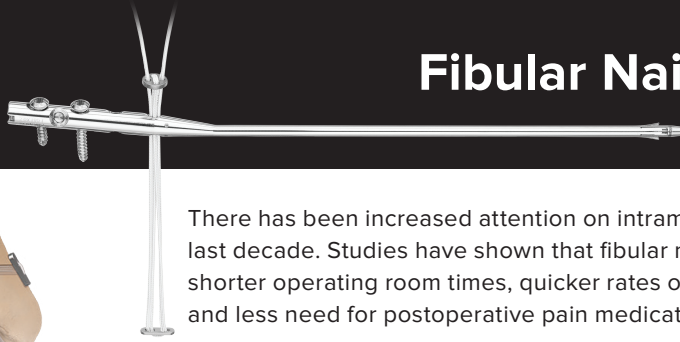


# Fibular Nailing Scientific Update



There has been increased attention on intramedullary nail fixation of fibular fractures over the last decade. Studies have shown that fibular nails from a variety of companies demonstrated shorter operating room times, quicker rates of recovery, fewer postoperative complications, and less need for postoperative pain medication.

Hodgkins CW,  
Fleites J

## Scientific Articles Highlighting the Various Benefits of Fibular Nails

[Fibula nailing: a retrospective review of 110 consecutive FibuLock nails. \*J Orthop Trauma\*. 2022;36\(7\):366-369. doi:10.1097/BOT.0000000000002329](#)

- Study reviewed a single surgeon's experience with 110 consecutive fibular nail procedures using the Arthrex FibuLock® nail.
- Found lower complication rates and lower removal rates with fibular nails than with traditional plates and screws.
- The smaller open incision size decreased infection risk and postsurgical complications.

White TO,  
Bugler KE,  
Olsen L,  
Lundholm LH,  
Holck K,  
Madsen BL,  
Duckworth AD

[A prospective, randomized, controlled, two-center, international trial comparing the fibular nail with open reduction and internal fixation for unstable ankle fractures in younger patients. \*J Orthop Trauma\*. 2022;36\(1\):36-42. doi:10.1097/BOT.0000000000002140](#)

- This study focuses on the Acumed Fibula Nail.
- Compared the outcomes of fibular nailing and plate fixation for unstable ankle fractures in patients under 65 years of age.
- No differences were found in patient-reported outcomes between fibular nail and plate fixation 2 years postsurgery.
- Intramedullary fixation is biomechanically stronger in osteoporotic bone than traditional open reduction internal fixation (ORIF).
- Fibular nailing is safe and effective for the stabilization of ankle fractures in younger patients. However, the benefits associated with fewer wound complications are not as apparent as they are with elderly patients.

Kho DH,  
Cho BK,  
Choi SM

[Midterm outcomes of unstable ankle fractures in young patients treated by closed reduction and fixation with an intramedullary fibular nail vs open reduction internal fixation using a lateral locking plate. \*Foot Ankle Int\*. 2021;42\(11\):1469-1481. doi:10.1177/10711007211017470](#)

- This study focuses on the Acumed Fibula Nail.
- Compared midterm outcomes of unstable ankle fractures in young patients treated with an intramedullary fibular nail vs with a lateral locking plate.
- Found no significant differences in measured clinical outcomes.
- There were less postoperative complications in the intramedullary nail group (9.5%) than in the ORIF group (39%).

Chen H,  
Li Z,  
Yang D,  
Wang P,  
Niu J,  
He X,  
Wu G

[Clinical study of intramedullary nailing fixation for the treatment of Danis-Weber B in lateral malleolus fracture.](#) *J Int Med Res.* 2021;49(10):3000605211047371. doi:10.1177/03000605211047371

- This study focuses on the Acumed Fibula Nail.
- Compared the clinical effects of anatomical locking plates and interlocking intramedullary nails in patients with Danis-Weber B lateral malleolus fractures.
- Operation time was significantly lower (approximately 10 minutes less) in the intramedullary nail group.
- Intraoperative blood loss and fracture healing time were found to be significantly lower when compared with the locked plating group.
- Eight patients in the locked plate group had infection complications compared to one patient in the intramedullary nail group.

Wright DJ,  
Bariteau JT,  
Hsu AR

[Advances in the surgical management of ankle fractures.](#) *Foot Ankle Orthop.* 2019;4(4):2473011419888505. doi:10.1177/2473011419888505

- This study focuses on the FibuLock® nail.
- Discussed recent advances in the operative management of ankle fractures.
- Indications for fibular intramedullary nailing should be expanded to include younger, healthier patients who desire smaller incisions and earlier weightbearing.

Coifman O,  
Bariteau JT,  
Shazar N,  
Tenenbaum SA

[Lateral malleolus closed reduction and internal fixation with intramedullary fibular rod using minimal invasive approach for the treatment of ankle fractures.](#) *Foot Ankle Surg.* 2019;25(1):79-83. doi:10.1016/j.fas.2017.08.008

- This study focuses on the Acumed Fibula Nail.
- Assessed the treatment of lateral malleolar ankle fractures via the use of closed reduction internal fixation.
- Intramedullary fibular nails offer a satisfactory and safe procedure to establish good reduction and fixation of lateral malleolar fractures.
- Fibular nailing is especially beneficial for diabetics, elderly patients, and patients with soft-tissue envelope problems.
- The small skin incision and minimal soft-tissue dissection required for the nail offers fewer wound complications, less hardware prominence, and potentially a more stable mechanical fixation.



Tas DB,  
Smeeing DPJ,  
Emmink BL,  
Govaert GAM,  
Hietbrink F,  
Leenen LPH,  
Houwert RM

[Intramedullary fixation versus plate fixation of distal fibular fractures: a systematic review and meta-analysis of randomized controlled trials and observational studies.](#) *J Foot Ankle Surg.* 2019;58(1):119-126. doi:10.1053/j.jfas.2018.08.028

- Compared outcomes of intramedullary fixation (IMF) and plate fixation (PF) of distal fibular fractures.
- Meta-analysis of 26 studies with 1710 patients looked at overall outcomes of distal fibular fractures treated with ORIF vs IMF.
- Wound-related complications occurred significantly less frequently after IMF (1.7%) than after PF (15.1%).
- Fracture fixation option should be determined based on patient-specific factors and should consider the advantages of minimal wound-related complications of IMF and optimal fracture reduction of PF.

Walton DM,  
Adams SB,  
Parekh SG

[Intramedullary fixation for fractures of the distal fibula.](#) *Foot Ankle Int.* 2016;37(1):115-123. doi:10.1177/1071100715622392

- Study assessed the outcomes of intramedullary fixation for distal fibula fractures using the FibuLock® nail.
- Modern design changes and the use of locking screw technology have overcome many shortcomings of early-generation intramedullary fibular fixation devices.
- Fibular nailing requires less soft-tissue dissection and inherently less periosteal stripping and displays less hardware prominence.
- Intramedullary fixation of long bones has become the preferred method of treatment due to the shorter operating time and lower morbidity rates.
- There are fewer complications with intramedullary fixation (7%) than with traditional plate fixation (56%).
- Intramedullary fixation of fibular fractures can lead to faster healing, faster rehabilitation, and decreased hospital stays.

Rehman H,  
McMillan T,  
Rehman S,  
Clement A,  
Finlayson D

[Intramedullary versus extramedullary fixation of lateral malleolus fractures.](#) *Int J Surg.* 2015;22:54-61. doi:10.1016/j.ijsu.2015.07.697

- Reviewed the use of nails vs plate constructs for the fixation of unstable ankle fractures.
- Pooled data depicted a statistically significant lower risk of wound infections, hardware infections, and hardware removals.
- The rate of wound infections was higher for the plate group, likely due to the longer skin incisions required for traditional ORIF compared to the 1 cm to 2 cm incision required for nails.
- Quicker inpatient recovery and earlier discharge from hospital by an average of 2 days was reported in the nail group postoperatively.
- Significantly lower doses of pain medicine (specifically meperidine) were reported in the nail group postoperatively.



Bugler KE,  
Watson CD,  
Hardie AR,  
Appleton P,  
McQueen MM,  
Court-Brown CM,  
White TO

[The treatment of unstable fractures of the ankle using the Acumed fibular nail: development of a technique.](#) *J Bone Joint Surg Br.* 2012;94(8):1107-1112. doi:10.1302/0301-620X.94B8.28620

- This study focuses on the Acumed Fibula Nail.
- Reviewed the results of 105 patients with lateral malleolus fractures.
- The fibular nail required a significantly smaller incision (1 cm compared to 8 cm for lateral plating), which also coincided with less soft-tissue dissection.
- Found the fibular nail to be an attractive alternative for the fixation of unstable ankle fractures.
- Good radiological outcomes were achieved in 97% of cases, with a mean Olerud and Molander Ankle Score (OMAS) of 87.

Tonks R

[Early experience with the FibuLock® nail: single surgeon results with the first 10 patients.](#) Arthrex, Inc. Data on file (LA1-00078-EN). Naples, FL; 2018.

- Article captured a single surgeon's experience with the FibuLock® nail.
- Incision required for nail implantation is approximately 80% smaller than the incision required for plate use.
- Nails were much less prominent under the skin than plates.
- Patients with both unimalleolar and bimalleolar fractures were able to weightbear much quicker due to the load-sharing qualities of the nail.

Ramasamy PR,  
Sherry P

[The role of a fibular nail in the management of Weber type B ankle fractures in elderly patients with osteoporotic bone--a preliminary report.](#) *Injury.* 2001;32(6):477-485. doi:10.1016/s0020-1383(01)00030-4

- This study focuses on the Acumed Fibula Nail.
- Reviewed fibular nailing of Weber type B ankle fractures in elderly patients.
- Concluded that fibular nailing in elderly patients can avoid the complications of standard surgical procedures.
- Advantages of fibular nailing in elderly patients include stable fixation of the lateral column, better fixation in osteoporotic bones, and minimal soft-tissue dissection.
- There were no infections in this small series.