

What's the Best Post-Marathon Recovery Strategy?

The Answer Is . . .

Simple: plan your post-marathon with as much care as you plan for everything that precedes the race. Your post-race plan should include two goals: (1) prepare for recovery without injury, and (2) set new targets for yourself.

Ultimately, a successful plan circumvents injuries during the restoration to full training and leads you naturally to the next target. Don't slip into a cycle of problems that impairs your return to top fitness or, even worse, sets you into a tailspin that undermines your will to run. For a proper recovery plan, you'll need some important building blocks: an understanding of common post-marathon ailments and the ability to identify, manage, and prevent them. It can also help to have an organizational template that allows you to create and implement a successful plan.

Risk Factors for Injury

While it's easy to establish new targets, it can be difficult to create a post-marathon plan that avoids injury. To better understand how to avoid injury after running a marathon, let's first look at the potential risk factors.

Downhill Running

Living in southeast Louisiana, we don't do much hill running, either up or down. If you happen to be training in a hilly area during your post-marathon recovery period, it's a good idea to limit your downhill running. The amount of downhill running in general, and the downhill section after Heartbreak Hill (when fatigue has already exacted a can be a risk factor for developing such injuries as patellar tendinitis, patellofemoral syndrome, iliotibial band syndrome, anterior tibial stress syndrome, and stress fractures (among others) in the post-marathon period.

Distance

Face it, even if you log your prerequisite long runs before the race, 26.2 miles is still a long way to run. Some runners are better prepared for the distance than others. For those marginally prepared for the distance, racing 26.2 miles can be an additional risk factor for post-race injuries. The muscle fatigue resulting from running farther than you are accustomed can linger for days, weeks, or even months. During this post-race fatigued state, you may be at risk for many of the overuse injuries that can befall a runner.

Intensity

A well-prepared runner out to enjoy the Boston Marathon experience while cruising well within his or her capacity will nevertheless stress his or her system to some degree. However, the cumulative lower extremity stresses absorbed by runners really pressing their limits can be exponentially greater. On the one hand, "bonking" and pressing on is one example of pressing one's limits. On the other hand, screaming to a new PR can equally stress one's limits. Completing such an intense effort can predispose you to post-race recovery problems.

Pre-Existing Problems

A fact of marathon running is that some runners, while preparing for the event, will acquire injuries that preclude them from participating in the race. Others make it through the training period unscathed except for a nagging "ding" that does not deter them from racing. Racing with a pre-existing ding may be most common at Boston, given that the Boston Marathon represents the crowning glory for many runners. For others, the financial commitment of nonrefundable airline tickets may be the driving force to suck it up and race while dinged. Regardless of the motivation to race at less than 100 percent, doing so carries the risk of the ding blossoming into a full-scale injury during the post-race period.

Race-Acquired Problems and Dehydration

For those who make it to race day unscathed (and for that matter, those who come to the race dinged), the race itself can leave its mark on you. From blisters to plantar fasciitis, neuroma symptoms, and iliotibial band syndrome,

problems can arise during the course of the marathon that did not exist beforehand. Furthermore, race-acquired problems may also present themselves systemically, such as hematuria, heat injury, and dehydration. Both musculoskeletal and systemic problems acquired during the marathon will affect the post-race recovery process. Even something as seemingly trivial as blisters can create additional problems. If runners try to run in the early days following the race while blistered areas are still sore, they might need to modify their foot strike and loading pattern to avoid painful areas. This modified running form can abnormally stress other areas already fatigued and set up a new injury. Race-acquired problems must be resolved before you return to full training.

Worn-Out Shoes

Most runners do not buy new shoes and break them in during the marathon-specific portion of their training program. Given that some shoes dramatically lose their shock-absorbing and protective characteristics after 350 to 500 miles, many runners' shoes will be shot by the time their owners start their post-race recovery program. To avoid this injury risk factor, consider buying a new pair of shoes after Boston. Alternate from your old pair to the new pair to allow a gradual adaptation to the new shoes. Your new pair should be broken in about the same time your feet and legs are ready to scale up the training regimen.

Premature Return to Running

Heaping additional physical stress on an already fatigued musculoskeletal system is asking for trouble. Guard against the urge to accelerate your progress toward these common targets: beginning your first post-race runs; beginning more intense training efforts (intervals, tempo runs, long runs); or resuming racing. Later, I'll say more on how you might accomplish this.

All Systems Go? A Postmarathon Checklist

Before embarking on a course to your new post-marathon target, clear yourself of any problems lingering from your pre-race training program or acquired during the race itself. In the days after the race, take inventory of any problems you may be harboring. To help you identify problems that may be present after the marathon (or may arise as you resume running), a brief review of some common post-marathon ailments follows.

For most of these problems, the initial care involves rest. Relative rest may be enough. By "relative rest" we mean exchanging non-plyometric, low-impact activities such as pool running, swimming, and cycling for your running. Additional self-care recommendations are made for each of the ailments discussed below.

If you're unsure of the diagnosis after reviewing this information and other running injury resources, seek professional help. Your running career is too valuable to jeopardize. Similarly, if you fail to improve with self-care, seek professional care. Most problems should improve at least somewhat after two weeks; if they don't, go see a pro.

Colds

After the marathon, your immune status will be depressed. Because of the physiological hit to the immune system created by the stress of running a marathon, colds, flu, and other upper respiratory tract infections are potential problems in the days and weeks that follow. The best medicine is prevention. After the marathon, take care to allow yourself more sleep than before the race. Resume a well-balanced, nutritious diet immediately following the race. During the first week following the race, focus on re-hydration.

Consider using herbal preparations, such as Echinacea (but only after reviewing product information).

If you do develop a cold, flu, or upper respiratory tract infection, remember that sleep, diet, and hydration remain important self-care weapons. Remember—if you have a fever, do not run. Also, if you must take medications (whether over-the-counter or prescription) for your illness, don't run. Seek professional care if you develop a persistent fever or cough. Consider herbal remedies for their therapeutic benefit.

Easy running can be resumed when there is no fever, no medications are required, and there's no residual fatigue or malaise. You should not resume hard running until there's no residual respiratory tract congestion (usually 2 to 3 weeks after easy running can be resumed).

Post-marathon Blues

After a marathon, some runners will experience depression. The cause for this depression varies. Is it from achieving a goal after a long training process, then not knowing how to top it? Is it from not achieving the goal? Is it from finishing the Boston Marathon, the greatest marathon the world has ever known, and then not knowing what to do next? Or is it from depletion or derangement of neurotransmitters?

It has been documented that choline, a neurotransmitter precursor, is depleted with marathon-like efforts. Perhaps marathon efforts impact neurotransmitters, thereby having a bearing on depression in a similar way. Regardless, post-marathon blues affect many runners in the days and weeks following the race. While there's no scientifically proven approach to post-marathon blues, there are some recommendations. Again, start with proper sleep, diet, and hydration. You might try supplements, including choline, and herbal remedies. Finally, be sure to refocus on a new target. There's nothing like a new running goal to blow away the blues.

Delayed Onset Post-exercise Muscle Soreness

Stiffness and muscle soreness are sure to follow most marathon efforts. The duration is typically for one to three days after the race. Contrary to popular belief, the soreness is not caused by lactic acid accumulation but by actual microscopic muscle damage. The severity depends on the specificity of fitness of the individual and the intensity of the effort. For the Boston Marathon, specificity of fitness means not only your ability to handle the distance and pace but also your ability to handle running downhill. The muscle demands in downhill running can be particularly deleterious to the quadriceps muscle group. When a young Boston Marathon neophyte asked Alvaro Mejia, winner of the 1971 race, how to get ready for the Boston Marathon, he replied: "Train yourself to run fast on downhills." This is perhaps the best preventive medicine that can be prescribed—along with adequate training for the distance and anticipated pace.

While there are no scientifically proven methods to reduce the severity or duration of delayed onset post-exercise muscle soreness, there are several anecdotal remedies. For the first 24 hours after the race, cooling the leg muscles intermittently might help. Walking in cold water or rolling the muscles with a frozen plastic water bottle are two ways to cool the muscles. After more than 24 hours have elapsed, warm soaks and hot-tubbing may be beneficial. Gentle massage therapy might also help. Over-the-counter anti-inflammatory medications (such as ibuprofen) or herbal remedies may also be of assistance.

Finally, don't resume running until the delayed onset post-exercise muscle soreness has been resolved.

Blisters

If your post-marathon blisters are not tense or extensive, just leave them be. At most, use ice water soaks. If your blisters have broken open, your primary goal is to prevent infection. Soak your feet twice a day for 10 to 20 minutes in water with providone iodine solution added (10:1 water to providone solution), then dry your feet and cover them with clean socks. Continue this care until the blistered areas are dry (not draining or oozing) and pain free. Self-care by opening an intact blister should be considered only for tense, painful blisters. In this case, clean the area with providone iodine solution, then open the blister near its edge with a clean instrument. The opening should be at least one-quarter-inch wide. After the blister is open, treat it the same way as a blister that broke open during the race.

If the area around the blister becomes more painful, or if there's redness spreading from the site, suspect an infection. If a blister site becomes infected, the infection usually arises two to five days after the blister is exposed. Seek professional care for extensive blisters, suspected infection, or tense painful blisters that you cannot care for yourself. It's best to delay your return to running until blistered sites are pain free. Altering your stride to avoid painful areas can unduly stress another area and risk a new injury.

Morton's Neuroma

Morton's neuroma is an overuse injury where the intermetatarsal nerve (lying between the metatarsal bones in the ball of the foot) becomes inflamed or enlarged. The symptoms include pain or burning under the ball of the foot, with numbness, tingling, or burning extending to two toes (usually the third and fourth toes). This problem doesn't occur overnight but may be lingering from the pre-race training period. However, the marathon can aggravate the condition, producing a flare of symptoms. The distance of the marathon, narrower than usual or tightly laced racing shoes, and the downhill running at Boston can all be aggravating factors. If you should acquire Morton's neuroma, consider new shoes, taking care to properly fit the width of your foot. You may also consider replacing the insoles of your running shoes with superior, well-padded over-the-counter insoles. Also avoid narrow shoes in your nonrunning footwear.

Metatarsalgia

The most common location for metatarsalgia is under the ball of the foot, near the base of the second toe. Think of this problem as a stone bruise of the bottom of the second metatarsal head and its associated joint. The symptoms include pain under the ball of the foot without numbness or tingling. It might feel like you are stepping on a pebble with every step. There's usually no pain or swelling on the top of the forefoot.

Metatarsalgia can be associated with abnormal foot pronation, loss of forefoot cushioning with shoe wear, using racing shoes with inadequate forefoot cushioning, or multiple foot strikes on pavement over the course of a marathon. Self-care should include ice massage for 10 to 15 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; over-the-counter insoles; and new shoes (if your current shoes already have significant mileage).

Metatarsal Stress Fractures

The second and third metatarsals are the most common to give rise to stress fractures. A metatarsal stress fracture usually occurs at one location on one metatarsal bone at any given time. The more fatigued the foot and legs are, the greater the risk of stress fractures. The symptoms of a stress fracture are pain with running, progressing to pain while standing or walking. The pain is felt more on the top of the forefoot rather than the bottom. You may notice subtle swelling on the top of your forefoot. Usually, you can find the most painful location on the top of the affected metatarsal bone with your finger. If you suspect a stress fracture, seek professional help to make the diagnosis and guide your treatment.

Plantar Fasciitis

Symptoms of plantar fasciitis include pain at the bottom of the heel or in the arch, particularly with first steps after sleep or sitting more than 20 minutes. Pain is also worse after longer or more intense running efforts. The problem is felt to be a strain of the plantar fascia, one of the supporting structures of the arch. The bottom of the heel is far more commonly affected, compared to the arch. Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; over-the-counter arch supports; calf-stretching exercise; and new shoes (if your current shoes have significant mileage).

Achilles Tendinitis

In early stages, Achilles tendinitis symptoms are present early during a run and again at the end of the run. Hills and speedwork can aggravate the condition. In later stages, the Achilles tendon will be painful with any running effort and also with walking. The tendon may be painful to squeeze. The tendon may creak when you move it, or you might notice a tender nodule or thickening. As was the case with plantar fasciitis, the tendon is often sore or stiff with first steps after sleep or after sitting more than 20 minutes. Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications and/or the supplement chondroitin sulfate; heel-lifts added to all of your shoes; gentle calf-stretching exercise; and avoiding shoes with low (less than 3/8") heel-to-ball height differential. When pain-free, begin strengthening with eccentric resistance exercises, such as standing on a chair on your tip-toes and (slowly) lowering your heel until you reach the endpoint, with your heel lower than the ball of your foot. Repeat this exercise 10 to 15 times. Progress to doing one foot at a time, then by adding weight (i.e., hold dumbbells) and reps as you become stronger.

Anterior Tibial Stress Syndrome

Just as the eccentric muscle contradictions of downhill running and racing can create delayed onset postexercise muscle soreness of the quadriceps, they can create anterior tibial stress syndrome (also called "shin splints"). Another factor favoring the development of this condition is the combination of weaker anterior (front of the leg) muscles and tighter, stronger calf muscles. This condition is marked by pain along the muscles in front of and to the outside of the tibia (shin). The pain is aggravated by downhill running. With anterior tibial stress syndrome, the pain should be more diffuse and muscle-oriented, which differentiates it from a stress fracture, which is more localized and bone-oriented. Also in contrast to anterior tibial stress syndrome, tense swelling of the muscle compartment, along with severe pain with stretching, and perhaps numbness or tingling on the top of the foot, may be a compartment syndrome. A suspected stress fracture or compartment syndrome should be evaluated by a professional without delay. Self-care of anterior tibial stress syndrome should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; gentle stretching exercises of the muscles in front of the shin, followed by strengthening exercises when pain free; and calf-stretching exercises.

Medial Tibial Stress Syndrome

In contrast to anterior tibial stress syndrome, medial tibial stress syndrome is marked by pain along the muscles on the inside edge of the tibia (shin). The chief cause is overuse in the presence of abnormal foot pronation. While there are many causes of abnormal foot pronation, one that occasionally affects marathoners is road cant. The foot landing on the high side of a canted road will be forced to pronate. When repeated continuously over the course of a marathon, medial tibial stress syndrome can result. Fortunately, runners are allowed full access to the road for much of the Boston Marathon course, so you can avoid running exclusively on either a right-sided or left-sided cant. The symptoms of medial tibial stress syndrome are diffuse and muscle-oriented in the muscle group lying on the inside edge of the tibia. Pain is worse when running with the affected side on the high side of a canted road. Localized bone pain, possibly with swelling, may suggest a stress fracture. Severe pain, tense swelling of the muscle compartment, and numbness or tingling on the bottom of the foot may indicate compartment syndrome. Again, if you suspect a stress fracture or compartment syndrome, seek professional care without delay. Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; over-the-counter arch supports; calf stretching exercises; and, if the heel counters are broken down to the inside, new shoes.

Iliotibial Band Friction Syndrome

Knee pain is another common post-marathon problem. Iliotibial band friction syndrome (and the two conditions that follow) can be one of the sources. Symptoms include pain on the outside of the knee, with or without localized swelling. The pain is worse when the knee reaches 20 degrees of flexion, particularly during the process of foot impact during running. Shock transference to the knee when muscle-supporting mechanisms are fatiguing and running on canted road surfaces are two potential marathon-specific factors that can lead to this condition. Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; new shoes (if your current shoes already have significant mileage); and a general hip-, thigh-, and leg-stretching program that focuses on iliotibial band stretching.

Patellofemoral Syndrome

This form of knee pain is usually associated with overuse and abnormal foot pronation. Symptoms include pain along the inner aspect of the patella (knee cap) particularly during the stage of running that includes foot impact. When the problem is present on one side and not the other, causative factors may include road cant (affected knee on the high side) and limb-length inequality (affected knee on the longer limb). Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medications; over-the-counter arch supports; general hip-, thigh-, and leg-stretching exercises; and, if the heel counters are broken down to the inside, new shoes.

Patellar Tendinitis

While not the most common knee injury in runners, patellar tendinitis may be among the more frequent post-Boston Marathon knee ailments. Downhill running can be an aggravating factor for patellar tendinitis as well. Symptoms include tenderness of the patellar tendon (running from the knee cap to the leg) and pain on foot impact in running.

Self-care should include ice massage for 15 to 20 minutes twice a day until pain free; over-the-counter anti-inflammatory medication; new shoes (if your current shoes have significant mileage); and a general hip-, thigh-, and leg-stretching program.

Putting It All Together: A Post-race Plan

The concept of periodization of training is well established and implemented throughout the world. In virtually all programs, the recovery mesocycle is the first phase of any major training macrocycle. Within the recovery-phase mesocycle are still smaller units of organized activity called microcycles. What follows is a suggestion for a model for your recovery phase following the Boston Marathon using the concept of microcycles.

To be able to adapt this model to your own post-race recovery program, you need to be aware of some transition indicators. Transition indicators are signals that it is OK to move on to the next microcycle in your recovery schedule. Some transition indicators may be as simple as a period of elapsed time. For example, the first microcycle lasts for the first 24 hours following the race. Some advise one day of recovery for every mile raced, meaning the recovery period following a marathon should be 26 days. However, some will interpret this guideline as a transition indicator to return to racing, while others interpret it as a transition indicator to return to more intense training efforts, including speed work and long runs. The advice here, given the goal of avoiding illness and injury, is to adopt the latter interpretation and delay your return to racing until six weeks following Boston.

Still other transition indicators are physiological. The presence of muscle soreness and stiffness should preclude you from transitioning from one microcycle to another. The same holds true if you're detecting the presence of any ailment, including those previously reviewed. Your post-race body weight can be a useful early indicator of hydration status, when compared with your pre-race body weight.

Heart-rate monitoring can be another valuable transition indicator. Resting heart rates (obtained just prior to rising) 10 beats per minute or more above your pre-race rate can be used as an indicator of persisting fatigue and incomplete recovery.

A more sensitive use of heart-rate monitoring would be to record your heart rate just before rising from bed in the morning and then again 20 seconds after rising. Subtract the first recorded rate from the higher standing rate. If all is well, the resulting calculated value should not vary more than five beats per minute from day to day or from pre-race to post-race. When these heart-rate monitoring indicators are not favorable, restrain from transitioning to the next microcycle, and even consider returning to the previous microcycle schedule until normal