

Foot

Calcaneal Apophysitis/Sever's Disease

- An injury to the calcaneal (heel) growth plate where the Achilles tendon inserts/attaches to.
- Sever's Disease is similar to Osgood Schlatter's Disease only it occurs in the heel rather than the knee.
- This occurs only in growing or skeletally immature gymnasts. Gymnasts who are done growing have closed growth plates, and cannot get this injury.
- The gymnast will have pain at the posterior (back) and medial (inside) aspect of their heel if they have Calcaneal Apophysitis/ Sever's Disease. The gymnast will also explain that the pain occurs whenever he/she jumps, lands, impacts, and runs.



How do you get this?

This injury occurs from repetitive jumping/pounding, tight calf muscles, improper landing mechanics, and repetitive pulling on the Achilles tendon. It can also occur from the calcaneal apophysis experiences a combination of direct impact and opposing forces from the gastrocnemius complex and plantar fascia.

Physical Exam

During an exam you may have tenderness to palpation (touch) on your heel, decreased calf flexibility, and a positive squeeze test (pain with squeezing your heel).

Diagnostic Images

An x-ray may be ordered to evaluate your bone. When getting an x-ray the clinician is looking to see if there is bone injury to the growth plate in your heel.

Treatment

- **RICE (Rest, Ice, Compression, Elevation):**

- **Rest:** Limit jumping, impact, pounding and landing/dismounts. You can still do uneven bars, as well as upper body, core, and back conditioning.
- **Ice:** Ice cup massage or lower leg ice submersion to just below your knee (10 minutes).
- **Compression**
- **Elevation**

- **Physical Therapy:**

- Strength: Foot intrinsic, ankle, calf, hamstrings, quadriceps, gluteus/hips.
- Range of Motion (ROM): Gastrocnemius, soleus, and hamstring.
- Modalities: Massage, e-stim, heat, ice, ultrasound.
- Other: Proprioception/balance and once allowed to impact, look at landing mechanics.
- Avoid: Impact/pounding and painful activities.

- **Braces:**

- Short walking boot
- Orthotics
- Heel cups (ankle tape with heel locking or for your sneakers) - [Tuli® Classic Heel Cup](#)
- [Cheetah Brace®](#) or the [X-brace®](#)

- **From time of diagnosis:**

- 2-6 weeks of avoiding all impact and pounding on the lower leg (until you are pain free with walking and can perform a single leg squat and single leg hop without pain). Once you are pain free you need to take at least however long you have been out to progress back with that same amount of time.
 - Example: If you are out of impact/pounding for 2 weeks you need to take at least 2 weeks to progress back to full gymnastics.

Injury Prevention

Injury prevention exercises should focus on Achilles/calf stretching, proprioception/balance, and proper landing mechanics.