



# MANAGING ANKLE PAIN IN GYMNASTICS

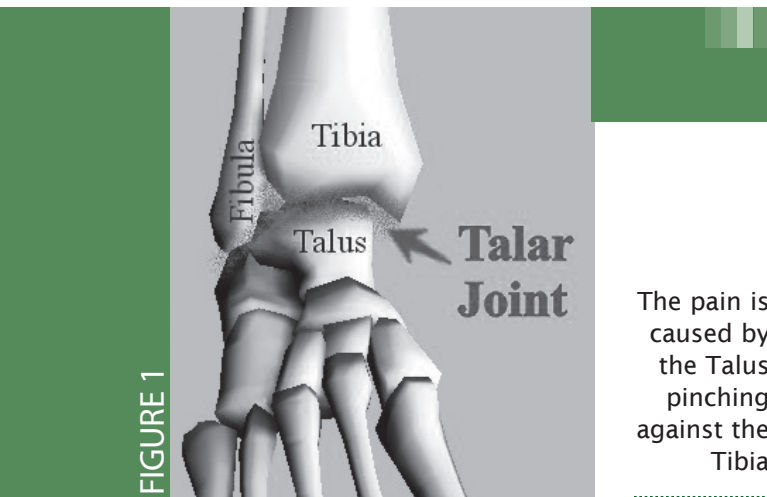
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**A**nkle pain is very common in gymnastics. Tumbling, jumping and landing without the support of athletic shoes put excessive stress on the ankle joint. Many gymnasts experience ankle pain on a daily basis and most are able to push through it until it becomes so painful it affects performance. Most people think of ankle pain as a result of a sprain or "I rolled my ankle." Many times this is true, but this article will examine anterior ankle pain. Anterior ankle pain is located between the ankle bones on the front side of the ankle. The pain is caused by the Talus pinching against the Tibia

## Causes of anterior ankle pain

Acute anterior ankle injuries are commonly caused by landing short which can actually cause a bruise to the surface of the bone (fig.1). Chronic irritations stem from repeated jumping, landing and tight calf muscles (gastroc/soleus) due to overemphasis of plantar flexion (point). Over time, calf tightness decreases the ankle joint's ability to glide posteriorly (back) which increases the "pinch" between the talus and tibia. This is not to say that having a gymnast in a point position is bad. Point position is a very important part of the art of gymnastics, but over time can cause an imbalance in the lower extremity strength, flexibility and joint mobility. You can identify an imbalance by measuring the amount of dorsiflexion or looking at the ability to squat and land. Ankle dorsiflexion needs to be at least 10-15 degrees with the knee straight and 15-20 with the knee slightly bent. When squatting, you will see an inability to keep the heels flat on the ground and the feet may turn out. When landing you will see an increase in knee movement in front of the toes, toes may turn out and knees may cave inward (fig 2). Not only will repetitive landing like this increase the risk of anterior ankle pain, it also increases the chance on knee, hip and back pain.



The pain is caused by the Talus pinching against the Tibia

Figure 1.

## Signs and symptoms

Symptoms include pain with any activity that forces the foot into dorsiflexion (toes toward shin), which includes landings and calf stretches. It usually begins with soreness but can progress to significant pain, swelling and loss of function. Early identification and treatment can significantly decrease the incidence of a more significant acute injury. It is important to educate gymnasts to speak up when calf stretching and landing hurt or when they don't feel a stretch in the calf at all because it feels like they are stuck in the front.

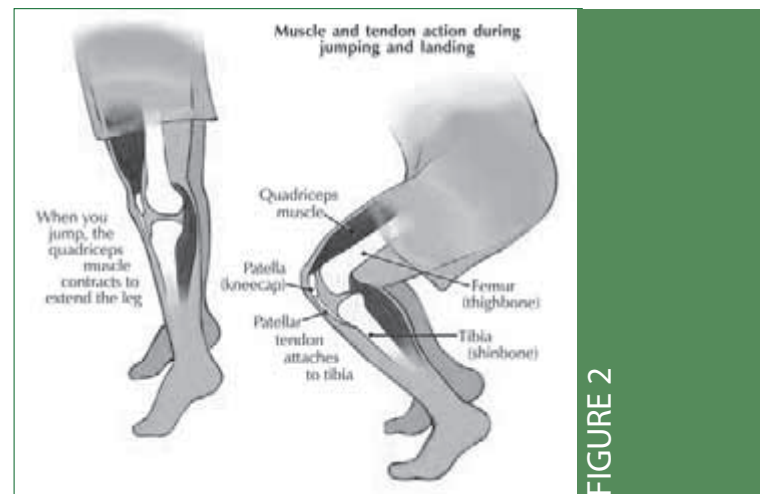


FIGURE 2

St. Vincent Hospital and St. Vincent Sports Performance in Indianapolis, Ind., are official service providers to USA Gymnastics. Call 317-415-5747 or visit <http://sportsperformance.stvincent.org>

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## Treatment

Acute ankle injuries that cause pain with walking or any gymnastics skill needs to be evaluated by a physician to rule out damage to the bony surfaces. Treatment includes reducing the inflammation with ice and medication. Exercises should be done to increase ROM, joint mobility and foot/ankle strength. Activities should be limited until pain is minimal with walking, running and landing.

Chronic soreness needs to be addressed by working on correct landing technique, increasing ankle joint mobility, soft tissue massage and stretching to the calf and foot/ankle strengthening (fig 3-8). Ankle joint mobilizations are routinely done by athletic trainers and physical therapists by posteriorly gliding the foot/ankle while the athlete ankle pumps (fig. 3). Soft tissue massage, foam rolling or using "the stick" to

improve calf pliability enhances the ability of the stretches to increase range of motion (fig. 4 & 5). Foot/ankle strengthening exercises such as balance activities and elastic band exercises in 4 directions (pulling in, out, up and down) are needed to increase ankle stability and control (fig.6 & 7). Finally, exercises to improve squat mechanics and landing are very important to decrease front side dominance and minimize anterior pinching of your ankle joint (Fig.8).

## Conclusion

Chronic anterior ankle pain can limit an athlete's ability to perform, but it is preventable. Even the extent of an acute injury may be decreased if good landing form is practiced and flexibility, strength and joint mobility is maintained. ✖

FIGURE 3



FIGURE 4



FIGURE 5



FIGURE 6



FIGURE 7

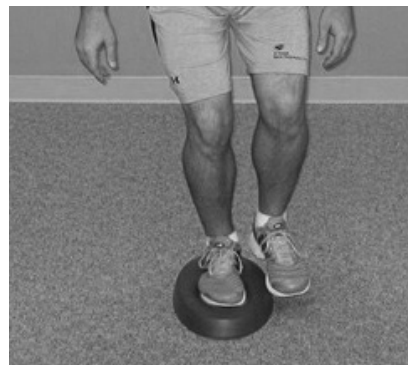


FIGURE 8

