

# What You Need to Know About Ankle Bracing

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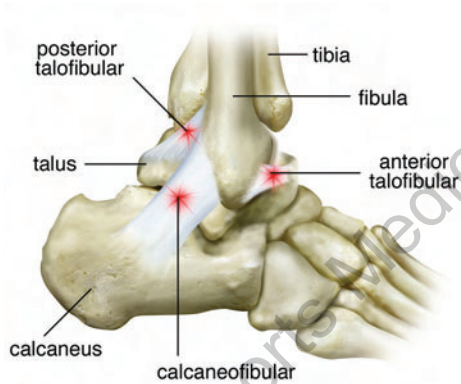
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# Why Brace?

Ankle injuries, specifically sprains, are one of the most common injuries experienced by physically active people. Approximately 25,000 people sprain their ankles on a daily basis according to the American Orthopaedic Foot and Ankle Society. Most ankle injuries happen as a result of rolling the ankle to the side and over stretching the ligaments or tendons that surround the ankle joint.



Ankle sprains are categorized by degree of severity. A first degree (mild) sprain is the stretching or minor tearing of ligaments causing the ankle to loosen. A second degree (moderate) sprain is the tearing of ligaments resulting in increased ankle loosening. A third degree (severe) ankle sprain is the complete tear of ligaments causing the ankle to be very loose and unstable. Once the support structures have been damaged, they become inefficient in providing support during athletic activities and activities of daily living. Therefore, your physician may suggest you use an ankle brace to aid the ankle's structural stability, balance, and functional movement patterns until these deficits can be corrected through rehabilitation therapy or surgical intervention.

The most current evidence reveals that the use of ankle bracing or athletic tape applied by a certified athletic trainer has decreased the incidence of initial ankle injuries and re-injuries, as well as reducing the severity of ankle injuries that did occur.<sup>1-5</sup> Bracing or taping protects the ankle by restraining lateral motion and proprioceptive feedback. Studies have shown favorable results for both bracing and taping. However, the disadvantage of taping is that it needs to be applied by a certified athletic trainer and it will stretch during activity and lose some of its rigid support.<sup>5</sup> The properly fitted ankle brace will maintain its rigidity much longer and can be re-adjusted during activity to ensure its effectiveness. This brochure will review four categories of functional ankle braces your evaluating physician, physical therapist, or certified athletic trainer (ATC) may recommend: athletic tape, compression braces, semi-rigid braces and rigid braces.

## Tape or Brace?

Currently, many physicians, physical therapists, and certified athletic trainers suggest the use of athletic tape or bracing for the prevention of ankle injuries and the protection of previous injuries. An external ankle support helps to decrease the incidence of repeat (chronic) ankle sprains by aiding balance and structural stability during activity. Additionally, an ankle brace will improve muscle reaction time and provide an improved sense of what your ankle is doing while in motion (proprioception), decreasing the risk of injury.



Several factors impact the efficacy of taping and bracing:

- The materials that compose the brace or taping technique
- The application of the brace or tape
- The design of the brace.

The optimal effectiveness of athletic tape is only realized when applied by a certified athletic trainer using the proper technique and materials for the injury. The tape will loosen as activity duration increases. Ankle braces loosen similar to tape; however, braces may be adjusted to improve stability, whereas, tape cannot be adjusted and must be reapplied.

A common misunderstanding is that the ankle brace will slow or decrease performance, yet there is minimal to no effect on activity. A properly applied ankle brace will allow for best performance with the protection necessary for return to activity following an ankle injury or to prevent reinjury.

# Types of Ankle Braces

## Compression Brace:

Neoprene or elastic compression braces are used in aiding the treatment of mild ankle sprains and tendinitis. Elastic braces consist of a light weight stretchable material and provide the ankle joint with compressive support. Compression enhances joint support and balance, while still allowing the motion necessary for daily functions and sport activities.



Compression

The benefits of compression braces include:

- Maintains ankle joint warmth, decreasing muscle stiffness and associated discomfort during activity
- Provides compression which reduces swelling associated with injury
- Fitted easily by measuring ankle joint size or shoe size
- Universal fit for either the right or the left ankle

## Semi-Rigid Brace:

### Lace-Up

The lace-up ankle brace is one of the most common types of semi-rigid ankle braces. These braces are used for mild to moderate ankle sprains or for the prevention of repeat ankle sprains that occur with activity. The lace-up braces are designed to limit the ankle from rolling side to side as well as the up and down ankle motion, theoretically providing “full ankle support”.



Semi Rigid Lace up

These braces are available in a variety of types, including those with and without figure-8 strapping systems. Similar to the compression braces, the lace-up brace will fit according to ankle

## Types of Ankle Braces - cont.

joint size or shoe size. Brace fitting and adjustment is provided by some type of lace-up / Velcro system. The braces may have an option to insert semi-rigid supports for added lateral and medial stability. The braces with external straps provide a figure-8 strapping system that allows for rapid tightening without re-lacing the entire brace. The benefit of the straps is increased ankle support. These braces are reusable, but require more time to put on and take off than the semi-rigid hinged brace, especially those with the figure-8 strapping system.

The benefits of lace-up braces include:

- Combines durability with a comfortable, lightweight feel
- Provides more support than the compression brace and fits in most shoes
- Universal fit for either the right or the left ankle

### Hinged

The hinged ankle brace is another type of semi-rigid brace. These braces are designed to prevent rolling the ankle from side to side without affecting the up and down motion of the ankle. They will feature padded sides for increased comfort and either one or two Velcro straps for quick adjustment and easy on and off application.



Hinged

The benefits of hinged ankle braces include:

- Increased side to side support compared to the lace-up brace
- Designed to fit in most shoes
- Constructed to fit contour of the right or the left ankle

## Types of Ankle Braces - cont.

### Rigid Brace:

The rigid stirrup ankle support is perhaps the most widely used brace in sports today due to the effectiveness and versatility in treating ankle sprains, stress fractures, and (chronic) repeat ankle sprains. It is made of a hard plastic shell that extends up both sides of the ankle and is strapped into place with easily adjustable Velcro straps.



Rigid Brace

The rigid brace provides more side to side support than the semi-rigid braces, yet may be difficult to fit in some shoes. After the ankle heals, a more functional lace-up ankle brace is recommended to prevent further injury.

The benefits of rigid braces include:

- Increased side to side support compared to the semi-rigid brace
- Provides compression which reduces swelling associated



# Ankle Bracing Tips

## ADVANTAGES OF BRACING:

- Support
- Stability
- Balance
- Improved functional movement
- Decreased pain

## WEARING YOUR BRACE:

- Check brace fit – snug and comfortable
- Straps and/or laces should be tightened to comfortable tension
- Tight, comfortable straps and laces make supportive braces
- Walk around and recheck brace fit prior to activity
- Adjust brace fit during activity to ensure support
- If your brace is not comfortable or you are experiencing problems contact your physical therapist or certified athletic trainer.

## CARING FOR YOUR BRACE:

- Check regularly for holes, cracks and excessive wear-and-tear, replace any broken or damaged pieces
- Hand wash Neoprene, liners, pads and straps in cold water and mild detergent and air dry
- Braces can be used in fresh and salt water but must be rinsed with fresh, clean water and air dried



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