



Tips From the Training Room

For more information contact the athletic training staff at Towson Sports Medicine, 410-828-4TSM (4876).

Running in Children and Adolescents

A study in 2007 estimated that more than 12 million children between the ages of 6 to 17 years old participated in running as a form of exercise. There are more than 65 national youth running clubs. Running is a great form of exercise; it can enhance physical fitness, coordination, and an athletes' sense of accomplishment. Coaches and trainers of young runners should keep the runners' overall health as the number one priority. Running programs, surfaces, shoes, techniques, and conditioning programs should be chosen to protect the child and minimize injuries. "Children involved in running can carry it on as a lifestyle that is maintained into adulthood," states Dr. Teri McCambridge.

Common Running Injuries:

Hip Apophysitis:

Hip apophysitis is an overuse injury. It is primarily caused by repetitive flexion of the hip flexor muscles. Runners with extremely tight hip and thigh muscles may be at a higher risk. This injury presents gradually and with dull achy pain near the front or side of hip. Runners describe pain worsening with activity and subsiding at rest. Treatment includes rest, ice, and rehabilitation focusing on stretching and strengthening.. Treatment will continue with sport-specific activities followed by gradual return to full activity. Athletes who continue to participate through pain are susceptible to an acute avulsion fracture of the apophysis with an explosive motion.

Patellofemoral Syndrome:

Patellofemoral stress syndrome (PFSS) is a term used to describe anterior knee pain or pain between the patella (kneecap) and femur. This injury presents gradually and with a dull achy pain behind or surrounding the patella. This injury may occur as a result of training errors including rapid change in activity intensity or duration, weight gain or growth spurt, weak musculature, poor flexibility, wearing old running shoes, malalignment, and/or flat feet. Activities that can worsen the pain are stairs, running hills,, squats, and prolonged sitting (theater sign). Pain can be described during and after activity. Treatment includes rest, avoiding activities that worsen the pain, anti-inflammatories such as Advil or Motrin, ice, strengthening and flexibility. A patellar stabilizing brace may be useful in some cases. If pain persists beyond 4 to 6 weeks despite activity modification, ice and anti-inflammatories, evaluation by a physician would be recommended.

Shin Splints:

Medial tibial stress syndrome, “shin splints”, is characterized by a gradual dull pain along the tibia of the lower leg. The pain results from inflammation of the soft tissue surrounding and attaching to the tibia. This pain may occur only after activity, before and after activity, or before, during and after activity. Shin splints will commonly occur early in the season due to improper preparation for athletic activity. This injury can also occur due to running on hard surfaces or multiple different surfaces poor or old shoe wear, foot conditions (flat feet or overpronation), and increase in body weight. Treatment includes rest, ice therapy (ice cup massage), anti-inflammatories, and a stretching/strengthening program. If the pain becomes very localized, is present while sitting, or first thing in the morning medical evaluation is required.

Stress Fractures:

Stress fractures are overuse injuries and a common injury for runners. They occur most often in the lower extremity due to the repetitive loading. The most common location for stress fractures are in the lower third of the tibia, but can also be found in the metatarsals or tarsals (foot), femur and the fibula (lower leg). Pain is described as sharp pain and point tender. Stress fractures are caused by similar errors as discussed above. Any female athlete who is diagnosed with a stress fracture should be screened for the, female athlete triad with questions about menses, calcium intake, diet, and family history of low bone density. Treatment and return to play is variable dependent on the area of injury. If you suspect you might have a stress fracture a medical evaluation should be scheduled.

Achilles Tendonitis:

Achilles tendonitis is an inflammatory condition of the Achilles tendon. This overuse injury is commonly found in long distance runners. Runners will present with swelling, thickening, and tenderness over the tendon with palpation. This injury can be caused because of improper training techniques (hills and uneven surfaces), conditioning, or over training. Other risk factors include tight calf musculature, older age and improper shoe wear. Treatment may include modifying or discontinuing activity until pain free, stretching and strengthening program, anti-inflammatory medications, walking boot or cast, and a gradual return to activity. Caution should be used with this injury because Achilles tendon ruptures can occur if this injury is ignored.

IT Band:

Iliotibial Band Syndrome is an inflammation in or surrounding the iliotibial band just above the knee joint on the outside of the leg. Runners may describe discomfort or pain starting a mile into run and increasing with uneven terrain. They may also describe pain going down stairs, a snapping sensation with squatting, and tenderness on the outside of their knee. Risk factors for IT Band are overuse, tight musculature, lack of proper stretching, and foot mechanics. Modification of activity or complete rest may be indicated. Treatment may include ice after running, anti-inflammatories, heat therapy prior to activity followed by stretching, strengthening and stretching program, and a

gradual return to activity. Also a strap may be placed above the knee that places pressure just above the site of irritation.

This condition worsens if not treated properly and will begin to limit running secondary to pain.

Plantar Fascitis:

The plantar fascia is a dense fibrous tissue that runs along the bottom of the foot. It attaches to the heel bone and spreads upward towards the base of the toes. Overuse can cause inflammation at the point of the fascia attachment to the heel bone, causing pain on the bottom and inside of the foot. Runners describe pain on the bottom surface of the foot, pain is sharp with the first few steps in the morning, and will lessen as the day progresses. Risk factors include foot mechanics, tight calf muscles, weight gain, sudden increase in activity, and lack of proper stretching before and after running. Other risk factors may include poor shoe support, running hills, running on soft surfaces (sand) in barefeet and aging. Treatment may include modifying activities or rest, ice (roll a cold can under the foot) anti-inflammatories, stretching calf muscles, shock absorbing heel pad or arch supports, custom orthotics, night splints, and wearing shoes with adequate support.

Prevention of Injuries:

1. Hydration

The best way to prevent dehydration is to “pre-hydrate”

- a. Night before activity drink 16 oz of water
- b. Drink another 16 oz upon waking
- c. Drink plenty of water throughout the entire day
- d. 10-17 fluid ounces 2-3 hours before the event
- e. 7-10 fluid ounces 10-20 minutes before the event
- f. One fluid ounce is equivalent to one gulp.

During Activity:

- a. Should drink water every 10-20 minutes during activity
- b. Water is the best source, but a sports drink is acceptable when exercising more than 1 hour.

After Activity:

- a. Replenishment of fluids is very necessary – replace two cups of fluid for every pound lost.
- b. Drink 20-24 oz after activity has ended or use number of pounds weight lost to calculate exact needs.

Monitor Hydration:

- a. Urine color = apple juice/dark colored urine means that the body is dehydrated.
- b. You can also monitor hydration through body weight measurement—your weight should be back to baseline prior to the next practice or game.

2. Spend 5 minutes “warming up” (jogging, biking, elliptical machine, etc.) before activity. Then stretch only to the point where you feel tightness or resistance to stretch or perhaps mild discomfort. Stretching should not be painful. Once that point of tension is found, hold that stretch for 30-40 seconds. Repeat this 2-3 times per session. Do not bounce. Always stretch slowly and with control. Do not perform ballistic stretching (repeated bouncing past the tension point). This type of stretching may increase the chance for a muscle injury.
3. Start off slowly and then increase speed
4. Spend 5 minutes at the conclusion of the run walking or cooling down
5. Take time to stretch again
6. Do not push through pain, seek medical advice, and follow their plan
7. Avoid running if temperatures are over 90 degrees and high humidity
8. Avoid running in cold freezing temperatures or if high winds are present

Beginning a Running Program:

1. Talk about running with a coach, trainer, or a knowledgeable runner
2. Determine the reason for running
3. Discuss realistic running goals and strategies to option them
4. Continue education on running through specialized running magazines and websites
5. Find local running clubs in the area

Tips for Parents:

1. Let it be their choice of exercise
2. Make running fun
3. Be a good role model
4. Run with them
5. Let them set their own pace
6. Don't over train or over race them

Endurance Events:

The American Academy of Pediatrics has stated that endurance events such as half marathons, marathons, and triathlons for children and adolescents are reasonably safe as long as the events are modified to be age appropriate. These events should be shorter in duration and length. Also safety and environmental conditions should be given careful attention. It is very important that children and adolescents have no injury or pain during training. They should follow a well established supervised training program focusing on fun, not records or fast times.

Proper Running Attire:

1. Light weight, breathable clothing
 - a. Avoid 100 % cotton
2. Running hats and sunscreen
3. Head covers, ear covers, gloves to avoid frostbite
 - a. Mittens are better for extreme cold
4. Proper thickness socks that avoid blisters and irritation

- a. Avoid 100% cotton
5. Proper fitted shoes with good arch supports
 - a. Local running stores are a good source for foot evaluation and running style
6. Running shoes are good for 300-500 miles
 - a. Inspect your shoes for holes, thinning and angles on the soles
7. Shoe inserts, both custom and over the counter may be helpful for some runners that have flat feet, high arches, unstable ankles, or other foot problems
8. If running in rainy climates, wear breathable waterproof gear
9. Good supportive sports bra
 - a. Top 10 Sports Bras for Women:
http://exercise.about.com/od/exerciseapparel/tp/sports_bras.htm

Quick tips before you start your run:

1. All purposes tracks surfaces are ideal for beginners, remember to switch directions every other time
2. Avoid steep hills
3. Avoid crowded roads
4. Run against traffic
5. Always look both ways when crossing the street
6. Avoid streets without sidewalks
7. Running during daylight is preferable
8. Stay in well-lit areas, schools and public streets
9. Have a running partner
10. Carry a cell phone with you
11. Avoid using headphones if running on the street
12. Do not pet stray dogs
13. Do not talk to strangers
14. Parents should always know:
 - a. Where you are running
 - b. When you are running
 - c. How far you plan to run
 - d. your running partner
 - e. What time you expect to be home

Recommended Websites:

Youth Movement: From preschool to high school, here's what your kids should, and shouldn't be doing, when it comes to running.

<http://www.runnersworld.com/article/1,7124,s6-238-267--11817-0,00.html>

Kids Running:

<http://www.kidsrunning.com>

Marathon Kids:

<http://www.MarthonKids.org>