



## Common distance running injuries

As distance running grows in popularity and athletes run more and more miles, they face an increasing risk of injuries. Various studies suggest that 30 to 40 percent of runners suffer some sort of injury every year.

Distance running injuries are often related to overuse and/or improper running form. Common injuries include stress fractures in the foot, heel, shin or hip. Common ligamentous and tendon injuries include plantar fasciitis (heel spurs); Achilles tendinitis and iliotibial (IT) band syndrome. It also is common to see hip flexor, sacro-iliac and low-back pain in distance runners.

A series of simple prevention strategies can help keep runners on track.



## Form and function

### What steps can I take to prevent a distance running injury?

#### Proper running style

First-time distance runners and those who struggle with repeat injuries should consider undergoing a gait analysis and re-training. The current knowledge of running seems to indicate that a strong overstride is most associated with increasing impact forces. The overstride usually relates to landing on a stiffer leg.

#### Progressive training

Use a progressive program that gradually builds to long mileage runs with some interval training. The program should include one day of cross-training, such as cycling or swimming. Strength training is also essential for injury prevention. Strength training should focus on core strength with attention to gluteal and hamstring muscles as well as upper body posture. Flexibility requirements vary from individual to individual. However, many runners are tight especially in hamstrings, hip flexors and Achilles. Building flexibility in these areas may help reduce injury risk.

#### Stop and stretch

Long distance runners may be able fend off common injuries such as IT band syndrome or Achilles problems by stopping and stretching if you experience pain while running. Gluteal muscle strength training may help prevent IT band injuries, while calf and foot strengthening are recommended to keep the Achilles in running form.

#### Stay fit

Injured runners striving to maintain fitness for a big event should avoid pounding the pavement. Instead, stay fit by biking, swimming or using an elliptical. When you return to the road, run at a slower pace for a few days.

# Readiness and recovery

## The health care provider

Schedule a visit with your health care provider before embarking on a distance running training program. Be sure to tell him about any nutritional supplements you use. If you ever experience shortness of breath, dizziness or chest pain during exertion, be sure to have it checked out by a physician.

## Hydration

Know your hydration level. Weigh yourself before and after long runs of 15 to 20 miles. Runners should lose about 1 to 2 percent of their body weight during long runs; any more weight loss may signal dehydration, less may mean overhydration. Overhydration can be a significant problem especially in the slower runners. Overhydration can lower the sodium level, which can be lethal in rare cases.

## Nutrition

Carbohydrates are important not only before the big race but also after long runs to restore the glycogen lost during the long run. Chocolate milk makes an excellent recovery drink. Its high water content replaces lost fluid, and plentiful protein and carbohydrates restore tired muscles.

## Post-race

Dehydration and overhydration symptoms can be confusing. Both can cause headaches and nausea. Once you are freely urinating, overhydration is less of an issue, and runners can replenish with carbohydrate-rich fluids and possibly protein-heavy drinks such as chocolate milk.

In the first few days after the race, it's appropriate to keep the muscles moving. Either a short, easy run or cycling is a good way to keep moving after the race. Be careful to give yourself enough recovery time and not overdo it.



## Extreme conditions

### Beat the heat

Hyperthermia, or heat stroke, can affect runners on even mildly warm days. While it's important to remain hydrated, overhydration is unnecessary. Many runners have the perception that hydration is the key to avoiding hyperthermia on a hot day. In reality, running at a slower pace is a safer way to avoid hyperthermia and overhydration.

### Cold weather

Layering is the ideal way to train. Wear garments that breathe well and wick away sweat close to the skin.

### Rainy days

Don't forget to wear a head cover made of impervious materials.

### Know when to stop

Persistent, focal pain in the hip or thigh may indicate a serious stress fracture in the femur or hip joint. If you experience pain beyond lateral soreness in this area, immediately make an appointment with your health care provider.



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This piece is part of an informational series on sports injury prevention produced by the Orthopedic Center/Sports Medicine Program at Boston Children's Hospital. For materials on preventing injuries in other sports, call **617-355-3501** or visit [bostonchildrens.org/sportsmed](http://bostonchildrens.org/sportsmed).



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