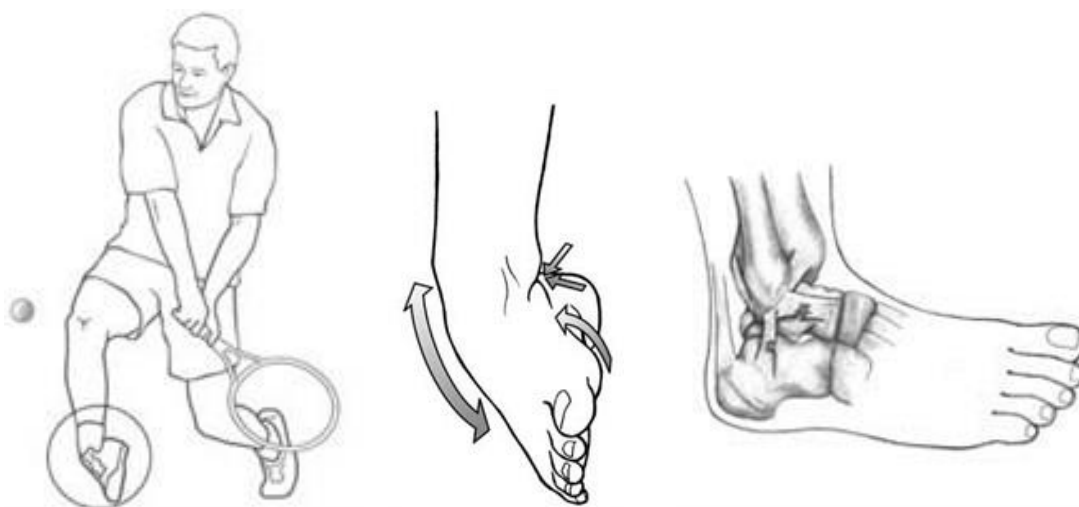


ANKLE SPRAIN

Diagnosis

A sprained or twisted ankle is the most common tennis injury. In most cases, the injury is caused by landing on the outside of the foot, with the foot turning too far inwards. The relatively weak lateral ankle ligaments are then injured (Figure 1, 1a and 1b).



Figures 1, 1a and 1b. Injury to the lateral ankle ligaments.

An injury of the much stronger ligament on the inside of the ankle (medial ankle ligament) is far less common (5-10% of cases). Depending on the severity of the injury, the ligaments may be overstretched or torn, resulting in instability of the ankle. The symptoms are pain and swelling around the ankle, mainly on the outside, later followed by discoloration of the skin.

First aid

Perform the following as quickly as possible, during the first 48 hours:

- Rest (immobilisation). Do not play tennis and do not lean on the ankle.
- Cool the painful area directly with ice, a cold pack or cold running water for 10 to 15 minutes. Repeat this several times a day (aim for 20 minutes every 2 hours). Do not place the ice directly on the bare skin, but cover the ice or cold pack with a towel.

- Apply a compressive bandage immediately. This is even more important than cooling with ice, as it will stop the bleeding and prevent severe swelling of the ankle due to an accumulation of blood. The ankle cannot be taped until the swelling subsides.
- Elevate the lower leg and the ankle above the heart whenever possible (i.e. lie on the floor and place the entire leg on several pillows to decrease swelling).

Immediate and adequate first aid is important to ensure fast healing. In more serious cases, a visit to the doctor is recommended to rule out a fracture and to determine whether crutches or a boot are necessary. The doctor may refer the patient for physiotherapy.

How to Ensure the Best Recovery

Rehabilitation can begin when most of the pain and swelling have disappeared (after 2 to 5 days). During the build-up phase, pain is a signal to rest. Do not cross the pain threshold, as this will slow down the healing process. The build-up of the training load takes place in three stages, as described below, together with some practical tips.

Stage 1. Improvement of Normal Function

- As much as the pain allows, you may stand on the foot. Crutches can be used to support the ankle/foot during the first week, but try to walk normally, from heel to toe.
- Sit down in a chair. Lift the injured foot and circle the ankle 10 to 20 times. Make the circles slow and wide, first with a clockwise set, then an anti-clockwise set.
- Sit on a smooth surface. Lay a towel on the floor in front of you. Put the injured foot on the towel, with both the heel and the toes touching it (Figure 2). Move the feet with the towel alternately forwards (extend the knees) and back (bend the knees). Both the heels and the toes should stay in touch with the ground.



Fig 2. Moving feet over a towel

- Stand straight and walk on your heels. The forefoot and mid-foot must not touch the ground. Take small steps. Then walk on your toes. Finally, walk on the inside of your feet, pressing the big toe firmly into the ground.

- Stand on the injured foot, with arms spread to keep your balance (Figure 3). Shut your eyes and try to still keep your balance.



Fig 3. Balancing on the injured foot

- Sit on a chair with your feet on the floor (Figure 4). Tie one end of an elastic tube to the chair. Wrap the other end of the tube under the middle of the injured foot. Bend the knees 90 degrees. Move the foot against the resistance of the elastic tubing outwards and try to keep the outer side of the foot facing up. Repeat 10 to 20 times. Try to hold the knee and upper leg stable.



Fig 4. Using the resistance of elastic tubing

- Swim or cycle for 15-30 minutes each day to preserve overall physical fitness.

Stage 2. Build-up

As soon as the player can perform the above exercises well and can walk without pain, he/she can start building up strength for a return to sport.

- Slowly rise onto your toes and hold this position for 10 to 20 seconds. Return to the starting position. Perform this exercise with first with both feet together, then using the injured leg only.
- Stand on the injured leg. Bounce a tennis ball against a wall or on the floor and catch it again without losing your balance. Try to vary the point of the bounce as much as possible. A variation on this exercise is to stand on one leg and try to juggle with one, two, three or even more balls.

- Take quick, small steps, alternating the injured and uninjured legs.
- A very good exercise for the muscles around the ankle and foot is skipping. This should be done with care, however. It is important to build up this exercise gradually, from one minute a day to 10-15 minutes daily. Use a soft surface, such as grass or carpet, and wear either tennis or running shoes.
- If this goes well, you can start jogging. Start with an easy warm up, then progress to straight running, followed by the introduction of starts and stops into your running exercises.
- Finally, include sprints and jumping exercises.

Stage 3. Return to Play

Now you are ready to go back on court again. Initially, the ankle should be taped or lace-up brace should be used, to help prevent re-injury of the ankle ligaments.

- Start against the practise wall or with mini-tennis (playing within the service lines). Gradually increase the area of play and move back towards the baseline. Make sure you use small steps to position yourself correctly for the ball.
- This can be followed by volley exercises.
- After 1-2 weeks, you can start including exercises in which you run longer distances to the ball (tennis drills, from side to side).
- Include low volleys, followed by the serve and overhead.
- As soon as you can hit a jump smash without problems, you can start playing practice matches.
- Take care with explosive or unexpected movements, or strokes in which your foot is perpendicular to the running direction, such as wide backhands.
- In this phase, it is important to increase the loading capacity of the ankle, to regain your rhythm and to win confidence.
- Once you have been able to play practice matches for two successive weeks without problems, you will be ready for match play again.

Preventing Re-injury

It is not always possible to prevent an ankle sprain, but the risk can be reduced by paying attention to the following:

- Perform a complete warm-up before each practice or match, and a cool-down afterwards, both lasting 10-15 minutes. Pay attention to the correct performance of stretching exercises. Stretching exercises for the calf muscles are especially important.
- Ensure a gradual build-up of training, so the body can get used to the extra load.
- Wear firm, stable, well-fitting tennis shoes and pay attention to how the shoelaces should be tied. An ideal tennis shoe should have good shock absorption, sideways stability, feeling with the surface (grip) and optimal comfort.
- Remove all the balls from the tennis courts, to avoid tripping over them.
- Improve your physical condition with regular jogging or cycling. Most injuries tend to occur towards the end of the match or at the end of the day, when you are getting tired. The better your physical condition, the lower the risk of injury.
- Improve proprioception and strength of the muscles around the ankle with co-ordination and balance exercises. Standing on one leg is a particularly useful exercise. The exercises can be made more difficult by using a wobble board.
- A tape, brace or high shoe will help protect the ankle ligaments, especially during the first three months after the injury, and have been shown to reduce the risk of re-injury. Contrary to common belief, this does not weaken the ankle.