



Turf Toe

Turf toe or first metatarsal-phalangeal (MTP) joint sprain is an injury to the joint capsule and ligaments that connect the big toe to the rest of the foot, causing pain at the ball of the foot. The joint consists of nine ligaments, four bones and three muscular attachments. Ligaments are bands of tissue that connect bones to one another. The severity of the injury depends upon the degree of damage that occurs to the ligaments and joint capsule. Injury can range from a mild stretch to a complete tear.

- Grade I: Stretched ligaments and joint capsule
- Grade II: Partially torn ligaments and capsule
- Grade III: Complete tear of ligaments and joint capsule, with possible joint dislocation

Causes

Turf toe occurs when the big toe gets bent too far upward (hyperextension) or downward (hyperflexion). This can occur with jamming the big toe, pushing off a hard surface, or pushing off repeatedly from the ball of the foot when running or jumping. As artificial turf became popular in the 1960s, the incidence of MTP joint injuries also increased. This is because artificial turf provides poor traction, increasing the chances of hyperextension injury to the big toe, which is why the injury is called "turf toe." Dancers and gymnasts that repeatedly stand on their toes in relevé can also experience turf toe due to chronic stretch and strain to the MTP joint ligaments and capsule.

Symptoms

There will be pain at the base of the 1st toe that is worse with running and jumping. There may also be some swelling and stiffness. Symptoms depend on severity of injury.

- Grade I sprains have tenderness at the ball of the foot.
- Grade II sprains have some swelling and bruising, and some limitation of joint motion.
- Grade III sprains have a greater degree of pain, swelling and bruising, and significant limitation of joint motion.

Diagnosis

Turf toe is diagnosed based on your mechanism of injury and physicians' examination of your foot. Imaging studies are not required to make the diagnosis, but x-rays of the foot may be performed to evaluate for other causes of foot pain. An MRI may be performed to confirm the diagnosis or determine the extent of the injury.

Treatment

Initial treatment consists of rest, elevation, ice, and anti-inflammatory medication. Your doctor may prescribe a stiff-soled shoe, walker boot and/or crutches in order to reduce the stress on the joint and allow the tissues to heal. Once the pain and swelling have subsided, physical therapy can be helpful to stretch the 1st MTP joint with range of motion exercises. This can help prevent hallux rigidus, a condition that occurs when the joint becomes permanently stiff and cannot move properly. Hallux rigidus can limit an athlete's ability to play sports that require a lot of running. Surgery may be recommended for turf toe if symptoms do not improve after several months of rest and physical therapy, if joint range of motion is severely limited, or if there are associated injuries such as a capsular avulsion fracture.



Returning to Activities & Sports

The joint capsule heals in 2-3 weeks for grade 1 sprains, 4-6 weeks for grade 2 sprains, and 6-12 weeks for grade 3 sprains. Upon return to physical activity, it is helpful to tape the toe and/or use a stiff soled shoe insert to limit motion of the big toe. Competitive athletes with grade 1 sprains may be able to return to physical activity 1-2 days after therapy begins if a stiff-soled shoe insert is used and the toe is taped. Grade 2 and 3 injuries usually require a longer period of rest. Your doctor can help you determine the extent of your injury and the rest period.

Prevention

Athletes with turf toe are prone to re-injury. Taking the following precautions can help prevent a recurrence.

- Tape the big toe to limit motion during sports.
- Use stiff shoe inserts and/or stiff soled shoes.
- Play on natural grass.
- Use cleated shoes only when appropriate. They have a built-in plastic sole that has more rigidity than a tennis shoe and therefore increases the risk for turf toe.