

## Rethinking Recovery: the Yin and Yang of Effort and Rest

Your overall improvement as a runner owes itself to many factors, but among the most important and overlooked are your ability—and *willingness*—to recover.

We all know that during hard training, your body is provided with a stimulus that implores your physiology to improve to meet the demands of that stimulus. The hard workout results in short-term negative effects such as loss of energy and tissue breakdown. Some time is required in order to regain your ability to train at the level you were able to before the hard workout. However, the key here is that “supercompensation” eventually occurs. This is an improvement resulting from the training stimulus that places you ahead of where you were before. In order for supercompensation to occur, the recovery period must be sufficiently long, but not too long.

With too short of a recovery, the body postpones the gains seen with supercompensation, and is also, significantly, less ready to perform the next scheduled hard workout. One type of a too-short recovery is simply running the scheduled easy, recovery day as if it were a hard training day because you were feeling energetic and up to it. This is a common, but significant, mistake. It takes discipline to hold back on days like this, but if you train too hard on a recovery day, you will be more tired for your next hard day than you ought to be, resulting in a suboptimal training session. This, in turn, leads to your trying to make up for the workout on the next recovery day, and a bad cycle ensues. With continually diminished hard days, your performance fails to improve because your training is, over time, quite compromised.

Remember, the desirable (and gradual) changes in hormone levels, fat burning metabolism, capillary density, and the like occur not just because of intense bouts of training, but also because of the body’s adaptive response to these bouts in the downtime. Once you begin to think about the training and the recovery as equally important, it becomes clear that it is essential to only train hard when your body is ready to train hard. This is simply the most efficient use of the effort-recovery cycle, the yin and yang of your regimen.

First, always follow a hard day with one or more easy days. This ensures increased blood flow to the damaged tissues, which clears debris and provides the steady delivery of nutrients. These easy runs *reduce* the amount of time before you may resume hard training. But adequate recovery is necessary not just between workouts, but within a training session (e.g., intervals), and over weeks, months, and even years. With regard to these longer recovery cycles, a good rule of thumb is this: every fourth week of training should be a light week, with mileage reduced by up to 30%, and hard sessions such as speedwork eliminated. This is because the body becomes progressively more fatigued with each added week of increased stimulus. Similarly, recovery blocks between racing seasons are also a staple of the periodization training plan discussed at length in prior issues.

If you are still establishing a mileage base, days off altogether from exercise may be called for. For veteran runners, recovery runs are best kept to no longer than 50 minutes (for those logging 70-plus weekly miles), and 30 minutes for lower-mileage runners.

How do we improve our ability to recover? There are genetic factors that limit a person's ability to recover, but enough sleep and a proper diet are important. Overall, carbohydrate is most essential to replace glycogen stores; some protein is needed for regeneration of tissue; and of course fluid and electrolyte replacement must take place after each workout and on a regular basis. We tend to recover more slowly as we age, and, due to decreased testosterone levels, women tend to recover more slowly than men. Iron is an important nutrient to facilitate the manufacture of hemoglobin in your red blood cells. Hemoglobin carries oxygen from your lungs to your red blood cells, and so is an obvious cornerstone of running performance.

Recovery immediately after a workout—the cooldown—is very important too; the goal is to return the body as quickly as possible to its pre-run state of reduced heart rate, breathing rate, and core temperature. That, after all, is the state at which the true repair and supercompensation begins. By lightly jogging for 10 minutes after a hard run, you clear lactate and adrenaline from the muscles and blood at a faster rate than when idle, and you facilitate muscle resilience which reduces stiffness later. Additionally, post-exercise massage and alternating hot and cold baths have, at least anecdotally and occasionally in some studies, been reported as beneficial to speeding recovery.

After cooldown, consuming 10 to 30 grams of protein in the first hour speeds the rebuilding process. It's a good idea to take carbohydrate along with it to restore glycogen; your muscles replace glycogen at the fastest rate 30 minutes to an hour after training. Consume at least 50 grams of carbohydrate within the hour following your workout. One bagel, a 20-oz. sports drink, or two bananas will give you this quick boost.

*Run Strong*, ed. Kevin Beck, *Human Kinetics*, 2005, Chapter 11, "Making Your Recovery Count" by Pete Pfitzinger, MS, pp. 203-224

## **What's in a Trail Shoe?**

Summer is a great time to try trail running. Many runners taper their racing schedules and take time out to enjoy intensified exposure to nature rather than stressing over road-race p.r.s. If you've thought about trail running, perhaps even researched some local trails, and then wondered how suited your road running shoes were to the task, the following may shed some light on your situation.

Most runners ask whether they really need trail running shoes at all. The fact is, while you can for a time get away with a running shoe in a trail environment, you are courting injury in the form of a twisted ankle or bruised toe, not to mention putting a real pounding to shoes that are not up to the task and will become useless soon, on roads or