



CU SPORTS MEDICINE

Marathon Training Tips

What kind of running experience or mileage should I have before training for a marathon?

You should be able to run at least 15 to 25 miles per week. If you have a regular history of fitness training, even though it may be with another activity like cycling or aerobics, this will boost a lower running mileage. You should also have participated in a couple 10K or 5K races and enjoyed the experience of racing.

What are the most common mistakes runners make when training for the marathon?

- *Mistake #1: Increase mileage or intensity too quickly.*
Increase your training mileage or time by no more than 10 to 20 % weekly. For example, if you're currently running 20 miles per week, increase your total weekly mileage by no more than 2 to 4 miles the next week. A periodic long run is part of race preparation, but you should reduce other training components or introduce a rest day. Gradually introduce speed or hill work. **Change only one training component at a time.** For example, if you've decided to begin some hill work (intensity), don't increase your running mileage the same week.
- *Mistake #2: Ignore the warning signs of an injury and continue to train with pain.*
This is a sure way to end up watching other people run the marathon!
- *Mistake #3: No rest!*
You should have at least one rest day each week. You should also have periodic light training weeks (every 4 to 6 weeks). This is especially important after a race or heavy week.
- *Mistake #4: Neglect a proper stretching and strengthening program.*
"I don't need to strengthen my legs because running does that". Wrong! Due to the repetitive nature of running, muscle imbalances that cause injuries are very common. Tight or weak muscles should be addressed with a specific conditioning program to avoid "breakdown" from the chronic stress of marathon training.
- *Mistake # 5: Worn-out or improperly fitting running shoes.*
Train in a supportive, well-fitting pair of running shoes, with ample room in the toe box. Depending on your weight and running surface, you should replace your running shoes every 250 to 500 miles. The extremely durable rubber of the sole of your shoe may still look good even if the midsole is no longer providing cushioning or support. Remember that shoes wear out before they look worn out! If you set your shoes on a level surface and they tilt in or out, they've begun to break down and will no longer support you. Nagging foot, knee, back, or hip pain may be another signal that you need new footwear.



- *Mistake #6: Try to make up for a lost week of running (due to illness or travel) by doubling your mileage the next week.*
This is a very bad move!
- *Mistake # 7: Forget that cross-training with other aerobic workout activities can contribute to overall fitness and race preparation.*
You can do up to 20% of your mileage in activities like cycling, deep water running, swimming, stair climbing etc. to reduce wear and tear on your body.
- *Mistake # 8: Listen to too many people.*
Don't beat yourself into the ground by training with friends who have a different fitness level, longer history of running, longer stride, or much faster pace!

What are the warning signs of overtraining?

- Pain which doesn't disappear within two days after your training run.
- Pain which begins to come on earlier in your workout instead of later.
- Pain which limits your workout.

Go see a doctor if any of the first three items describe YOU'

- Fatigue (You just don't feel like you have the energy.)
- Boredom (You can think of any number of other things you'd rather be doing and have to force yourself to get out there.)
- Increasing resting pulse (Take your true resting pulse for one minute in the morning when you wake up. Get to know your typical resting pulse rate. One of the adaptations to physical conditioning is that your resting heart rate will gradually decrease. However, if your resting pulse becomes higher after a period of intense conditioning, this suggests too much physical stress on the body.)

What are the basic elements of marathon training which should be included in my program?

There are many training programs available prepared by the organizers of various marathon races or running coaches. Remember that these are a framework for training and you should listen to your body. Be sure to follow the directions of your physician, therapist, or coach. Take into account your overall level of fitness and health, years of conditioning and running, and your skill or competitive level. Your training schedule should include:

Slow Distance

These are long easy training runs done at 60 to 70% or your maximal heart rate (HRmax). This is the foundation of your training, particularly during the early months of preparation when you are building a base of aerobic fitness. Keep your intensity low and comfortable. Many runners train *too hard* for *too many miles*.

Tempo (70 to 90% HRmax depending on fitness level)

Tempo training is typically done at a brisk pace which is slightly slower or right at your 10 K race pace. This type of training will help you to increase your lactate threshold. This improves your ability to tolerate speed over time. During the last 2 months before the marathon, do one 30 to 50 minute tempo run each week, depending on your level.

Hills (80 to 100% HRmax)

Hill training is an important part of building the strength to finish strong when you're fatigued, especially on a hilly course. Hill work should occur no more than once a week.

Speed (80 to 100% HRmax)

Speed training involves running at a speed that is much faster than your 10K race pace but for a shorter distance (200 meters to 1 mile). Speed intervals should never be done more than 1 time a week and *only after you've developed a good base of endurance and strength*. Speed work helps you:

- develop the ability to sustain speed over distance
- improves your anaerobic energy systems
- trains your neuromuscular system to fire efficiently
- improves your mental ability to train at tough intensities

Rest/Recovery

This is one of the most important parts of your training schedule! Overtraining depletes your muscles of glycogen, thus limiting your endurance. It takes over 24 hours to restore muscle glycogen. Allow for at least one complete rest day each week. **A light training day or rest day should *always* follow a hard training day.** This will keep you mentally and physically fresh and prevent overuse injuries.

Long Run

How long is a long run? Regardless of where you start, this is the one run that you gradually increase to move toward marathon distance. You should not do more than one long run every week! Increase your long run by 2 to 3 miles every 2 to 3 weeks. Then cut back by 2 to 3 miles for one week. Your cutback week should essentially act as a rest week or maintenance week. Initially your long run may be 8 miles and end up at 22 miles (or maximum 3 hours) about a month before the race.

Stretching

Intense training can increase muscle tension and reduce range of motion. Stretching will keep your muscles flexible to prevent injury, improve your performance, and promote a fluid running motion. Stretching should be done every day, particularly after exercise, when high muscle temperature and good blood flow augment your body's response to flexibility training. It is also good to stretch your hamstrings, quads, calves, hip flexors, IT band, and *any* other muscles which you know are particularly tight before you run. Hold each stretch 15 to 30 seconds and repeat 3 to 5 times. Do not bounce while stretching. You should feel muscle tension, but NOT pain. Be sure to keep breathing while holding the stretch. During your long runs, you may want to stop and stretch halfway through.

Strength Training

Even though you may not want to add a lot of muscle weight to your frame, strength training for running can protect your joints from injury and keep your body in balance. Basic strength training should be performed during the early months of your marathon preparation using a conditioning prescription of 8 to 12 repetitions, 1 to 3 sets of each exercise, 3 days a week. Avoid heavy lifting. Don't neglect the abdominals and low back which support your spine during running. Reduce strength training to only 2 days a week and substitute some sports-specific strength training drills like hill work and bounding as the marathon approaches (last few months).

Should I do any racing to prepare for the marathon and what distance?

Races are opportunities to go through the ritual of racing: mentally, physically and logistically. They can be a yardstick with which to measure your progress. Racing may just be a fun highlight in your training and a chance to get together with running buddies.

- No more than 3 half-marathons in 6 months. Too many races drain your physical and mental reserves.
- Always cut out your long run on the weeks that you race.

- You can do 5 K and 10 K races scattered throughout your training.
- Your last race should be 3 weeks before the marathon

What about nutrition for training and competing?

- Consume a diet high in complex carbohydrates and low in fat that also meets your body's protein needs. Remember that carbohydrates include not only bread and pasta, but fruits, vegetables, legumes and a variety of whole grains. *Every day* should be a high carbohydrate day during training (60 % of your total calories come from carbs). This keeps your muscles fueled with glycogen which has a direct effect on your endurance.
- Drink plenty of fluids. See our "Hydration Guidelines for Exercise" handout.
- Make sure to drink electrolyte replacement drinks when you are exercising more than 45 to 60 minutes. It is important to train using a replacement drink so that you know what works for you.
- Don't forget about protein and iron! Runners tend to consume very little protein, while concentrating on carbohydrates. You need at least 4 to 6 ounces of high quality protein per day. Maintaining adequate iron intake is important for preventing athletic anemia. Anemia causes inadequate oxygenation of the muscles and fatigue.
- A sports nutritionist can assess your food intake and help you meet your unique nutrition needs.

A week before the marathon:

- As you gradually reduce training, increase the percentage of carbohydrates up to 70% to maximize muscle glycogen levels. By four days before the event, your diet should be up to 70% carbohydrate.
- During this time you will need to reduce fat content even further to increase your carbohydrate intake. Use jelly instead of butter or margarine, use syrup without butter, drink juices, eat fruits, have an extra serving of starch at each meal in place of some fat.

Before the race:

What you eat the night before and the morning of the race should be familiar, comforting food that is typical of your usual pre-running meals. Enjoy a high carb meal and drink plenty of fluids the night before the marathon (pasta, thick-crust light-cheese pizza, rice and beans, rice & veggies, lentils). Your morning meal should be low in fat, include some carbohydrate and protein, and be eaten at least an hour before start time. The purpose of the meal is to provide enough blood glucose to keep you alert, as well as fuel your muscles in the beginning of the race. This is not the time to try a new unfamiliar food that may give you digestive problems. Good breakfast choices are:

- A large glass of orange juice, 3 pieces of toast with a few teaspoons of peanut butter, a banana and a cup of tea with sugar and milk
- One or two poached eggs or low fat cottage cheese on toast
- Cereal and low-fat milk with fresh fruit
- Pancakes with fruit and syrup (no butter) and a large glass of skim milk

During the race:

- With any endurance event longer than 90 minutes, an athlete will benefit from some carbohydrate ingested intermittently during the event. You can increase your stamina by consuming 100 to 300 calories/hour during the marathon. These snacks should obviously be made of easy-to-carry, easy-to-eat carbohydrates. These foods should have a high glycemic index which means they will be absorbed quickly to provide energy. Examples are sports drinks, dilute juice, orange segments, bananas, "Goo", "Powergel", "Gator-gel" or other similar products.

- Past the 8 mile mark, have friends strategically located to hand you your favorite endurance snacks. Don't rely on the aid stations to provide what works best for you.

After the race or a training run:

Refuel muscle glycogen immediately after each training session, preferably within the first 15 minutes. There is about a 2 to 4 hour window of opportunity where muscles will refuel maximally. Drink and eat carbohydrates like juice, yogurt, fruit, bagels, pretzels or high carb meal. Be sure to rehydrate.

What pre-race preparation should I do the last few days (or hours!) before the marathon?

- *Don't run* the day before the race. The day before that, only run an easy 15 to 20 mins. at a conversational pace.
- Taper. This means there should be a gradual reduction in training volume (but not intensity) in preparation for the race. It helps you go into the marathon fresh. Beginning 3 weeks before the race, reduce your training mileage to 75%, 50% and then 25% with each successive week. It's much better to go into a race well-rested and slightly under-trained than over-trained. You'll feel better and perform better.
- Get good quality and quantity sleep the whole week before the marathon. If you're anxious and have trouble dozing off the night before the marathon, *but are generally well rested*, you'll be a step ahead.
- Know the route. Drive, cycle or look at a race map to familiarize yourself with the course. This will reduce anxiety and help you pace yourself mentally and physically during the race.
- Know where you will put your warm-ups, car keys, etc on the morning of the marathon.
- On the morning of the race, stretch, stride a little and focus on positive thoughts. A warm-up run generally isn't necessary and will probably make you start off too fast.
- Prepare for the weather with appropriate clothing. In cold weather, dress in layers that you can shed as you run. (Be sure to use garments you don't mind leaving by the side of the road!) Avoid cotton which traps moisture next to the skin and can chill you in a hurry. Inner layer fabrics should wick your body's moisture away, while the outer layer should repel cold, wind or rain. Hats and gloves will also protect you from the cold, but can be easily removed to keep you comfortable.
- Vaseline[®] rubbed between your thighs and near your armpits (where a bra or tank top might rub) will help prevent chafing. Do this yourself at home, but many marathons provide Vaseline[®] vats at the starting line and at intervals along the race course.
- Make sure you are well-hydrated going into the race, particularly in warm weather, and take advantage of the aid stations along the way. Don't forget to wear a sweat proof sunscreen (minimum SPF 15).
- Have a support person(s) along the course, especially at a vulnerable mile point for you. They can provide a pair of dry socks, carbohydrate source, or just verbal encouragement.
- Don't try anything new on race day. Don't wear new shoes or clothing. The result may be blisters or chafing. Stick with beverages and foods that are familiar. Keep with the tried and true.
- Relax. Visualize a beautiful, fun run.