Avoiding, and Recovering from Over-reaching and Over-training

By Dave Scott

At some point during your athletic career you will experience fatigue—either for a few days or, possibly, for several months. Fatigue in otherwise healthy triathletes is typically the result of emotional, psychological or physical overload—or a combination of all three, and, ultimately, it takes a toll on your ability to perform. Endurance athletes are particularly vulnerable to physical overload. Too much progressive training combined with incomplete recovery can create an over-reached athlete and an over-trained body.

The term over-reaching was adopted by exercise scientists to describe the short-term overload that can be managed within a few days. However, over-reaching can develop into over-training (from which it can be more difficult to recover) if the athlete does not mitigate the factors that caused the over-reaching or fails to allocate proper recovery time.

First, it's important to recognize that an athlete who repeatedly overloads his or her body without allowing adequate recovery time will eventually reach a state that requires rest. The length of the required rest period is one difference between over-reaching and over-training. Secondly, over-reaching symptoms can sometimes be masked by an overzealous, type - A athlete. An athlete and/or a coach must objectively recognize the patterns and fluctuations in a training year to prevent the compromised results that accompany chronic over-training.

To begin, let's take a look at the characteristics that produce over-reaching. It is important to remember that individuals may demonstrate a broad range of causes. However, over-reaching is most commonly caused by:

1. Too much too soon, such as a 10- to 20-percent increase in training volume over a three- to four-week period.
2. Frequently combining two harder variables in one training session (i.e. combining a long run with challenging hills or a tempo session with speed work).
3. Two or three high-intensity (i.e. near or above lactic threshold) workouts in one week on either the bike or run.
4. Not allowing two days of easier sessions between the challenging workouts described in 2 and 3 above.
5. Overload in psychological or emotional stress in other facets of your life.
6. Lack of sleep.
7. Poor nutritional habits before, during or immediately after workouts.
8. Loading up your racing season with too many events.

If only one of these statements matched your training style, then you might be able to get through the year. However, if you nodded your head to two or more then you are likely destined to experience over-reaching and possibly slide into over-training.

Walking a Fine Line

The three training parameters that dictate success for an endurance athlete are progression, overload and recovery. Without repeated days, weeks and months of workloads that break down and rebuild you, physiological progress would come to a standstill. And, indeed, there are times throughout the year during which you need to train in a fatigued state. Your muscles may, at times, feel sore and heavy, but there is a fine line between preserving your body's ability to repair and rebound and pushing yourself into a spiral. In fact, *rebound* is the key word that differentiates a tired athlete from one who has gone too far and has crossed the line separating over-reaching from over-training.

As with the above causes of over-reaching, the symptoms of the condition demonstrated by each athlete may vary. Still, many commonalities exist:

1. Physiologists, coaches and athletes have looked at morning pulse rate as an indicator of over-reaching, and studies have confirmed that a pulse rate of four to six beats above your baseline normal can be an initial indication that you are fatigued but not necessarily over-reached. An easy day or a day off will usually bring your resting pulse back to normal. A more accurate indication of over-reaching is an inability to elevate your pulse rate and sustain it at a sub-threshold level. The body seemingly has a set governor that acts as a protective mechanism. When you are over-reached your muscles cannot and will not allow you to drive up the workload.

2. This inability to increase the pulse goes hand-in-hand with a muscular heaviness or overloaded feeling. Quite often there is a simultaneous tightness and stiffness in the joints. Regardless of the length of your warm-up, the muscles remain lethargic and heavy.

3. After a hard session the muscles can experience millions of micro-tears that can cause tenderness and soreness. The delayed onset of muscle soreness is a common symptom post-exercise (24 to 60 hours). However, if the muscles are sore for an extended period, even with light exercise, this can be a sign of over-reaching. In an effort to repair and rebuild the muscle damage, the muscle fills with water to flush out the by-products of exercise. This swelling can add to the heaviness described above.

4. A lack of sharpness during workouts as heart rate falls off for more than two days.

5. Eating habits are disrupted or compromised.

6. There is a decrease in your body weight.

If you have identified several of the above symptoms, and they last for three to five days or more, and if you ignore these symptoms, then you can push your body into a more severe state of fatigue called over-training.

Scheduling R & R to Avoid Over-training

Recognize that if over-reaching crops up several times during the year this is OK. However, if you experience a bout of over-reaching and the symptoms reoccur fewer than two weeks later (or linger, as described above), you need to modify your training workload.
Recovering from over-reaching requires four steps:

1. Identify the symptoms.

2. Take two full days of rest with no exercise.

3. Take the following three days easy. No more than 50 minutes of exercise in one session. Do not attempt more than two of these easy sessions in one day.

4. After this five-day period you can resume your normal training program. However, note that the symptoms of over-reaching should dramatically reduce during the three easy days. If they do not, then you may be on the verge of over-training. If your sleep pattern, exercise load or frequency of racing all dramatically increase and the ability to rebound diminishes, look out for over-training. The symptoms of over-training can closely parallel over-reaching; however, without adequate recovery an over-trained athlete will quite often advance to a much deeper valley of fatigue. Over-trained athletes quite often have signs of improper hormone function, such as persistent colds, lack of sleep and muscular aches for several weeks. In addition, repeated hard sessions with little or no rest can lead to chronic low levels of amino acids in the blood. As intensity increases amino acids are released to control muscle breakdown. Additionally, if the intake of carbohydrates and protein is low, particularly after exercise, then the rate of repair and protein synthesis can be delayed. This delay can, in turn, prevent the body from rebounding. Quite simply, the body never catches up to the ongoing demands placed upon it.

Over-training requires an extended recovery period of six to 12 weeks, and, in some cases, it may take several months to regain your prior fitness level. Here are the four key steps to help you recover from a bout of over-training:

1. See a sports-medicine specialist. The protocol for evaluation will be determined by the specialist and should include a complete blood panel, muscle enzyme and hormone review.

2. Rest. This may be total rest for several weeks or light activity as determined by your specialist, coach and yourself.

3. Sleep. Increase the amount of sleep you get each night to ensure you rest for between seven and nine hours.

4. Plot out a logical step-by-step increase in your training routine after a second evaluation. This gradual increase in your desired fitness level may take anywhere from six weeks to six months. Over-reaching and over-training can be controlled by recognizing the early symptoms and required patterns of recovery. During a recovery day or week, you need to ensure your body is given enough time to rebuild. Never compromise proper recovery for another hard training session.

The key to improving is progression, overload and recovery. Use all three forms of training to maximize your training and racing potential. Recovery is not an excuse; it is a necessity.