

- Distal: Internal fixation or external fixation (consideration for a circular fixator).
- *Ankle*
 - Internal fixation or external fixation (consideration for a circular fixator).
- *Foot*
 - Internal fixation, external fixation (consideration for a circular fixator), or percutaneous fixation.

Grade: 1C

Clinical Considerations: The advent of Exoskeleton Assisted Walking (EAW) has led to an appreciation that persons with an SCI have a high predisposition for foot and ankle fractures. The bone mineral density (BMD) of the calcaneus/foot likely will be markedly reduced, and the patient should avoid early return to weight-bearing activities after healing of the fracture because of the high risk of refracture with upright activities.

1.6 Recommendation

If nonoperative management is chosen, we recommend the following.

- Utilization of well-padded immobilization devices (or well-padded support of the fracture site when immobilization is not feasible), with attention to pressure relief over osseous prominences.
- Immobilization devices should allow for easy and frequent skin inspection and should maintain neutral rotation and alignment.

Grade: 1D**1.7 Recommendation**

If nonoperative management is chosen, we recommend the following, in conjunction with physical therapy.

- *Hip*
 - A well-padded positioning support with attention to neutral rotation and alignment. Range of motion may be as tolerated if the hip fracture is relatively nondisplaced and stable, with monitoring for worsening fracture characteristics (e.g., displacement) and rotation/alignment. Range-of-motion exercises are not recommended for unstable intertrochanteric or subtrochanteric fractures.
- *Femur*
 - Proximal/mid-shaft: A well-padded immobilization device.
 - Distal: A well-padded immobilization device with transition to a hinged brace when there is clinical/radiographic evidence of stability.
- *Tibia/Fibula*
 - Proximal/mid-shaft: A long-leg well-padded immobilization device with transition to a shorter padded immobilization device when there is clinical/radiographic evidence of stability.
 - Distal: A well-padded immobilization device.

- *Ankle*
 - A well-padded positioning support device.
- *Foot*
 - A well-padded positioning support device.

Grade: 1D**Section II: Role of Physical Therapy: Functional, Positional, and Mobility Considerations****2.1 Recommendation**

We recommend that therapists (physical therapists [PTs], kinesiotherapists [KTs], and occupational therapists [OTs]) should be involved in fracture rehabilitation as soon as possible to assess equipment needs, skills training, and caregiver assistance due to changes in mobility.

Grade: 1D

Clinical Considerations: When fractures are managed nonoperatively, the involvement of/consultation with PTs prior to the selection of braces should be considered. During the acute management phase, the focus should be on access to the environment and return to the prior level of their living situation. After acute management, return to the full prior level of participation in activities, including leisure and recreational activities, should be a priority. If the patient is unable to return to their prior living situation after the fracture, social workers should be involved to assist.

2.2 Recommendation

We recommend that orthopaedic surgeons engage in early and ongoing communication with therapists regarding range of motion, weight-bearing, and transfer restrictions and that these instructions should be updated as fracture-healing progresses.

Grade: 1D**2.3 Recommendation**

We recommend that someone who is knowledgeable in wheelchair seating (e.g., physical medicine and rehabilitation/physiatrist, physical therapist, or a wheelchair specialist if available) should be involved in post-fracture care for wheelchair users to assess needs related to support of the fractured limb, alignment abnormalities, limb-length discrepancies, and/or seating posture during and following fracture management.

Grade: 1D**Section III: Post-Fracture Complications****3.1 Recommendation**

We suggest surgical intervention for the treatment of (1) a nonunion or malunion associated with residual deformity that impairs functional ability or (2) a fracture that has converted to an open fracture following the failure of nonoperative treatment.

Surgical treatment should be considered for a National Pressure Ulcer Advisory Panel (NPUAP) Stage-3 or 4 pressure injury that has failed to heal with conservative therapy.

Grade: 2D