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# What To Do After An Ankle Sprain

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Ankle sprains are the most common acute injury in sports. They are also the most common injury in volleyball. Although they can occur in a number of ways, in volleyball they are most often the result of landing on the outside part of the foot (inversion injury). This causes a sprain of the outside (lateral) ankle ligaments. Frequently, a player may jump at the net and land on an opponent's foot, causing his/her weight to roll over the outside part of his/her own foot. If this force overwhelms the ankle stabilizing muscles, the lateral ankle ligaments are stretched and injured.

After an acute ankle sprain, immediate steps should be taken to control swelling and inflammation. These steps are most effective if begun within minutes of injury, and will allow for easier rehabilitation and earlier return to play. An easy way to remember these is to use the pneumatic RICE, which stands for Rest, Ice, Compression, and Elevation, respectively.

Although absolute rest of the ankle may be necessary in severe injuries, lesser injuries may only require "relative rest." A decrease in the intensity, duration, or frequency of activity (especially jumping) may be sufficient to stop the cycle of inflammation and swelling, allowing the injured tissues to heal.

Ice is crucial in decreasing the initial swelling and inflammatory response. The sooner this is initiated the better, and it should be continued for at least 48-72 hours after the injury. The first day, the ankle should be iced 15-20 minutes at a time, as frequently as every hour. Place a towel or other cloth between the ice bag and the skin. Icing for more than 20 minutes at one time can be damaging to the tissues, however, and should be avoided.

Compression and elevation are equally as important, and frequently overlooked. The pressure applied by an ACE wrap on an injured ankle is quite effective in minimizing the initial swelling after injury. A lace-up ankle brace can be helpful here, and this support device can be worn throughout the course of rehabilitation, as well. Similarly, keeping the injured ankle elevated at or above the level of the heart uses the effects of gravity to minimize swelling.

## Rehabilitation

After the initial inflammation has been treated, rehabilitation of the injured ankle should begin. An athletic trainer or physical therapist is a valuable asset to manage recovery, but coaches and players can often direct rehabilitation on their own. This process typically involves several successive steps. There is one important principle to keep in mind: any activity that results in increased swelling or pain should be curtailed, and the athlete should return to the previous step in the process.

The first exercise step is range of motion. A simple activity to regain range of motion is to use the big toe to write the capital letters of the alphabet (See Fig. 1). Strengthening the foot muscles should also be done at this stage. "Towel curls" can help accomplish this goal (See Fig. 2). Place a towel on the floor with the toes on the leading edge. Then curl up the toes and use the tips of the toes to gather the towel up under the foot.

The next step is isometric strengthening of the muscles that support the ankle. This can be done by sitting with the leg extended on a couch and the toes pointing up (See Fig. 3). First, sit with the outside of the leg against the couch. Then press outward with the "little toe side" of the foot against the couch (external rotation or abduction). Next, place a pillow between the feet (See Fig. 4) and press against the pillow from both sides with the big toes (internal rotation or adduction).

Finally, neuromuscular rehabilitation involves strengthening the muscles that support the foot and ankle while using them to balance on the injured leg. This can be done several different ways. One is to stand on the injured ankle while the athlete crosses the arms in front and balances for as long as possible (See Fig. 5). Then the same thing can be done with the eyes closed. Another option is to stand in a doorway facing forward, balancing on the injured leg and use the hands to push the torso from side to side. The athlete must "catch their balance" using the ankle muscles. A course of rehabilitation should continue for at least 10 weeks following the ankle sprain.

Another exercise (See Fig. 6) involves standing on the injured foot and touching the big toe of the opposite foot on the spot marked #1 on the diagram 10 times. Repeat for spots #2 through #4.

One other question that physicians are asked frequently is whether ankle bracing prevents ankle sprains. There are now a couple of studies that answer this question; indeed, braces are helpful in preventing repeat ankle sprains. Wearing a brace does not seem to decrease the chance of injury in ankles that have not been previously injured. They do decrease the chance of injury to ankles that have been sprained before, especially within the last year after the injury. The first year after a sprain is the time when the ankle is most vulnerable to re-injury. So a reasonable recommendation is to wear a supportive brace (lace-up, stirrup or air stirrup) for volleyball for at least a year following an ankle sprain.

Not every ankle sprain needs formal physical therapy. Athletes may progress through these steps with varying speed, but if they fail to progress, then evaluation by a sports medicine physician and a course of physical therapy should be considered.

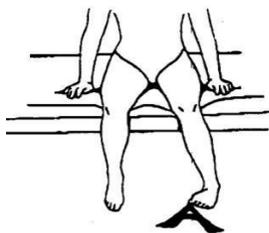


Fig. 1: ANKLE ALPHABET

Using your ankle & foot only, trace the letters of the alphabet from A to Z. Do one time and repeat two sessions per day.

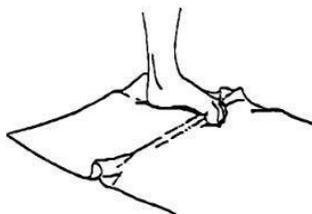


Fig. 2: TOE CURLS

With your injured foot resting on a towel, slowly bunch the towel up as you curl your toes. Do one time and repeat two sessions per day.

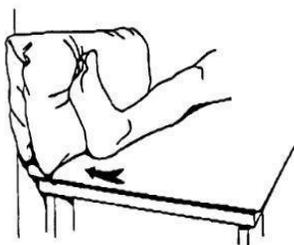


Fig. 3: EVERSION

With a rolled towel against a wall, press the outer edge of the foot into the pillow. Hold for 5 seconds. Relax and repeat 15 times. Do two sessions per day.

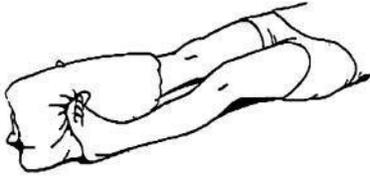


Fig. 4: INVERSION

With a rolled towel between the feet, press the inner edges of the feet into the pillow. Hold for 5 seconds. Relax and repeat 15 times. Do two sessions per day.



Fig 5: ONE FOOT BALANCE

Balance on the injured foot, with eyes open and then repeat with eyes closed. Hold as long as you can. Relax and repeat 5 times. Do two sessions per day.



Fig. 6: BALANCED TOE TOUCHES

Balance on the injured foot, then touch the big toe of the other foot on the spot marked #1 ten times. Repeat for spots #2-#4. Do two sessions per day.