

TABLE E-1 Current Evidence in Orthopaedic Trauma

Level of Evidence	Sample Size	Summary
Therapy*		
I	100	Authors found both the functional and radiographic outcomes of the Kapandji method to be significantly better than those of the Willenegger technique.
I	80	Patients who were provided with information and questions for their primary-care physician about osteoporosis were more likely to receive appropriate therapeutic intervention than were patients who had not received the information and questions.
I	40	External fixation with hydroxyapatite-coated pins is an effective treatment for pertrochanteric fractures.
I	400	Irrigation of open fracture wounds with antibiotic solution offers no advantages over the use of a nonsterile soap solution, and it may increase the risk of wound-healing problems.
I	102	There was no significant difference between the groups in terms of union and osteonecrosis at two years.
I	120	The authors recommend lag screws coated with hydroxyapatite for dynamic hip-screw fixation, especially in osteoporotic bone.
I	64	The A-V Impulse "in-cast" system demonstrated significant benefit in the management of adults with isolated ankle fractures who could not undergo immediate open reduction and internal fixation.
I	72	In the treatment of distal fibular fractures, precisely diagnosing and treating the combined intra-articular disorders is important for gaining satisfactory clinical results.
I	19,114	This meta-analysis demonstrated that oral vitamin-D supplementation with a dose of between 700 to 800 IU/d appears to reduce the risk of hip and any nonvertebral fractures in ambulatory or institutionalized elderly persons. An oral vitamin-D dose of 400 IU/d is not sufficient for fracture prevention.
I	90	In community-dwelling frail elderly patients with hip fracture, six months of extended outpatient rehabilitation that includes progressive resistance training can improve physical function and quality of life and can reduce disability compared with low-intensity home exercise.
I	3314	The authors found no evidence that calcium and vitamin-D supplementation reduces the risk of clinical fractures in women with one or more risk factors for hip fracture.
I	5292	The findings do not support routine oral supplementation with calcium and vitamin D ₃ , either alone or in combination, for the prevention of additional fractures in previously mobile elderly people.
II	2660	A delay of more than four days significantly increased mortality in patients undergoing surgical treatment of a hip fracture.
III	61	The authors found no difference in outcome between primary and delayed radial head excision following a Mason type-II, III, or IV fracture.
III	536	In children who receive early antibiotic therapy following an open fracture, surgical débridement within six hours after the injury offers little benefit over débridement within twenty-four hours after the injury with regard to the prevention of acute infection.
III	28	The results support a recommendation for open reduction and internal fixation in the treatment of comminuted radial head fractures.
III	70	Open reduction and internal fixation of intra-articular calcaneal fractures can only be expected to benefit patients in whom nearly anatomical reconstruction is obtained.
III	174	Damage-control orthopaedics treatment was associated with a lesser systemic inflammatory response than early total care for femoral fractures.
Prognosis†		
I	868	Nonunion at twenty-four weeks after a clavicular fracture is an uncommon occurrence, although the prevalence is higher than previously reported.
I	31	Levels of IL-6 were significantly higher in patients with head injury and fracture compared with controls.
I	18,209	Delay to surgery independently affects mortality.
I	268	Smoking places the patient at risk for increased time to union and complications.
I	550	Higher preoperative hemoglobin was associated with shorter length of stay and lower odds of death and readmission within sixty days after discharge.
II	100	The authors recommend urgent reduction of dislocations and treatment of open injuries.
II	189	Coronal plane fractures frequently occurred in association with high-energy supracondylar-intercondylar distal femoral fractures; in the present study, the prevalence of associated coronal plane fractures was 38%.
II	169	Body-mass index is predictive of complications after operative treatment of acetabular fractures.
II	27	In eleven patients with footdrop at presentation, including all nine with the double-crush lesion, there was no improvement in function after a mean duration of follow-up of 4.3 years.
II	3670	This meta-analysis demonstrated that factors influencing the functional outcome included the type of fracture and/or dislocation, damage to the femoral head, associated injuries and comorbidity (all of which can be considered to be noncontrollable), and the timing of the operation, the surgical approach, the quality of reduction, and local complications (all of which are controllable).
II	24	In unstable pertrochanteric hip fractures, the traditional description of the posteromedial fracture part as the most important prognostic factor should be revised to include the structural description of the lateral wall.
II	103	The incidence of complete ligamentous or meniscal disruption associated with operative tibial plateau fractures was higher than previously reported.
II	15,188,292	While airbags may reduce the risk of death when used alone or in combination with seatbelts, the results of this study demonstrated that air bags increase the risk of lower extremity fractures when used as the sole method of passenger protection.
II	747	Use of the clinical pathway was associated with significant decreases in the acute-care hospital length of stay, in-hospital mortality, and one-year mortality.
III	42	An increased risk of complications in diabetic patients with closed rotational fractures of the ankle are specific to a subpopulation with identifiable related comorbidities.
Diagnosis‡		
II	61	Soft-tissue indicators are not accurate predictors of stability.
II	101	Medial tenderness, swelling, and ecchymosis were not sensitive with regard to predicting widening of the medial clear space on stress radiographs.
II	973	Discontinuation of screening for the diagnosis of deep-vein thrombosis did not change the rate of pulmonary embolism.

*Investigating the results of a treatment. †Investigating effect of patient characteristic on the outcome of a disease. ‡Investigating a diagnostic test

TABLE E-2 Search Strategy (All databases and Journals searched from June 1, 2004 to May 2005):

Journal/Database	Total Papers	Total Eligible	Included
J Bone Joint Surg AM	440	34	20
J Bone Joint Surg BR	269	41	9
Clin Orthop	532	58	7
J Orthop Trauma	144	63	15
Acta Orthop Scand	110	16	2
McMaster Database of Bone and Joint Papers		17	
J Trauma	474	44	4
N Engl J Med	1511	3	
JAMA	1067	7	2
BMJ	2105	3	1
Lancet	1737	4	1
Cochrane Database	42	1	
Spine	133	5	1
OTA Transactions	12	12	10
Total	8,576	308	72

*Following review of titles, abstracts, and level of evidence scores