

SEVER'S DISEASE - WHAT YOU NEED TO KNOW

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Does Your Child Experience Heel Pain When They Run?

Running is supposed to be an enjoyable experience for children of all ages. The thrill of running faster and faster is exhilarating and rewarding. However, what happens when that joy of running is replaced with the pain of running?



Are You Familiar With This Scenario?

Your child is hobbling, limping, and grimacing in pain during or after running. And in some instances, they are reduced to tears during or after running. To overstate the obvious, this should not happen. Children should not experience heel pain when running or jumping. Avoiding putting full body weight on one leg when walking, standing, or going up and down stairs are strong indicators that your child is experiencing symptoms which are not normal.

Heel pain can be used to describe a variety of different diagnoses (Sever's disease, plantar fasciitis, stress fractures, Achilles tendonopathy, or retrocalcaneal bursitis)¹. The focus of this blog will be discussing Sever's Disease.

What Is Sever's Disease?

Sever's disease, also known as calcaneal apophysitis, is the result of repetitive microtrauma to the growth plate (apophysis) of the heel (calcaneus). Because children are still growing the growth plate is considered "open". During running the Achilles tendon pulls at the growth plate. If the repetitive stress is too great from running, the area where the Achilles tendon attaches to the heel, as well as the growth plate become inflamed and painful. The typical occurrence for Sever's disease is with children between the ages of 7 to 15 years.



First Steps

It is important to improve your understanding with the nature of the child's symptoms. These questions will help gather essential information:

- Where is their pain?
 - Determine the location of their pain (back of the heel, bottom of the heel, arch of the foot)
- Is there tenderness when the painful area is touched?
- Does their pain worsen with activity?
- Are they having difficulty walking / running?
- Do you notice an usual pattern when walking / running (e.g., limp)?
- When did their symptoms start?
- Are their symptoms worsening?
- Was there a recent growth spurt?
- Was there a recent and dramatic increase in their activity (running and jumping)?
- Has a new sport season begun?
- Are their shoes older than 6 months?
- Was there another recent (less than 2 months) injury to either leg?



If your child follows a pattern of symptoms based on pain location (heel), worsening symptoms, altered walking or running, new sport season, tenderness, recent growth spurt and increased activity there is concern for Sever's disease. This does not mean that a season is lost. Early treatment is the key. The earlier the treatment is initiated the sooner the symptoms will go away.

Initial Treatment

The most basic treatment options for Sever's disease include:

- Rest from activities that aggravate symptoms
- Ice the painful area (wrapped in a towel) for 15 minutes or apply an ice massage for 5 minutes
- Stretching - pain-free
- Strengthening for the leg - pain-free
- Balance exercises - pain-free



Management

The above conservative initial treatment should be effective at decreasing symptoms within 7 to 10 days. However, if the pain persists you should seek medical attention (medical professional). Remember early treatment is essential to avoid the risk of missing an entire season. You need to avoid the “no pain, no gain” mindset - this will only make the problem worse.

A thorough evaluation by a medical professional includes a detailed patient history and a specific survey for the lower body. The evaluation is crucial to determine what the actual cause of the injury is and helps develop the treatment plan.

You should also expect an advanced evaluation to also include:

- Comprehensive lower body flexibility testing
- Comprehensive lower body strength testing
- Hands-on assessment for range of motion and joint mobility
- Hands-on assessment of the painful area(s)
- Movement analysis with basic movements (squatting, stepping, walking)
 - If applicable - high speed video analysis with running
- Discussion and recommendations for age appropriate training and avoiding / preventing overuse
- Detailed home exercise program
- Explanation of clinical findings
- Anticipated recovery period based measurable goals



Successful recovery from injuries is criterion-based not time-based. If you are a sports fan you will appreciate the following example because you have heard it countless times. An elite, professional athlete does not directly return from injury to competition based on a time frame. They have to pass a collection of tests in order to be cleared for practice and light drills, then another collection of tests to increase the intensity of practice. This pattern continues until they are able practice at near game conditions, then the athlete is cleared to return to play.

Taking more than 10 to 14 days off from activity to rest while recovering from Sever's disease requires a plan. Immediately returning to the same level of training intensity following the period of rest is a recipe of disaster. This accounts for the high rate of re-aggravation of symptoms and where a season is lost. It is more safe and effective to determine return to play (running) through a systematic and gradual workout progression.

what can't I do

Youth athletes will be frustrated based on their inability to practice and compete. In order to shorten the recovery period, it is important that the youth athlete is active. The crucial point is that the activity is PAIN-FREE. Once the initial painful symptoms have decreased specific exercises need to be introduced to address their weakness, muscle tightness, coordination, etc. Treatment will also include specific hands-on techniques to address joint, tendon and muscular issues.

After exercises have been (pain-free) mastered then onto the next phase of their recovery. This is the basic principle of the criterion-based system. Once the criteria has been met, the next phase is introduced. Each individual navigates the phases at different speeds, and the rate of return to play from Sever's Disease varies based on the length of symptoms, severity of aggravation, strength, etc.

Properly managed Sever's Disease can be treated efficiently provided you are pro-active based on your newfound awareness and education related to this injury. If you have concerns or questions talk to a coach or medical professional who has experience with youth athletes.

1. Malanga GA, Ramirez-Del Toro JA. Common injuries of the foot and ankle in the child and adolescent athlete. *Phys Med Rehabil Clin N Am.* 2008; 19:347-371.

[Matt](#) is originally from Canada, and graduated from Queen's University (2002) and the University of St. Augustine (2017). He has over 16 years of working as a physical therapist, coach, teacher, and consultant. Currently, he is co-owner of [Evolve Physical Therapy](#) in Sherwood, Oregon.

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