

ACHES AND PAINS OF RUNNING

A PRIMER

BY DOUGLAS F. TUMEN, D.P.M.

Whatever your level of running—regular racing, fitness running, or occasional jogging—aches and pains are a part of the sport. While aches and pains should never be ignored, some are more significant than others, because they signify injury. The most commonly injured areas include the arch and heel region, lower leg, knee, Achilles tendon, and forefoot. Running injuries are usually caused by overuse, faulty biomechanics, and lack of flexibility. Let's look first at some general causes of aches and pains before tackling specific injuries.

OVERUSE INJURIES

The majority of aches and pains are overuse injuries. Each running step requires your body to absorb three to four times its weight, and the repetitive stress of this shock can lead to breakdown and injury. Luckily, overuse injuries can be prevented with proper training. Following these guidelines can help reduce your risk of overuse injury:

- * Build your mileage slowly. Increase by no more than 10% a week or 20% every two weeks.
- * Follow hard days with easy recovery days. A hard day means that you ran farther or faster than usual. Plan your easy days as carefully as you do hard days.
- * Do not routinely increase your weekly mileage. Plan easy weeks just as you plan easy days.
- * Crosstrain. Replacing a day of running with swimming, bicycling, in-line skating, or stairclimbing will give you an aerobic workout while resting your running muscles. These activities also save you from some of running's pounding.
- * Your risk of overuse injuries rises dramatically as your weekly mileage goes above 40 to 50 miles. Maintain this level of running only if you can do so relatively pain-free most of the time.
- * Racing places enormous stress on your body. Plan a racing schedule that allows enough recovery between events. A good rule after a race is to run easy at least one day for each mile of a race.

BIOMECHANICS

The relationship of muscles and joints to how you run is called biomechanics. Faulty biomechanics greatly increase your

risk of injury. The most common example is pronation of the joint below the ankle (the sub-talar joint), which may be noticed as partial or complete collapsing of the arch and rolling in of the ankle as your foot lands.

To determine if you have improper biomechanics, look for abnormal shoe wear patterns. Wearing shoes on the inside (the medial counter) signifies excessive pronation. Have a friend watch you run and note from behind if the insides of your ankles roll inward. If so, you probably overpronate.

If you think you have faulty biomechanics and are often injured, visit a sportsmedicine professional familiar with runners for an analysis of your running style and shoe wear patterns. Often custom orthotic devices are necessary to improve muscle and joint function and reduce your risk of injury.

FLEXIBILITY

Running has many benefits, but increased flexibility is not one of them. In fact, as running strengthens your leg muscles, it also shortens and tightens them. Tight muscles and tendons restrict your range of motion, and as mentioned above, poor running form can lead to injury.

Take time before and after each run for stretching. At the least, stretch your calves and hamstrings. See the section "Achilles Tendinitis" on the next page for proper stretching of the Achilles tendons. To stretch your hamstrings, sit with one leg extended straight out and the sole of the other foot pressed against the inside thigh of the extended leg. Keep your back straight and slowly lower your upper body toward the extended knee until you feel a gentle pull along the back of your extended leg. Bob Anderson's book **Stretching** gives additional stretches for these and all other muscle groups.

Let's now take a closer look at some of the more common aches and pains of running. Remember that training errors, faulty biomechanics, or lack of flexibility—or a combination of the three—often lead to these and other injuries.

PLANTAR FASCIITIS

Pain in the heel or arch area is often plantar fasciitis, or heel spur syndrome. This is an inflammation of a fibrous band of tissue which stretches from the heel to the toes. Pain may be present in the morning, after rest, and after running; it's usually

worse upon waking and at the start of a run. Chronic plantar fasciitis may lead to the formation of heel bone spurs. Flat feet and high-arch feet are prone to this injury. Treatment may include a combination of rest, stretching, taping, different shoes, arch supports or custom orthotics, and anti-inflammatories.

KNEE PAIN

One common knee injury is patella-femoral compression syndrome (also known as chondromalacia patella). This occurs when the knee cap slams into the femur, the bone behind the kneecap. Patella-femoral compression syndrome is often caused by excessive pronation or muscle weakness around the knee. Rest and icing should reduce temporary pain. If it is caused by pronation, orthotics may help to reduce further flare-ups. Strengthening your quadriceps will help if it is caused by weakness around the knee.

Another common cause of knee pain is iliotibial band syndrome (ITBS), which causes pain on the outside of the knee. The onset of pain is usually slow and occurs after running a certain distance. The major causes of ITBS are excessive internal rotation of the leg and pronation of the sub-talar joint. Both cause the ITB to be stretched over a bony prominence of the femur (the bone in your thigh), which leads to irritation and subsequent pain.

Treatment includes rest, icing, eliminating overpronation, and stretching the ITB, which is done as follows: Stand with both legs straight and the affected leg crossed behind the other. Reach overhead toward the unaffected side and drop your pelvis on the affected side while stabilizing your upper body against a wall or table.

ACHILLES TENDINITIS

Tight calf muscles, poor stretching habits, and too much running on hard surfaces and hills may result in Achilles tendinitis. This is a progressive degeneration and weakness of the tendon, usually just above its attachment to the heel bone. It is often necessary to stop running until the injury is healed. Heel lifts, icing, and anti-inflammatories in conjunction with rest often speed healing.

Achilles tendinitis can often be avoided with good stretching habits. A

good calf stretch is the wall push-up, done as follows: Stand about three feet from a wall with your legs shoulders-width apart. Lean forward and place your palms against the wall. Bring one foot six to 12 inches behind the other while keeping your knee straight. Lean forward without bending your knee and hold for a count of ten.

SHIN SPLINTS

Muscle and tendon weakness in the front or inside of the lower leg may result in sharp pain in these areas, often called shin splints. Stress fractures may occur if shin splints are left untreated. Excessive pronation, increasing mileage too fast, hard surfaces, and downhill running are leading causes. Beginning runners are also susceptible to shin splints because of the new stress placed on the lower legs.

Initial treatment consists of rest, icing, and anti-inflammatories. To prevent shin splints, strengthen the muscles of the lower leg. For posterior shin splints (pain along the inside of the leg), press the balls of your feet together and hold for a count of ten. Repeat this 50 to 100 times. For anterior shin splints (pain along the front of the leg), sit with a five-pound weight (a paint can works well) over the top of your foot. Flex your foot upward to lift the weight ten to 20 times.

FOREFOOT PAIN

Many problems develop in the forefoot because of improper and excessive weight transfer during the propulsion phase of running, including bunions, hammertoes, black toenails, and metatarsal stress fractures. If swelling is present with pain in the forefoot, suspect a stress fracture and stop running. Seek the opinion of a specialist before resuming running.

Black toenails are usually caused by shoes that are too small in the toe box area and by downhill running, which causes the toes to slam into the end of the shoe. Bleeding under the nail develops, which needs to be drained for pain relief. To do so, sterilize a pin and make a small hole in the nail plate. Apply an antiseptic and soak the foot in water to speed healing.

Now that you know some of the causes and types of running's aches and pains, let's look at some general preventative measures.

SHOE TIPS

Proper running shoes are essential to injury prevention. Keep track of mileage and replace shoes after 400 to 600 miles, depending upon how hard you are on shoes and how well the midsole cushioning holds up.

Note excessive wear patterns—they may indicate biomechanical instability. In general, excessive pronators (very common) need a stable, supportive shoe with a rigid heel counter, which will help limit rolling in of the foot and ankle. Supinators (common mostly with a rigid, high-arched foot) need a shoe with increased cushioning and flexibility, which will help with the shock absorption supinators need. AR&FA's Running Shoe Database can help you find shoes which fit your needs.

TREATMENT TIPS

Injuries often respond quickly if treated early and properly. Rest and icing are your first line of defense. If you have acute pain or pain that alters your normal running motion, stop running and don't resume training until the pain is gone. If you have minor aches which don't affect your running motion, reduce your running and apply ice to painful areas for 10 to 15 minutes after a run. If you have swelling, apply compression and elevate the affected leg.

Self-treatment has its limits. If you have acute pain which does not respond to rest, see a sportsmedicine specialist. Also see a specialist if you have a chronic injury to a given body part, because this probably means you have an underlying condition that needs to be corrected, such as a problem with pronation or lack of flexibility.

Remember that you can run with minor aches but you should not run with pain. The methods described above may seem overly cautious, but in hindsight you'll be glad you took a conservative treatment route which got you back on the road to pain-free running.

AR&FA Professional Member Douglas Tumen, D.P.M., is a sportsmedicine podiatrist from Kingston, New York. Outside of his practice, Dr. Tumen conducts training clinics and has run the New York City Marathon six times.