

Published in Trail Runner Magazine - October 2008

Too Much of a Good Thing: How do you know if you're overtraining?

By Dave Sheldon

“To go beyond is as wrong as to fall short.”

—Chinese proverb

It was a crisp autumn day, the kind made for finding peace, and even though I was standing at the trailhead, I had zero desire to run. This complete lack of motivation was matched with chronically sore legs and a dizzy feeling every time I stood up quickly. Plus, food held no appeal, and I hadn't slept well in weeks. What was wrong?

The next day, I visited an experienced healthcare practitioner, who concluded that a summer of strenuous runs, long work weeks and a stressful relationship had cooked me. I was overtrained.

WHAT IS IT?

Overtraining is a deceptively innocent word that describes a complex physiological condition brought on by a lack of proper recovery during periods of prolonged exercise. Overtraining is not the mild fatigue associated with logging more miles than usual over the course of a few days. Developing the overtraining symptoms takes much longer, and in its more severe form, the affliction can require over a year of recovery time.

To reach an overtrained state, you must put such a heavy demand on the body's repair-and-recovery mechanisms they cease to function properly. The endocrine system and its family of glands like the pituitary, thyroid and adrenals are particularly vulnerable to such abuse. Then, dump an exhausted autonomic nervous system (flight-or-fight response, cardiac function and digestion) into the equation, and losing the ability to recover from athletic activity is the least of an overtrained athlete's worries.

“During cardiovascular exercise, cortisol and adrenaline from the stress glands are released. These hormones allow for an increase in mental focus, cardiac output, and arterial pressure. This helps us run,” says functional-medicine doctor and Certified Clinical Nutritionist, Rae Lynn Riedel, DC, CCN, of Denver, Colorado. “However, the overtrained athlete loses the regulatory nature of this hormonal release mechanism and the body starts to go haywire, releasing too much or too little cortisol and adrenaline. As a result, you might feel tired but wired, suffer from frequent colds or autoimmune disorders and even increase your cardiovascular risk. There is a metabolic reason why some famous long distance runners have died at middle age from heart attacks!”

Some typical physiological symptoms brought on by overtraining and the resulting hormonal confusion include: altered cardiac function, reduction of adrenal and thyroid gland function, decreased glycogen storage and amino-acid imbalance. These physiological changes may be manifested as weight loss, the inability to gain weight, lacking the energy to exercise, chronically sore muscles, depression, sexual dysfunction, digestive issues (including heartburn), hypertension, sleep disruption and concentration difficulty. Altered heart rates when resting and/or exercising can be another key signal and each individual has their own

unique heart rate symptomology. However, elevated resting heart rates and the inability to raise ones heart rate into upper training zones are common. In advanced stages of overtraining don't be surprised by lowered resting heart rates.

WHAT'S UP, DOC?

As the ultrarunning saying goes, "If you think you are overtrained, you probably are." However, overtraining can be tricky to diagnose, so visit your physician and eliminate the chance you are not suffering from anemia, food allergies, heredity ailments, digestive problems or a host of other maladies that share symptoms with overtraining. The doctor may test your testosterone, cortisol, blood count and iron levels.

If these tests show abnormalities and the doctor rules out other possible maladies, you may be overtrained. A brutally honest appraisal of your situation is essential for accurate diagnosis, treatment and recovery. When was the last time you really enjoyed running and your legs did not hurt? Is sleep peaceful or do you toss and turn all night long? How is your appetite? Are you eating a healthy diet?

SNEAKY STAGE ONE

In its earliest stage, overtraining may be easily ignored, especially when the weather is perfect and your motivation to run is high. Mild fatigue, not being able to perform at a previous levels, sugar cravings and an elevated resting heart rate are common warning signs. Your body may be asking for a few rest days then a reduced running volume for a week or two. However, it's important to slowly work back up to your typical mileage. Starting out too fast may shock the recovering system and send you back to the couch for more rest. It's an evil cycle that is best avoided.

The more serious, middle level of overtraining is much harder to brush under the rug and best dealt with as soon as possible. Symptoms may include those from the earliest stage but felt more intensely.

Exercise physiologist and nutritionist Pam Vagnieres, MS, CNT, CSCS, of Boulder, Colorado's Nutri-Physique says, "Ironically, people striving to be healthy with vigorous exercise regimens can end up with these difficult-to-treat conditions if they don't balance their exercise with adequate rest."

Healing times vary from person to person, but taking a considerable break from any aerobic exercise (two weeks to two months) followed by a slow and deliberate rebuilding cycle should be expected. Unfortunately, many runners continue to push themselves while overtrained at this middle level for months, not knowing they're prolonging their recovery and inching closer to a full-on meltdown.

OVER THE TOP

If no steps to address these symptoms are taken, hormone levels become even more imbalanced, resting heart rates drop to abnormally low levels, as the sympathetic nervous system is too impaired to provide proper cardiac function, depression is palpable and you'll lack motivation. And when you attempt to run, your performance is at an all-time low. Runners who push themselves to this place are looking at a long recovery of a year or more. This means

very limited aerobic activity. At the very least kiss the current season goodbye. You may need to seek professional help to regain full health.

“It’s important to realize that untreated overtraining may significantly affect your long-term health,” says Vagnieres. “When adrenal fatigue, thyroid dysfunction and/or hormonal dysregulation are present, health issues such as recurrent infections, allergies, asthma, Fibromyalgia, Chronic Fatigue Syndrome, hypoglycemia, autoimmune disorders, and even diabetes, heart disease, and cancer can occur.”

PREVENTIVE MEASURES

Thankfully, when it comes to overtraining, simple prevention is the best medicine. Immediately address the signs and symptoms of a struggling recovery mechanism. Monitoring waking heart rate can also be an effective way to catch overtraining in its earliest form (see sidebar).

Keeping the engine well fueled and energized with a nutritious, well-balanced diet is vital for maintaining health during periods of high mileage running. And make sure to eat enough. Attempting to meet the demands of running and day-to-day living in a calorie-depleted state is big trouble, and at the least hinders performance.

Adds Vagnieres, “Eliminate processed foods and instead include protein, complex carbohydrates, fruits and vegetables and healthy fats in every meal. And consider taking supplemental nutrients such as B vitamins, D-ribose, CoQ10, antioxidants, l-carnitine, magnesium and omega-3 fatty acids such as fish oil. These nutrients protect the overworked mitochondria, or the powerhouse of the muscle cell, which is crucial for recovery and long term well-being.”

Ultimately, despite your goals or racing schedule, you trail run for personal enjoyment. So simply understand the symptoms of overtraining, get plenty of quality rest, eat and drink your fill, throw in an extra rest day occasionally, and you’ll virtually guarantee your running will always feel great.

One Eye Open

Monitoring morning heart rate can be a sound way to stay ahead of the overtraining curve, as heart-rate data can predict a tired body well before overtraining symptoms appear.

First, find your baseline pulse (beats per minute) when you know you are well rested and healthy. Over the next two weeks, check your pulse with a heart-rate monitor every morning right after waking before getting out of bed. This average will be your base number.

At least once a week, compare your morning heart rate to your base number. Whenever it shows a five or six beat variance (above or below) the base number, your nervous system is having trouble keeping up with the stress placed upon it. If your heart rate continues to show this variation for more than a few consecutive days, take some time off and let your body recover.

A similar test is to take the in-bed reading, then stand and take your pulse again after 20 seconds. (Wearing a heart-rate monitor for the standing count can be helpful.) The difference

between these two readings will be the baseline, and the same five- or six-beat-variance rule applies.

Respect the Machine

Start every run with well-stocked glycogen stores, then replenish your muscles with high-quality, easily digestible carbohydrates and protein within an hour of returning. Maintaining proper hydration levels is equally as important.

Sleep! If possible, take a short nap (20 to 60 minutes) after a particularly long or hard run. When asleep, the body releases growth hormone (think muscle repair). Quality zzz's also allow the nervous system a chance to reset. Going to bed early, before 11 p.m., also supports recovery.

“If you are not running on rest and recovery, you are running on stress hormones, and doing so will greatly deplete and injure the body,” says Dr. Dave Boynton, owner of Colorado's North Boulder Chiropractic. “Your muscles must have time to heal in order to grow stronger.”

Eliminate as much stress from daily living as possible. The body does not discriminate between the stress of a two-hour run or two hours spent stuck in traffic. So, if the strain of work, a relationship, etc., in combination with running starts pushing you into the red zone, think about reducing trail time, which will free up energy for coping with your non-running life. The break will also ensure your recovery system remains healthy, so when you are able to run at your desired level, you'll have ample energy.

Dave Sheldon is a Certified Advanced Rolfer™ living in Boulder, Colorado.