary surgical procedures and promote overall success for single-level cervical degenerative disc disease, but there are no significant differences in postoperative NDI, neck and arm pain scores, radiography success, and complications. | Surgery | Chinese Journal of Evidence-Based Medicine 2010;10(8):957-963 2010 | 2010 |  | neck |
| Jiang 2012 | Cervical disc arthroplasty versus fusion for single-level symptomatic cervical disc disease: a meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSION: Compared with ACDF, CDA carry a lower incidence of dysphagia complications and reoperation related to adjacent-segment degeneration, and a higher prevalence of neurological and overall success at 2 years postoperatively. As the poor quality of the included studies, it is still uncertain whether CDR is more effective and safer than ACDF treating single-level symptomatic cervical disc disease. Future large-scale RCTs with long-term follow-up are needed to provide clear evidence. | Surgery | Archives of Orthopaedic and Trauma Surgery 2012;132(2):141-151 2012 | 2012 |  | neck |
| Jirarattanaphochai 2008 | Nonsteroidal antiinflammatory drugs for postoperative pain management after lumbar spine surgery: a meta-analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis provides evidence that the addition of NSAIDs to opioid analgesics in lumbar spine surgery provided better pain control than opioid analgesics alone. | Medication | J Neurosurg Spine Jul 2008;9(1):22-31 2008 Jul | 2008 |  | spine |
| Kan 2016 | [Mid- to long-term outcomes of cervical disc arthroplasty for symptomatic cervical disc disease: a meta-analysis] | Conclusions: CDA can significantly reduce the rates of secondary surgical procedures compared with ACDF.Meanwhile, CDA is superior or equivalent to ACDF in other aspects.As some studies without double-blind are included and some potential biases exites, more randomized controlled trials with high quality are required to get more reliable conclusions. | Surgery | Zhonghua Wai Ke Za Zhi Dec 01 2016;54(12):935-939 2016 Dec 01 | 2016 |  | neck |
| Lambert 2014 | Meta-analyses of intrathecal morphine for lumbar spine surgery | Conclusion: The addition of intrathecal morphine provides superior post-operative analgesia up to 18 hours, for lumbar spine surgery. Pruritis is the main side-effect that can be expected regardless of dosing. Despite concern for increased sedation with intrathecal morphine, our study results indicate that the incidence is actually reduced when compared to control group. | Medication | Canadian Journal of Anesthesia June 2014;61():S55 2014 June | 2014 |  | spine |
| Lee 2011 | Fusion rates of instrumented lumbar spinal arthrodesis according to surgical approach: a systematic review of randomized trials | CONCLUSIONS: One low quality RCT reported no difference in fusion rate between ALIF with posterior transpedicular instrumentation and circumferential fusion, and PLIF and circumferential fusion. There is moderate evidence suggesting no difference in fusion rate between PLF and PLIF. The evidence on the fusion rate of circumferential fusion compared to PLF from qualitative analysis was conflicting. However, no general conclusion could be made due to the scarcity of data, heterogeneity of the trials included, and some methodological defects of the six studies reviewed. | Surgery | Clin Orthop Surg Mar 2011;3(1):39-47 2011 Mar | 2011 |  | spine |
| Li 2013 | Is tranexamic acid effective and safe in spinal surgery? A meta-analysis of randomized controlled trials | Conclusions: Intravenous use of TXA for patients undergoing spinal surgery is effective and safe. It reduces total blood loss and the need for blood transfusion, particularly in the using of high dosage of TXA (>15 mg/kg), yet does not increase the risk of postoperative DVT. Due to the limitation of the quality of the evidence currently available, high-quality RCTs are required. | Medication | European Spine Journal 2013;22(9):1950-1957 2013 | 2013 |  | spine |
| Li 2015 | Unilateral versus bilateral pedicle screw fixation for degenerative lumbar diseases: a meta-analysis of 10 randomized controlled trials | CONCLUSIONS: The meta-analysis indicated no significant difference in fusion rates and functional outcomes between the 2 treatment procedures, but unilateral PS fixation reduced blood loss and operative time. | Surgery | Med Sci Monit Mar 16 2015;21():782-90 2015 Mar 16 | 2015 |  | spine |
| Li 2016 | Interspinous process devices for the treatment of neurogenic intermittent claudication: a systematic review of randomized controlled trials | Eleven articles (eight RCTs) were included, with two having high risk of bias. These RCTs were divided into three groups according to control cohort interventions: IPD implantation was compared with nonoperative treatment (group 1, n = 3), laminectomy (group 2, n = 3), and laminectomy associated with instrumented spinal fusion (group 3, n = 2). Group 1 studies reported better Zurich Claudication Questionnaire (ZCQ) scores for the IPD group. In group 2, two studies reported comparable ZCQ scores and one revealed comparable visual analog scale (VAS) and Oswestry Disability Index (ODI) scores; pooled analysis showed a higher reoperation rate in patients treated with IPD. In group 3, one study found that more patients in IPD group gained more than 25 % improvement in VAS and ODI, with lower complication rate; the other reported better ZCQ scores in the IPD group and comparable complication and reoperation rates. IPD implantation is more effective than the other methods, but not superior to laminectomy in treating NIC. | Surgery | Neurosurg Rev May 14 2016;(): 2016 May 14 | 2016 |  | spine |
| Li 2016 | Efficacy of Warm Needle Moxibustion on Lumbar Disc Herniation: A Meta-Analysis | Fifteen randomized controlled trials were included in this meta-analysis evaluating the efficacy of moxibustion for treatment of low back pain due to lumbar disc herniation when compared to other nonoperative treatment modalities. Other treatment methods included traditional acupuncture, manipulation therapy, non-steroidal anti-inflammatory drug therapy, and Chinese medicine. When compared to acupuncture or manipulation, moxibustion demonstrated a greater effect on clinical measures. When compared to NSAID therapy in one study, the rate of excellent outcome and Japanese Orthopaedic Association scores were similar between groups, while NSAID therapy demonstrated significantly greater pain reduction than moxibustion. | Non Surgical Intervention | J Evid Based Complementary Altern Med. 2016;(): 2016 | 2016 |  | spine |
| Li 2017 | Efficacy of antifibrinolytic agents on surgical bleeding and transfusion requirements in spine surgery: a meta-analysis | Conclusions: The antifibrinolytic agents were able to reduce perioperative blood loss and transfusion requirements in spine surgery. TXA appeared more effective than aprotinin and EACA in reducing total blood loss, intra-operative blood loss, and blood transfusion according to the results of this analysis. The three groups in reducing the post-operative blood loss are significan ly better than control groups. There was no evidence that the use of antifibrinolytic agents was a risk factor for thromboembolism in spine surgery. Further multicenter, large-sample, double-blind RCTs are required to confirm the efficacy and safety of the three antifibrinolytic agents in spine surgery. | Medication | European Spine Journal 01 Jan 2017;26(1):140-154 2017 01 Jan | 2017 |  | spine |
| Liu 2008 | Evidence for use of bone morphogenetic protein in lumbar spine arthrodesis. [Chinese] | Conclusion: BMP may be introduced to China for lumbar spine arthrodesis. Before it is applied extensively, further large-scale, high-quality randomized controlled trials are needed. Meanwhile, more research is necessary to determine the proper dosage and preparation form for the dominant Chinese population. | Surgery | Chinese Journal of Evidence-Based Medicine 2008;8(9):786-790 2008 | 2008 |  | spine |
| Liu 2010 | [A meta-analysis of the effectiveness and safety of using tranexamic acid in spine surgery]. [Chinese] | This meta-analysis indicates that the use of TXA infusion for patients undergoing spine surgery is effective in reducing total blood loss, transfusion volumes and the rate of transfusion, yet doesn't raise the risk of postoperative DVT. | Medication | Zhonghua wai ke za zhi [Chinese journal of surgery] 15 Jun 2010;48(12):937-942 2010 15 Jun | 2010 |  | spine |
| Liu 2012 | Microendoscopic discectomy versus microscopic discectomy for treatment of lumbar disc herniations: a systematic review of randomized controlled trials | Conclusion: According to present knowledge, the two techniques were found to be effective for the treatment of lumbar disc herniations, but recurrent herniations were significantly more common in MED group. As for the safety of the two techniques, dural tears and root injuries were significantly more common in MED group. Because of the limitation of the quality and amount for the RCTs included, the results of this systematic review should be prudently cited, and more high quality RCTs are needed to be performed. | Surgery | Chinese Journal of Contemporary Neurology and Neurosurgery 2012;12(4):399-406 2012 | 2012 |  | spine |
| Liu 2014 | Microsurgical discectomy versus microendoscopic discectomy for treatment of lumbar disc herniations: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: A total of 5 randomized controlled trials involving 1 430 cases were included. The results of meta-analysis indicated that no significant difference between microsurgical discectomy and microendoscopic discectomy groups was detected in the length of hospital stay, the improvement rate of Oswestry disability index, the improvement rate of visual analogue scale, and the root injure. Compared with microendoscopic discectomy, microsurgical discectomy showed less surgical time, less blood loss, lower incidence of dural tear, lower risk of recurrent herniation. Above data showed that microsurgical discectomy for lumbar disc herniations was safe and effective under the same condition, but with updated technology and equipment, above conclusion is not necessarily always the same. We suggested that clinical physicians should choose a manner based on practical condition. This topic still requires the verification of more high-quality randomized controlled trials, and the conclusion should be updated promptly. | Surgery | Chinese Journal of Tissue Engineering Research 23 Jul 2014;18(31):5036-5043 2014 23 Jul | 2014 |  | spine |
| Lu 2013 | Cervical disc arthroplasty versus anterior cervical discectomy and fusioN: A systematic review | CONCLUSIONS: Cervical disc arthroplasty is a viable alternative procedure in the surgical management of cervical disc disease with similar safety profiles and at least equivalent and possibly superior clinical outcomes compared to ACDF. There does not appear to be a difference in reoperations for adjacent level degeneration between the two procedures. More long-term follow up studies are needed to make a more robust conclusion on overall effectiveness of CDA. | Surgery | Spine Journal September 2013;1)():4S 2013 September | 2013 |  | neck |
| Luo 2015 | Comparison of artificial cervical arthroplasty versus anterior cervical discectomy and fusion for one-level cervical degenerative disc disease: a meta-analysis of randomized controlled trials | CONCLUSIONS: For patients with one-level CDDD, TDR was found to be more superior than ACDF in terms of neurological success, secondary surgical procedures, visual analogue scale pain scores and range of motion at 24 months post-operatively. Therefore, cervical arthroplasty is a safe and effective surgical procedure for treating one-level CDDD. We suggest adopting TDR on a large scale; with failure of TDR, ACDF would be performed. | Surgery | Eur J Orthop Surg Traumatol Jul 2015;25 Suppl 1():S115-25 2015 Jul | 2015 |  | neck |
| Luo 2015 | Incidence of adjacent segment degeneration in cervical disc arthroplasty versus anterior cervical decompression and fusion meta-analysis of prospective studies | CONCLUSIONS: For patients with one-level cervical degenerative disc disease (CDDD), total disc replacement was found to have significantly fewer ASDs and reoperations compared with the ACDF. Cervical replacement arthroplasty may be superior to ACDF in ASD. Therefore, cervical arthroplasty is a safe and effective surgical procedure for treating CDDD. We suggest adopting TDR on a large scale. | Surgery | Arch Orthop Trauma Surg Feb 2015;135(2):155-60 2015 Feb | 2015 |  | neck |
| Ma 2016 | Two- and five-year follow-up of lumbar total disc replacement compared to fusion: A meta-analysis | We performed the research of database including Pubmed/Medline, EMBASE, and Ovid. Our studies were classified into short-term (2 years) and midterm (5 years) follow-up. Twelve randomized controlled trials involving 1479 cases were included in the study. The repetitive data from them were excluded. Significant difference in visual analogue scale (VAS) and Oswestry disability index (ODI) could be found at 2 year follow-up, and TDR group was better than fusion group in both of them. No difference was found in reoperation rate at 2 year follow-up. However, the reoperation rate at the index level in TDR group was significantly lower than that in fusion group at 5 year follow-up. The incidence of ASP in TDR group was lower compared with fusion group at 5 year follow-up but not at 2 year follow-up. TDR shows the efficacy and safety comparable to lumbar fusion at 2 and 5 year follow-up. Besides, TDR has significant superiority in a lower incidence of ASP at 5 year follow-up. | Surgery | International Journal of Clinical and Experimental Medicine 29 Feb 2016;9(2):485-494 2016 29 Feb | 2016 |  | spine |
| Machado 2016 | Surgical options for lumbar spinal stenosis | Authors' conclusions: The results of this Cochrane review show a paucity of evidence on the efficacy of surgery for lumbar spinal stenosis, as to date no trials have compared surgery with no treatment, placebo or sham surgery. Placebo-controlled trials in surgery are feasible and needed in the field of lumbar spinal stenosis. Our results demonstrate that at present, decompression plus fusion and interspinous process spacers have not been shown to be superior to conventional decompression alone. More methodologically rigorous studies are needed in this field to confirm our results. | Surgery | Cochrane Database of Systematic Reviews 01 Nov 2016;2016 (11) (no pagination)(CD012421): 2016 01 Nov | 2016 |  | spine |
| Manchikanti 2015 | Do Epidural Injections Provide Short- and Long-term Relief for Lumbar Disc Herniation? A Systematic Review | 23 randomized controlled trials (RCTs) were included in this systematic review to determine the efficacy of caudal, lumbar interlaminar, and transforaminal epidural injection techniques in the treatment of lumbar disc herniation. Findings indicated that fluoroscopic epidural injections improved pain and function in the short term in all three techniques. | Medication | Clin Orthop Relat Res 2015;(): 2015 | 2015 |  | spine |
| Manchikanti 2015 | What is the role of epidural injections in the treatment of lumbar discogenic pain: A systematic review of comparative analysis with fusion | Conclusions: The available evidence suggests fluoroscopically directed epidural injections provide long-term improvement in back and lower extremity pain for patients with lumbar discogenic pain. There is also limited evidence showing the potential effectiveness of surgical interventions compared to nonsurgical treatments. | Medication | Korean Journal of Pain 2015;28(2):75-87 2015 | 2015 |  | spine |
| Mannion 2013 | Comparison of spinal fusion and nonoperative treatment in patients with chronic low back pain: long-term follow-up of three randomized controlled trials | Three long term (average 11 years) studies comparing fusion surgery to multidisciplinary cognitive-behavioural and exercise rehabilitation for patients with chronic low back pain were pooled to compare the clinical outcomes of each treatment method in the long term. The results of the study indicated that treatment with fusion resulted in similar patient assessed outcomes and ODI scores when compared to multidisciplinary cognitive-behavioural and exercise rehabilitation. Future research regarding chronic low back pain should aim to address the question of who benefits most from fusion surgery. | Surgery | Spine J 2013;13(11):1438-1448 2013 November | 2013 |  | back |
| McGregor 2013 | Rehabilitation following surgery for lumbar spinal stenosis | Authors' conclusions: Evidence suggests that active rehabilitation is more effective than usual care in improving both short- and long-term (back-related) functional status. Similar findings were noted for secondary outcomes, including short-term improvement in low back pain and long-term improvement in both low back pain and leg pain, although limited impact was observed in relation to improvements in general health status. The clinical relevance of these effects is medium to small. Our evaluation is limited by the small number of relevant studies identified, and further research is required. | Physio/Rehab | Cochrane Database of Systematic Reviews 2013;(12): John Wiley & Sons, Ltd 2013 | 2013 |  | spine |
| McGuire 2011 | Lumbar posterolateral fusion with local bone graft plus bone extender compared with iliac crest bone graft: a systematic review | CONCLUSION: Local bone graft plus bone extender has similar fusion rates, functional outcomes, and patient quality-of-life scores as iliac crest bone graft in posterolateral spinal fusion procedures. Additional randomized trials with standardized methods of measuring fusion and functional outcomes are needed. | Surgery | Evid Based Spine Care J May 2011;2(2):35-40 2011 May | 2011 |  | spine |
| Meng 2017 | Impact of spinal anaesthesia vs. general anaesthesia on peri-operative outcome in lumbar spine surgery: a systematic review and meta-analysis of randomised, controlled trials | We conclude that spinal anaesthesia appears to offer advantages over general anaesthesia for lumbar spine surgery. | Medication | Anaesthesia 01 Mar 2017;72(3):391-401 2017 01 Mar | 2017 |  | spine |
| Michaleff 2014 | Low back pain in children and adolescents: a systematic review and meta-analysis evaluating the effectiveness of conservative interventions | 15 randomized controlled trials (4 RCTs on intervention and 11 RCTs on prevention) were included in this meta-analysis/systematic review to determine the effectiveness of conservative treatments to treat and prevent low back pain in children/adolescents. Pooled analysis revealed that patients who participated in an exercise program indicated pain intensity improvement in comparison to patients with no treatment. However, back education and promotion programs were found not to be an effective prevention approach for low back pain in patients under the age of 18. | Physio/Rehab | Euro Spine J 2014;(): 2014 | 2014 |  | back |
| Molinari 2015 | Unilateral versus bilateral instrumentation in spinal surgery: A systematic review | Conclusions The existing literature does not identify significant differences in clinical outcomes, union rates, and complications when unilateral instrumentation is used for degenerative pathologic conditions in the lumbar spine. The majority of published reports involve single-level lumbar unilateral instrumentation. | Surgery | Global Spine Journal 20 Jun 2015;5(3):185-193 2015 20 Jun | 2015 |  | spine |
| Mu 2015 | What were the advantages of microendoscopic discectomy for lumbar disc herniation comparing with open discectomy: A meta-analysis? | The purpose of this study was to compare the safety and efficacy of micro-endoscopic discectomy (MED) and open discectomy (OD) for lubmar disc herniation (LDH). Nine RCTs involving 774 patients were obtained and reported the relevant outcome measures. Compared with OD group, there were significant difference in the general operation indicators including operation time, blood loss, site of incision, hospital stay and time of return to work, biochemical indexes including C-reactive protein (CRP) and interleukin-6 (IL-6) in MED group. Meanwhile, there were no difference in effective rate, complication including total complications, dural leaks occurred and recurrence of the disc herniation, compared MED group with OD group. MED had slighter trauma, milder blood loss and shorter healing time than OD. The results demonstrated MED has great efficacy and safety comparable to OD. So we think that MED can be used routinely for LDH patients, especially the patients of old and intolerable major surgery. Meanwhile, it is necessary for surgeon to master indication and contraindication of MED and improve the operative technique. | Surgery | International Journal of Clinical and Experimental Medicine 30 Oct 2015;8(10):17498-17506 2015 30 Oct | 2015 |  | spine |
| Muheremu 2015 | Comparison of the short- and long-term treatment effect of cervical disk replacement and anterior cervical disk fusion: a meta-analysis | 18 randomized controlled trials, comparing outcomes of single-level cervical disc arthroplasty (CDA) to anterior cervical disc fusion (ACDF) in symptomatic cervical disc disease were selected for inclusion. The purpose of the study was to determine the efficacy of CDA compared to ACDF. The results of the meta-analysis displayed significant benefits in terms of arm and neck pain, patient satisfaction, range of motion of the adjacent level and multiple clinical scores of CDA compared to ACDF over a maximum of 4 years after surgery. | Surgery | Eur J Orthop Surg Traumatol 2015;(): 2015 | 2015 |  | neck |
| Muheremu 2015 | Study on anterior and posterior approaches for spinal tuberculosis: a meta-analysis | CONCLUSIONS: There are significant differences between the two operative approaches regarding the correction of Cobb angle, but no significant differences regarding operation time, blood loss, loss of Cobb angle at the last follow-up, total fusion time, and length of total stay in the hospital. | Surgery | Eur J Orthop Surg Traumatol Jul 2015;25 Suppl 1():S69-76 2015 Jul | 2015 |  | spine |
| Nie 2015 | Comparison of Total Disc Replacement with lumbar fusion: a meta-analysis of randomized controlled trials | TDR shows a significant superiority for the treatment of lumbar DDD compared with fusion. | Surgery | J Coll Physicians Surg Pak Jan 2015;25(1):60-7 2015 Jan | 2015 |  | spine |
| Ostelo 2008 | Rehabilitation after lumbar disc surgery | Authors' conclusions: Exercise programs starting four to six weeks post-surgery seem to lead to a faster decrease in pain and disability than no treatment. High intensity exercise programs seem to lead to a faster decrease in pain and disability than low intensity programs. There were no significant differences between supervised and home exercises for pain relief, disability, or global perceived effect. There is no evidence that active programs increase the re-operation rate after first-time lumbar surgery. | Physio/Rehab | Cochrane Database of Systematic Reviews 2008;(4) (no pagination)(CD003007): 2008 | 2008 |  | spine |
| Ostelo 2009 | Rehabilitation after lumbar disc surgery: an update Cochrane review | CONCLUSION: Exercise programs starting 4 to 6 weeks postsurgery seem to lead to a faster decrease in pain and disability than no treatment. High intensity exercise programs seem to lead to a faster decrease in pain and disability than low intensity programs. There were no significant differences between supervised and home exercises for pain relief, disability, or global perceived effect. There is no evidence that active programs increase the reoperation rate after first-time lumbar surgery. | Physio/Rehab | Spine (Phila Pa 1976) Aug 01 2009;34(17):1839-48 2009 Aug 01 | 2009 |  | spine |
| Rao 2014 | Artificial total disc replacement versus fusion for lumbar degenerative disc disease: a meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSION: TDR showed significant safety and efficacy comparable to lumbar fusion at 2 year follow-up. TDR demonstrated superiorities in improved physical function, reduced pain and shortened duration of hospitalization. The benefits of operating time, blood loss, motion preservation and the long-term complications are still unable to be proved. | Surgery | Archives of Orthopaedic and Trauma Surgery 2014;134(2):149-158 2014 | 2014 |  | spine |
| Rao 2015 | Cervical disc arthroplasty versus anterior cervical discectomy and fusion for treatment of symptomatic cervical disc disease: A meta-analysis of randomized controlled trials | Conclusion The meta-analysis revealed that CDA demonstrated superiorities in better neurological success, greater motion preservation at the operated level, lower rate of adverse events and fewer secondary surgical procedures compared with ACDF. However, the benefits of blood loss, lengths of hospital stay, neck and arm pain functional recovery are still unable to be proved. | Surgery | Archives of Orthopaedic and Trauma Surgery 2015;135(1):19-28 2015 | 2015 |  | neck |
| Ren 2014 | Mid- to long-term outcomes after cervical disc arthroplasty compared with anterior discectomy and fusion: a systematic review and meta-analysis of randomized controlled trials | CONCLUSIONS: CDA may result in better mid- to long-term functional recovery and a lower rate of subsequent surgical procedures than ACDF would. A review of the literature showed that only an insufficient number of studies had investigated adjacent segment disease; therefore, it is mandatory that adequate future research should focus in this direction. | Surgery | Eur Spine J May 2014;23(5):1115-23 2014 May | 2014 |  | neck |
| Ren 2016 | Comparison of unilateral versus bilateral pedicle screw fixation in transforaminal lumbar interbody fusion: A systematic review and meta-analysis of twelve randomized controlled trials | Conclusions: This meta-analysis showed that unilateral fixation group was superior to bilateral fixation group regarding operative time and blood loss. However, the results of fusion rate, total complication rate, specific complications, reoperation rate, functional outcomes and hospital stay were similar in the two groups. Therefore, the results of this study indicate that unilateral PS fixation in TLIF is a good alternative to bilateral PS fixation for the treatment of lumbar degenerative disease. | Surgery | International Journal of Clinical and Experimental Medicine 30 Sep 2016;9(9):17113-17127 2016 30 Sep | 2016 |  | spine |
| Santana-Rios 2014 | [Postoperative treatment for lumbar disc herniation during rehabilitation. Systematic review] | CONCLUSIONS: An immediate rehabilitation program is recommended in patients undergoing microiskectomy for the first time. Cognitive intervention with positive reinforcement together with exercise is an effective treatment. It is even considered as an alternative to vertebral fusion in patients who underwent LDH surgery with symptom recurrence after the first surgery. The results of early postoperative activity are usually excellent and involve no complications. The number and the methodological quality of the clinical trials on this topic need to be increased to justify the usefulness of these interventions in the daily clinical practice. | Physio/Rehab | Acta Ortop Mex Mar-Apr 2014;28(2):113-24 2014 Mar-Apr | 2014 |  | spine |
| Smith 2013 | Systematic review of microendoscopic discectomy for lumbar disc herniation | Conclusions: There is some evidence to suggest that microendoscopic discectomy (MED) performed by surgeons skilled in the technique in tertiary referral centres is as effective as open discectomy (OD). | Surgery | European Spine Journal Novenber 2013;22(11):2458-2465 2013 Novenber | 2013 |  | spine |
| Tan 2017 | Treatment of single-level cervical spondylosis: Cervical disk arthroplasty versus anterior cervical decompression and fusion | A meta-analysis was performed to compare cervical arthroplasty with anterior cervical diskectomy and fusion for single-level cervical spondylosis. A comprehensive search was conducted with PubMed, Embase, and the Cochrane Central Register of Controlled Trials from January 1, 2000, to April 30, 2015. Random-effects models were used for heterogeneous data. Fixed-effects models were used for pooled nonheterogeneous data. Mean difference or standard mean difference was used for continuous outcomes, and odds ratio, risk ratio, or risk difference was used for dichotomous outcomes. | Surgery | Orthopedics January-February 2017;40(1):e23-e34 2017 January-February | 2017 |  | neck |
| Tian 2015 | Comparison of patient-controlled epidural analgesia and patient-controlled intravenous analgesia after spinal fusion surgery: a meta-analysis of randomized controlled trials | 8 randomized controlled trials were included in this meta-analysis comparing efficacy and safety between patient-controlled epidural analgesia and patient-controlled intravenous analgesia in postoperative management of patients following spinal fusion surgery. Pooled results demonstrated significantly lower pain scores on postoperative days 1 and 2 with epidural analgesia compared to intravenous analgesia; no significant difference between strategies was observed when data from POD 3 was analyzed. The incidences of pruritis and paraesthesia were significantly lower following treatment with intravenous analgesia compared to epidural analgesia; no significant differences were observed in the incidences of nausea and vomiting. | Medication | BMC Musculoskelet Disord 2015;(): 2015 | 2015 |  | spine |
| VanMiddelkoop 2012 | No additional value of fusion techniques on anterior discectomy for neck pain: a systematic review | Results revealed no clinically relevant differences in recovery: the pooled risk difference in the short-term follow-up was0.06 (95% confidence interval0.22 to 0.10) and0.07 (95% confidence interval0.14 to 0.00) in the long-term follow-up. Pooled risk differences for pain and return to work all demonstrated no differences. There is no additional benefit of fusion techniques applied within an anterior discectomy procedure on pain, recovery and return to work. | Surgery | Pain Nov 2012;153(11):2167-73 2012 Nov | 2012 |  | neck |
| Wang 2014 | Meta-analysis of posterolateral fusion versus 360degree circumferential fusion in lumbar spondylolisthesis. [Chinese] | RESULTS AND CONCLUSION: Three randomized controlled trials containing 336 patients were identified, 175 cases in posterolateral fusion group and 161 cases in circumferential fusion group. Meta-analysis results showed that, Oswestry Disability Index in circumferential fusion group was significantly better than that in posterolateral fusion group at follow-up 6 months (MD=8.08, 95%CI: 1.23-14.94, P=0.02), 12 months (MD=6.72, 95%CI: 6.02-7.42, P < 0.000 01), and 24 months (MD=4.94, 95%CI: 4.30-5.57, P<0.000 01). The operating time (MD=-91.15, 95%CI:133.17 to49.14, P < 0.000 1) and postoperative hospital stay (MD=-0.98, 95%CI:1.85 to0.11, P=0.03) in posterolateral fusion group were significantly better than that in circumferential fusion group. The limb function score and pain score at 6, 12, 24 months of follow-ups in circumferential fusion group were significantly better than that in posterolateral fusion group (P < 0.05). However, there were no significant differences in intraoperative blood loss (MD=-165.51, 95%CI:375.89 to 44.86, P=0.12), postoperative complications (OR=1.16, 95%CI: 0.51-2.62, P=0.72), and VAS score (MD=0.20, 95%CI:0.36 to 0.76, P=0.48) between the two groups. Circumferential fusion can significantly reduce Oswestry Disability Index, limb function score and pain score, but prolonged operating time and postoperative hospital stay. The proximal repair scheme should be chosen according to the individual conditions. Copyright © 2014, Journal of Clinical Rehabilitative Tissue Engineering Research. | Surgery | Chinese Journal of Tissue Engineering Research 24 Dec 2014;18(53):8685-8692 2014 24 Dec | 2014 |  | spine |
| Wang 2015 | Meta-analysis of randomized trials comparing fusion surgery to non-surgical treatment for discogenic chronic low back pain | CONCLUSIONS: Fusion surgery was not superior to nonsurgical treatment in terms of changes in ODI scores for DLBP. Fusion surgery resulted in surgical complications. Longer follow-up observation is necessary regarding condition-specific disability, pain, and life satisfaction. | Surgery | J Back Musculoskelet Rehabil 2015;28(4):621-7 2015 | 2015 |  | back |
| Wu 2015 | Minimum 4-year outcomes of cervical total disc arthroplasty versus fusion: a meta-analysis based on prospective randomized controlled trials | This review was prepared following the standard procedures set forth by the Cochrane Collaboration organization, and preferred reporting items for systematic reviews and meta-analyses (PRISMA). The only studies included were randomized controlled trials with a minimum of 4 years of follow-up data. The meta-analysis included the neck disability index (NDI), visual analog scale (VAS) of neck and arm pain, SF-36 physical component scores (SF-36 PCS), over success, neurological success, work status, implant-related complications, and secondary surgery events. Four randomized controlled trials meet the inclusion criteria. The long-term improvement of NDI, VAS of neck and arm pain, SF-36 PCS, over success, and neurological success favored the TDA group. The TDA group also had a lower incidence of secondary surgery for both the index level (RR: 0.45 [0.28, 0.72]) and adjacent level (RR: 0.53 [0.33, 0.88]). In this meta-analysis of 4 included RCTs with a minimum 4 years of follow-ups, total disc arthroplasty showed improvements over ACDF as measured by the NDI, VAS of neck and arm pain, and SF-36 PCS. | Surgery | Medicine (Baltimore) Apr 2015;94(15):e665 2015 Apr | 2015 |  | neck |
| Xie 2016 | Cervical disc arthroplasty (CDA) versus anterior cervical discectomy and fusion (ACDF) in symptomatic cervical degenerative disc diseases (CDDDs): an updated meta-analysis of prospective randomized controlled trials (RCTs) | CONCLUSIONS: CDA is associated with higher clinical indexes and fewer complications than ACDF, indicating that it is a safe and effective treatment for CDDDs. However, the operative time of CDA is longer than ACDF. Because of some limitations, these findings should be interpreted with caution. Additional studies are needed. Large, definitive RCTs are needed. | Surgery | Springerplus 2016;5(1):1188 2016 | 2016 |  | neck |
| Xin 2016 | Unilateral versus bilateral pedicle screw fixation in short-segment lumbar spinal fusion: a meta-analysis of randomised controlled trials | Conclusion: Unilateral pedicle screw fixation is equally as effective as bilateral pedicle screw fixation in short-segment lumbar spinal fusion and may reduce operation time and blood loss. | Surgery | International Orthopaedics 01 Feb 2016;40(2):355-364 2016 01 Feb | 2016 |  | spine |
| Xue 2014 | Do bisphosphonates affect bone healing? A meta-analysis of randomized controlled trials | CONCLUSION: There was no clinically detectable delay to fracture healing via external callus formation following bisphosphonates treatment. Considering the benefit aspects of bisphosphonates for osteoporosis treatment, we recommend bisphosphonates infusion after fracture fixation surgery and lumbar fusion surgery. | Medication | J Orthop Surg Res Jun 05 2014;9():45 2014 Jun 05 | 2014 |  | spine |
| Yajun 2010 | A meta-analysis of artificial total disc replacement versus fusion for lumbar degenerative disc disease | In conclusion, TDR does not show significant superiority for the treatment of lumbar DDD compared with fusion. The benefits of motion preservation and the long-term complications are still unable to be concluded. More high-quality RCTs with long-term follow-up are needed. | Surgery | Eur Spine J Aug 2010;19(8):1250-61 2010 Aug | 2010 |  | spine |
| Ye 2014 | The comparison of instrumented and non-instrumented fusion in the treatment of lumbar spondylolisthesis: a meta-analysis | CONCLUSIONS: This meta-analysis found that inclusion of fusion surgery with instrumentation provided no benefit as evaluated by patient-reported outcomes in patients with lumbar spondylolisthesis. LEVEL OF EVIDENCE: Not applicable. | Surgery | Eur Spine J Sep 2014;23(9):1918-26 2014 Sep | 2014 |  | spine |
| Yin 2013 | Is cervical disc arthroplasty superior to fusion for treatment of symptomatic cervical disc disease? A meta-analysis | CONCLUSIONS: For treating symptomatic cervical disc disease, cervical disc arthroplasty appears to provide better function, a lower incidence of reoperation related to index surgery at 1 to 5 years, and lower major complication rates compared with fusion. However, cervical disc arthroplasty did not reduce the reoperation rate attributable to adjacent segment degeneration than fusion. Further, it is unclear whether these differences in subsequent surgery including arthroplasty revisions will persist beyond 5 years. | Surgery | Clin Orthop Relat Res Jun 2013;471(6):1904-19 2013 Jun | 2013 |  | neck |
| Yu 2011 | Systematic review and meta-analysis of randomized controlled trials: comparison of total disk replacement with anterior cervical decompression and fusion | The authors performed a systematic review and meta-analysis to evaluate whether there is a beneficial clinical effect of total disk replacement compared with anterior cervical diskectomy and fusion for the treatment of single-level symptomatic cervical disk disease. A comprehensive literature search of multiple databases, including PubMed (1966-2011), Cochrane Controlled Trials Register (CENTRAL; issue 1, 2011), and Embase (1984-2011), was conducted to identify studies that met the inclusion criteria. Methodologic quality was assessed and relevant data were retrieved, and if appropriate, meta-analysis was performed. Eight randomized controlled trials were identified; six of the 8 reported 24-month follow-up results. At 24 months, total disk replacement was demonstrated to be more beneficial for patients compared with anterior cervical diskectomy and fusion for the following outcomes: overall success rate (odds ratio [OR], 1.79; 95% confidence interval [CI], 1.37-2.33; P<.0001), overall reoperation rate (OR,.36; CI, .21-.61; P=0), reoperation rate for revision (OR, .12; CI, .02 to .64; P=.01), and visual analog scale neck pain scores (standard mean differences [SMD],.48; CI,.91 to.05; P=.03). Other outcomes, including Neck Disability Index scores (SMD,.02; CI,.44 to .27; P=.67) and visual analog scale arm pain scores (SMD,.21; CI,.63 to .22; P=.34), demonstrated no differences between the 2 groups. For patients with single-level symptomatic cervical disk disease, total disk replacement was found to be more effective than anterior cervical diskectomy and fusion in the 2 outcomes of overall success rate and overall reoperation rate at 24 months. Long-term results also showed total disk replacement trended to be more effective than anterior cervical diskectomy and fusion in some aspects. | Surgery | Orthopedics Oct 05 2011;34(10):e651-8 2011 Oct 05 | 2011 |  | neck |
| Yu 2013 | Gabapentin and pregabalin in the management of postoperative pain after lumbar spinal surgery: A systematic review and meta-analysis | Conclusion: This work suggested that both gabapentin and pregabalin were efficacious in reduction of postoperative pain and narcotic requirements after lumbar spinal surgery, whereas more trials were needed to further assess the efficacy of pregabalin in the management of postoperative pain after lumbar spinal surgery. | Medication | Spine 15 Oct 2013;38(22):1947-1952 2013 15 Oct | 2013 |  | spine |
| Yuan 2013 | Efficacy and safety of using antifibrinolytic agents in spine surgery: a meta-analysis | CONCLUSIONS: We conclude that antifibrinolytic agents significantly decrease blood loss, blood transfusion, and there is no increase in the risk of deep vein thrombosisfor transfusion requirements in spine surgery. | Medication | PLoS One 2013;8(11):e82063 2013 | 2013 |  | spine |
| Zhang 2013 | Management of spinal tuberculosis: A systematic review and meta-analysis | Conclusions: There is no obvious statistically significant clinical precedence to suggest that routine surgery will improve the prognosis of patients with spinal tuberculosis. | Surgery | Journal of International Medical Research September 2013;41(5):1395-1407 2013 September | 2013 |  | spine |
| Zhang 2014 | A meta analysis of lumbar spinal fusion surgery using bone morphogenetic proteins and autologous iliac crest bone graft | CONCLUSION: Compared with ICBG, BMPs in lumbar fusion can increase the fusion rate, while reduce the reoperation rate and operating time. However, it doesn't increase the complication rate, the amount of blood loss and hospital stay. No significant difference was found in the overall success of clinical outcome of the two groups. | Surgery | PLoS One 2014;9(6):e97049 2014 | 2014 |  | spine |
| Zhang 2014 | Effectiveness of tranexamic acid in reducing blood loss in spinal surgery: A meta-analysis | Conclusion: We conclude that the use of TXA in patients undergoing spinal surgery appears to be effective in reducing the amount of blood loss, the volume of blood transfusion, the transfusion rate, and the postoperative PTT. However, data were too limited for any conclusions regarding safety. More high-quality RCTs are required before recommending the administered of TXA in spinal surgery. | Medication | BMC Musculoskeletal Disorders 2014;15 (1) (no pagination)(448): 2014 | 2014 |  | spine |
| Zhang 2015 | Cervical total disc replacement is superior to anterior cervical decompression and fusion: a meta-analysis of prospective randomized controlled trials | CONCLUSIONS: Cervical total disc replacement presented favorable functional outcomes, fewer adverse events, and fewer secondary surgical procedures. The efficacy and safety of cervical total disc replacement are superior to those of fusion. Longer-term, multicenter studies are required for a better evaluation of the long-term efficacy and safety of the two procedures. | Surgery | PLoS One 2015;10(3):e0117826 2015 | 2015 |  | neck |
| Zhong 2016 | Reoperation After Cervical Disc Arthroplasty Versus Anterior Cervical Discectomy and Fusion: A Meta-analysis | CONCLUSIONS: Cervical disc arthroplasty is associated with fewer reoperations than anterior cervical discectomy and fusion, indicating that it is a safe and effective alternative to fusion for cervical radiculopathy and myelopathy. However, because of some limitations, these findings should be interpreted with caution. Additional studies are needed. LEVEL OF EVIDENCE: Level I, therapeutic study. | Surgery | Clin Orthop Relat Res May 2016;474(5):1307-16 2016 May | 2016 |  | neck |
| Zhu 2016 | Does cervical spine manipulation reduce pain in people with degenerative cervical radiculopathy? A systematic review of the evidence, and a meta-analysis | CONCLUSION: There was moderate level evidence to support the immediate effectiveness of cervical spine manipulation in treating people with cervical radiculopathy. The safety of cervical manipulation cannot be taken as an exact conclusion so far. | Surgery | Clin Rehabil Feb 2016;30(2):145-55 2016 Feb | 2016 |  | neck |
| Zorrilla-Vaca 2016 | A Comparison of Regional Versus General Anesthesia for Lumbar Spine Surgery: A Meta-Analysis of Randomized Studies | CONCLUSIONS: In summary, RA has several advantageous characteristics, including lower incidence of postoperative nausea and vomiting, length of stay, and blood loss. Further well-designed studies with more sample size are needed to clarify the associations with possible neurological complications. | Medication | Journal of Neurosurgical Anesthesiology. 2016;25(): 2016 | 2016 |  | spine |
| Zou 2016 | Anterior cervical discectomy and fusion (ACDF) versus cervical disc arthroplasty (CDA) for two contiguous levels cervical disc degenerative disease: a meta-analysis of randomized controlled trials | CONCLUSION: We can learn from this meta-analysis that the cervical disc arthroplasty (CDA) group is equivalent and in some aspects has more significant clinical outcomes than the ACDF group at two contiguous levels CDD. | Surgery | Eur Spine J Jun 17 2016;(): 2016 Jun 17 | 2016 |  | neck |

**UpEx**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation Ref shoulder, elbow, hand** | **Year** | **58** |
| Ashraf 2014 | Systematic review and meta-analysis on steroid injection therapy for de Quervain's tenosynovitis in adults | Conclusion: Steroid injection is an effective form of conservative management for de Quervain's disease although more research is needed to establish the full benefits of the treatment. | Medication | European Journal of Orthopaedic Surgery and Traumatology February 2014;24(2):149-157  2014 February | 2014 |  |
| Assmus 2015 | Carpal and cubital tunnel and other, rarer nerve compression syndromes | RESULTS: Randomized controlled trials have shown, with a high level of evidence, that the surgical treatment of carpal tunnel syndrome yields very good results regardless of the particular technique used, as long as the diagnosis and the indication for surgery are well established by the electrophysiologic and radiological findings and the operation is properly performed. The success rates of open surgery, and the single-portal and dual-portal endoscopic methods are 91.6%, 93.4% and 92.5%, respectively. When performed by experienced hands, all these procedures have complication rates below 1%. The surgical treatment of cubital tunnel syndrome has a comparably low complication rate, but worse results overall. Neuro-ultrasonography and magnetic resonance imaging (neuro-MRI) are increasingly being used to complement the diagnostic findings of electrophysiologic studies. CONCLUSION: Evidence-based diagnostic methods and treatment recommendations are now available for the two most common peripheral nerve compression syndromes. Further controlled trials are needed for most of the rarer syndromes, especially the controversial ones. | Surgery | Dtsch Arztebl Int Jan 05 2015;112(1-2):14-25; quiz 26 2015 Jan 05 | 2015 |  |
| Bannuru 2014 | High-energy extracorporeal shock-wave therapy for treating chronic calcific tendinitis of the shoulder: a systematic review | Results indicated statistically significant improvements in shoulder pain, function and calcification resolution for high-energy ESWT over placebo but only significant benefits in function for low-energy ESWT over placebo. Shoulder function was significantly better with high-energy ESWT versus low-energy ESWT while pain outcomes were similar. ESWT did not appear to affect outcomes in noncalcific tendinitis. Comparisons between ESWT and other treatments were infrequent. | Non Surgical Intervention | Ann Intern Med 2014;()  2014 | 2014 |  |
| Bernardino 2011 | An evidence-based review of the most current treatment options and trends for carpal tunnel syndrome (CTS) | Our review revealed that most of the recent studies support the AAOS guideline. However, the recent literature demonstrates a trend toward recommending early surgery for CTS cases with or without median nerve denervation, although the AAOS guideline recommends early surgical treatment only for cases with denervation. The usefulness of splinting and steroids as initial treatments for improving patients' symptoms is also supported by the recent literature, but these effects are temporary. The evidence level for ultrasound treatment is still low, and further studies are needed to determine the effectiveness of this treatment. Finally, our review revealed a paucity of articles comparing the costs of CTS diagnosis and treatment. With the recent focus on health care reform and rising costs, attention to the direct and indirect costs of health care is important for all conditions. Future well-designed studies should include cost analyses to help determine the cost burden of CTS. | Surgery | Rheumatology International 2011;():1-7  2011 | 2011 |  |
| Bertozzi 2015 | Investigation of the effect of conservative interventions in thumb carpometacarpal osteoarthritis: systematic review and meta-analysis | Results found therapeutic exercise to benefit grip strength, manual therapy to benefit pain, therapeutic exercise with manual therapy to benefit both pain and grip strength, laser therapy to benefit stiffness, splint use to benefit pinch strength, and magnetotherapy to benefit pain, function, pinch strength, and stiffness. However, results were based on a limited number of studies per outcome and should be interpreted with caution. | Physio/Rehab | Disabil Rehabil 2015;(): 2015 | 2015 |  |
| Bexkens 2017 | Effectiveness of reduction maneuvers in the treatment of nursemaid's elbow: A systematic review and meta-analysis | Conclusions Hyperpronation was more effective in terms of success rate and seems to be less painful compared to the supination-flexion maneuver in children with nursemaid's elbow. | Non Surgical Intervention | American Journal of Emergency Medicine 01 Jan 2017;35(1):159-163  2017 01 Jan | 2017 |  |
| Boudreault 2014 | The efficacy of oral non-steroidal anti-inflammatory drugs for rotator cuff tendinopathy: A systematic review and meta-analysis. | 12 randomized control trials comparing oral non-steroidal anti-inflammatory drugs (NSAIDs) to any another intervention for adult patients with rotator cuff tendinopathy were included in this systematic review/meta-analysis. Upon analysis, low to moderate grade evidence supports the use of oral non-steroidal anti-inflammatory drugs (NSAIDs) for short-term pain relief compared to placebo. In addition, NSAIDs were as clinically effective as corticosteroid injections with respect to short-term pain relief and function in patients with rotator cuff tendinopathy. | Medication | J Rehabil Med 2014;():  2014 | 2014 |  |
| Cai 2015 | Efficacy of platelet-rich plasma in arthroscopic repair of full-thickness rotator cuff tears: a meta-analysis | Results showed that although there was a significant reduction in failure-to-heal rates in PRP groups with minor to moderately sized rotator cuff tears, there was no significant difference in clinical and functional outcome measures between study groups. | Medication | J Shoulder Elb Surg 2015;():  2015 | 2015 |  |
| Chahal 2012 | The role of subacromial decompression in patients undergoing arthroscopic repair of full-thickness tears of the rotator cuff: a systematic review and meta-analysis | CONCLUSIONS: On the basis of the currently available literature, there is no statistically significant difference in subjective outcome after arthroscopic rotator cuff repair with or without acromioplasty at intermediate follow-up. LEVEL OF EVIDENCE: Level I, systematic review of Level I studies. | Surgery | Arthroscopy May 2012;28(5):720-7  2012 May | 2012 |  |
| Chan 2014 | Delayed versus early motion after arthroscopic rotator cuff repair: a meta-analysis | CONCLUSIONS: The current meta-analysis did not identify any significant differences in functional outcomes and relative risks of recurrent tears between delayed and early motion in patients undergoing arthroscopic rotator cuff repairs. A statistically significant difference in forward elevation range of motion was identified; however, this difference is likely clinically unimportant. | Physio/Rehab | J Shoulder Elbow Surg Nov 2014;23(11):1631-9  2014 Nov | 2014 |  |
| Chang 2015 | Early Versus Delayed Passive Range of Motion Exercise for Arthroscopic Rotator Cuff Repair: A Meta-analysis of Randomized Controlled Trials | CONCLUSION: Early ROM exercise accelerated recovery from postoperative stiffness for patients after arthroscopic rotator cuff repair but was likely to result in improper tendon healing in shoulders with large-sized tears. The choice of either protocol should be based on an accommodation of the risks of recurrent tears and postoperative shoulder stiffness. | Physio/Rehab | Am J Sports Med May 2015;43(5):1265-73  2015 May | 2015 |  |
| Chen 2015 | Rehabilitation protocol after arthroscopic rotator cuff repair: Early versus delayed motion | Conclusion: Our meta-analysis included data from randomized controlled trials and demonstrated that delayed motion after arthroscopic rotator cuff repair resulted in higher healing rates and ASES scores than early motion. Alternatively, early motion increased range of motion (ROM) recovery, but also increased the rate of recurrence compared to delayed motion. | Physio/Rehab | International Journal of Clinical and Experimental Medicine 2015;8(6):8329-8338  2015 | 2015 |  |
| Chen 2015 | A Bayesian network meta-analysis: Comparing the clinical effectiveness of local corticosteroid injections using different treatment strategies for carpal tunnel syndrome | 10 randomized controlled trials comparing different approaches in corticosteroid injections for carpal tunnel syndrome were selected for this pairwise and Bayesian network meta-analysis. Included treatment groups were the ultrasound-guided ulnar in-plane approach, the ultrasound-guided ulnar out-of-plane approach, the proximal approach, the distal approach, and placebo injections. Pooled measures included rate of clinical response (reduction in pain scores below 2), and the Boston Carpal Tunnel Questionnaire symptom severity scale and functional status scale. Results of the network meta-analysis, standardized relative to placebo, demonstrated the greatest effect and highest likelihood of being ranked the best option for all three measures. | Medication | BMC Musculoskelet Disord 2015;():  2015 | 2015 |  |
| Chin 2013 | Infraclavicular brachial plexus block for regional anaesthesia of the lower arm | Authors' conclusions: ICB is as safe and effective as any other BPBs, regardless of whether ultrasound or neurostimulation guidance is used. The advantages of ICB include a lower likelihood of tourniquet pain during surgery, more reliable blockade of the musculocutaneous nerve when compared to a single-injection axillary block, and a significantly shorter block performance time compared to multi-injection axillary and mid-humeral blocks. | Medication | Cochrane Database of Systematic Reviews 2013;(8): John Wiley & Sons, Ltd 2013 | 2013 |  |
| Chin 2016 | Single, double or multiple-injection techniques for non-ultrasound guided axillary brachial plexus block in adults undergoing surgery of the lower arm | Authors' conclusions: This review provides evidence that multiple-injection techniques using nerve stimulation for axillary plexus block produce more effective anaesthesia than either double or single-injection techniques. However, there was insufficient evidence to draw any definitive conclusions regarding differences in other outcomes, including safety. | Medication | Cochrane Database of Systematic Reviews 2016;(9): John Wiley & Sons, Ltd 2016 | 2016 |  |
| Chou 2016 | Autologous blood injection for treatment of lateral epicondylosis: A meta-analysis of randomized controlled trials | 9 randomized controlled trials which compared autologous whole blood (ABI) injections to either corticosteroid injections (CSI) (6 RCTs) or platelet-rich plasma injections (PRP) (3 RCTs) in the treatment of lateral epicondylitis were included in the current meta-analysis. Comparisons were performed to assess the effect of these treatment options on pain. Pooled results demonstrated a significant effect in favour of ABI versus CSI, and a non-significant effect between ABI and PRP. Sensitivity analysis, which excluded trials with high-risk of bias, demonstrated a non-significant difference between ABI and CSI, while results were maintained in the analysis of ABI versus PRP. | Medication | Phys Ther Sport 2016;():  2016 | 2016 |  |
| Desmeules 2015 | The efficacy of therapeutic ultrasound for rotator cuff tendinopathy: A systematic review and meta-analysis | Results indicated that therapeutic ultrasound was not beneficial in terms of improving pain or function when compared to other active treatment, placebo, or as an addition to exercise. | Non Surgical Intervention | Phys Ther Sport 2015;(): 2015 | 2015 |  |
| Duan 2013 | Total shoulder arthroplasty versus hemiarthroplasty in patients with shoulder osteoarthritis: A meta-analysis of randomized controlled trials | Results after a minimum follow-up of two years indicated that TSA results in significantly better functional outcomes when compared to HA. In addition, there were no statistically significant differences between groups in the incidence of revision, quality of life, and the incidence of shoulder instability. | Surgery | Semin Arthritis Rheum 2013;():  2013 | 2013 |  |
| Familiari 2015 | Is acromioplasty necessary in the setting of full-thickness rotator cuff tears? A systematic review | CONCLUSIONS: This systematic review of the literature does not support the routine use of partial acromioplasty or CA ligament release in the surgical treatment of rotator cuff disease. In some instances, partial acromioplasty and release of the CA ligament can result in anterior escape and worsening symptoms. Further research is needed to determine the optimum method for the operative treatment of full-thickness rotator cuff tears. LEVEL OF EVIDENCE: Level I, systematic review of level I and II studies. | Surgery | J Orthop Traumatol Sep 2015;16(3):167-74  2015 Sep | 2015 |  |
| Fitch 2008 | Intraarticular lidocaine versus intravenous procedural sedation with narcotics and benzodiazepines for reduction of the dislocated shoulder: a systematic review | CONCLUSIONS: The use of IAL for reduction of anterior shoulder dislocations should be strongly considered as a first line therapy because it is effective and safe and may potentially reduce time spent in the ED. | Medication | Acad Emerg Med Aug 2008;15(8):703-8  2008 Aug | 2008 |  |
| Fleisch 2007 | Corticosteroid injections in the treatment of trigger finger: A level I and II systematic review | This review indicates that the incidence of trigger finger is greatest in women (75%), with an average patient age range of 52 to 62 years. Combined analysis of these four studies shows that corticosteroid injections are effective in 57% of patients. Copyright 2007 by the American Academy of Orthopaedic Surgeons. | Medication | Journal of the American Academy of Orthopaedic Surgeons March 2007;15(3):166-171 2007 March | 2007 |  |
| Gebremariam 2011 | Effectiveness of surgical and postsurgical interventions for the subacromial impingement syndrome: a systematic review | CONCLUSIONS: This review shows that there is no evidence that surgical treatment is superior to conservative treatment or that 1 particular surgical technique is superior to another. Because of possibly lower risks for complications, conservative treatment may be preferred. When choosing for surgery, arthroscopic decompression may be preferred because of the less invasive character of the procedure. | Surgery | Arch Phys Med Rehabil Nov 2011;92(11):1900-13 2011 Nov | 2011 |  |
| Godin 2010 | Systematic review of rehabilitation versus operative stabilization for the treatment of first-time anterior shoulder dislocations | CONCLUSIONS: While limited, the available evidence from randomized controlled trials supports operative stabilization as a reasonable alternative to nonoperative treatment for primary acute shoulder dislocation in young, active adults participating in highly demanding physical activities. Recommendations on the optimal surgical intervention cannot be provided. There is no conclusive evidence available to determine whether operative stabilization or conservative rehabilitation is superior for other patient or injury types. | Surgery | Sports Health Mar 2010;2(2):156-65 2010 Mar | 2010 |  |
| Godin 2011 | Systematic review of arthroscopic versus open repair for recurrent anterior shoulder dislocations | CONCLUSIONS: While limited, the available evidence from randomized controlled trials does not show a statistically significant difference in redislocation rates, return to activity, and functional outcomes between the arthroscopic and open repair groups. Range of motion is marginally better following arthroscopic treatment when compared with open repair. Recommendations on the optimal surgical intervention cannot be provided. | Surgery | Sports Health Jul 2011;3(4):396-404 2011 Jul | 2011 |  |
| Goyal 2015 | Efficacy of surgical vs. non-surgical treatment of carpal tunnel syndrome (CTS): A systematic review | Conclusions: Surgical treatment of CTS relieves symptoms significantly better compared to non-surgical treatment. Further, the surgical treatment was a better option as compared to local steroid injections and splinting. | Surgery | Value in Health November 2015;18 (7)():A635 2015 November | 2015 |  |
| Hanratty 2012 | The Effectiveness of Physiotherapy Exercises in Subacromial Impingement Syndrome: A Systematic Review and Meta-Analysis | Conclusions: Physiotherapy exercises are effective in the management of SAIS. However, heterogeneity of the exercise interventions, coupled with poor reporting of exercise protocols, prevented conclusions being drawn about which specific components of the exercise protocols (ie, type, intensity, frequency and duration) are associated with best outcomes. | Physio/Rehab | Seminars in Arthritis and Rheumatism December 2012;42(3):297-316 2012 December | 2012 |  |
| Haslerud 2015 | The efficacy of low-level laser therapy for shoulder tendinopathy: a systematic review and meta-analysis of randomized controlled trials | Findings indicated outcomes were improved when LLLT was used alone and as an adjunct treatment. Active shoulder abduction was not benefited by treatment. | Non Surgical Intervention | Phytother Res 2015;():  2015 | 2015 |  |
| Huisstede 2010 | Carpal Tunnel Syndrome. Part I: Effectiveness of Nonsurgical Treatments-A Systematic Review | Conclusions: The reviewed evidence supports that a number of nonsurgical interventions benefit CTS in the short term, but there is sparse evidence on the midterm and long-term effectiveness of these interventions. Therefore, future studies should concentrate not only on short-term but also on midterm and long-term results. | Non Surgical Intervention | Archives of Physical Medicine and Rehabilitation July 2010;91(7):981-1004 2010 July | 2010 |  |
| Huisstede 2011 | Current evidence for effectiveness of interventions to treat rotator cuff tears | In conclusion, although surgery seems to give better results compared to non-surgery and TB is more effective than SS in rotator cuff repair (RCR), it remains hard to draw firm evidence-based conclusions for effectiveness of non-surgical or (post)surgical interventions to treat RotCuffTears. More research is clearly needed. | Surgery | man ther Jun 2011;16(3):217-30 2011 Jun | 2011 |  |
| Ji 2015 | Arthroscopic versus mini-open rotator cuff repair: an up-to-date meta-analysis of randomized controlled trials | CONCLUSIONS: On the basis of current literature, no differences in surgery time, functional outcome score, VAS pain score, and range of motion were found at the end of follow-up between the arthroscopic and mini-open rotator cuff repair techniques. In addition, there was no significant difference in VAS pain score in the early phase between the 2 repairs. LEVEL OF EVIDENCE: Level I, meta-analysis of Level I studies. | Surgery | Arthroscopy Jan 2015;31(1):118-24 2015 Jan | 2015 |  |
| Jiang 2014 | Intra-articular lidocaine versus intravenous analgesia and sedation for manual closed reduction of acute anterior shoulder dislocation: An updated meta-analysis | Conclusions Intra-articular lidocaine injection may be safer than IVAS because there are fewer risks of postoperative complications with IAL. Both techniques are similarly effective for manual closed reduction of acute anterior shoulder dislocation. Copyright | Medication | Journal of Clinical Anesthesia 01 Aug 2014;26(5):350-359 2014 01 Aug | 2014 |  |
| JimenezdelBarrio 2016 | Conservative treatment in patients with mild to moderate carpal tunnel syndrome: A systematic review | Conclusions: Several conservative treatments are able to relieve symptoms and improve functional ability of patients with mild-to-moderate CTS. These include splinting, oral drugs, injections, electrotherapy, specific manual techniques, and neural gliding exercises as well as different combinations of the above. We have been unable to describe the best technique or combination of techniques due to the limitations of the studies; therefore, further studies of better methodological quality are needed. | Non Surgical Intervention | Neurologia. 2016;12(): 2016 | 2016 |  |
| Koester 2007 | The efficacy of subacromial corticosteroid injection in the treatment of rotator cuff disease: A systematic review | This systematic review of the available literature indicates that there is little reproducible evidence to support the efficacy of subacromial corticosteroid injection in managing rotator cuff disease. | Medication | Journal of the American Academy of Orthopaedic Surgeons 2007;15(1):3-11 2007 | 2007 |  |
| Li 2011 | Comparison of trapeziectomy and trapeziectomy with ligament reconstruction and tendon interposition: a systematic literature review | CONCLUSION: Neither procedure produced greater benefit in terms of outcomes investigated. CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, II. | Surgery | Plast Reconstr Surg Jul 2011;128(1):199-207 2011 Jul | 2011 |  |
| Liu 2014 | The external rotation immobilisation does not reduce recurrence rates or improve quality of life after primary anterior shoulder dislocation: a systematic review and meta-analysis | CONCLUSION: Based on the results of our analysis, the ER immobilisation could not reduce the rates of recurrence after primary anterior shoulder dislocation or improve the quality of life compared with the IR immobilisation. More rigorous and adequately powered prospective randomised controlled trials with long-term follow-ups are required to elucidate a more objective outcome. | Non Surgical Intervention | Injury Dec 2014;45(12):1842-7 2014 Dec | 2014 |  |
| Liu 2016 | Evidence-based Status of Pulsed Radiofrequency Treatment for Patients with Shoulder Pain: A Systematic Review of Randomized Controlled Trials | Findings of this study indicated that the use of PRF demonstrated marked within-group improvement of passive range of motion (PROM), visual analogue scale (VAS) pain scores, and Shoulder Pain and Disability Index (SPADI) from baseline to 12 weeks follow-up. However, when compared to various control interventions, results on the efficacy of PRF were mixed based on the based on the type of control intervention (intra-articular corticosteroids, transcutaneous electrical nerve stimulation, physical therapy) being compared to. | Non Surgical Intervention | Pain Pract 2016;(): 2016 | 2016 |  |
| Meena 2015 | Arthroscopic rotator cuff repair with and without acromioplasty for rotator cuff tear: A meta-analysis of randomized controlled trial | Conclusion: Our meta-analysis does not demonstrate any difference in the functional outcome and retear rate of arthroscopic rotator cuff with or without acromioplasty. Level of evidence: Level II. Therapeutic study. | Surgery | Journal of Arthroscopy and Joint Surgery 01 Sep 2015;2(3):99-104 2015 01 Sep | 2015 |  |
| Millett 2014 | Clinical and structural outcomes after arthroscopic single-row versus double-row rotator cuff repair: a systematic review and meta-analysis of level I randomized clinical trials | CONCLUSION: Single-row repairs resulted in significantly higher re-tear rates compared with double-row repairs, especially with regard to partial-thickness re-tears. However, there were no detectable differences in improvement in outcomes scores between single-row and double-row repairs. | Surgery | J Shoulder Elbow Surg Apr 2014;23(4):586-97 2014 Apr | 2014 |  |
| Ono 2016 | Arthroscopic Repair of Articular Surface Partial-Thickness Rotator Cuff Tears: Transtendon Technique versus Repair after Completion of the Tear-A Meta-Analysis | The purpose of this study was to evaluate the efficacy of the transtendon repair technique compared to completion of the tear followed by subsequent repair. Constant scores were the only common outcome between all the included studies. Findings indicated no significant differences in Constant scores between transtendon repair and completion of the tear with a subsequent repair. | Surgery | Adv Orthop 2016;(): 2016 | 2016 |  |
| Piazzini 2007 | A systematic review of conservative treatment of carpal tunnel syndrome | Results: Thirty-three RCTs were included in the review. The studies were analysed to determine the strength of the available evidence for the efficacy of the treatment. Our review shows that: (1) locally injected steroids produce a significant but temporary improvement, (2) vitamin B6 is ineffective, (3) steroids are better than non-steroidal anti-inflammatory drugs (NSAIDs) and diuretics, but they can produce side-effects, (4) ultrasound is effective while laser therapy shows variable results, (5) exercise therapy is not effective, (6) splints are effective, especially if used full-time. Conclusion: There is: (1) strong evidence (level 1) on efficacy of local and oral steroids; (2) moderate evidence (level 2) that vitamin B6 is ineffective and splints are effective and (3) limited or conflicting evidence (level 3) that NSAIDs, diuretics, yoga, laser and ultrasound are effective whereas exercise therapy and botulinum toxin B injection are ineffective. | Medication | Clinical Rehabilitation April 2007;21(4):299-314 2007 April | 2007 |  |
| Qian 2016 | Efficacy and Safety of Autologous Blood Products Compared With Corticosteroid Injections in the Treatment of Lateral Epicondylitis: A Meta-Analysis of Randomized Controlled Trials | The results of the meta-analysis demonstrated that despite significantly lower pain following corticosteroid injection at a 2-4 week follow-up, autologous blood product injections led to significantly lower pain from 6-24 weeks and beyond 24 weeks of follow-up. Function and disability outcomes also favoured the autologous blood product injections at mid-term follow-up (6-24 weeks). Beyond 24 weeks there were no differences between the groups in function scores, disability of the arm, shoulder, and hand score, and grip strength. | Medication | PM R 2016;(): 2016 | 2016 |  |
| Riboh 2014 | Early Passive Motion Versus Immobilization After Arthroscopic Rotator Cuff Repair | This meta-analysis included 5 level II randomized control trials that compared early passive motion to sling immobilization following arthroscopic rotator cuff repair. The aim of this study was to analyze retear rates and range of motion between groups. Results from this analysis indicated that early passive motion significantly improves shoulder flexion at 3, 6, and 12 months postoperatively, while retear rates do not differ significantly between groups at the 1 year follow-up. | Physio/Rehab | Arthroscopy 2014;(): 2014 | 2014 |  |
| Rompe 2007 | Repetitive shock wave therapy for lateral elbow tendinopathy (tennis elbow): a systematic and qualitative analysis | CONCLUSIONS: With current studies heterogeneous in terms of the duration of the disorder; type, frequency and total dose of SWT; period of time between SWT; type of management and control group; timing of follow-up and outcomes assessed, a pooled meta-analysis of SWT for lateral elbow tendinopathy was considered inappropriate. In a qualitative systematic per-study analysis identifying common and diverging details of 10 randomized-controlled trials, evidence was found for effectiveness of shock wave treatment for tennis elbow under well-defined, restrictive conditions only. | Non Surgical Intervention | Br Med Bull 2007; 83():355-78 2007 | 2007 |  |
| Sayegh 2014 | Open versus Endoscopic Carpal Tunnel Release: A Meta-analysis of Randomized Controlled Trials | Conclusions: High-level evidence from randomized controlled trials indicates that endoscopic release allows earlier return to work and improved strength during the early postoperative period. Results at 6 months or later are similar according to current data except that patients undergoing endoscopic release are at greater risk of nerve injury and lower risk of scar tenderness compared with open release. While endoscopic release may appeal to patients who require an early return to work and activities, surgeons should be cognizant of its elevated incidence of transient nerve injury amid its similar overall efficacy to open carpal tunnel release. Additional research is required to define the learning curve of endoscopic release and clarify the influence of surgeon volume on its safety. | Surgery | Clinical Orthopaedics and Related Research 2014;473(3):1120-1132 2014 | 2014 |  |
| Shen 2014 | Incidence of retear with double-row versus single-row rotator cuff repair | Compared with single-row repair, double-row repair demonstrated a lower retear incidence and a reduced incidence of partial-thickness retears. Functional ASES, Constant, and UCLA scores showed no difference between single- and double-row cuff repairs. Use of the double-row technique decreased the incidence of retears, especially partial-thickness retears, compared with the single-row technique. The functional outcome was not significantly different between the 2 techniques. To improve the structural outcome of the repaired rotator cuff, surgeons should use the double-row technique. However, further long-term RCTs on this topic are needed. | Surgery | Orthopedics Nov 2014;37(11):e1006-13 2014 Nov | 2014 |  |
| Shen 2014 | Does immobilization after arthroscopic rotator cuff repair increase tendon healing? A systematic review and meta-analysis | CONCLUSION: We found no evidence that immobilization after arthroscopic rotator cuff repair was superior to early-motion rehabilitation in terms of tendon healing or clinical outcome. Patients in the early-motion group may recover ROM more rapidly. LEVEL OF EVIDENCE: Level II; systematic review of levels I and II studies. | Physio/Rehab | Arch Orthop Trauma Surg Sep 2014;134(9):1279-85 2014 Sep | 2014 |  |
| Shen 2014 | Early functional exercises after arthroscopic rotator cuff repairs: A meta-analysis. [Chinese] | RESULTS AND CONCLUSION: We included three randomized controlled trials, including 237 patients: 119 in the early movement group and 118 in the delayed movement group. During follow-up at 1 year after operation, no significant differences in range of motion, pain degree, American Shoulder and Elbow Surgeons Scale, Simple Should Test scores and re-tear rate of rotator cuff were detected between the two groups. Results confirmed that compared with delayed functional exercises, early functional exercises after arthroscopic rotator cuff repair did not have advantages on the improvement of joint function and range of motion, but also did not negatively affect cuff healing. Postoperative rehabilitation can be modified to ensure patient's compliance. | Physio/Rehab | Chinese Journal of Tissue Engineering Research 2014;18(17):2777-2782 2014 | 2014 |  |
| Soh 2011 | Image-guided versus blind corticosteroid injections in adults with shoulder pain: a systematic review | Findings of two randomized controlled trials were pooled in order to investigate if method of corticosteroid injection - either image-guided or anatomical landmark guided (blind) - impacted clinical outcome in patients suffering from shoulder pain. Clinical outcomes of pain and function were reported at 6 weeks, and the incidences of adverse events were recorded. Pooled effects illustrated that pain and function at 6 weeks were significantly improved with image-guided injections compared to blind injections. Incidence of adverse events was also lower in image-guided group; however, the difference did not reach statistical significance. | Medication | BMC Musculoskelet Disord 2011;(): 2011 | 2011 |  |
| Toliopoulos 2014 | Efficacy of surgery for rotator cuff tendinopathy: a systematic review | Fifteen trials met our inclusion criteria. After consensus, the mean methodological quality for all studies was 58.9 +/- 10.8 %. In three out of four RCTs of moderate or low methodological quality, no significant difference in treatment effectiveness was observed between open or arthroscopic acromioplasty compared to exercises in the treatment of RC tendinopathy. Based on two studies of low or moderate methodological quality, no difference in treatment effectiveness was observed between arthroscopic and open acromioplasty. Two other RCTs of low to moderate quality, however, found that arthroscopic acromioplasty yielded better results in the short-term for shoulder range of motion in flexion but that both procedures were comparable in the long-term. One additional study favored open acromioplasty over arthroscopic acromioplasty for the treatment of RC tendinopathy. Based on low- to moderate-quality evidence, acromioplasty, be it open or arthroscopic, is no more effective than exercises for the treatment of RC tendinopathy. Low-grade evidence also suggests that arthroscopic acromioplasty may yield better results in the short-term for shoulder range of motion in flexion compared to open acromioplasty, but long-term results are comparable between the two types of surgery. More high-quality RCTs are required in order to provide comprehensive treatment guidelines to healthcare providers. | Surgery | Clin Rheumatol 2014;33(10):1373-83 2014 | 2014 |  |
| Valdes 2015 | Conservative treatment of mallet finger: A systematic review | Results indicated no clincial differences in distal interphalangeal (DPI) joint extensor lag or functional outcomes based on the type of orthosis. Increased age, edema and decreased adherence were found to negatively influence DPI extension. | Non Surgical Intervention | J Hand Ther 2015;(): 2015 | 2015 |  |
| VanderSande 2013 | Subacromial impingement syndrome: effectiveness of pharmaceutical interventions-nonsteroidal anti-inflammatory drugs, corticosteroid, or other injections: a systematic review | 8 studies (5 randomized clinical trials (RCTs) and 3 systematic reviews) were evaluated to compare the efficacy of nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections, and other injections in the treatment of subacromial impingement syndrome (SIS). Results indicated that effectiveness in pain management was seen for oral ibuprofen in the short term. Promising outcomes were found for glyceryltrinitrate transdermal (GNT) patches for the short term, and for disodium ethylene diamine tetraacetic acid (EDTA) injections in both short and long term. | Medication | Arch Phys Med Rehabil 2013;(): 2013 | 2013 |  |
| Vintar 2015 | Pro-con debate: A perineural catheter should always be placed after major shoulder surgery for postoperative pain relief pro | Conclusions: CBPB provides successful postoperative analgesia for several postoperative days, including decresaed baseline, dynamic and breakthrough pain, supplemental analgesic requirements, opioid side effects and sleep disturbances. CBPB improves patient satisfaction and ambulation and accelerates resumption of passive joint range-of-motion. Nearly all benefits occur during the local anesthetic infusion itself, but several RCTs suggest that there are prolonged benefits after catheter removal as well (13). | Medication | Regional Anesthesia and Pain Medicine September-October 2015;1)():e35-e36 2015 September-October | 2015 |  |
| Wakai 2011 | Intra-articular lignocaine versus intravenous analgesia with or without sedation for manual reduction of acute anterior shoulder dislocation in adults | Authors' conclusions: We observed no significant difference between IAL and IVAS with regard to the immediate success rate of reduction, pain during reduction, post-reduction pain relief and reduction failure. Compared to IVAS, IAL may be less expensive and may be associated with fewer adverse effects and a shorter recovery time. | Medication | Cochrane Database of Systematic Reviews 2011;(4): John Wiley & Sons, Ltd 2011 | 2011 |  |
| Wang 2013 | Percutaneous release, open surgery, or corticosteroid injection, which is the best treatment method for trigger digits? | CONCLUSIONS: The frequencies of treatment failure and complications were no different between percutaneous release surgery and open surgery for trigger digit in adults. Patients treated with percutaneous releases were less likely to have treatment failure than patients treated with corticosteroid injections. | Surgery | Clin Orthop Relat Res. 2013;(): 2013 | 2013 |  |
| Warrender 2016 | Pain Management After Outpatient Shoulder Arthroscopy: A Systematic Review of Randomized Controlled Trials | CONCLUSION: On the basis of the evidence in this review, we recommend the use of ISBs as the most effective analgesic for outpatient arthroscopic shoulder surgery. | Medication | Am J Sports Med Oct 11 2016;(): 2016 Oct 11 | 2016 |  |
| Whelan 2016 | Immobilization in External Rotation Versus Internal Rotation After Primary Anterior Shoulder Dislocation: A Meta-analysis of Randomized Controlled Trials | Six randomized controlled trials (RCTs) which investigated the use of immobilization in external rotation versus internal rotation after primary anterior shoulder dislocation were selected for the current meta-analysis. Pooled comparisons were conducted for outcomes of recurrence, disease-specific quality of life, and compliance. Overall, there was no significant difference between external rotation and internal rotation in recurrence rate, nor in subgroup analyses based on mean study patient age or length of immobilization protocol. No significant differences were observed in pooled Western Ontario Shoulder Instability Index (WOSI) Scores or compliance rate. | Non Surgical Intervention | Am J Sports Med 2016;(): 2016 | 2016 |  |
| Wu 2015 | Effectiveness of Botulinum Toxin for Shoulder Pain Treatment: A Systematic Review and Meta-Analysis | Results displayed that when compared with conventional injection treatment (steroid or placebo), BTX had beneficial effects, as evidenced by decreased pain scores and increased range of motion. | Medication | Arch Phys Med Rehabil 2015;(): 2015 | 2015 |  |
| Wu 2015 | Ultrasound-guided versus blind subacromial-subdeltoid bursa injection in adults with shoulder pain: A systematic review and meta-analysis | 7 randomized controlled trials, including 445 patients, were analysed to evaluate the effectiveness of ultrasound-guided (UGI) versus blind landmark-guided subacromial-subdeltoid bursa corticosteroid injection for the treatment of adult patients with shoulder pain. Pooled outcomes included pain, disability, function, and shoulder range of motion. Results indicated that there was significant difference in favour of USG injection for all measured outcomes. | Medication | Semin Arthritis Rheum 2015;(): 2015 | 2015 |  |

**Sport**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation  Ref ACL (all knee ligaments)** | **Year** | **41** | **Coding** |
| Arneja 2009 | Graft tensioning in anterior cruciate ligament reconstruction: a systematic review of randomized controlled trials | The purpose of this review was to assess the effect of initial graft tensioning during graft fixation in ACL reconstruction, while also evaluating the methodological quality of the currently available publications using the Destky score. Qualitative analysis revealed a trend that suggested an optimal initial graft tension of 80N to 90N, as it was shown in some studies to significantly decrease overall side-to-side differences in knee laxity. The proportion of included studies that met the Destky standard of acceptability was 0.40. | Surgery | Arthroscopy 2009;():  2009 | 2009 |  | knee |
| Chee 2017 | Outcome of Patellar Tendon Versus 4-Strand Hamstring Tendon Autografts for Anterior Cruciate Ligament Reconstruction: A Systematic Review and Meta-analysis of Prospective Randomized Trials | Conclusions Contemporary 4-strand HT ACL reconstruction is comparable with the PT technique in terms of clinical stability and postoperative functional status across most parameters studied. The HT technique carries lower risk of postoperative complications such as anterior knee pain, kneeling discomfort, and extension deficit. Primary ACL reconstruction using the 4-strand HT technique achieves clinical results that are comparable with the PT technique with significantly less postoperative complications. Level of Evidence Level I, systemic review and meta-analysis of Level I studies. | Surgery | Arthroscopy Journal of Arthroscopic and Related Surgery 01 Feb 2017;33(2):450-463  2017 01 Feb | 2017 |  | knee |
| Chen 2015 | Comparison of single-bundle versus double-bundle anterior cruciate ligament reconstruction after a minimum of 3-year follow-up: a meta-analysis of randomized controlled trials | This meta-analysis demonstrated that the DB technique could result in better rotational stability and higher subjective function score and was effective in preventing OA compared to SB in the mid-term treatment of the injured ACL. Further studies with better design involving larger sample sizes and longer-term follow-up are required. | Surgery | Int J Clin Exp Med 2015;8(9):14604-14 2015 | 2015 |  | knee |
| Chen 2016 | Efficacy of remnant-preserving anterior cruciate ligament reconstruction versus standard anterior cruciate ligament reconstruction by arthroscopy: A meta-analysis | Conclusion Arthroscopic remnant-preserving ACL reconstruction can prevent the tibia tunnel enlargement and improve the stability of the knee joint postoperatively, but cannot improve the short-term postoperative functional scores. Due to the limited quality and quantity of the included studies, more large-scale and high quality RCTs are needed to verify the above conclusion. | Surgery | Chinese Journal of Evidence-Based Medicine 2016;16(2):153-159 2016 | 2016 |  | knee |
| Clifton 2007 | Closed suction surgical wound drainage after anterior cruciate ligament reconstruction: a systematic review of randomised controlled trials | Five studies involving 349 patients were identified. There was no significant difference in the occurrence of wound healing complications, infections or the number of aspirations for haemarthrosis. There was also no difference in post-operative range of movement, functional score or incidence of limb swelling. The difference in pain scores varied between authors with some reporting increased pain in the drained group. All other outcomes reported failed to show any benefit for the use of drains. The authors recommend not using a drain following anterior cruciate ligament reconstruction with either Bone-Patellar Tendon-Bone or Quadrupled Hamstring graft. | Surgery | Knee Oct 2007;14(5):348-51  2007 Oct | 2007 |  | knee |
| Cvetanovich 2014 | Hamstring autograft versus soft-tissue allograft in anterior cruciate ligament reconstruction: a systematic review and meta-analysis of randomized controlled trials (Provisional abstract) | CONCLUSIONS: On the basis of this systematic review and meta-analysis of 5 randomized controlled trials, there is no statistically significant difference in outcome between patients undergoing ACL reconstruction with hamstring autograft and those undergoing ACL reconstruction with soft-tissue allograft. These results may not extrapolate to younger patient populations. The methodology of the available randomized controlled trials comparing hamstring autograft and soft-tissue allograft is poor. LEVEL OF EVIDENCE: Level II, systematic review of Level I and II studies. | Surgery | Database of Abstracts of Reviews of Effects 2014;(2):1616-1624  2014 | 2014 |  | knee |
| Emond 2011 | A comparison of the results of anterior cruciate ligament reconstruction using bioabsorbable versus metal interference screws: a meta-analysis | CONCLUSIONS: The clinical results associated with bioabsorbable screws and metal screws are statistically similar. Laxity evaluation demonstrated no significant differences between bioabsorbable screws and metal screws. The complication rates associated with bioabsorbable screws and metal screws were also similar. The results of this meta-analysis support the hypothesis that there are no significant differences in the outcomes associated with bioabsorbable screws as compared with metal screws for ACL reconstruction. LEVEL OF EVIDENCE: Therapeutic Level II. See Instructions to Authors for a complete description of levels of evidence. | Surgery | J Bone Joint Surg Am Mar 16 2011;93(6):572-80  2011 Mar 16 | 2011 |  | knee |
| Frank 2015 | Closure of patellar tendon defect in anterior cruciate ligament reconstruction with bonee-patellar tendone-bone autograft: Systematic review of randomized controlled trials | Conclusions: Based on this systematic review of 4 randomized trials, there are no statistically significant or clinically relevant differences in outcomes between patients who have the patellar tendon defect closed and those who have it left open after ACLR with BPTB autografts. The methodology of the included studies limits the interpretation of the data, as evidenced by low MCMS and Jadad scores. Level of Evidence: Level II, systematic review of Level I and Level II studies. | Surgery | Arthroscopy Journal of Arthroscopic and Related Surgery 2015;31(2):329-338 2015 | 2015 |  | knee |
| George 2007 | Endoscopic versus rear-entry ACL reconstruction: a systematic review | Overall, these studies show similar outcomes comparing the all-endoscopic and rear-entry anterior cruciate ligament reconstruction techniques. | Surgery | Clin Orthop Relat Res Feb 2007;455():158-61 2007 feb | 2007 |  | knee |
| Herrington 2005 | Anterior Cruciate Ligament reconstruction, hamstring versus bone-patella tendon-bone grafts: A systematic literature review of outcome from surgery | Overall, the studies reported that there was no significant difference between the two groups for recovery of sporting ability, pain, knee stability, function, muscle strength, range of motion and complication rates. Both grafts led to similar improvement in patients with ACL injuries. | Surgery | Knee 2005;():  2005 | 2005 |  | knee |
| Järvelä 2011 | ACL reconstruction with double-bundle technique: A review of clinical results | According to the 14 randomized controlled trials published in the literature and included in this review, 4 (29%) trials did not find any significant differences in the results between double-bundle and single-bundle ACL reconstruction. Ten (71%) trials reported significantly better results with double-bundle technique than with single-bundle technique, of which 7 (50%) reported better rotational stability, 6 (43%) reported better anterior stability, 3 (21%) reported better objective knee scores, 3 (21%) reported better subjective knee scores, 2 (14%) reported fewer graft failures, and 1 (7%) reported less degenerative changes of the knee. In addition, none of the trials found the single-bundle technique to have better results in any of these evaluations when compared with the double-bundle technique. However, 13 (93%) of the 14 trials had only a short-term follow-up (1-3 years), and only 1 (7%) trial conducted long-term follow-up (8-10 years). Therefore, only through long-term follow-up studies will we be able to determine whether the double-bundle reconstruction is really better than the single-bundle technique. | Surgery | Physician and Sportsmedicine 2011;39(1):85-92 2011 | 2011 |  | knee |
| Khan 2014 | Arthroscopic surgery for degenerative tears of the meniscus: a systematic review and meta-analysis | INTERPRETATION: There is moderate evidence to suggest that there is no benefit to arthroscopic meniscal debridement for degenerative meniscal tears in comparison with nonoperative or sham treatments in middle-aged patients with mild or no concomitant osteoarthritis. A trial of nonoperative management should be the first-line treatment for such patients. | Surgery | CMAJ Oct 07 2014;186(14):1057-64 2014 Oct 07 | 2014 |  | knee |
| Kong 2017 | Single-bundle versus double-bundle anterior cruciate ligament reconstruction: A systematic review and meta-analysis | Based on current evidence, double-bundle ACL reconstruction appears to yield better outcomes when compared with single-bundle ACL reconstruction. However, the results should be interpreted with caution and further large-scale, well-designed RCTs on this topic are still needed. | Surgery | International Journal of Clinical and Experimental Medicine 2017;10(1):1-15 2017 | 2017 |  | knee |
| Kongtharvonskul 2013 | Clinical outcomes of double- vs single-bundle anterior cruciate ligament reconstruction: a systematic review of randomized control trials | The double-bundle may be better than the single-bundle ACL reconstruction technique in rotational stability but not for function, translation, and complications. | Surgery | Scand J Med Sci Sports Feb 2013;23(1):1-14 2013 Feb | 2013 |  | knee |
| Lamsam 2012 | Single-bundle versus double-bundle anterior cruciate ligament reconstruction: a meta-analysis | CONCLUSION: The present study shows that DB-ACLR provides better AP and rotational stability than SB-ACLR. There is no difference in the results of functional scores. DB-ACLR should be considered in patients who particularly require rotational stability of the knee. In the future, the interesting issue is to develop the functional knee score that is more specific to rotational stability evaluation. | Surgery | J Med Assoc Thai Sep 2012;95 Suppl 9():S114-21 2012 Sep | 2012 |  | knee |
| Laupattarakasem 2014 | Meta-analysis comparing bioabsorbable versus metal interference screw for adverse and clinical outcomes in anterior cruciate ligament reconstruction | CONCLUSION: This is the first systematic review focusing on adverse effects of the BS, such as larger tunnel widening and higher rates of other complications. With these effects, routine use of the BS should be balanced with the advantages claimed. Cost-effectiveness is another issue, and well-designed RCTs are needed to better validate the implication. | Surgery | Knee Surg Sports Traumatol Arthrosc Jan 2014;22(1):142-53 2014 Jan | 2014 |  | knee |
| Lewis 2008 | Systematic review of single-bundle anterior cruciate ligament reconstruction outcomes: a baseline assessment for consideration of double-bundle techniques | CONCLUSION: Systematic review of a significant body of unbiased outcome data on single-bundle anterior cruciate ligament reconstruction demonstrates it to be a safe, consistent surgical procedure affording reliable results. CLINICAL RELEVANCE: These results may be used to assist orthopaedic surgeons in evaluating the benefit and practicality of pursuing new anterior cruciate ligament reconstruction techniques over standard single-bundle anterior cruciate ligament reconstruction. | Surgery | Am J Sports Med Oct 2008;36(10):2028-36 2008 Oct | 2008 |  | knee |
| Li 2010 | Bioabsorbable versus metal interference srews for endoscopic restruction of anterior cruciate ligament: A meta-analysis of randomized controlled trials | Conclusion: Bioabsorbable interference screws provide equivalent clinical outcomes compared with metal interference screws. However, further confirmation is required because of varieties of types and complex compositions. | Surgery | Chinese Journal of Evidence-Based Medicine 2010;10(7):848-856 2010 | 2010 |  | knee |
| Li 2013 | Single-bundle versus double-bundle anterior cruciate ligament reconstruction: an up-to-date meta-analysis | CONCLUSIONS: Considering the more favourable outcomes of graft failures, knee joint stability and knee joint function in double-bundle reconstruction, we concluded that arthroscopic double-bundle reconstruction should be considered as the primary treatment in ACL reconstruction. | Surgery | Int Orthop Feb 2013;37(2):213-26 2013 Feb | 2013 |  | knee |
| Li 2014 | Single-bundle or double-bundle for anterior cruciate ligament reconstruction: a meta-analysis | CONCLUSION: Our meta-analysis demonstrated the superiority of double-bundle over single-bundle anterior cruciate ligament reconstruction. The double-bundle ACL reconstruction technique has better outcomes in rotational laxity (pivot-shift test, KT grading and IKDC grading). However, for functional recovery, there was no significant difference between single-bundle and double-bundle reconstruction techniques. | Surgery | Knee Jan 2014;21(1):28-37 2014 Jan | 2014 |  | knee |
| Li 2015 | Hamstring tendon autograft versus hamstring tendon allograft in anterior cruciate ligament reconstruction by arthroscopy: A systematic review. [Chinese] | Conclusion Hamstring tendon autograft and hamstring tendon allograft have similar efficacy in anterior cruciate ligament reconstruction by arthroscopy. Due to limited quality and quantity of the included studies, more large-scale and high quality studies are needed to verify the above conclusion. | Surgery | Chinese Journal of Evidence-Based Medicine 2015;15(8):967-973 2015 | 2015 |  | knee |
| Lobb 2012 | A review of systematic reviews on anterior cruciate ligament reconstruction rehabilitation | Five systematic reviews were included assessing eight rehabilitation components. There was strong evidence (consistent evidence from multiple high quality randomised controlled trials (RCTs)) of no added benefit of bracing (0-6 weeks post-surgery) compared to standard treatment in the short term. Moderate evidence (consistent evidence from multiple low quality RCTs and/or one high quality RCT) supported no added benefit of continuous passive motion to standard treatment for increasing range of motion. There was moderate evidence of equal effectiveness of closed versus open kinetic chain exercise and home versus clinic based rehabilitation, on a range of short term outcomes. There was inconsistent or limited evidence for some interventions. Recommendations for clinical practice are made at specific time points for specific outcomes. | Physio/Rehab | Phys Ther Sport Nov 2012;13(4):270-8 2012 Nov | 2012 |  | knee |
| Ma 2017 | Remnant preservation in anterior cruciate ligament reconstruction versus standard techniques: a meta-analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis of randomized controlled trials showed that ACL reconstruction with technique of remnant preservation cannot provide superior clinical outcomes compared with the standard procedure. | Surgery | J Sports Med Phys Fitness Jan 13 2017;(): 2017 Jan 13 | 2017 |  | knee |
| MaiXu 2013 | Outcomes of Anterior Cruciate Ligament Reconstruction Using Single-Bundle Versus Double-Bundle Technique: Meta-analysis of 19 Randomized Controlled Trials | CONCLUSIONS: Meta-analysis of random controlled trials revealed that double-bundle anterior cruciate ligament reconstruction resulted in significantly better anterior and rotational stability and higher IKDC objective scores compared with single-bundle reconstruction. However, the meta-analysis did not detect any significant differences in subjective outcome measures between double-bundle and single-bundle reconstruction, as evidenced by the Lysholm score, Tegner activity scale, and IKDC subjective score. LEVEL OF EVIDENCE: Level II, meta-analysis of Level I and II studies. | Surgery | Arthroscopy 2013;(): 2013 | 2013 |  | knee |
| Mall 2010 | Femoral nerve block use in anterior cruciate ligament reconstruction surgery | CONCLUSIONS: On the basis of the available Level I and II data from randomized controlled trials, there appears to be no evidence that FNBs add additional benefit over multimodal analgesia. FNBs have not been shown to significantly affect patient pain, readiness for discharge, or outcome scores. There is a small but identifiable risk associated with performing FNBs, with potentially catastrophic effects. LEVEL OF EVIDENCE: Level II, systematic review of Level I and II randomized controlled trials with minimal heterogeneity. | Medication | Arthroscopy Mar 2010;26(3):404-16 2010 Mar | 2010 |  | knee |
| Pereira 2012 | Physiotherapy after reconstruction of anterior cruciate ligament | No difference was observed between the techniques, however, with a recommendation for a less aggressive rehabilitation and greater attention to the strengthening of the hamstring when they are used as grafts. | Physio/Rehab | Acta Ortopedica Brasileira 2012;20(6):372-375 2012 | 2012 |  | knee |
| Rezende 2015 | Does Combined Intra- and Extraarticular ACL Reconstruction Improve Function and Stability? A Meta-analysis | CONCLUSION: Combined intra- and extraarticular ACL reconstruction provided marginally improved knee stability and comparable failure rates but no difference in patient-reported functional outcomes scores. Complications and adverse events such as knee stiffness may be underreported and technical factors such as graft placement were difficult to evaluate. Future studies are needed to determine whether the small differences in additional stability warrant the potential morbidity of the additional extraarticular procedure and to determine long-term failure rates. | Surgery | Clin Orthop Relat Res Aug 2015;473(8):2609-18 2015 Aug | 2015 |  | knee |
| Saccomanno 2014 | Clinical and functional outcomes after anterior cruciate ligament reconstruction using cortical button fixation versus transfemoral suspensory fixation: a systematic review of randomized controlled trials | CONCLUSIONS: The present evidence suggests that there are no short- to medium-term differences in knee-specific outcome measures between patients treated with cortical button femoral graft fixation and those treated with suspensory transfemoral fixation when undergoing ACL reconstruction. In addition, radiologic evidence of tunnel widening does not seem to affect short- to medium-term clinical outcomes. LEVEL OF EVIDENCE: Level II, systematic review of Level I and II studies. | Surgery | Arthroscopy Nov 2014;30(11):1491-8 2014 Nov | 2014 |  | knee |
| Saccomanno 2015 | Outcomes following ACL Reconstruction: Cortical Button vs. Transfemoral Suspensory Fixation Systematic Review | Results indicated no significant differences in clinical or functional outcomes between groups. The cortical button fixation group experienced significantly greater tunnel widening, although was not shown to have a clinical effect. | Surgery | NULL 2015;(): 2015 | 2015 |  | knee |
| Saccomanno 2016 | Surgical versus conservative treatment of primary patellar dislocation. A systematic review and meta-analysis | CONCLUSIONS: Based on the available data, surgical treatment of primary patella dislocation significantly reduces the risk of patella redislocation. | Surgery | Int Orthop Nov 2016;40(11):2277-2287 2016 Nov | 2016 |  | knee |
| Secrist 2016 | Pain Management After Outpatient Anterior Cruciate Ligament Reconstruction: A Systematic Review of Randomized Controlled Trials | CONCLUSION: Regional nerve blocks and intra-articular injections are both effective forms of analgesia. Cryotherapy-compression appears to be beneficial, provided that intra-articular temperatures are sufficiently decreased. Early mobilization reduces pain symptoms. Gabapentin, zolpidem, ketorolac, and ibuprofen decrease opioid consumption. Despite the vast amount of high-quality evidence on this topic, further research is needed to determine the optimal multimodal approach that can maximize recovery while minimizing pain and opioid consumption. CLINICAL RELEVANCE: These results provide the best available evidence from RCTs on pain control regimens after ACL reconstruction. | Medication | Am J Sports Med Sep 2016;44(9):2435-47 2016 Sep | 2016 |  | knee |
| Shen 2010 | Bioabsorbable versus metallic interference screw fixation in anterior cruciate ligament reconstruction: a meta-analysis of randomized controlled trials (Structured abstract) | CONCLUSIONS: There was no significant difference in measurement results of knee joint stability or knee joint function outcome between bioabsorbable and metallic interference screws. Knee joint effusion is more common after ACL reconstruction with bioabsorbable interference screw fixation than with metallic interference screw fixation. More high-methodologic quality randomized controlled trials would be helpful in further meta-analysis. LEVEL OF EVIDENCE: Level I, meta-analysis. | Surgery | Arthroscopy 2010;26(5):705-713 2010 | 2010 |  | knee |
| Speziali 2014 | Fixation techniques for the anterior cruciate ligament reconstruction: early follow-up. A systematic review of level I and II therapeutic studies | The purpose of our study was that to systematically review the fixation techniques for the ACL reconstruction and associated clinical outcomes at the early follow-up. Systematic search on three electronic databases (Cochrane register, Medline and Embase) of fixation devices used for primary ACL reconstruction with doubled semitendinosus and gracilis and bone-patellar tendon-bone autografts in randomized clinical trials of level I and II of evidence published from January 2001 to December 2011. Therapeutic studies collected were with a minimum 12-month follow-up, and the clinical outcomes were evaluated by at least one of International Knee Documentation Committee, Lysholm and Tegner functional scales and at least one of the following knee stability tests: arthrometric AP tibial translation, Lachman test and pivot-shift test. Nineteen articles met the inclusion criteria. At the femoral side cross-pin, metallic interference screw, bioabsorbable interference screw, and suspensory device were used in 32.3, 27.3, 24.8, 15.5% of patients, respectively. At the tibial side fixation was achieved with metallic interference screw, bioabsorbable interference screw, screw and plastic sheath, screw post and cross-pin in 38.7, 31, 15.7, 12.8, and 1.7% of patients, respectively. Side-to-side anterior-posterior tibial translation was 1.9 +/- 0.9, 1.5 +/- 0.9, 1.5 +/- 0.8, 2.2 +/- 0.4 mm for metallic interference screw, bioabsorbable screw, cross-pin and suspensory device, respectively. At least two-third of all the patients achieved good-to-excellent clinical outcomes. Rate of failure was 6.1, 3.3, 1.7 and 1.2% for bioabsorbable interference screw, metallic interference screw, cross-pin and suspensory device, respectively. Clinical outcomes are good to excellent in almost two-third of the patients but several pitfalls that affect the current fixation techniques as graft tensioning such as graft-tunnel motion are still unaddressed. | Surgery | Musculoskelet Surg Dec 2014;98(3):179-87 2014 Dec | 2014 |  | knee |
| Tian 2012 | Meta analysis on the treatment of acute patellar dislocation by surgical versus conservative treatment. [Chinese] | Results and Conclusion: Only six randomized controlled trials were included involving 380 patients (203 patients in surgical group and 117 patients in conservative group) met the criteria of the present study. Meta analysis results showed that there was no significant difference between surgical and conservative group of acute patellar dislocation in the risk of recurrent dislocation [relative risk (RR)=0.54, 95% confidence interval (CI): 0.28-1.07], Kujala scores [weighted mean difference (WMD)=5.50, 95%CI: -4.46-15.45], excellent and good rate based on Kujala scores (RR=2.53, 95%CI: 0.47-13.56) and re-operation rate during follow-up (RR=1.09, 95%CI: 0.72-1.65) (P > 0.05). Further analysis was performed between the short-term 2-5 years follow-up group and long-term 5-7 years follow-up group, and found that only in the short-term 2-5 years follow-up group, the Kujala scores of surgical group were better than that of the conservative group (WMD=15.52, 95%CI: 5.67-25.38, P < 0.05). For patients with acute patellar dislocation, the surgical treatment result is equivalent to conservative treatment, but the short-term recovery knee function after surgical treatment is superior to conservative treatment. | Surgery | Chinese Journal of Tissue Engineering Research 28 Oct 2012;16(44):8228-8234 2012 28 Oct | 2012 |  | knee |
| Tie 2016 | The difference in clinical outcome of single-bundle anterior cruciate ligament reconstructions with and without remnant preservation: A meta-analysis | Conclusions The outcome of single-bundle ACL reconstruction with the remnant-preservation technique is similar to that with the standard technique in terms of anterior stability and functional recovery of the knee. Remnant preservation in ACL reconstruction decreases the percentage of tibial tunnel enlargement. Level of evidence is II. | Surgery | Knee 01 Aug 2016;23(4):566-574 2016 01 Aug | 2016 |  | knee |
| vandeGraaf 2016 | Arthroscopic Partial Meniscectomy or Conservative Treatment for Nonobstructive Meniscal Tears: A Systematic Review and Meta-analysis of Randomized Controlled Trials | Conclusions We found small, although statistically significant, favorable results of APM up to 6 months for physical function and pain. However, we found no differences at longer follow-up. Level of Evidence Level I, systematic review and meta-analysis of Level I studies. | Surgery | Arthroscopy - Journal of Arthroscopic and Related Surgery 01 Sep 2016;32(9):1855-1865.e4 2016 01 Sep | 2016 |  | knee |
| Wang 2016 | Is surgical treatment better than conservative treatment for primary patellar dislocations? A meta-analysis of randomized controlled trials | CONCLUSION: Surgical treatment may be better than conservative treatment for patients with primary patellar dislocation on incidence of redislocation. However, since these findings are built on a limited number of studies available, well-designed, multicenter clinical trials with long-term follow-up are required to provide more solid evidence concerning optimal strategies. | Surgery | Arch Orthop Trauma Surg Mar 2016;136(3):371-9 2016 Mar | 2016 |  | knee |
| Wright 2008 | A systematic review of anterior cruciate ligament reconstruction rehabilitation: part I: continuous passive motion, early weight bearing, postoperative bracing, and home-based rehabilitation | A variety of randomized controlled trials have investigated aspects of ACL reconstruction rehabilitation. A systematic review of English language level 1 and 2 studies identified 54 appropriate randomized controlled trials of ACL rehabilitation. Topics discussed in this part of the article include continuous passive motion, early weight bearing in motion, postoperative bracing, and home-based rehabilitation. | Physio/Rehab | The journal of knee surgery Jul 2008;21(3):217-224 2008 Jul | 2008 |  | knee |
| Wright 2008 | A systematic review of anterior cruciate ligament reconstruction rehabilitation: part II: open versus closed kinetic chain exercises, neuromuscular electrical stimulation, accelerated rehabilitation, and miscellaneous topics | Anterior cruciate ligament (ACL) reconstruction is a common surgical knee procedure that requires intensive postoperative rehabilitation by the patient. A variety of randomized controlled trials have investigated aspects of ACL reconstruction rehabilitation. A systematic review of English language level 1 and 2 studies identified 54 appropriate randomized controlled trials of ACL rehabilitation. This part of the article discusses open versus closed kinetic chain exercises, neuromuscular electrical stimulation, accelerated rehabilitation, and miscellaneous topics. | Physio/Rehab | The journal of knee surgery Jul 2008;21(3):225-234 2008 Jul | 2008 |  | knee |
| Wu 2014 | Tourniquet used in anterior cruciate ligament reconstruction: a system review | CONCLUSIONS: There was insufficient evidence to support the hypothesis that patients would benefit from routinely applying a tourniquet. More high-quality randomized controlled trials were needed to test the result. | Surgery | Eur J Orthop Surg Traumatol Aug 2014;24(6):999-1003 2014 Aug | 2014 |  | knee |
| Yao 2015 | Comparison operative and conservative management for primary patellar dislocation: an up-to-date meta-analysis | 7 randomized controlled trials (402 patients) were included in this meta-analysis assessing the clinical outcomes over 2 years, between operative and conservative management for acute primary patellar dislocation. No differences between treatments were found for patient satisfaction, while significant differences were noted in Tegner score and redislocation rate favoring surgical treatment. Surgical treatment achieved higher Kujala scores in the short-term, but conservative treatment demonstrated better long-term Kujala scores. | Surgery | Eur J Orthop Surg Traumatol 2015;(): 2015 | 2015 |  | knee |
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**Misc**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation** | **Year** | **23** | **Coding** |
| Akai 2002 | Effect of electrical stimulation on musculoskeletal systems; a meta-analysis of controlled clinical trials | A total of 20 randomized controlled trials (RCTs) examining electrical stimulation in bone-related conditions and 29 RCTs examining electrical stimulation in soft-tissue-related conditions were included in this systematic review and meta-analysis. Qualitatively, 75% and 86% of studies included on bone-related and soft-tissue-related conditions, respectively, demonstrated a positive effect of electrical stimulation compared to control. In the meta-analysis of 11 studies evaluating the use of electrical stimulation in bone fracture, a significant effect on union rate was observed for electrical stimulation. In the meta-analysis of 15 studies on electrical stimulation use in soft-tissue management, a statistically significant effect on healing rate was observed with electrical stimulation. | Non Surgical Intervention | Bioelectromagnetics 2002;():  2002 | 2002 |  | Not specific to knee + hip |
| Aleem 2016 | Efficacy of Electrical Stimulators for Bone Healing: A Meta-Analysis of Randomized Sham-Controlled Trials | The purpose of this meta-analysis was to quantitatively assess the efficacy of bone stimulation in terms of pain relief, functional improvements, and radiographic nonunion. The results indicated that pain was significantly improved and the risk of radiographic nonunion was significantly decreased with electrical stimulation when compared to the sham control group (moderate-quality evidence). No significant differences were noted with regard to functional outcome (low-quality evidence) and subgroup analysis by clinical indication or type of stimulation did not alter the effects of electrical stimulation. | Non Surgical Intervention | Sci Rep 2016;(): 2016 | 2016 |  | Not specific to knee + hip |
| AlHajri 2016 | The Efficacy and Safety of Edoxaban for VTE Prophylaxis Post-Orthopedic Surgery: A Systematic Review | CONCLUSION: This study helped to amalgamate evidence with regard to the use of edoxaban for VTE prophylaxis post-lower limb orthopedic surgery. In line with the results of the reviewed studies, edoxaban seems to be highly effective in reducing VTE post-lower limb orthopedic surgery. | Medication | J Cardiovasc Pharmacol Ther Nov 02 2016;():  2016 Nov 02 | 2016 |  | Not specific to knee + hip |
| Avouac 2007 | Efficacy and safety of opioids for osteoarthritis: a meta-analysis of randomized controlled trials | Of the 18 studies with placebo as the comparator, a total of 4856 patients were identified (3244 opioids, 1612 placebo). The results from the analysis of these 18 studies indicated that the use opioids (strong opioids in particular) was more effective in relieving patient pain and improving function in comparison to placebo. However, it is important to note that opioid use resulted in the occurrence of several adverse events. | Medication | Osteoarthr cartilage 2007;():  2007 | 2007 |  | Not specific to knee + hip |
| Bachmann 2010 | Inpatient rehabilitation specifically designed for geriatric patients: systematic review and meta-analysis of randomised controlled trials (Structured abstract) | CONCLUSION: Inpatient rehabilitation specifically designed for geriatric patients has the potential to improve outcomes related to function, admission to nursing homes, and mortality. Insufficient data are available for defining characteristics and cost effectiveness of successful programmes. | Physio/Rehab | BMJ 2010;340:c1718 2010 | 2010 |  | Not specific to knee + hip |
| Barbin 2014 | Mirror therapy in the treatment of the phantom limb pain in amputees | Conclusion.- There is convergent data to conclude that MT is effective on PLP and PLM in amputated persons. | Non Surgical Intervention | Annals of Physical and Rehabilitation Medicine May 2014;57():e127-e128 2014 May | 2014 |  | Not specific to knee + hip |
| Chan 2015 | A systematic review of contemporary trials of anticoagulants in orthopaedic thromboprophylaxis: suggestions for a radical reappraisal | In contemporary trials of anticoagulants, the rates of symptomatic VTE and mortality are low, but the rates of clinically important post-operative bleeding remain relatively high. Based on these results, we propose that approaches that minimize bleeding without substantially reducing efficacy merit investigation, particularly if improvement in surgical and perioperative care have also resulted in falling baseline patient important VTE rates independent of anticoagulant use. | Medication | J Thromb Thrombolysis Aug 2015;40(2):231-9  2015 Aug | 2015 |  | Not specific to knee + hip |
| Chaparro 2012 | Combination pharmacotherapy for the treatment of neuropathic pain in adults | Authors' conclusions: Multiple, good-quality studies demonstrate superior efficacy of two-drug combinations. However, the number of available studies for any one specific combination, as well as other study factors (e.g. limited trial size and duration), preclude the recommendation of any one specific drug combination for neuropathic pain. Demonstration of combination benefits by several studies together with reports of widespread clinical polypharmacy for neuropathic pain surely provide a rationale for additional future rigorous evaluations. In order to properly identify specific drug combinations which provide superior efficacy and/or safety, we recommend that future neuropathic pain studies of two-drug combinations include comparisons with placebo and both single-agent components. Given the apparent adverse impact of combining agents with similar adverse effect profiles (e. . CNS depression), the anticipated development and availability of non-sedating neuropathic pain agents could lead to the identification of more favourable analgesic drug combinations in which side effects are not compounded. | Medication | Cochrane Database of Systematic Reviews 2012;(7): John Wiley & Sons, Ltd 2012 | 2012 |  | Not specific to knee + hip |
| Chapelle 2014 | Prevention of venous thromboembolic events with low-molecular-weight heparin in the non-major orthopaedic setting: meta-analysis of randomized controlled trials | CONCLUSIONS: This meta-analysis indicates potential efficacy of LMWH in preventing thromboembolic events in patients with reduced mobility in the non-major orthopaedic setting compared with placebo or no treatment. However, the decision of whether to implement LMWH prophylaxis in each specific setting should also take into account the risk of VTEs in the absence of prophylaxis, the potential adverse effects of LMWH, and the cost. LEVEL OF EVIDENCE: Level II, meta-analysis of Level II studies or Level I studies with inconsistent results. | Medication | Arthroscopy Aug 2014;30(8):987-96  2014 Aug | 2014 |  | Not specific to knee + hip |
| Chong 2009 | Orthopaedic-geriatric models of care and their effectiveness | Orthopaedic-geriatric models can be divided according to the setting of care (i) acute inpatient orthopaedic-geriatric care; (ii) subacute rehabilitation; and (iii) community-based rehabilitation. Studies have been heterogenous in nature and outcomes measured have differed making pooled data analysis difficult. In general, there is a trend to effectiveness in outcomes such as functional recovery, length of stay, complications and mortality and importantly studies have not shown detrimental consequences. However, because of the varied types of interventions and models of care, it is difficult to draw firm conclusions about the effectiveness of these programs. | Non Surgical Intervention | Australasian Journal on Ageing, 28: 171–176. doi:10.1111/j.1741-6612.2009.00368.x | 2009 |  | Not specific to knee + hip |
| Derry 2015 | Topical NSAIDs for acute musculoskeletal pain in adults | Authors' conclusions: Topical NSAIDs provided good levels of pain relief in acute conditions such as sprains, strains and overuse injuries, probably similar to that provided by oral NSAIDs. Gel formulations of diclofenac (as Emugel®), ibuprofen, and ketoprofen, and some diclofenac patches, provided the best effects. Adverse events were usually minimal. ince the last version of this review, the new included studies have provided additional information. In particular, information on topical diclofenac is greatly expanded. The present review supports the previous review in concluding that topical NSAIDs are effective in providing pain relief, and goes further to demonstrate that certain formulations, mainly gel formulations of diclofenac, ibuprofen, and ketoprofen, provide the best results. Large amounts of unpublished data have been identified, and this could influence results in updates of this review. | Medication | Cochrane Database of Systematic Reviews 2015;(6): John Wiley & Sons, Ltd 2015 | 2015 |  | Not specific to knee + hip |
| Doleman 2015 | Preoperative gabapentin for postoperative pain in orthopaedic surgery: Systematic review, meta-analysis and meta-regression | Discussion This meta-analysis demonstrated a significant reduction in pain scores and 24-h morphine consumption with preoperative Gabapentin in orthopaedic surgery. In addition, a reduction in vomiting and pruritis was observed with no increase in side effects. Effects were highest in spinal surgery and increasing doses preoperatively led to greater reductions in postoperative Morphine consumption. This is consistent with data in other forms of surgery [3]. Increased efficacy in spinal surgery may be due to the anatomical site of surgery. Gabapentin has proven efficacy in neuropathic pain [4] and nerve root irritation during spinal surgery may explain the increasing analgesic effect in this cohort of patients. Gabapentin is also known to reduce neuronal sensitisation [5] to noxious stimuli and possibly reduce opioid-induced hyperalgesia [6]. This may explain the prolonged reductions in postoperative pain scores and Morphine consumption observed in this review. | Medication | Anaesthesia January 2015;70():28  2015 January | 2015 |  | Not specific to knee + hip |
| Gambito 2010 | Evidence on the effectiveness of topical nitroglycerin in the treatment of tendinopathies: a systematic review and meta-analysis | The meta-analysis revealed a significant reduction in pain on activity, improvement in muscle strength, and a higher occurrence of headaches for treatment with nitroglycerin. Evidence was limited and conflicting on all other outcomes. | Medication | Arch Phys Med Rehabil 2010;(): 2010 | 2010 |  | Not specific to knee + hip |
| Jebaraj 2013 | Intravenous paracetamol reduces postoperative opioid consumption after orthopedic surgery: a systematic review of clinical trials | We conclude that postoperative intravenous paracetamol is a safe and effective adjunct to opioid after orthopedic surgery, but at present there is no data to decide whether paracetamol reduces opioid related adverse effects or not. | Medication | Pain Res Treat 2013;2013():402510 2013 | 2013 |  | Not specific to knee + hip |
| Karamanis 2008 | Fluoroquinolones Versus B-Lactam Based Regimens for the Treatment of Osteomyelitis A Meta-Analysis of Randomized Controlled Trials | CONCLUSION: Fluoroquinolones are as effective as beta-lactams for the treatment of osteomyelitis and can be considered as a useful alternative in the physician's armamentarium. The value of fluoroquinolones for the treatment of osteomyelitis lies in the fact that they can be administered in an outpatient setting. However, they should be used with caution, so as to preserve their activity against increasingly resistant bacteria. | Medication | Spine 2008;(): 2008 | 2008 |  | Not specific to knee + hip |
| Lazo-Langner 2009 | A systematic review and meta-analysis of proportions of thrombosis and bleeding in patients receiving venous thromboembolism (VTE) prophylaxis after orthopedic surgery (OS). an update | We found differences in the percentage of VTE and bleeding events associated with the use of different anticoagulants for VTE prophylaxis after OS. Due to the nature of the analysis no effect measure can be estimated. | Medication | Blood. Conference: 51st Annual Meeting of the American Society of Hematology, ASH. New Orleans, LA United States. Conference Start 2009;114(22): 2009 | 2009 |  | Not specific to knee + hip |
| Mussano 2007 | Bone morphogenetic proteins and bone defects: a systematic review | CONCLUSIONS: The use of BMPs at the vertebrae can eliminate the need for surgery to harvest autologous bone. The only large study carried out on the other sites suggests that BMPs should be used at a concentration of 1.5 mg/mL to treat fractures of the tibia. However, further RCTs of good methodological quality are advisable so as to clarify the effectiveness of BMPs in clinical practice. | Surgery | Spine (Phila Pa 1976) Apr 01 2007;32(7):824-30 2007 Apr 01 | 2007 |  | Not specific to knee + hip |
| Opina 2012 | Rivaroxaban is Associated with Higher Incidence of Major Bleeding Compared to Low Molecular Weight Heparin for Venous Thromboembolism Prophylaxis- A Meta-analysis | Conclusion: Rivaroxaban is associated with a higher incidence of major bleeding compared to LMWH when used for VTE prophylaxis. This information will be instrumental in calculating risks and benefits of patients who need VTE prophylaxis. | Medication | Circulation. Conference: American Heart Association 2012;126(21 SUPPL. 1): 2012 | 2012 |  | Not specific to knee + hip |
| Riva 2016 | Major Bleeding and Case Fatality Rate with the Direct Oral Anticoagulants in Orthopedic Surgery: A Systematic Review and Meta-Analysis | This meta-analysis was conducted in order to determine if direct oral anticoagulants, in addition to being associated with a higher compliance rate, are able to provide an enhanced safety profile. The findings of this systematic review and meta-analysis demonstrated comparable risks of major, fatal, and intracranial bleeding between groups. | Medication | Semin Thromb Hemost. 2016;(): 2016 | 2016 |  | Not specific to knee + hip |
| Tanner 2006 | Double gloving to reduce surgical cross-infection | Authors' conclusions: There is no direct evidence that additional glove protection worn by the surgical team reduces surgical site infections in patients, however the review has insufficient power for this outcome.The addition of a second pair of surgical gloves significantly reduces perforations to innermost gloves. Triple gloving, knitted outer gloves and glove liners also significantly reduce perforations to the innermost glove. Perforation indicator systems results in significantly more innermost glove perforations being detected during surgery | Non Surgical Intervention | Cochrane Database of Systematic Reviews 2006;(3): John Wiley & Sons, Ltd 2006 | 2006 |  | Not specific to knee + hip |
| Teng 2015 | Restrictive blood transfusion strategies and associated infection in orthopedic patients: a meta-analysis of 8 randomized controlled trials | This meta-analysis of RCTs demonstrates that restrictive transfusion strategies in orthopedic patients result in a significant reduction in infections compared with more liberal strategies. | Medication | Sci Rep Aug 26 2015;5():13421 2015 Aug 26 | 2015 |  | Not specific to knee + hip |
| Villasis-Keever 2009 | Systematic review to assess the effectiveness and safety of parecoxib. [Spanish] | CONCLUSIONS: Parecoxib 40 mg is an effective and safe analgesic choice during the postoperative period in orthopedic surgery. | Medication | Acta ortopedica mexicana 2009 2009;23(6):342-350 2009 2009 | 2009 |  | Not specific to knee + hip |
| Villasis-Keever 2010 | A meta-analysis of efficacy and safety of parecoxib in orthopedics surgery | CONCLUSIONS: Parecoxib 40 mg is an effective and safe analgesic option during the first hours of the postoperative period in orthopedic surgeries. | Medication | Value in Health May 2010;13 (3)():A205-A206 2010 May | 2010 |  | Not specific to knee + hip |

**FootAnkle**

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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation** | **Year** | **13** |
| Aqil 2013 | Extracorporeal shock wave therapy is effective in treating chronic plantar fasciitis: a meta-analysis of RCTs | Conclusion: following (ESWT), patients exhibited significantly better composite VAS scores and reduction in absolute VAS scores, along with greater success in improving heel pain (after first steps and during daily activities) than the placebo treatment. A significant difference in change from 'excellent or good' was also found in favour of the ESWT group. | Non Surgical Intervention | Clin Orthop Relat Res 2013;():  2013 | 2013 |  |
| Brumann 2014 | Accelerated rehabilitation following Achilles tendon repair after acute rupture - Development of an evidence-based treatment protocol | In conclusion, the rehabilitation protocol after Achilles tendon repair should allow immediate full weight bearing. After the second postoperative week controlled ankle mobilization by free plantar flexion and limited dorsiflexion at 0 degrees should be applied. | Physio/Rehab | Injury Nov 2014;45(11):1782-90  2014 Nov | 2014 |  |
| Chen 2015 | Acute closed rupture of the achilles tendon: A meta-analysis of nonsurgical and surgical treatment. [Chinese] | RESULTS AND CONCLUSION: Nine randomized controlled trials were included, and totally 874 patients were involved, 441 cases in the nonsurgical group and 433 in the surgical group. The results of Meta-analysis showed that compared with the surgical group, the incidence of complications was lower [OR=0.41, 95%CI(0.26, 0.63), P < 0.000 1], but the rate of tendon re-rupture [OR=2.86, 95%CI(1.62, 5.02), P=0.000 2] and incidence of cicatricial adhesion [OR=0.07, 95%CI(0.03, 0.19), P < 0.000 1] were higher in the nonsurgical group. However, there were no significant differences between the two groups in patient satisfaction, superficial infection, motionrecovery, and deep infection. Compared with the surgical treatment, the nonsurgical treatment can reduce the incidence of complications, but has a higher incidence of re-rupture. Because of sample-size and methodological quality restrictions, this conclusion needs further verification of large-sample, multicenter, and high-quality randomized controlled trials. | Surgery | Chinese Journal of Tissue Engineering Research 09 Apr 2015;19(15):2449-2454  2015 09 Apr | 2015 |  |
| Dallimore 2015 | Tendon lengthening and fascia release for healing and preventing diabetic foot ulcers: a systematic review and meta-analysis | CONCLUSIONS: Achilles tendon lengthening and gastrocnemius recession appear to be effective surgical treatments for healing diabetic foot ulcers. The rate of ulcer recurrence was lower following Achilles tendon lengthening or gastrocnemius recession procedures compared to total contact casting treatment alone. Therefore, these surgical procedures may provide viable treatment options for the management and prevention of diabetic foot ulcers. Further rigorous randomised-controlled trials with longer follow-up are required to determine the long-term effectiveness and safety of these procedures. | Surgery | J Foot Ankle Res 2015;8():33  2015 | 2015 |  |
| Edwards 2010 | Debridement of diabetic foot ulcers | Authors' conclusions: There is evidence to suggest that hydrogel increases the healing rate of diabetic foot ulcers compared with gauze dressings or standard care. There is insufficient evidence (one small trial, abstract only) of the effects of larval therapy on diabetic foot ulcers. More research is needed to evaluate the effects of a range of widely used debridement methods and of debridement per se. | Non Surgical Intervention | Cochrane Database of Systematic Reviews 2010;(1): John Wiley & Sons, Ltd 2010 | 2010 |  |
| Han 2012 | A Meta-analysis of treatment methods for acute ankle sprain | Conclusion: Surgical treatment is better than the conventional treatment alone, especially for the outcome of the ankle activity and instability. Further high quality randomized controlled trials are required. | Surgery | Pakistan Journal of Medical Sciences October-December 2012;28(5):895-899 2012 October-December | 2012 |  |
| Jiang 2012 | Operative versus nonoperative treatment for acute Achillestendon rupture: a meta-analysis based on current evidence | Meta-analysis revealed that patients who underwent operative treatment were less likely to have a re-rupture (RR 0.44, p=0.002); however, these patients were more likely to suffer other complications. Functional analysis was not conducted, due to the heterogeneity of functional outcome reporting. | Surgery | Int Orthop 2012;(): 2012 | 2012 |  |
| Li 2014 | Ultrasound versus Palpation-Guided Injection of Corticosteroid for Plantar Fasciitis: A Meta-Analysis | 5 randomized control trials containing 149 patients were analyzed in this meta-analysis to determine the efficacy of ultrasound versus palpation-guided corticosteroid injections for plantar fasciitis. Patients who received ultrasound-guided corticosteroid injections had a higher tenderness threshold, thinner plantar fascial thickness, and a lower incidence of hypoechogenicity compared to palpation-guided corticosteroid injections. Other outcomes including pain, the heel tenderness index, response rate, and heel pad thickness were not significantly different between groups. | Medication | PLoS One 2014;(): 2014 | 2014 |  |
| Mark-Christensen 2016 | Functional rehabilitation of patients with acute Achilles tendon rupture: a meta-analysis of current evidence | 7 randomized controlled trials (RCTs) were included in this meta-analysis comparing functional mobilization and immobilization rehabilitation techniques for patients with an acute Achilles tendon rupture. The objective of this meta-analysis was to evaluate the effects of controlled early motion (n=3 RCTs), controlled early weight-bearing (n=1 RCT), and the combined effect of controlled early motion and early weight-bearing (n=3 RCTs) in this patient population. Outcomes included re-rupture rates, complication rates, strength, the range of motion, duration of sick leave, return to sport after one year, and overall patient satisfaction. Findings indicated that all measured outcomes were statistically comparable between mobilization and immobilization rehabilitation techniques. However, additional trials are needed to increase the volume of high-quality evidence available and strengthen the findings from the evidence. | Physio/Rehab | Knee Surg Sports Trauma Arth 2016;(): 2016 | 2016 |  |
| McMahon 2011 | A meta-analysis of randomised controlled trials comparing conventional to minimally invasive approaches for repair of an Achilles tendon rupture | A meta-analysis was undertaken to compare the clinical outcomes of MIS with conventional open surgical repair. Six randomised controlled trials of 277 Achilles tendon repairs were eligible for review. This included 136 minimally invasive repairs and 141 conventional open repairs. On analysis, there was no significant difference between the two surgical approaches in respect to the incidence of re-rupture, tissue adhesion, sural nerve injury, deep infection and deep vein thrombosis (p>0.05). However, MIS had a significantly reduced risk of superficial wound infection, with three times greater patient satisfaction for good to excellent results compared with conventional open surgical approaches. | Surgery | Foot Ankle Surg Dec 2011;17(4):211-7 2011 Dec | 2011 |  |
| Sun 2017 | Recombinant human platelet-derived growth factor-BB versus autologous bone graft in foot and ankle fusion: A systematic review and meta-analysis | The goal of this article is to evaluate the safety and efficacy of rhPDGF-BB versus ABG in foot and ankle fusion. The PubMed MEDLINE, EMBASE, Web of Science, and Cochrane Library were systematic searched. Finally, three randomized controlled trials (RCTs) with 634 patients were enrolled in this study. Results of radiologic effectiveness which included CT and radiographic union rates revealed that there was no significant difference between rhPDGF-BB approach and ABG approach. Analysis of clinical results held the same outcomes expect that ABG group was superior in long-term Short Form-12 physical component scores. The pooled results also demonstrated that rhPDGF-BB was as safe as ABG in foot and ankle surgery. However, autograft harvesting procedure has some drawbacks such as donor-site pain and morbidity, additional operation time, blood loss, and scarring, which can be overcome by rhPDGF-BB. Thus, rhPDGF-BB is a viable alternative to autograft in foot and ankle fusion surgery. Yet, more high-quality RCTs with long-term follow-up are still required to make the final conclusion. | Surgery | Foot and Ankle Surgery 01 Mar 2017;23(1):32-39 2017 01 Mar | 2017 |  |
| Wang 2015 | Pain Management for Elective Foot and Ankle Surgery: A Systematic Review of Randomized Controlled Trials | Pain after foot and ankle surgery can significantly affect the postoperative outcomes. We performed a systematic review of randomized controlled trials assessing postoperative pain after foot and ankle surgery, because the surgery will lead to moderate-to-severe postoperative pain, but the optimal pain therapy has been controversial. A systematic review of randomized controlled trials in English reporting on pain after foot and ankle surgery in adults published from January 1946 to February 2013 was performed. The primary outcome measure was the postoperative pain scores. The secondary outcome measures included supplemental analgesic requirements and other recovery outcomes. With 953 studies identified, 45 met the inclusion criteria. The approaches improving pain relief (reduced pain scores or opioid requirements) included peripheral nerve blocks, wound infiltration, intravenous dexamethasone, acetaminophen, nonsteroidal anti-inflammatory drugs, cyclooxygenase-2 selective inhibitors, and opioids. Wound instillation, intra-articular injection, and intravenous regional analgesia had variable analgesia. The lack of homogeneous study design precluded quantitative analyses. Optimal pain management strategies included locoregional analgesic techniques plus acetaminophen and nonsteroidal anti-inflammatory drugs or cyclooxygenase-2 selective inhibitors, with opioids used for "rescue," and 1 intraoperative dose of parenteral dexamethasone. Popliteal sciatic nerve blocks would be appropriate when expecting severe postoperative pain (extensive surgical procedure), and ankle blocks and surgical incision infiltration would be appropriate when expecting moderate postoperative pain (less extensive and minimally invasive surgical procedures). Additional studies are needed to assess multimodal analgesia techniques. | Medication | J Foot Ankle Surg Jul-Aug 2015;54(4):625-35 2015 Jul-Aug | 2015 |  |
| Zhao 2011 | Outcomes and complications of operative versus non-operative treatment of acute Achilles tendon rupture: a meta-analysis | CONCLUSIONS: Operation could significantly reduce the risk of rerupture; however, it was associated with a higher risk of other complications. The functional outcomes were similar in two treatment methods except an earlier return to work in patients treated operatively. Thus operative treatment is preferable for patients with good physical condition. Non-operative treatment is an acceptable alternative especially for the older and patients with lower sporting requirements. | Surgery | Chin Med J (Engl) Dec 2011;124(23):4050-5 2011 Dec | 2011 |  |
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| **Author** | **Title** | **Conclusion** | **Intervention** | **Citation  Ref  (Age 18yrs â)** | **Year** | **7** | **Coding** |
| Bae 2012 | Distal radius fractures: what is the evidence? | CONCLUSIONS: Unbiased evalution of empirical patient outcomes using randomized trials has proven feasible for distal radius fractures and should continue to inform and guide our practice in the future. | Surgery | J Pediatr Orthop Sep 2012;32 Suppl 2():S128-30  2012 Sep | 2012 |  | wrist # |
| Castillo 2009 | Effects of bisphosphonates in children with osteogenesis imperfecta: an AACPDM systematic review | Despite a large body of published literature, there have been only eight studies with a sufficiently high level of internal validity to be truly informative. These studies confirm improvement in bone density. Many, but not all studies, demonstrate reduction in fracture rate and enhanced growth. There has been extremely limited evaluation of broader treatment impacts such as deformity, need for orthopedic surgery, pain, functioning, or quality of life. Short-term side effects were minimal. Which medication and dosing regimen is optimal and how long patients should be treated are unclear. This body of evidence would be strengthened by a larger controlled trial, because many studies lacked adequate power to evaluate stated outcomes. These studies do not address the impacts of bisphosphonates in children with milder forms of osteogenesis imperfecta and severe forms that are not due to mutations in the type I pro-collagen gene (e.g. types VII and VIII). Additional research is needed into treatment of infants. More studies evaluating medication choices, optimal dosing, duration of treatment, post-treatment impacts, and long-term side effects are necessary. | Medication | Dev Med Child Neurol. 2009;(): 2009 | 2009 |  | bone disorder |
| Hill 2016 | A systematic review of alternative splinting versus complete plaster casts for the management of childhood buckle fractures of the wrist | The evidence endorses the use alternative splinting over casting in paediatric wrist-buckle fractures. | Non Surgical Intervention | Journal of Pediatric Orthopaedics Part B 2016;25(2):183-190 2016 | 2016 |  | wrist # |
| Hoare 2010 | Botulinum toxin A as an adjunct to treatment in the management of the upper limb in children with spastic cerebral palsy (UPDATE) | Authors' conclusions: This systematic review found high level evidence supporting the use of BoNT-A as an adjunct to managing the upper limb in children with spastic CP. BoNT-A should not be used in isolation but should be accompanied by planned occupational therapy.Further research is essential to identify children most likely to respond to BoNT-A injections, monitor longitudinal outcomes, determine timing and effect of repeated injections and the most effective dosage, dilution and volume schedules. The most effective adjunct therapies including frequency and intensity of delivery also requires investigation. | Medication | Cochrane Database of Systematic Reviews 2010;(1): John Wiley & Sons, Ltd 2010 | 2010 |  | Upper Extremity |
| Jiang 2016 | Management of Pediatric Forearm Torus Fractures: A Systematic Review and Meta-Analysis | CONCLUSIONS: The current study suggests that the nonrigid immobilization methods have more advantages than rigid cast for immobilization of pediatric forearm torus fracture. The former strategies are also safe enough for clinical therapy. | Non Surgical Intervention | Pediatr Emerg Care Nov 2016;32(11):773-778 2016 Nov | 2016 |  | wrist # |
| Lukban 2009 | Effectiveness of botulinum toxin A for upper and lower limb spasticity in children with cerebral palsy: A summary of evidence | In conclusion, there is now growing convincing evidence for the time limited beneficial effect of BoNT-A in decreasing muscle tone in children with upper and lower limbs spasticity associated with CP. Decrease muscle tone in the lower limbs translates to improved gait in CP children with spastic equinovarus however more systematic studies are necessary to show sufficient evidence for improved hand function from BoNT-A injection in the upper limbs | Medication | Journal of Neural Transmission March 2009;116(3):319-331 2009 March | 2009 |  | limb spasticity |
| Zhao 2013 | Is lateral pin fixation for displaced supracondylar fractures of the humerus better than crossed pins in children | The evidence presented in this meta-analysis demonstrates that lateral pinning presents with reduced risk of iatrogenic ulnar nerve injury compared to crossed medial and lateral pinning. No differences were apparent between techniques for radiographic outcomes, function or other surgical complications. | Surgery | Clin Orthop Relat Res 2013;(): 2013 | 2013 |  | arm # |