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**Appendix:**

**1 - Concerning VTE risk, which surgeries can be considered major, and which surgeries can be considered non-major in orthopaedic sports surgery?**

**Search Terms:**

(((((sports[MeSH Terms]) OR (sport medicine[MeSH Terms])) OR (athletic injury[MeSH Terms])) OR (athletic injuries[MeSH Terms])) AND (((orthopedic procedure[MeSH Terms]) OR (orthopedic procedures[MeSH Terms]) OR (orthopedic procedure) OR (orthopedic procedures) OR (orthopaedic procedures) OR (orthopaedic procedure)))) AND ((((Prevention and Control[MeSH Subheading]) OR (prevention[Title/Abstract])) OR (prevent\*[Title/Abstract]) OR (prophylaxis[tw])) AND ("Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism" OR "deep vein thrombosis"))

**Total: 11 search results.**

***Inclusion Criteria:***

* Clinical and preclinical studies with any level of evidence
* Published in peer reviewed journals in English
* Publication between 1990-2021

***Exclusion Criteria:***

* Patients undergoing upper or lower extremity arthroplasty
* Studies in which data was not accessible or missing
* Conference papers, proceedings, editorials, commentaries, technical papers, unavailable full text manuscript.

**2 - Is routine VTE prophylaxis required for patients undergoing knee arthroscopy who will be allowed to fully weight bear after surgery?**

**Search Terms:**

**Databases Searched:**

**PubMed, Cochrane.**

**Filters:**

* Results by Year: 2000-Present (All Articles)
* Species: Humans
* Language: English

**Pubmed/Medline:**

"Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism[mesh] " OR "deep vein thrombosis" AND Prevention and Control [Subheading] OR prevention OR prevent OR prophylaxis AND "Knee"[Mesh] OR “Knee Joint” AND "Arthroscopy"[Mesh]

**Cochrane:**

"Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism[mesh] " OR "deep vein thrombosis" AND Prevention and Control [Subheading] OR prevention OR prevent OR prophylaxis AND "Knee"[Mesh] OR “Knee Joint” AND "Arthroscopy"[Mesh]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Database and dates covered | Date searched | Search terms | limits | Hits | Notes |
| Medline/Pubmed | 07/11/2021 | "Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism[mesh] " OR "deep vein thrombosis" AND Prevention and Control [Subheading] OR prevention OR prevent OR prophylaxis AND "Knee"[Mesh] OR “Knee Joint” AND "Arthroscopy"[Mesh]  | English / Humans/Adults | 4,670 |  |
| Cochrane | 07/11/2021 | "Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism[mesh] " OR "deep vein thrombosis" AND Prevention and Control [Subheading] OR prevention OR prevent OR prophylaxis AND "Knee"[Mesh] OR “Knee Joint” AND "Arthroscopy"[Mesh]  | English/Humans | 3,415 |  |

***Inclusion Criteria:***

* Patient characteristics: Adults (19+ years), with:
* Confirmation of PE (including Massive, Submassive, Incidental, Segmental, and Subsegmental) or,
* Confirmation of Pulmonary Hypertension due to blood clots in the lungs (Type 4 PAH) by RHC or imaging (RHC ONLY versus RHC, VQ, TTE, and CTPA) and
* History of recent Knee Arthroscopic procedure (within 3 months of VTE) with immediate partial or total weight bearing as part of postoperative care

***Exclusion Criteria:***

* Other causes of Pulmonary Hypertension that are NOT CTEPH (Type 1: Primary or Idiopathic; Type 2: Due to left heart disease; Type 3: Due to lung disease; Type 5: Blood and other rare disorders that lead to Pulmonary Hypertension e.g. connective tissue disorders and sickle cell disease)
* Non-arthroscopic procedures or other surgical interventions of the knee before VTE.
* Arthroscopic procedure without immediate partial or total weight bearing as a component of postoperative care.
* Conference papers; proceedings; editorials; commentaries; guidelines and book chapters; technical papers; image quality-, and phantom studies; and unavailable full-text manuscripts.
* Review articles
* Sample size less than 20.

**3 - What is the most optimal VTE prophylaxis for patients undergoing arthroscopic knee surgery who are instructed to remain non-weight bearing for a prolonged period of time?**

**Search Terms:**

((arthroscopic knee surgery) OR (Knee scoping surgery) OR (knee keyhole surgery) OR (knee arthroscopy) OR (meniscal root repair OR microfracture OR ACI OR osteochondral allograft OR ACL surgery OR PCL surgery OR meniscal repair)) AND ((Prophylaxis OR Prophylactic treatment OR preventative VTE treatment) OR (anti-clotting OR antithrombotic OR anti-thrombotic OR anticoagulation OR anti-coagulation) OR (heparin OR lwwh OR low molecular weight heparin OR low-molecular-weight heparin OR "Heparin"[Mesh] OR "Heparin, Low-Molecular-Weight"[Mesh] OR "Dalteparin"[Mesh] OR dalteparin OR fragmin OR "Enoxaparin"[Mesh] OR enoxaparin OR lovenox OR "Nadroparin"[Mesh] OR nadroparin OR fraxiparin OR "Tinzaparin"[Mesh] OR tinzaparin OR innohep OR low dose unfractionated heparin OR low-dose unfractionated heparin OR lduh) OR ("Factor Xa Inhibitors"[Mesh] OR direct factor xa inhibitor OR apixaban OR Eliquis OR betrixaban OR bevyxxa OR edoxaban OR savaysa OR rivaroxaban OR "Rivaroxaban"[Mesh] OR xarelto OR Indirect factor xa inhibitors OR fondaparinux OR fondaparin OR arixtra OR direct thrombin inhibitors OR dabigatran OR pradaxa OR ximelagatran OR exanta) OR (OR vitamin k antagonists OR vka OR warfarin OR "Warfarin"[Mesh] OR coumadin OR aspirin OR "Aspirin"[Mesh] OR salicylate))

**Total: 930 results**

***Inclusion Criteria:***

* Primary research
* Patients undergoing knee arthroscopy, regardless of weightbearing status postoperatively
* Incidence of VTE reported
* English articles
* Cochrane systematic reviews
* LoE I, LoE II, LoE III studies

***Exclusion Criteria:***

* Letters to the Editor
* Narrative review articles
* Not in English language.

**4 - What is the most optimal VTE prophylaxis for patients undergoing ACL reconstruction?**

**Search Terms:**

(“venous thromboembolism” OR “deep vein thrombosis” OR “venous thrombosis” OR “thromboembolism” OR “pulmonary embolism” OR “emboli”) AND (“arthroscopy” OR “arthroscopic” OR “arthroscopically” OR “anterior cruciate” OR “ACL”).

**Results**: 783 search hits.

***Inclusion Criteria:***

* Years 1990-2021
* Peer-reviewed articles with full text available in English language;
* Number of ACLR patients and percentage of VTE mentioned clearly in patients with or without medical or mechanical prophylaxis.
* Diagnostic modality (duplex ultrasound, venography, magnetic resonance venography, pulmonary angiography, ventilation-perfusion lung scan or computed tomography) used for diagnosis of VTE.

***Exclusion Criteria:***

* Different study population (e.g., hip and shoulder scopes)
* Revision ACLR patients.
* Case studies series with sample size less than 20
* Case reports, review articles.
* Non-English literature
* Non-human studies.

**5 - Do patients undergoing hip arthroscopy require routine VTE prophylaxis?**

**Search Terms:**

(((Hip[MeSH Terms]) OR (Hip[Title/Abstract])) AND (arthroscopy[MeSH Terms])) AND ("Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism" OR "deep vein thrombosis")

**Total: 43 articles.**

**Final number of articles included: 21.**

***Inclusion Criteria:***

• English language

• Patient population: hip arthroscopy

• Article type: retrospective and prospective observational studies, randomized controlled trials, systematic reviews.

• Studies that reported VTE complication and prophylaxis

***Exclusion Criteria:***

• Article type: narrative reviews, in vitro studies, animal studies.

• Clinical articles published prior to 2008.

**6 - Should patients undergoing mini-open femoroacetabular osteoplasty receive routine VTE prophylaxis?**

**Search Terms:**

((femoroacetabular osteoplasty OR Femoral Acetabular Osteoplasty OR Femoral Osteoplasty OR mini-open femoroacetabular osteoplasty OR Hip FAO OR "Femoracetabular Impingement/surgery"[Mesh] OR "Femoracetabular Impingement/rehabilitation"[Mesh]) AND (Routine Venous Thromboembolism Prophylaxis OR Prophylaxis OR Prophylactic treatment OR preventative VTE treatment OR anti-clotting OR antithrombotic OR anti-thrombotic OR anticoagulation OR anti-coagulation OR heparin OR lwwh OR low molecular weight heparin OR low-molecular-weight heparin OR "Heparin"[Mesh] OR "Heparin, Low-Molecular-Weight"[Mesh] OR "Dalteparin"[Mesh] OR dalteparin OR fragmin OR "Enoxaparin"[Mesh] OR enoxaparin OR lovenox OR "Nadroparin"[Mesh] OR nadroparin OR fraxiparin OR "Tinzaparin"[Mesh] OR tinzaparin OR innohep OR low dose unfractionated heparin OR low-dose unfractionated heparin OR lduh OR "Factor Xa Inhibitors"[Mesh] OR direct factor xa inhibitor OR apixaban OR Eliquis OR betrixaban OR bevyxxa OR edoxaban OR savaysa OR rivaroxaban OR "Rivaroxaban"[Mesh] OR xarelto OR Indirect factor xa inhibitors OR fondaparinux OR fondaparin OR arixtra OR direct thrombin inhibitors OR dabigatran OR pradaxa OR ximelagatran OR exanta OR vitamin k antagonists OR vka OR warfarin OR "Warfarin"[Mesh] OR coumadin OR aspirin OR "Aspirin"[Mesh] OR salicylate)) AND (((1990:3000/12/12[pdat]) AND (english[Filter])) OR (("randomized controlled trial"[pt] OR "controlled clinical trial"[pt] OR randomized[tiab] OR placebo[tiab] OR "clinical trials as topic"[mesh: noexp] OR randomly[tiab] OR randomised[tiab] OR randomization[tiab] OR randomisation[tiab] OR trial[ti])) NOT ("animals"[mh] NOT "humans"[mh])

**Total: 70 results.**

***Inclusion Criteria:***

* Discussion of mini-open approach for femoroacetabular impingement
* Discussion of venous thromboembolism
* Discussion of venous thromboembolism prophylaxis
* English articles

***Exclusion Criteria:***

* Hip preservation surgery for femoroacetabular impingement not related to mini-open approach
* Not in English
* No mention of venous thromboembolism.

**7 - How should athletes receiving chemical anticoagulation for VTE prophylaxis or treatment of active VTE be managed?**

**Search Terms:**

(Athlet\* OR (sport professional) OR (elite athlete) OR (sport professional) OR (elite player) OR (NFL player) OR (NBA player) OR (MLB player) OR (NHL player) OR ( soccer player) OR (football player)) AND (("Venous Thromboembolism"[Mesh] OR "Venous Thrombosis"[Mesh] OR "pulmonary embolism" OR "deep vein thrombosis") OR ("Anticoagulants"[Mesh] OR "Platelet Aggregation Inhibitors"[Mesh] OR “Fibrinolytic Agents”[Mesh]) OR ( “LMWH”[tw] OR “low molecular weight heparin “[tw] OR “aspirin”[tw] OR “antithrombotics”[tw] OR “antiplatelet”[tw] OR “ Vitamin K antagonists” [tw] OR “Factor Xa Inhibitors” [tw] OR “Adenosin-diphosphate ADP receptor antagonist”[tw] or “Cyclooxygenase Inhibitor”[tw] or “Prostaglandine”[tw] or “Prostacycline”[tw] or “Glycoprotein IIb/IIIa antagonist”[tw] or “Glycoprotein IIb/IIIa inhibitor”[tw] or “Heparinoids”[tw] or “Fibrinolytic”[tw] or “Thrombin inhibitors”[tw] ))

**Total: 426**

***Inclusion Criteria:***

* Patients were athletes
* Chemical anticoagulation for prophylaxis or treatment of venous thromboembolism
* Studies in English
* Publication between 1990 - 2021

***Exclusion Criteria***

* Patients who only received non-chemical antithrombotic measures
* Conference papers; proceedings; editorials; commentaries; technical papers; image quality; phantom studies; unavailable full text manuscripts
* Articles not written in English.