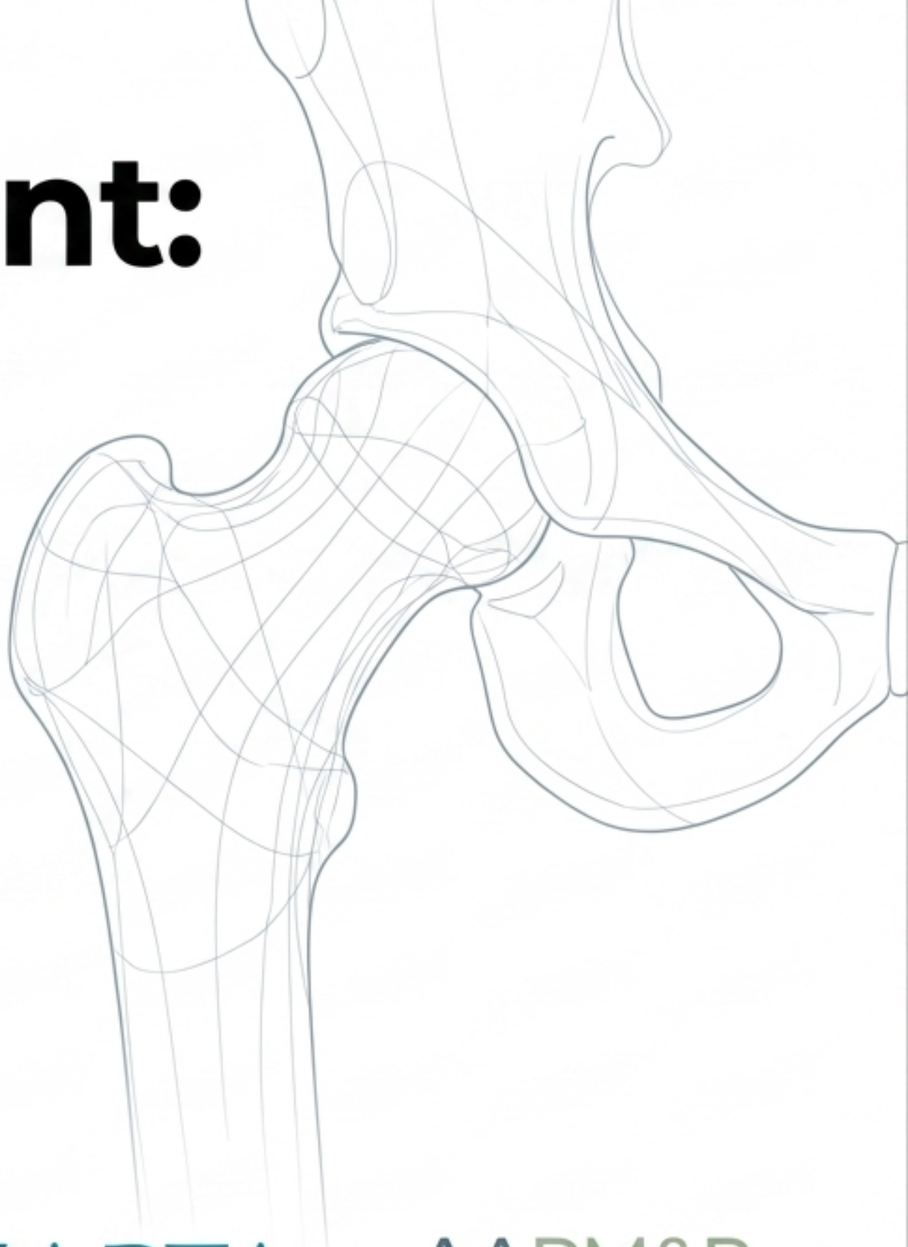
The Clinical Blueprint: Management of Hip Fractures in in Older Adults

Distilled Clinical Pathways from the 2021 AAOS Evidence-Based Clinical Practice Guideline



AAOS
American Academy of Orthopaedic Surgeons

AAHKS
American Association of Hip and Knee Surgeons

OTA
Orthopaedic Trauma Association

APTA
American Physical Therapy Association

AAPM&R
American Academy of Physical Medicine and Rehabilitation

Phase: The Burden of Hip Fractures

4.5 Million

Global hip fractures expected annually by 2050.

24%

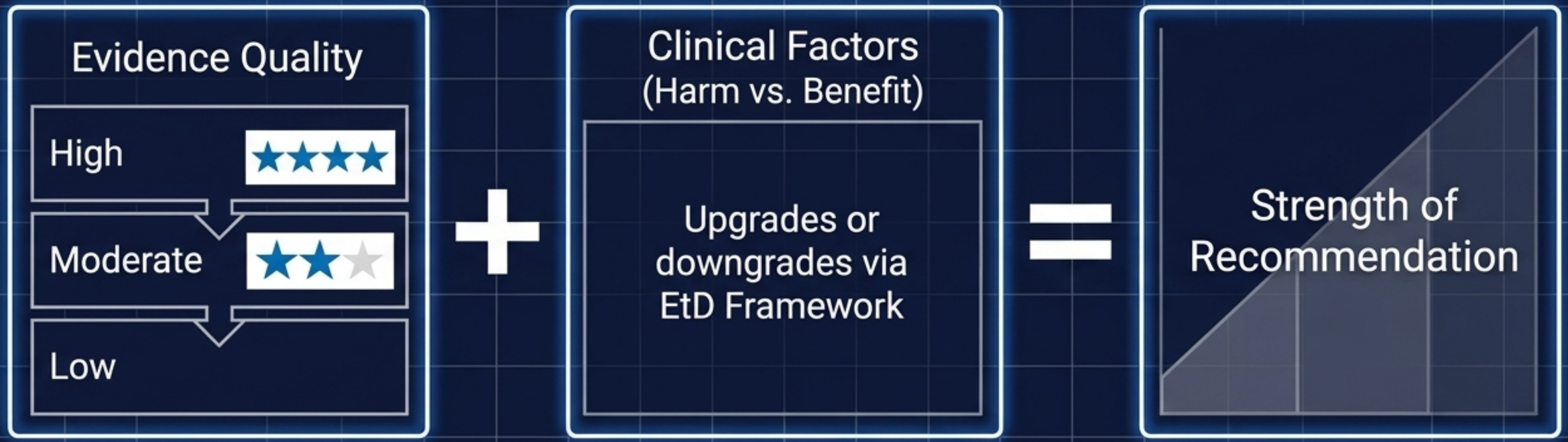
1-year mortality rate for overall older adult hip fractures. Up to 36% 6-month mortality for nursing home residents.

$50,000+

Annual medical cost incurred per typical older adult patient.

The imperative is clear: optimize surgical timing, standardize anatomical interventions, and strictly control perioperative complications.

Methodology Decoder



Strong: High confidence.
Two+ High Quality studies.

Moderate: Less likely to change.
Two+ Moderate Quality studies.

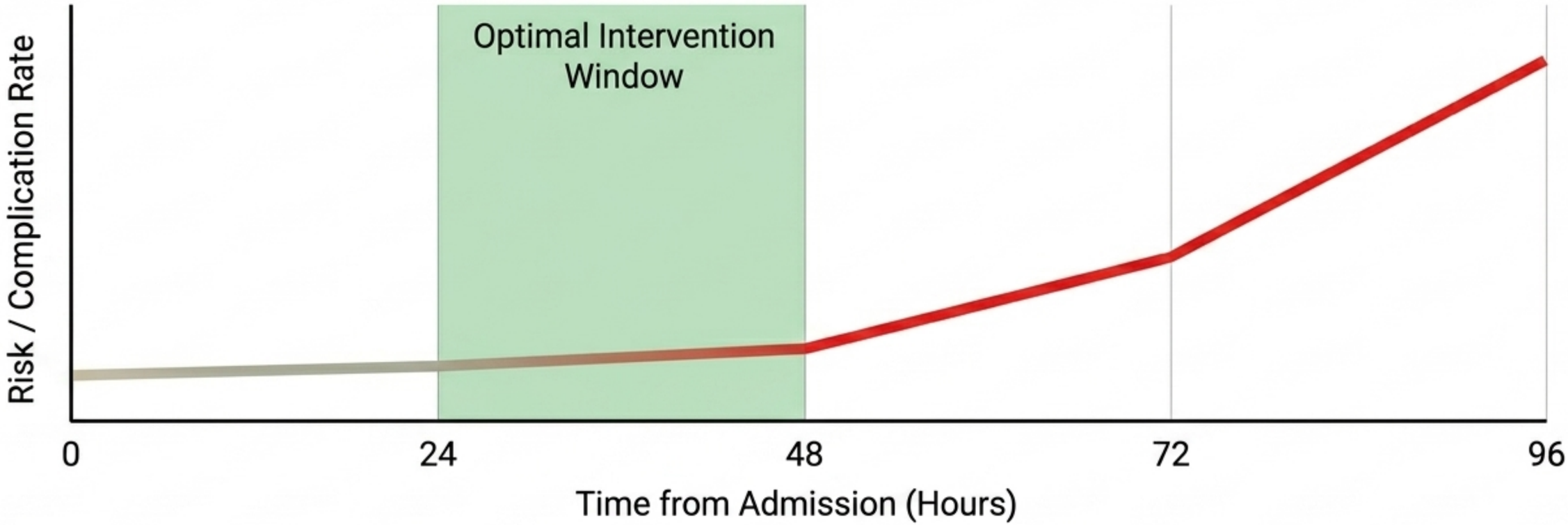
Limited: Change anticipated.
Low Quality studies.

Every subsequent slide features a standardized badge indicating the exact strength of the AAOS 2021 recommendation.

Phase 1: Admission & Pre-Op | Optimal Surgical Timing

Surgery within 24-48 hours of admission is associated with better outcomes.

★★★☆ Moderate Recommendation | Low Quality Evidence (Upgraded)



Controlling for patient comorbidities, delay to surgery directly associates with increased mortality. Modifiable perioperative issues must be optimized rapidly.

Phase 1: Admission & Pre-Op | Pre-Op Care Paradox

NOT THAT: Preoperative Traction

★★★★

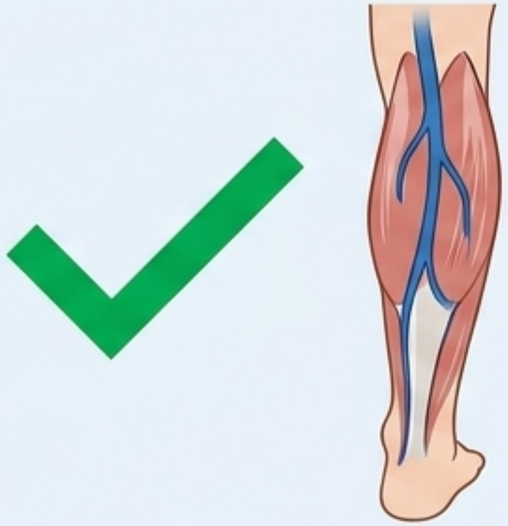
Strong Against | High Quality

Do NOT routinely use. Higher pre-op complications (pressure ulcers, urinary tract infections, pain). A positioning splint or pillows are superior and feasible.

DO THIS: VTE Prophylaxis

★★★★

Strong For | Moderate Quality (Upgraded)



MUST use. Significant risk of DVT/PE in this population. Mechanical and/or chemical prophylaxis (Aspirin, LMWH, Coumadin, DOACs) on patient-specific bleeding vs. immobility risks.

Phase 2: Intra-Op Core Decisions | Anesthesia & Surgical Approach Equilibrium

Scale 1: Anesthesia

Strong | High Quality

Both are appropriate. No persistent difference in mortality up to 120 days or in-hospital length of stay. (Caution: timing of block placement relative to anticoagulants must be monitored for spinal).

Scale 2: Surgical Approach

Moderate | Moderate Quality

No favored surgical approach for hip arthroplasty. Newer data shows no significant difference in dislocation rates. Less invasive approaches may show early pain reduction but require longer operative times.

Phase 2: Intra-Op Core Decisions | The Anatomical Decision Tree

Takeaway: Implant selection is strictly dictated by anatomical location and fracture stability.

FLOWCHART

ANATOMICAL MAP

Node 1: Femoral Neck

Intracapsular: Femoral Neck Fractures.
Focus: Preservation vs Arthroplasty.

ANATOMICAL MAP

Node 2: Intertrochanteric

Extracapsular: Intertrochanteric Fractures.
Focus: Stability and Fixation.

DECISION PATHWAYS

Node 3: Subtrochanteric

Extracapsular: Subtrochanteric & Reverse Obliquity.
Focus: Load-bearing hardware.

Phase 2: Femoral Neck Focus | Unstable (Displaced) Femoral Neck Fractures

Strong | High Quality Strong | High Quality

Arthroplasty

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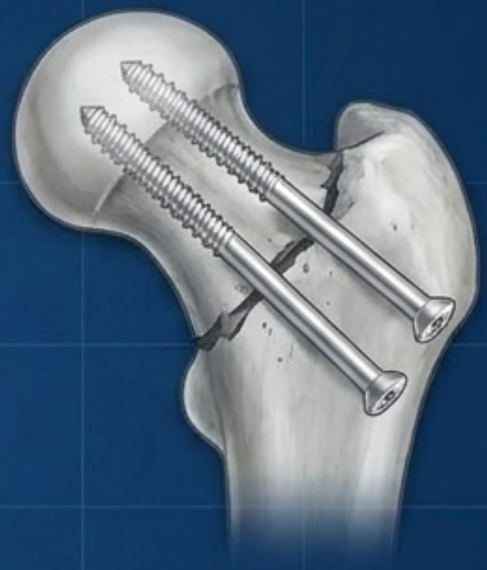


Fixation (Screws)

Arthroplasty is strongly recommended over internal fixation. Decreased rate of reoperation. Consistently better outcomes in pain scores and functional status. No statistically significant difference in mortality.

Phase 2: Femoral Neck Focus | Total Hip Arthroplasty vs. Hemiarthroplasty

Moderate | High Quality (Downgraded)

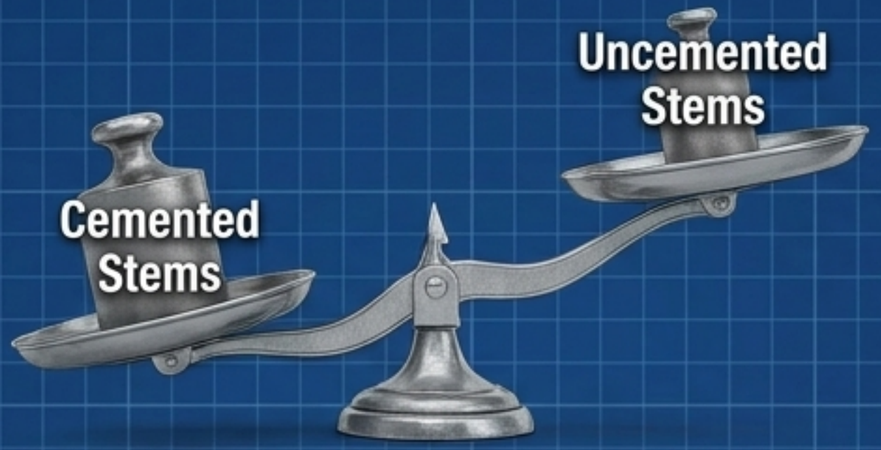
	Total Hip Arthroplasty	Hemiarthroplasty
Functional Benefit	Higher function, community ambulators	Adequate for lower-demand
Complication Risk	Slight increase in complications/dislocation risk	Small decrease in instability
Cost/Resources	Higher implant, procedural, and professional fees	Lower upfront cost

Synthesis Note: Downgraded to Moderate due to small effect size. Surgeon bias and patient baseline function (shared decision making) are critical. Total hip may benefit highly active patients; cautious decision making justified for lower functioning patients.

Phase 2: Femoral Neck Focus | Stem Fixation and Head Type Trade-offs

Stem Fixation: Cemented vs. Uncemented

★★★ Strong | High Quality



- Cemented stems are recommended. They yield lower periprosthetic fracture risk and improved short-term reported outcomes.
- Trade-off: Increased surgical time and blood loss.

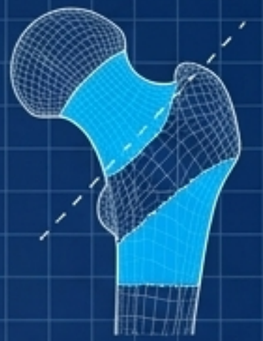
Head Type: Unipolar vs. Bipolar

★★½ Moderate | Moderate Quality

Unipolar Head = Bipolar Head

- Unipolar and Bipolar hemiarthroplasty hemiarthroplasty are equally beneficial. No significant differences in mortality, QoL, or advers or adverse events.
- (Note: Unipolar heads generally carry lower implant costs).

Phase 2: Extracapsular Focus | Extracapsular Fracture Fixation



Diagnosis/Fracture Type	Evidence Strength	Recommendation	Synthesis Notes
Stable Intertrochanteric (OTA 31.A1/A2)	★★★★ Strong | High Quality	Sliding Hip Screw (SHS) OR Cephalomedullary Device (CMD)	Similar clinical outcomes; CMD often has higher device cost but reduced hospital stay.
Unstable Intertrochanteric	★★★★ Strong | High Quality	Cephalomedullary Device (CMD) recommended	
Subtrochanteric / Reverse Obliquity (OTA 31.A3)	★★★★ Strong | High Quality	Cephalomedullary Device (CMD) recommended	Lower complication rate, improved mobility, and decreased limb shortening vs SHS.

Phase 3: Post-Op & Rehab | Post-Operative Blood Management

Tranexamic Acid (TXA)

★★★ Strong | High Quality

TXA should be administered. Safely reduces surgical blood loss and the need for post-operative blood transfusions.

Transfusion Threshold

★★½ Moderate | Moderate Quality

A blood transfusion threshold of no higher than 8 g/dl is suggested in asymptomatic postoperative hip fracture patients.

Phase 3: Post-Op & Rehab | Analgesia and Mechanical Loading

Multimodal Analgesia

Strong | High Quality ★★★★★

Multimodal analgesia is highly recommended. It must incorporate preoperative nerve blocks to effectively treat pain, reduce opioid consumption, and facilitate recovery.

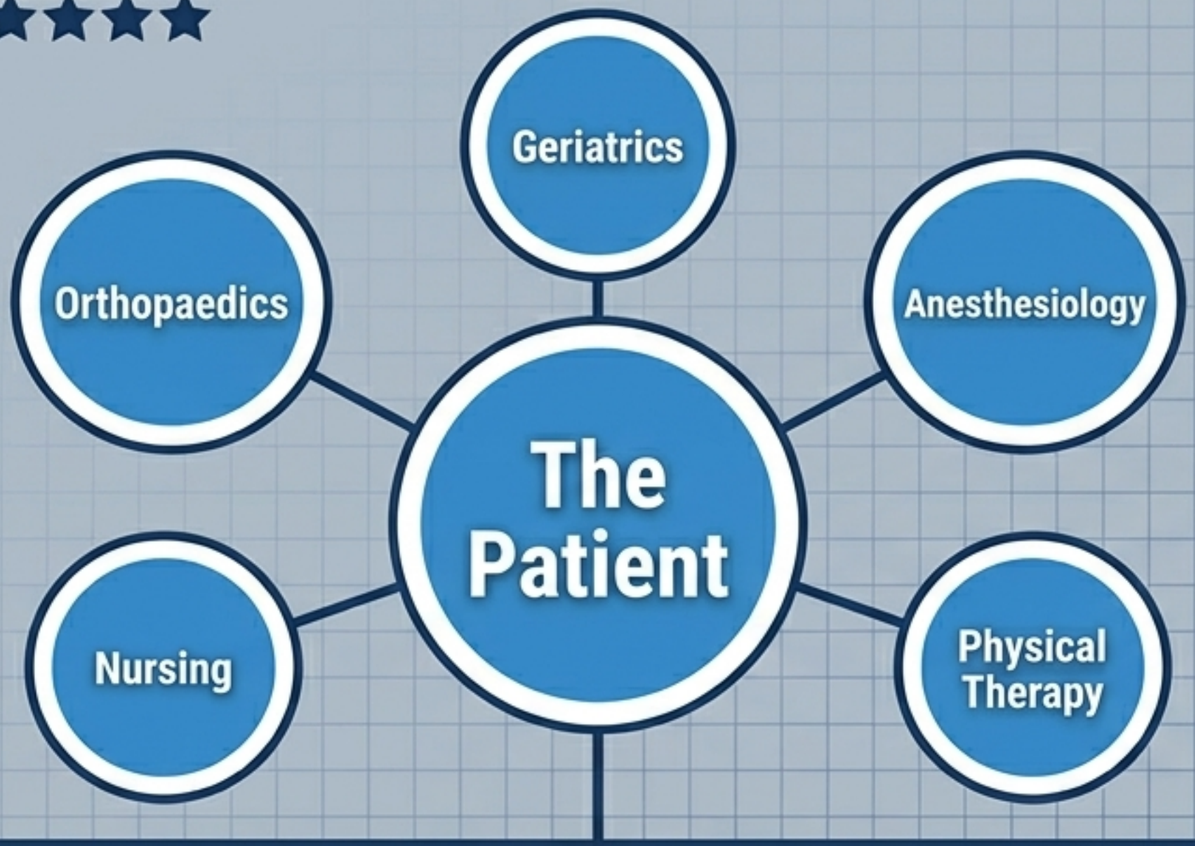
Weight Bearing

Limited | Low Quality ★☆☆☆☆

Following surgical treatment, immediate, full weight-bearing to tolerance may be considered to accelerate rehabilitation.

Phase 3: Post-Op & Rehab | Multidisciplinary Integration

Strong | High Quality ★★★★★



Interdisciplinary care programs should be utilized. Demonstrably decreases post-operative complications, reduces length of stay, and improves long-term functional outcomes. Recovery to pre-fracture function occurs in less than 50% of patients without systemic, coordinated care.

The Blueprint in Action: Unified Clinical Protocol

0-24 Hours (Admission)

- ☐ Administer VTE Prophylaxis.
- ☐ Perform Pre-Op Nerve Block.
- ☐ Do NOT use routine traction.

24-48 Hours (The OR)

- ☐ Enter OR (Optimal 24-48 hr window).
- ☐ Administer TXA.
- ☐ Apply Anatomical Fixation:
  - If Displaced Fem Neck: Arthroplasty (Cemented Stems preferred).
  - If Inter/Subtrochanteric: Cephalomedullary Nail.

48+ Hours (Recovery)

- ☐ Monitor Transfusion (Trigger at <8g/dl).
- ☐ Initiate Multidisciplinary Care Program.
- ☐ Begin immediate weight-bearing to tolerance.

Reference: AAOS Evidence-Based Clinical Practice Guideline for Management of Hip Fractures in Older Adults (2021).