



## THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS EVIDENCE-BASED GUIDELINE ON

# Management of Hip Fractures in the Elderly

W. Timothy Brox, MD  
Karl C. Roberts, MD  
Sudeep Taksali, MD  
Douglas G. Wright, MD  
John J. Wixted, MD  
Creighton C. Tubb, MD  
Joshua C. Patt, MD  
Kimberly J. Templeton, MD  
Eitan Dickman, MD  
Robert A. Adler, MD  
William B. Macaulay, MD  
James M. Jackman, DO  
Thiru Annaswamy, MD  
Alan M. Adelman, MD, MS  
Catherine G. Hawthorne, MD  
Steven A. Olson, MD

Daniel Ari Mendelson, MD  
Meryl S. LeBoff, MD  
Pauline A. Camacho, MD, MACE  
David Jevsevar, MD, MBA  
Kevin G. Shea, MD  
Kevin J. Bozic, MD, MBA  
William Shaffer, MD  
Deborah Cummins, PhD  
Jayson N. Murray, MA  
Patrick Donnelly, MA  
Peter Shores, MPH  
Anne Woznica, MLS  
Yasseline Martinez  
Catherine Boone  
Leeaht Gross, MPH  
Kaitlyn Sevarino

### Introduction

The AAOS Evidence-Based Guideline on Management of Hip Fractures in the Elderly includes both diagnosis and treatment. This clinical practice guideline has been endorsed by the Orthopaedic Trauma Association (OTA), the American Academy of Physical Medicine and Rehabilitation (AAPM&R), the American Society for Bone and Mineral Research (ASBMR), the United States Bone and Joint Initiative, the Hip Society, the American Association of Clinical Endocrinologists, the Orthopaedic Rehabilitation Association (ORA), and the American Geriatrics Society (AGS). This brief summary of the AAOS Clinical Practice Guideline contains a list of the recommendations and the rating of strength based on the quality of the supporting evidence. Discussion of how each recommendation was developed and the complete evidence report are contained in the full guideline at [www.aaos.org/guidelines](http://www.aaos.org/guidelines).

**Disclosure:** The disclosure information for the Work Group members and the AAOS staff on this guideline are found in Appendix XI (page 416) of the guideline document at [http://www.aaos.org/research/guidelines/HipFxGuideline\\_rev.pdf](http://www.aaos.org/research/guidelines/HipFxGuideline_rev.pdf).

**Disclaimer:** This Clinical Practice Guideline was developed by an AAOS multidisciplinary volunteer Work Group based on a systematic review of the current scientific and clinical information and accepted approaches to treatment and/or diagnosis. This Clinical Practice Guideline is not intended to be a fixed protocol, as some patients may require more or less treatment or different means of diagnosis. Clinical patients may not necessarily be the same as those found in a clinical trial. Patient care and treatment should always be based on a clinician's independent medical judgment, given the individual patient's clinical circumstances.

The complete AAOS guideline is available at [http://www.aaos.org/research/guidelines/HipFxGuideline\\_rev.pdf](http://www.aaos.org/research/guidelines/HipFxGuideline_rev.pdf).

**Summary of Recommendations****ADVANCED IMAGING**

Moderate evidence supports MRI as the advanced imaging of choice for diagnosis of presumed hip fracture not apparent on initial radiographs.

**Strength of Recommendation: Moderate ★★★☆**

**PERIOPERATIVE REGIONAL ANALGESIA**

Strong evidence supports regional analgesia to improve preoperative pain control in patients with hip fracture.

**Strength of Recommendation: Strong ★★★★★**

**PREOPERATIVE TRACTION**

Moderate evidence does not support routine use of preoperative traction for patients with a hip fracture.

**Strength of Recommendation: Moderate ★★★☆**

**SURGICAL TIMING**

Moderate evidence supports that hip fracture surgery within 48 hours of admission is associated with better outcomes.

**Strength of Recommendation: Moderate ★★★☆**

**ASPIRIN AND CLOPIDOGREL**

Limited evidence supports not delaying hip fracture surgery for patients on aspirin and/or clopidogrel.

**Strength of Recommendation: Limited ★★☆☆**

**ANESTHESIA**

Strong evidence supports similar outcomes for general or spinal anesthesia for patients undergoing hip fracture surgery.

**Strength of Recommendation: Strong ★★★★★**

**STABLE FEMORAL NECK FRACTURES**

Moderate evidence supports operative fixation for patients with stable (non-displaced) femoral neck fractures.

**Strength of Recommendation: Moderate ★★★☆**

**DISPLACED FEMORAL NECK FRACTURES**

Strong evidence supports arthroplasty for patients with unstable (displaced) femoral neck fractures.

**Strength of Recommendation: Strong ★★★★★**

**UNIPOLAR VERSUS BIPOLAR**

Moderate evidence supports that the outcomes of unipolar and bipolar hemiarthroplasty for unstable (displaced) femoral neck fractures are similar.

**Strength of Recommendation: Moderate ★★★☆**

**HEMI VERSUS TOTAL HIP ARTHROPLASTY**

Moderate evidence supports a benefit to total hip arthroplasty in properly selected patients with unstable (displaced) femoral neck fractures.

**Strength of Recommendation: Moderate ★★★☆**

**CEMENTED FEMORAL STEMS**

Moderate evidence supports the preferential use of cemented femoral stems in patients undergoing arthroplasty for femoral neck fractures.

**Strength of Recommendation: Moderate ★★☆☆**

#### *SURGICAL APPROACH*

Moderate evidence supports higher dislocation rates with a posterior approach in the treatment of displaced femoral neck fractures with hip arthroplasty.

**Strength of Recommendation: Moderate ★★☆☆**

#### *STABLE INTERTROCHANTERIC FRACTURES*

Moderate evidence supports the use of either a sliding hip screw or a cephalomedullary device in patients with stable intertrochanteric fractures.

**Strength of Recommendation: Moderate ★★☆☆**

#### *SUBTROCHANTERIC OR REVERSE OBLIQUITY FRACTURES*

Strong evidence supports using a cephalomedullary device for the treatment of patients with subtrochanteric or reverse obliquity fractures.

**Strength of Recommendation: Strong ★★★★★**

#### *UNSTABLE INTERTROCHANTERIC FRACTURES*

Moderate evidence supports using a cephalomedullary device for the treatment of patients with unstable intertrochanteric fractures.

**Strength of Recommendation: Moderate ★★☆☆**

#### *VTE PROPHYLAXIS*

Moderate evidence supports use of venous thromboembolism prophylaxis (VTE) in hip fracture patients.

**Strength of Recommendation: Moderate ★★☆☆**

#### *TRANSFUSION THRESHOLD*

Strong evidence supports a blood transfusion threshold of no higher than 8 g/dl in asymptomatic postoperative hip fracture patients.

**Strength of Recommendation: Strong ★★★★★**

#### *REHABILITATION*

##### **SUB-RECOMMENDATION SUMMARY**

**Occupational and Physical Therapy:** Moderate evidence supports that supervised occupational and physical therapy across the continuum of care, including home, improves functional outcomes and fall prevention.

Strength of Recommendation: Moderate ★★☆☆

**Intensive Physical Therapy:** Strong evidence supports intensive physical therapy post-discharge to improve functional outcomes in hip fracture patients.

Strength of Recommendation: Strong ★★★★★

**Nutrition:** Moderate evidence supports that postoperative nutritional supplementation reduces mortality and improves nutritional status in hip fracture patients.

Strength of Recommendation: Moderate ★★☆☆

**Interdisciplinary Care Program:** Strong evidence supports use of an interdisciplinary care program in those patients with mild to moderate dementia who have sustained a hip fracture to improve functional outcomes.

Strength of Recommendation: Strong ★★★★★

*POSTOPERATIVE MULTIMODAL ANALGESIA*

Strong evidence supports multimodal pain management after hip fracture surgery.

Strength of Recommendation: Strong ★★★★★

*CALCIUM AND VITAMIN D*

Moderate evidence supports use of supplemental vitamin D and calcium in patients following hip fracture surgery.

Strength of Recommendation: Moderate ★★★★★☆

*SCREENING*

Limited evidence supports preoperative assessment of serum levels of albumin and creatinine for risk assessment of hip fracture patients.

Strength of Recommendation: Limited ★★☆☆☆

*OSTEOPOROSIS EVALUATION AND TREATMENT*

Moderate evidence supports that patients be evaluated and treated for osteoporosis after sustaining a hip fracture.

Strength of Recommendation: Moderate ★★★★★☆