

Chapter 18 RECOVERY

第 18 章 恢复

My number one asset as a bike racer is my recovery.
-- BOBBY JULICH

作为车手我最大的长处就是我的恢复能力。
——BOBBY JULICH

Throughout this book, I have often referred to recovery and occasionally given some guidelines. This chapter will emphasize and more fully explain this important, and often underrated, aspect of training. Due to the nature of the sport, with its stage races and double-race weekends, cycling requires the athlete to be ready to go again within a few hours. In addition, the sooner a cyclist can do another breakthrough workout, the sooner his or her fitness will improve. Recovery holds the key to both of these situations.

在本书中，从头到尾，我常常提到恢复，有时还会给出一些指导方针。本章我会重点地全面地介绍这个对训练非常重要，但常被轻视的部分。由于本项运动的特性，比如多日赛或周末的双日赛，运动员需要在几个小时里做好准备并重新投入比赛。另外，车手越快地重新投入下一次突破性训练，他或她的身体素质就会提高地越快。在这两种情形下，恢复都将起到决定性的作用。

The Need for Recovery

恢复的必要性

It is reasonably easy to get athletes to train hard. Give serious riders tough workouts and they are not only challenged, but most are even happy. Competitive cyclists are successful in part because they have a great capacity and affinity for hard work. Without such drive, they would never make it in the sport.

让运动员进行艰苦训练是相当简单的。让认真的车手进行困难的训练，不但让他们感到有挑战性，而且大部分人甚至会很开心。部分有竞争力的车手能够成功就是因为他们有很强的能力并喜欢艰苦的训练。没有这样的动力，他们就不可能达到那样的成就。

If daily, arduous training was the key to victory, everyone would be atop the winner's platform. The greater challenge for the self-coached cyclist is not formidable training sessions, but rather knowing how, when, and for how long to recover following tough workouts and races. Although that sounds like it should be easy, for most it is not. Recovery is the one area of training that athletes have the most difficulty getting right.

如果每天都做艰苦的训练能够让你成功，那么每个人都能站到领奖台上了。自我训练的车手面临的最大挑战不是令人生畏的训练内容，而是在艰苦的训练和比赛之后，怎么知道如何恢复，何时能够恢复。虽然这听上去很简单，但实则不然。在训练过程中，恢复是运动员最难正确把握的方面。

Recovery determines when you can go hard again, and ultimately, it determines your fitness level. Cut recovery short enough times and the specter of overtraining lurks ever nearer. Go beyond the time needed to recover, and you end up wasting time and may even be losing some components of your fitness. Most serious athletes err on the side of not allowing enough

恢复情况决定了你何时可以重新开始艰苦训练，并且最终决定了你的身体素质水平。过于缩短用于恢复的时间的话，过度训练的幽灵就会在你身边潜伏起来。而用于恢复的时间超过需要时，你不但浪费了时间而且还可能因此而丧失某些方面的身体素质。大部分认真的运动员犯的错误都是没有留出

recovery. They believe that "training" only takes place on the bike. It is how many miles they ride, how hard the workouts are, and how often they ride that matter. To most, what they do off the bike has no relevance to fitness – it is viewed as "non-training" time and, therefore, of no consequence.

If you think that way, you are wrong. Off-the-bike-recovery time is critical to improving performance. Workouts provide the potential for increased fitness. But it's during recovery that the potential is realized. The time it takes for your body to realize this potential is also critical. The sooner you recover, the sooner you can do another quality workout. The sooner you can do another quality workout, the more fit you become. Another way of looking at it is as a formula:

$$\text{Fitness} = \text{Workout} + \text{Recovery}$$

In this formula, workout and recovery are of equal value. So the higher the intensity of the workout, the greater the depth of recovery must be, not only in terms of time, but also in terms of method. They must balance. If the balance is right, your fitness is bound to improve. Get the balance wrong often enough, and you are initially suffering, then off the back, and finally overtrained.

If you understand this relationship between workouts and recovery you will be as concerned about the quality of recovery as the difficulty of the preceding workout. The first question to answer in writing a weekly training schedule should be, "How quickly can I recover?" With the answer to that question, the week can be scheduled.

Recovery Time

What happens inside the muscles during a hard workout is not a pretty sight. If you could look into your legs with a microscope after a hard race or BT workout, what you would see looks like a battleground. The muscles appear as if a miniature bomb has exploded, with torn and

足够的恢复时间。他们相信只有骑车才算得上“训练”，包括骑了多少里程，训练课的强度有多大，以及这样的训练的频度。对大多数人来说，不骑车时所做到事情都和身体素质扯不上关系——这是所谓的“非训练”时间，所以，对训练也没有影响。

如果你这么想就错了。不骑车时的恢复过程对能力的提高非常关键。训练提供了让身体素质增加的潜力，但这种潜力却是在恢复过程中变成现实的。另外身体为实现这种潜力而花费的时间也是很关键的。你恢复得越快，你就能越早地投入下一次高质量的训练。你越早地开始下一次高质量的训练，你的身体素质也会提高得越快。下面的公式是从另一种角度来描述这种道理：

$$\text{身体素质} = \text{训练} + \text{恢复}$$

在这个公式里，训练和恢复是同等价值的。所以训练的强度越高，恢复所需的深度也越大，这里面包括时间和方法两方面的问题。训练和恢复必须保持平衡。如果做到了平衡，你的身体素质一定会提高；如果老是破坏这种平衡，你就会先感到受苦，然后退步，最后变得训练过度。

如果你明白了训练和恢复之间的这种关系，你就会象关心早先的训练的难度一样关心训练之后的恢复过程了。在写每周训练计划时要回答的第一个问题就是：“多长时间后我才能恢复？”根据这个问题的答案，你就能够安排这周的活动了。

恢复时间

在一次艰苦训练中你的肌肉里面发生的事情可不是什么美景。经过一次艰苦的比赛或突破性训练后，如果你能够用显微镜观察大腿内部的话，你看到的就如同一个战场。肌肉里好象爆炸了一个微型炸弹一样，充满了撕

jagged cell membranes evident. The damage can vary from slight to extreme, depending on how powerful the workout was. Under such conditions, it is unlikely the muscles and nervous system will be able to go hard again. Not until the cells are repaired, the energy stores rebuilt, and cellular chemistry returns to normal will another all-out effort be possible. Your racing performance depends on how long that process takes.

Much of the time needed for recovery has to do with creating new muscle protein to repair the damage. Research conducted at McMaster University in Hamilton, Ontario, and at the Washington University School of Medicine in St. Louis found that this protein resynthesis process takes several hours. The study used young, experienced weight lifters and maximal efforts followed by observation of the muscles' repair process. Reconstruction work started almost immediately following the workout. Four hours after the weight session protein activity was increased about 50 percent. By twenty-four hours post-workout it reached a peak of 109 percent of normal. Protein resynthesis was back to normal, indicating that repair was complete, thirty-six hours after the hard workout.

While this study used exhaustive strength training to measure recovery time, the results are similar to what could be expected following a hard race or cycling workout.

裂和锯齿状的细胞膜。破坏程度可能非常轻也可能非常严重，这要看训练的强度有多大。在这种情况下，肌肉和神经系统不可能再次承受艰苦训练了。直到细胞被修复，能量重新储备，细胞的化学状态恢复正常后，才可能再次开始全力以赴地投入训练。你的比赛能力是由这个过程花费的时间所决定的。

恢复期间的大部分时间里身体在重新合成新的肌肉蛋白来修复损伤。位于安大略省 Hamilton 市的 McMaster 大学，以及圣路易市的华盛顿大学医学院所做的研究表明，这种蛋白质的重新合成过程要持续几个小时。研究选取的对象是年轻有经验的举重选手，先让他们在训练中使出最大气力，然后观察肌肉的修复过程。研究发现重建工作几乎在训练后立刻就开始了。举重练习 4 个小时后，蛋白质的活动增加了大约 50%，而到了训练完的 24 小时后达到顶峰，即正常时的 109%。艰苦训练后的 36 小时，蛋白质的重新合成回到正常状态，表明修复工作的结束。

在这项研究中也测量了在竭尽全力的力量训练后的恢复时间，这与完成一次艰苦的比赛或骑行训练后得到的结果差不多。

Recovery Phases

The recovery process can be divided into three phases in relation to the workout before and during, immediately following, and long term. If each is carefully planned, recovery will be quicker and the next quality session made more productive.

恢复阶段

恢复的过程可以根据与训练之间的关系划分为 3 个阶段：训练开始前和训练中，训练刚刚结束，以及长期性的恢复。如果每个阶段都能仔细规划，那么恢复就会比较快，而且下一个高质量的训练也会更有成果。

Recovery before and during the Workout

Recovery actually starts with a warm-up before the workout or race that will cause the damage, not after. A good warm-up before starting to ride hard helps limit damage by:

- Thinning body fluids to allow easier muscle contractions
- Opening capillaries to bring more oxygen to muscles
- Raising muscle temperature so that contractions take less effort
- Conserving carbohydrates and releasing fat for fuel

The recovery process should continue during the workout with the ongoing replacement of carbohydrate-based energy stores. By drinking 18 to 24 ounces of a sports drink every hour, the training session is less stressful on the body and the recovery of the energy production system later on is enhanced. There is some research indicating that the addition of protein to your sports drink may also be beneficial. Other research has supported the addition of caffeine to the sports drink. These bodies of research are still growing.

There are individual differences in how well carbohydrate drinks are tolerated and emptied from the stomach. Find a sports drink that tastes good and doesn't upset your stomach when riding hard. Before a race, make sure you have plenty of whatever works for you on your bike and are prepared for hand-ups at feed zones. Making the drink more concentrated than is recommended on the label may cause you to dehydrate during a fast race, especially on a hot and humid day. You most likely to benefit from a sports drink during races and workouts longer than one hour are . In races lasting longer than about four hours, solid food is also necessary.

Gels may be used in place of or in addition to sports drinks. By using a gel with water you are essentially mixing a sports drink in your gut. If you don't take in enough water with the gel the risk of dehydration increases, as fluid will be

训练前和训练中的恢复

恢复实际上是从训练或比赛前的热身活动开始的。一上来就开始艰难骑行会造成损伤，但好的热身活动可以通过以下方面限制损伤的发生：

- 稀释体液，从而使肌肉收缩更容易
- 打开毛细血管，使肌肉获得更多氧气
- 增加肌肉温度，是肌肉收缩更省力
- 燃烧脂肪并节省碳水化合物的消耗

在训练期间应该继续恢复过程，即不断地补充以碳水化合物为主的能量储备。每小时喝 18-24 盎司运动饮料，这样训练过程对身体的压力就不会那么大，而随后的能量制造系统也会恢复到更高水平。有些研究表明，在你的运动饮料中添加蛋白质也会有好处的。另一项研究建议在运动饮料中添加咖啡因。这一类的研究仍然在进行中。

每个人对碳水化合物饮料的接受程度和胃排空的速度都是不同的。你应该找一种味道不错的运动饮料，在艰苦骑行时不会让你的胃不舒服。在比赛前，要确保你已经做足了在车上的热身运动，并在食品区准备好了补给袋。不要把饮料的浓度调得比标签建议的高，否则可能会在快速的比赛中造成你的脱水，特别是在热天和潮湿天。在超过 1 个小时的比赛和训练中，运动饮料最有可能给你带来好处；而对于超过 4 个小时的比赛，你必须准备固体食物。

凝胶状的能量棒也许会代替运动饮料或作为其补充。一边吃能量棒一边喝水实际上就是在你的胃里混合成运动饮料。但如果你吃能量棒时没有喝足够的水的话却会增加脱

pulled from the blood plasma into the gut to help break down the sugar of the gel. Due to this same mechanism, it's also best to wash down the gel with water rather than a sports drink.

Recovery continues with a cool-down. If you complete the interval portion of a workout and hammer all the way back to the front door and then collapse in a heap, recovery will be prolonged. Instead, always use the last ten to twenty minutes of a hard ride to bring the body back to normal. The cool-down should be a mirror image of the warm-up, although it may be considerably shorter, ending with easy pedaling in zone 1 for several minutes.

Short-Term Recovery following the Workout

As soon as you are off the bike, the most important thing you can do to speed recovery is to replace the carbohydrates and protein just used for fuel. A long and hard workout or race can deplete nearly all of your stored glycogen, a carbohydrate-based energy source, and consume several grams of muscle-bound protein. In the thirty minutes after riding, your body is several times more capable of absorbing and replenishing those fuels than at any other time.

At this time, you don't want to use the same sports drink you used on the bike. It's not potent enough. You need something designed for recovery. There are several such products now on the market. As long as you like the taste and can get 15 to 20 grams of protein and about 80 grams of simple carbohydrates from one of them, it will meet your recovery needs. You can easily make a recovery "homebrew" by adding 5 tablespoons of table sugar to 16 ounces of skim milk. Whatever you use, drink all of it within the first thirty minutes after finishing.

Short-term recovery continues for as long as the preceding workout or race lasted. So if the race was three hours long, this recovery phase lasts three hours after getting off the bike. Once past the first thirty minutes the remaining portion should be focused on foods that are

水的可能性，因为身体会从血浆里分离出水分进入消化系统来帮助分解凝胶里的糖分。同样道理，你最好是就着水，而不是就着运动饮料吃能量棒。

冷身阶段恢复仍在继续。如果你在完成间歇训练的恢复部分后，总是再次竭尽全力地骑行到家门口，然后瘫做一堆休息的话，你的恢复时间就会被延长。相反，你应该利用每次艰苦骑行的最后 10—20 分钟让身体重新恢复正常状态。冷身活动应该是热身活动的镜像，虽然它也许显得更短一些，只是在区域 1 做几分钟的轻松踩踏而已。

训练后的短期恢复

一旦你从单车上下来，你能做到最重要的加速恢复的办法就是补充被消耗掉的碳水化合物和蛋白质。一次长而艰苦的训练或比赛几乎能够耗尽你身体储备的所有糖原——一种碳水化合物类的能量来源——以及好几克影响肌肉弹性的蛋白质。骑行结束后的 30 分钟里，你的身体对这些能量的吸收和补充能力比其他任何时候都要高几倍。

这时，你不会喝平时在骑车时喝的那些运动饮料，因为它不够有效。你需要一些专门用于恢复的物品。其中某些产品目前在市场上有售。只要你选择的产品的味道是你所喜欢的，并且能够从中摄取 15—20 克蛋白质和大约 80 克碳水化合物，那么就能满足你的恢复需要了。你也可以制作“家酿”的恢复饮料，很简单，在 16 盎司的脱脂牛奶里加 5 大勺白糖就行了。但不管你喝什么，一定要在训练结束后 30 分钟内喝完。

短期恢复持续的时间与在此之前的训练或比赛的时间相当。如果比赛进行了 3 个小时，那么比赛完后的这一恢复阶段也需要 3 个小时。前 30 分钟过去之后的剩余部分应该把焦点放在中等和高等升糖指数的食物以及

moderate- to high-glycemic index along with some protein. Following the short-term recovery phase return to eating foods that are dense in vitamins and minerals and are lower on the glycemic index scale. The best such foods for long-term recovery are vegetables, fruits, and lean meats including fish and poultry. See Chapter 16 for more information on the glycemic index and nutrient-dense foods.

某些蛋白质上。短期恢复阶段结束之后，饮食应该重新恢复到大量维生素和矿物质以及低升糖指数的食物上。长期恢复的最佳食物应该是蔬菜，水果，包括鱼或家禽之类的瘦肉。关于升糖指数和食物中的营养素方面的详细信息可以参考第 16 章的内容。

Long-Term Recovery

长期恢复

In the six to nine hours after a BT workout or race, you must actively seek recovery by using one or more specific techniques. This is critical when stage racing, meaning the difference between finishing well in subsequent stages and failing to finish at all.

突破性训练或比赛后的 6—9 小时里，你必须采用一种或多种特殊方式来积极恢复身体。这在多站式比赛中尤其关键，它决定了你是在接下来的几站里顺利完赛，还是在比赛结束前就被迫倒下。

The most basic method is sleep. Nothing beats a nap for rejuvenation. In addition to a 30- to 60-minute, post-workout nap, seven to nine hours of sleep are needed each night. Other recovery methods are unique to each individual, so you will need to experiment with several of these to find the ones that work best for you.

最基本的恢复方法就是睡觉。没什么能比小睡片刻更能恢复体力的了。除了训练之后小睡 30 或 60 分钟，每天晚上也要保证 7—9 小时的睡眠。其他的恢复手段的效果都是因人而异的，所以你需要多方面尝试并从中找出最适合你的方式。

Most of these methods speed recovery by slightly increasing the heart rate, increasing blood flow to the muscles, accelerating the inflow of nutrients, reducing soreness, lowering blood pressure, or relaxing the nervous system.

这些手段中的大部分都是通过增加心率，增加进入肌肉的血液流量，加速营养素的摄入，减轻酸痛，降低血压，或舒缓神经系统，从而达到加上恢复的目的。

Hot Shower or Bath

Immediately following the cool-down and recovery drink, take a hot shower or bath for ten to fifteen minutes. Do not linger, especially in the bathtub, as you will dehydrate even more.

热水澡

冷身活动结束后并喝完恢复饮料之后，马上洗个 10—15 分钟的热水澡。不要洗得太久，特别是在浴缸里，以免加重你的脱水程度。

Active Recovery

For the experienced rider, one of the best recovery methods is to pedal easily for 15 to 30 minutes several hours after the workout and before going to bed. Pressure on the pedals should be extremely light and cadence comfortably high with very low power and heart rate low in zone 1.

积极性恢复

对有经验的骑手来说，最好的恢复方法之一就是在训练后几小时和睡觉前轻松骑行 15—30 分钟。踩踏应该非常轻松，踏频稍高一些，输出功率要低，心率保持在区域 1。

Another effective active recovery

另外还有一种有效积极的恢复手段，比

technique is better for the novice, but also works well for seasoned riders. This technique is swimming, especially with a pull buoy between the legs, or simply moving in the water while floating.

Massage

Other than sleep, most riders find a massage by a professional therapist is the most effective recovery technique. A post-race massage should employ long, flushing strokes to speed the removal of the waste products of exercise. Deep massage at this time may actually increase muscle trauma. After thirty-six hours, the therapist can apply greater point pressure, working more deeply.

Due to the expense of massage, some athletes prefer self-massage. Following a hot bath or shower, stroke the leg muscles for 20 to 30 minutes working away from the feet and toward the heart.

Sauna

Several hours following a workout or race some athletes report that a dry sauna speeds recovery. Do not use a steam room for recovery as it will have the opposite effect. Stay in the sauna for no more than ten minutes and begin drinking fluids as soon as you are done.

Relax and Stretch

Be lazy for several hours. Your legs want quality rest. Give it to them by staying off your feet whenever possible. Never stand when you can lean against something. Sit down whenever possible. Better yet, lie on the floor with your feet elevated against a wall or furniture. Sit on the floor and stretch gently. Overused muscles tighten and can't seem to relax on their own. This is best right after a hot bath or sauna and just before going to bed.

Walk in a Park or Forest

A few hours after finishing the workout or race, a short, slow walk in a heavily vegetated area such as a park or forest seems to speed recovery for some. Abundant oxygen and the aroma of grass, trees, and other plants are soothing.

较适合新手，但对老手也同样适用。这种恢复方式就是游泳，特别是在双腿中间夹一个漂浮板来游，或者简单地在水面漂浮移动。

按摩

除了睡觉，大多数骑手选择的最有效的恢复手段就是接受专业临床医师的按摩。比赛之后的按摩应该用长刮法并让皮肤发红，从而加速移除运动产生的废物。这时候做深度的按摩也许会增加肌肉的损伤。在 36 小时之后，按摩师才能够施加较重的按压力量，以及深度的按摩。

按摩的花费较大，所以有些运动员喜欢自我按摩。先洗个热水澡，然后对大腿肌肉进行 20—30 分钟的刮推，方向是从腿部下方向心脏方向刮推。

桑拿

有些运动员宣称在训练或比赛后几个小时做干蒸桑拿能加速恢复。不要到蒸汽房做恢复，因为这只能适得其反。蒸桑拿的时间不要超过 10 分钟，做完以后要马上喝水。

放松和拉伸

你可以懒散地休息几个小时。你的大腿需要有质量的休息，所以你要尽可能地让双脚放松休息，能斜靠着就千万别站着，只要有可能就坐下来，最好是能躺到地板上，把脚抬高靠着墙或家具。做在地板上柔和地拉伸，因为过度使用的肌肉比较紧无法自行放松。最好在洗完热水澡或桑拿以后和上床睡觉之前做拉伸活动。

在公园或森林里散步

训练或比赛结束几个小时以后，有些人在植物茂盛的地方，比如公园或森林里做短时间缓慢的散步好象能加速恢复，充足的氧气，花草，树木和其他植物的芳香也很享受。

Other Methods

The sports program of the former Soviet Union made a science of recovery and employed several techniques with their athletes that may or may not be available to you. They included electro muscle stimulation, ultrasound, hyperbaric chambers, sport psychology, and pharmacological supplements such as vitamins, minerals, and adaptogens. These require expert guidance.

其他方法

前苏联的体育组织创立了恢复科学，并在他们的运动员身上实验了某些恢复方法，你也许可以试试是否有用。这些方法包括：对肌肉的电击刺激，超声波，高压氧舱，体育心理学，以及药物增补，比如维生素，矿物质，和生理调节剂。这些都需要在专家指导下使用。

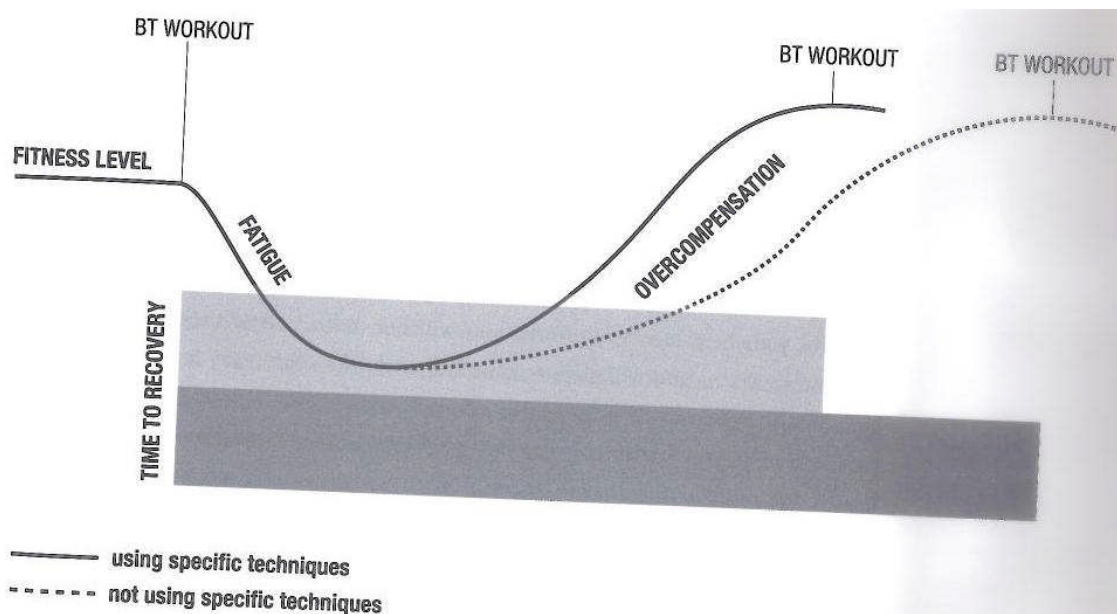


Figure 18.1 Recovery time with and without specific techniques

图 18.1 使用和不使用特殊手段的恢复时间

By employing some of the specific methods described here, you can accelerate the recovery process and return to action sooner. Figure 18.1 illustrates how this happens.

通过引入某些上述的特殊恢复手段，你能够加速恢复过程，更快地恢复活力。图 18.1 展示了这一结果。

Individualization

个性化

While I have listed several possible methods to speed recovery, you will find that some work better for you than others. You may also discover that a teammate doing the same workouts as you and following the same recovery protocol springs back at a different rate – either slower or faster. This goes back to the principle of individualization discussed in Chapter 3. While there are many physiological

虽然我列出了这么多可能的加速恢复的方法，但你会发现有些方法的使用效果比较好。你也许还会发现你的队友进行同样的训练，采用同样的恢复手段，但恢复效果却不同——要么快些，要么慢些。这就又回到第 3 章所讨论的个性化原则上了。虽然运动员们有许多生理方面的相似处，但我们每个人都是独特的，并按我们自己的方式对任何特

similarities between athletes, we are each unique and respond in our own way to any given set of circumstances. You must experiment if you want to discover how best to recover. As always, do this in training rather than in the first important stage race of the season.

There are several individual factors affecting recovery. Younger athletes, especially those who are 18- to 22-years old, recover faster than older athletes. The more race-experienced an athlete is, the quicker he or she recovers. If fitness is high, recovery is speeded up. Females were shown in one study to recover faster than males. Other factors influencing the rate of recovery are climate, diet, and psychological stress.

How do you know if you are recovering? The best indicator is performance in races and hard workouts, but these are the worst times to find out that you're not ready. Typical signs that recovery is complete include a positive attitude, feelings of health, a desire to train hard again, high-quality sleep, normal resting and exercise heart rates, and balanced emotions. If any of these are lacking, continue the recovery process. By closely monitoring such signs, you should be able to determine not only the best procedure, but also the typical time needed to bounce back.

Recovery in the Real World

If you're following the periodization program suggested in this book, there will occasionally be periods of time when you experience an increasing load of fatigue. Despite your best recovery efforts, you will not unload all of the fatigue between planned workouts and will go into some BT workouts a bit heavy legged and lacking snap. Don't expect to be fully recovered for every workout, all the time. In fact, a little workout fatigue sometimes can bring benefits in the form of supercompensation, which was discussed in earlier chapters. This can better prepare you for stage races and peak performances. You just don't want this to happen too often. Every three or four weeks,

定的外界环境做出反应。你必须通过尝试来确定什么是对你来说最好的恢复方式。再次重复一遍，在训练过程中做这些尝试，而不要在本赛季重要的多站式比赛里的第一站赛后尝试。

有一些个人因素会影响恢复。年轻的运动员，特别是那些 18—22 岁的，比年纪大的运动员恢复得快。运动员的比赛经验越丰富，他或她恢复得也越快。如果身体素质比较高，恢复也会加速。有一项研究表明女性比男性恢复速度快。其他一些会影响恢复速度的因素有：天气，饮食，精神压力。

如果了解你是否在恢复呢？最佳的指示器是在比赛和艰苦训练中的能力表现，但这也是发现你状态不佳的最糟糕的时机。恢复完成的典型特征是积极的心态，健康的感觉，对再次艰苦训练的渴望，高质量的睡眠，正常的休息和训练心率，以及平稳的情绪。如果缺少了任何一项，都应该继续恢复过程。通过仔细察看这些特征，你应该能够确定卷土重来的最佳步骤和最佳时机。

现实世界里的恢复

如果你遵循本书所建议的周期性训练计划的话，那么偶尔你会在某段时期里感到不断增加的疲劳负担。虽然你已尝试了最好的恢复手段，但在开始下次训练之前你仍然无法完全解除所有疲劳，并拖着沉重的双腿和不足的睡眠进行某些突破性训练。不要指望在任何时候的每次训练后都能充分恢复。实际上，一定的训练疲劳有时能够以超量补偿的方式让你受益，我们在前几章讨论过这个问题。只要你不是经常出现这种状况就行了。每隔三到四周，这取决于你避免过度训练的能力，你应该安排一个恢复周，让身体解除疲劳，然后再开始下一个三到四周的训练阶

depending on your ability to avoid overtraining, 段。
a recovery week should be included to allow for
the unloading of fatigue before starting a new
three- or four-week block of training.