

A PATIENT GUIDE

Ankle Fracture Surgery

Two modern fixation options patients should know about

Fibula nailing and TightRope fixation can provide strong, lower-profile repair for selected ankle injuries.



Kaitlin C. Neary, MD, FAAOS

Catalyst Orthopaedics & Sports Medicine

catalystorthoidaho.com

THE BASICS

Why some ankle fractures need surgery

A broken ankle can involve bone, ligaments, or both. If the ankle is unstable or the bones have shifted out of place, surgery may help restore the joint and hold it steady while it heals.

Two parts of the injury often guide the surgical plan

The fibula

The fibula is the smaller bone on the outside of your lower leg. It is commonly broken near the ankle.

The syndesmosis

The syndesmosis is the strong group of ligaments that holds the two lower-leg bones together just above the ankle.



An X-ray shows the fracture and the ankle's alignment.

What surgery is designed to do

- 1 Put the ankle bones back into the best possible position.
- 2 Hold the repair securely while the bone and ligaments heal.
- 3 Protect the skin and other soft tissues whenever possible.
- 4 Create a stable foundation for rehabilitation and return to activity.

INSIDE THE BONE

Fibula nailing uses a small incision and a hidden implant

A fibula nail is a slender metal implant placed inside the fibula. It works like an internal support rod. Small screws lock the nail in place and hold the broken bone in alignment.

Because the implant sits inside the bone, the surgeon may avoid the longer incision and more prominent plate used in traditional repair.

Why patients may prefer it

- ✓ A smaller incision over the outside of the ankle
- ✓ Less hardware directly under thin skin
- ✓ Potentially fewer wound problems in selected patients
- ✓ Strong healing and function in clinical studies



The nail sits inside the fibula and can be combined with syndesmosis fixation when needed.

Is it right for every fracture?

No. Fracture shape, bone quality, swelling, skin condition, and other injuries all matter. Some fractures are better treated with a plate or another method.

RESEARCH SUMMARY

7

RANDOMIZED STUDIES

586

ADULTS

Similar

OUTCOMES VS. PLATES

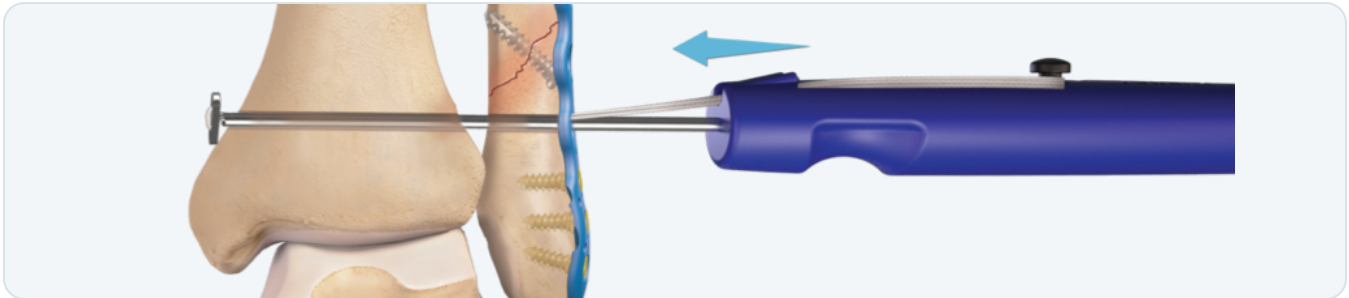
Across seven randomized studies involving 586 adults, fibula nails and plates produced similar healing and functional results. The pooled study found fewer infections with nails, but some nail designs had more hardware problems. Careful patient selection and surgical technique remain important.

Source: Zhang J, Luo R, Chen J. *J Orthop Surg Res.* 2024;19:542.

FLEXIBLE LIGAMENT FIXATION

TightRope stabilization supports the injured syndesmosis

A severe ankle fracture can tear the ligaments that hold the tibia and fibula together. If that connection is unstable, it also needs repair.



A strong suture connects small metal buttons on each side of the ankle bones.

How it differs from a syndesmosis screw

TRADITIONAL SCREW

Holds the two bones rigidly.

TIGHTROPE

A strong suture-and-button device that stabilizes the bones while allowing a small amount of natural motion as the ligaments heal.

- ✓ Lower risk of implant breakage than rigid screws in pooled studies
- ✓ Routine removal is usually not required
- ✓ May lower the chance of another operation for hardware removal

What the research suggests

Randomized studies have found good ankle function with TightRope fixation. Several studies also report better joint alignment and fewer repeat operations than screw fixation. The exact number and position of devices depends on the injury.

The device helps hold the repair. Accurate joint alignment and a complete evaluation of the ligament injury still determine the result.

ONE INJURY, TWO REPAIRS

A fibula nail and TightRope can work together

Some ankle fractures involve both a broken fibula and an unstable syndesmosis. In those cases, the fibula nail can support the broken bone while TightRope fixation stabilizes the injured ligament connection.

This combination keeps much of the hardware inside the bone and may reduce the amount of metal directly beneath the skin.



Your treatment plan is personal

Your surgeon chooses the repair after reviewing your X-rays, examining the skin and swelling, and testing the stability of the ankle. The decision also considers bone quality, activity level, medical conditions, and the exact fracture pattern.

BRING THIS PAGE

Questions to ask at your visit

- ☐ Is my fibula fracture a good match for a nail?
- ☐ Is my syndesmosis injured or unstable?
- ☐ Could TightRope fixation help me avoid a rigid syndesmosis screw?
- ☐ When can I begin motion, put weight on the ankle, and return to work or sports?
- ☐ What risks and alternatives apply to my specific injury?

SPECIALIZED ANKLE CARE

Modern options, chosen for your injury

As an orthopaedic foot and ankle surgeon, Dr. Kaitlin Neary uses current evidence and careful surgical planning to match the repair to each patient. When appropriate, fibula nailing and TightRope fixation can offer lower-profile alternatives to traditional plates and screws.

If you break your ankle, ask whether these options fit your fracture. The right repair should restore alignment, respect the soft tissues, and give you a stable path into rehabilitation.

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Learn more or request an appointment

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Selected medical references

1. Zhang J, Luo R, Chen J. Fibular nail versus plate fixation for ankle fractures. *J Orthop Surg Res.* 2024;19:542.
2. Hodgkins CW, Fleites J. Clinical outcomes after FibuLock fibular nailing. *J Orthop Trauma.* 2022;36:366-369.
3. Sanders D, Schneider P, Taylor M, et al. TightRope compared with screw fixation. *J Orthop Trauma.* 2019;33:531-537.
4. Shimozone Y, Hurley ET, Myerson CL, et al. Suture button versus syndesmotic screw fixation. *Am J Sports Med.* 2019;47:2764-2771.

This information is for general patient education. It does not replace an examination, medical advice, or a discussion of the risks, benefits, and alternatives for your injury. Every ankle fracture is different.