

## Managing Acute Ankle Sprains

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Given that the ankle needs to perform complex movements under high forces during normal walking, it isn't surprising ankle sprains are common injuries. This can be especially relevant to patients whose participation in recreational activities or sports requires running and jumping. Proper evaluation and management in the initial stages of an ankle sprain are essential in preventing chronic instabilities. With appropriate care, including stabilizing orthotic support and exercise, significant improvements in stability and function can be achieved, even in patients with long-standing ankle problems.

### Initial Acute Care

The modern PRICE formula (Protection, Restricted Activity, Ice, Compression, Elevation) spells out recommended early treatment of ankle sprains. Even with severe sprains, these procedures have been shown to speed recovery and return to sports participation. With the injured joint protected, patients can be encouraged to continue their activities (with some restrictions) rather than face the now-discredited bed rest. In the case of ankle sprains, this entails the use of a lightweight, laterally rigid brace that protects against inversion and eversion. If a patient has been placed in a walking cast rather than a mobilizing brace, frequent, prolonged Achilles-tendon stretching must be performed in order to prevent shortening.

### The "PRICE" Formula for Acute Injuries

- Protection of the injured joint (brace or support)
- Restricted Activity (contra-lateral exercising)
- Ice (cryotherapy)
- Compression (elastic)
- Elevation (above heart level)

### Conditioning and Exercise

Exercises for the damaged ankle are not appropriate during the initial acute stage. General full-body conditioning should be continued as long as undue stress is not placed on the healing ankle. (A stationary cycle with pedal straps is recommended.)<sup>1</sup> In addition, vigorous exercise of the opposite ankle's muscles ("cross education" or "crossover") provides a healing stimulus and results in a more rapid return to activities.<sup>2,3</sup>

As healing progresses, patients should begin to perform nonresistive active exercises concentrating on mobility of the injured ankle. Once the joint can be passively moved through a normal range, isotonic resistance exercising of the peroneal muscles using elastic tubing should be started.<sup>4</sup> Initially, these exercises should be performed in a sitting position, with the heel resting on the floor, to reduce the forces on the ankle joint while still maintaining functional alignment.

As strength builds, the patient should progress to standing during the exercises in order to restrain the ankle support muscles in a closed-chain position. Furthermore, sport-specific exercises should be introduced to ensure the athlete has all the strength and mobility required to participate in sports.

### Regaining Coordination

One reason some ankle injuries become chronic or recur is the loss of normal coordination of the muscles surrounding the ankle, rather than simply their strength.<sup>5</sup> An easy test is to have the patient stand on each leg with their eyes open and then closed. Check to see if there is less capability of the injured leg. The one-legged stance and use of a "wobble board" might be required to regain normal proprioceptive coordination. An athlete should be able to demonstrate a "stork stand" for a least one minute on the injured leg before being allowed to return to full competition.<sup>6</sup>

### Orthotic Support

In many patients, custom-made orthotics also can be helpful in preventing future (and often more disabling) damage to the injured ankle. A careful evaluation of foot and ankle biomechanics will reveal some patients have underlying anatomical or functional problems. Particularly in the case of athletes, the use of stabilizing, custom-made orthotics with good torsional rigidity should be considered. Orthotic support and control of inversion/eversion are necessary and highly recommended when there is a deficit in biomechanical function.<sup>7</sup>

### Successful Ankle Management

Studies demonstrate that even in severe ankle injuries, a well-informed, conservative and active treatment approach can result in good outcomes.<sup>8</sup> Using active rehabilitation concepts, most DCs can manage acute ankle-sprain injuries very well. In many patients, custom-made orthotics will be needed to help prevent future problems and joint degeneration.

### References

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