



ARONSON FOOTCARE

Podiatric Medicine and Foot Surgery

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SEVERS DISEASE (CALCANEAL APOHYSITIS)

Sever's Disease, calcaneal apophysitis, is a common and painful heel condition experienced by growing children.



The site of the pain is the calcaneal epiphysis (white arrow in x-ray). This is the growth plate of the heel bone. This area is also the attachment of the Achilles tendon. Pain may result in inability to bear weight on the heel; resulting in a “toe walking” gait. Physical activities that involve running and jumping can make the pain worsen.

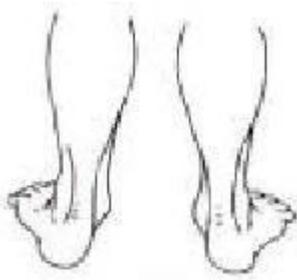
This condition is most common in children between 10 and 14 years of age. It is very similar to Osgood-Schlatters Disease seen in the knee.

Pain is felt in the back of the heel. Some shoes may make the pain worsen due to pressure on the sore heel. In some cases there may be pain that “wraps” around the heel, ending on the bottom of the foot near the beginning of the arch of the foot. This is due to the anatomy of the area. The Achilles Tendon does not end at the calcaneus but continues around and completes its insertion on the bottom of the bone where the long arch of the foot begins.

As with Osgood-Schlatters, Severs is caused by increased shearing forces on the growth plate. This causes mild swelling in the area and pain. As stated earlier, sports participation will worsen the symptoms, but they will often subside when activities are stopped.

Due to the rapid growth of 10 to 14 year olds muscle flexibility needs to be evaluated. Tight calf muscles (both the gastrocnemius and soleus) can exacerbate symptoms by adding to the shearing forces on the calcaneal epiphysis.

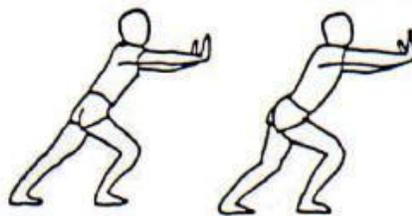
Also, children who experience this problem seem to be prone to a pronated foot. Walking on the inside of the foot, as shown in the graphic, can increase the shearing forces on the physal plate, increasing pain. Due to this orthotics to correct this problem may be used.



TREATMENT

Treatment of this condition is very simple.

1. Ice the affected area daily; even on days when the pain is not extreme. This helps to allay the inflammatory cycle, reducing overall pain. Ice should be applied for 20 minutes at least one time per day. Remember that real ice is preferable to reusable ice packs. Reusable ice packs can cause frostbite and their contents can be caustic to the skin. Ice massage is a very effective method for icing the heel.
2. Stretch the calf muscles. Since the calf is composed of two muscles (one that attaches above the knee, gastrocnemius, and one that attaches below the knee, soleus) two stretches need to be performed, one for each muscle. The image on the left stretches the upper calf. The image on the right shows how to stretch the lower calf. Hold the stretch for 10 to 15 seconds and repeat 3 to 5 times. This should be repeated 5 to 10 times daily.



3. Arch stretching can also be effective in treating the heel pain associated with Severs. Stretch the arch by placing the big toe on a wall, then sliding the foot to the floor.



4. Heel or calf raises should be performed to keep normal strength in the calf muscles due to decreased physical activity. Begin by performing 10 to 30 two-leg calf raises, progressing in

number as pain allows. If two-leg calf raises become too easy, one-leg calf raises can be performed.



5. Non-steroidal anti-inflammatory medications (Aleve® or Advil®) may be prescribed by the treating physician to reduce the inflammation and pain of the child.
6. Insertion of a heel lift into shoes may help to relieve some of the stress on the physal plate. Raising the heel will effectively lengthen the Achilles tendon, reducing the stress. Keep in mind that if a heel lift is used stretching becomes more important to counteract any physical shortening of the tendon that may occur.
7. Participating in sporting activities as pain allows. If it hurts, rest and ice, then return to play when the pain allows.
8. During sports participation, taping the arch or Achilles tendon may reduce stress and pain, thereby increasing performance.
9. ALWAYS wear shoes. As with Osgood-Schlatters, one of the most painful things is impact on the heel. If the child does not wear shoes the chances for impact to the sore area increases. When the heel is impacted, the pain level escalates significantly. Shoe choices should be made wisely: avoid high heels, heavy or “clunky” (often trendy) shoes and choose a well fit and supportive athletic-type shoe.

Sever's Disease is often self-limiting, it will go away when the child completes the growth cycle. In very few cases, the child will have to be removed from all sporting activities due to the level of pain and loss of function. However, most children with Severs will continue to participate in their sporting endeavors with modifications that allow for pain-free participation.