

Chapter 13 STRETCHING

*It doesn't get any easier; you just get faster..
-- GREG LEMOND*

Physiologically speaking, cycling is not a perfect sport. But then again, no sport is. The repetitive movements of cycling cause a shortening and tightening of certain muscles. Pedaling leg muscles lose elasticity since they don't go through a full range of motion – the leg stops both before reaching a full extension and complete flexion. Muscular tension affects the back, neck, arms, and shoulders on rides lasting several hours with little change of position. Such tightness can hold you back.

A good example of how tight muscles limit your performance involves the hamstring muscle on the back of the upper leg. Of all the tightness that can result from cycling, this may be the most debilitating. Tight hamstrings restrain the leg during the down stroke. In this condition they work to prevent the leg from straightening, and in doing so, reduce the force produced by the leg. In an attempt to alleviate the tension felt in the back of the leg, the affected cyclist will often lower his or her saddle. A saddle that is set too low further reduces force generation, which in turn reduces power output.

Benefits of Stretching

Tight hamstrings can also contribute to a tight lower back, which haunts some riders on long rides as they wonder when it might lock up, forcing them to abandon a hard workout or race. Off the bike, this low-back tightness may become lower-back pain. A consistent and effective program of stretching can prevent, or, at the least, alleviate such problems. Prevention is always more comfortable, less time consuming, and cheaper than treatment.

A study of 1,543 runners in the Honolulu Marathon found that those who stretched regularly following workouts had fewer

第 13 章 拉伸活动

*这一点都不简单，但能让你更快
—— GREG LEMOND*

从生理学上说，骑车不是个完美的运动。当然话说回来，所有的运动都不完美。骑车时的重复性动作会导致部分肌肉变紧变短。踩车的动作不是全冲程的运动——腿在达到最大伸展和最大弯曲前就停止了——这样的运动使得腿部肌肉失去弹性。骑车时保持一个姿势数小时之久，这也导致后背，颈部，胳膊和肩膀的肌肉紧张。这些都会拖你的后腿。

肌肉紧张会限制运动能力，大腿后部的腿窝肌肉就是一个很好的例子。这是所有因骑车引起的肌肉变紧中影响最大的。腿窝肌肉变紧会对大腿的下踩动作起限制作用，因为在这种情况下它的作用就是阻止大腿变直，从而抵消了部分大腿产生的力量。为了减轻大腿后部的紧张，这些骑手会把坐包降低。而坐包太低更加影响发力，反而更加降低功率输出。

拉伸的好处

腿窝肌肉变紧还会造成后背紧张，这个问题常常象幽灵一样困扰一些长途骑手，迫使它们放弃一些艰苦的训练和比赛。下车以后，后背紧张也许会变成下后背疼痛。坚持不懈和有效的拉伸活动能够避免，或者说至少能减轻这些问题。预防往往比治疗更舒服，更省时，更经济。

一项对火奴鲁鲁马拉松赛的 1,543 名长跑选手的调查发现：那些比赛或训练后总是做拉伸活动的运动员比那些不做拉伸的运动

injuries that those who didn't. It is noteworthy that in this same study those who stretched only before workouts had the highest rate of injuries.

Stretching after workouts appears to aid the recovery process by improving muscle cells' uptake of amino acids. This promotes protein synthesis within muscle cells, which is necessary for full and quick recovery, and maintains the integrity of muscle cells.

Stretching after a workout takes less than fifteen minutes, and you can do it while downing a recovery drink and chatting with your training partners. This is the optimum time to work on flexibility, as the muscles are warm and supple.

Another important time to stretch is during strength workouts. The act of forcefully contracting muscles against resistance creates extreme tightness. As described in the previous chapter, following each strength set in the weight room you should stretch the muscles that were just used. Correctly doing a strength workout means spending more time stretching in the gym than lifting weights.

Stretching a little bit throughout the day is also beneficial to long-term flexibility and performance. While sitting at a desk working or reading, you can gently stretch major muscle groups such as the hamstrings and calves. Work on flexibility while watching television, standing in line, talking with friends, and first thing in the morning while still in bed. After a while, you may make it such an integral part of your life that you no longer even think about stretching. It just happens. That's when your flexibility will be at its peak.

员更少受伤，值得关注的是这一调查还发现只在比赛和训练前做拉伸活动的运动员最容易受伤。

艰苦训练后的拉伸活动似乎对身体恢复也有好处，因为它能改善肌肉细胞对氨基酸的吸收，从而提高肌肉细胞中蛋白质的合成。这些对完全和快速的身体恢复，以及保持肌肉细胞的完整都是很重要的。

训练后的拉伸活动耗时不到 15 分钟，而且你可以一边做拉伸一边喝饮料，或和队友聊天。这是锻炼身体柔韧性的最好时刻，因为这时肌肉又暖又软。

力量训练是另一个做拉伸活动的重要时机。强制性收缩肌肉来抗拒阻力的动作会造成极端的肌肉紧张。前面章节讲到，在力量房中每做一组动作你都应该对刚才使用的肌肉做拉伸活动。如果力量训练的方法正确的话，你在健身房里拉伸的时间应该比举重的时间要长。

每天做一点拉伸活动也有利于长期保持身体柔韧性。坐在桌旁工作学习时，你可以轻柔地拉伸大肌肉群，比如大腿腿窝和小腿。看电视，排队，和朋友聊天，以及早上醒来但还躺在床上时都可以练习柔韧性。照这样子过一段时间，你也许就会把拉伸练习变成生活的一部分以及下意识的活动。奇迹就这样发生了，你的柔韧性将会达到顶峰。

Stretching Models

Over the past forty years, four stretching methods have gained (and sometimes lost) popularity.

拉伸模式

在过去 40 年里，总共流行过 4 种拉伸方法（有些已经销声匿迹了）。

Ballistic

When I was in college in the 1960s, ballistic stretching was common. Bouncing movements were thought to be the best way to make muscles longer. Later we learned that this technique had just the opposite effect – muscles resisted lengthening and could even be damaged by overly motivated stretchers. Today almost no one stretches this way.

Static

In the 1970s, Californian Bob Anderson refined a stretching method and in 1980 released a book called *Stretching*. Anderson's approach involved static stretching with little or no movement at all: Stretch the muscle to a level of slight discomfort and then hold it in that position for several seconds. Static stretching remains the most popular style today.

PNF

Another method also surfaced about the same time as static stretching, but never received much exposure or support until the 1990s. Several university studies going back to the early 1970s found it to be 10 to 15 percent more effective than static stretching. This approach, called “proprioceptive neuromuscular facilitation”, has started to catch on over the last few years.

There are many variations on PNF stretching, some being quite complex. Here are the steps in one easy-to-follow version:

1. Static-stretch the muscle of about eight seconds.
2. Contract the same muscle for about eight seconds. (Leave out the contraction step when stretching between sets of strength training. Instead, hold static stretches for about fifteen seconds).
3. Static-stretch the muscle again for

钟摆式拉伸

20 世纪 60 年代我还在念大学的时候，钟摆式拉伸很普遍。来回跳动的动作被认为是使肌肉变长的最好方式。后来我们才发现这么做只有反作用——肌肉反抗变长，而且会被过度拉伸所损伤。现在几乎没人这样做拉伸活动了。

静态拉伸法

20 世纪 70 年代，加利福尼亚的 Bob Anderson 完善了拉伸理论并于 80 年代出版了一本书《拉伸活动》。Anderson 提出了静态拉伸法：拉伸肌肉到一种稍微不舒服的程度然后保持这个姿势几秒钟。静态拉伸法是今天最流行的拉伸方式。

PNF 拉伸法

与静态拉伸法同时出现的有另一种拉伸方法，但直到 90 年代以前还没有得到多少了解和支持。早在 70 年代早期，就有些大学的研究发现这种比静态拉伸法更加有效 10—15% 的方法，这就是“本体感受改善神经肌肉法”，简称 PNF。最近几年这种方法开始流行了。

PNF 拉伸法有很多变种，有些非常复杂。以下步骤是一种简单易行的版本：

1. 静态拉伸肌肉大约 8 秒钟
2. 收缩该肌肉 8 秒钟（如果是力量训练中的拉伸则跳过该步骤，改为静态拉伸 15 秒）
3. 再次拉伸该肌肉 8 秒钟
4. 继续交替收缩和拉伸动作，总共做 4—8 次静态拉伸，最后总是以静态拉伸结束。

about eight seconds.

4. Continue alternating contractions with stretches until you have done four to eight static stretches. Always finish with a static stretch.

You should find that the static stretches become deeper with each repeat as the muscles seem to loosen up.

Using this PNF method, a stretch would take one to two minutes. The time is well worth it for the benefit received.

你会发现每次重复后的静态拉伸都比前一次要更深一些，肌肉好象也更松一些。

使用 PNF 法的拉伸活动需要 1—2 分钟，但相比于它的好处，这些时间值得花。

Active-Isolated

A relatively new arrival on the fitness scene, active-isolated stretching involves brief, assisted stretches that are repeated several times. Here is a typical routine:

1. Contract the opposing muscle group as you move into a stretching position.
2. Use your hands, a rope, or a towel to enhance the stretch.
3. Stretch to the point of light tension.
4. Hold for two seconds and then release.
5. Return to the starting position and relax for two seconds.
6. Do one or two sets of eight to twelve repetitions of each two-second stretch.

积极隔离法

作为一种相当新的健身场景，积极隔离拉伸法有简短，使用辅助工具，重复多次等特点。以下为典型步骤：

1. 收缩反向肌肉群以达到拉伸姿势。
2. 用手，绳子，或毛巾来提高拉伸。
3. 拉伸到轻度紧张状态。
4. 保持 2 秒拉伸后放开。
5. 回到开始动作，放松 2 秒钟。
6. 重复以上动作，每次拉伸 2 秒，一组重复 8—12 次，做 1—2 组。

Cycling Stretches

The following are a few of the many possible stretches for cyclists. You may find that some are more important for you than others. These are the ones to focus on every day and every time you ride. You should also blend some of these with your strength training in the gym. Those combinations are indicated here and also with the strength exercise drawings in the last chapter. I recommend following this stretching order at the end of a workout. You can do most of these stretches while holding your bike for balance.

骑车拉伸

下面介绍一些骑手们很可能使用的拉伸动作。你会发现它们对你来说更加重要。因为你每次骑车时都会关注这些动作，你也应该把它们结合进健身房里的力量训练过程中。下文中有如何结合的介绍，前一章有力量训练示意图。我建议每次训练或比赛完后都按照图示的顺序做一遍拉伸活动。你可以靠自行车保持平衡来完成大部分拉伸活动。

Stork Stand

(Quadriceps)

1. While balancing against your bike or a wall, grasp your right foot behind your back with your left hand.
2. Static-stretch by gently pulling your hand up and away from your butt.
3. Keep your head up and stand erect – do not bend over at the waist.
4. Contract by pushing against your hand with your foot, more gently at first.
5. Repeat with other leg.



Figure 13.1 Stork stand

Use this stretch in the weight room during the hip extension and seated knee extension exercises.

鹤立式

(股四头肌)

1. 靠着车子或墙平滑身体，用左手从背后抓住你的右脚。
2. 轻轻地把手向上拉离臀部，静态拉伸。
3. 保持手拉的位置，站直 —— 不要弯腰。
4. 要收缩肌肉，就用脚把手推开，开始时轻一些。
5. 另一条腿重复以上动作。

图 13.1 鹤立式

举重房里，在臀部伸展和坐式直膝练习中使用这种拉伸。

Triangle

(Hamstrings)

1. Bend over at the waist while leaning on your bike or a wall.
2. Place the leg to be stretched forward with the foot about 18 inches from the bike.
3. The other leg is directly behind the first. The farther back you place this

三角式

(腿窝肌肉)

1. 靠着自行车或墙向下弯腰。
2. 把腿向前伸直，前脚离车 18 英寸。
3. 另一脚在正后方。后脚离的越远，拉伸的强度也越大。
4. 把身体重心移向前脚，把上身向下压。你应该感到前腿腿窝处被拉伸。

- leg, the greater the stretch.
4. With your weight on the front foot, sag your upper body toward the floor. You should feel the stretch in the hamstring of your forward leg.
 5. Contract the forward leg by trying to pull it backward against the floor. There will be no movement.
 6. Repeat with other leg.

5. 要收缩肌肉，就把前腿收回来。
6. 另一条腿重复以上动作。

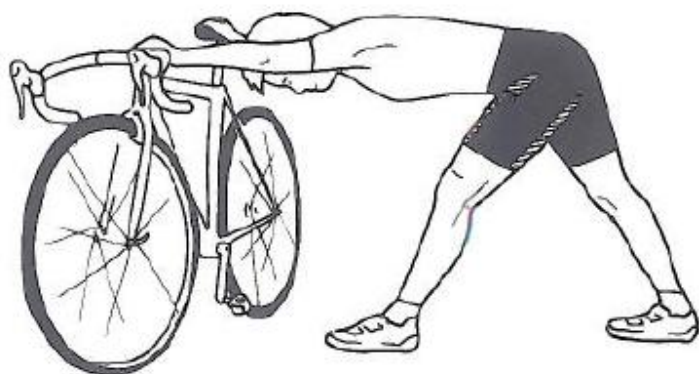


Figure 13.2 Triangle

图 13.2 三角式

Use this stretch in the weight room during the hip extension and leg curl exercises.

举重房里，在臀部拉伸和屈腿练习中使用这种拉伸。

Pull-down

俯背式

(Latissimus Dorsi, Trapezius, Pectoralis, and Triceps)

（背阔肌，斜方肌，胸大肌，肱三头肌）

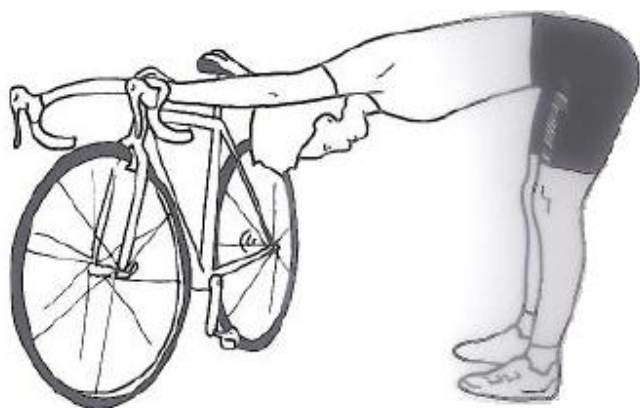


Figure 13.3 Pull-down

图 13.3 俯背式

1. Hold onto your bike or a railing for balance, with your weight resting on your arms.

1. 抓着自行车或栏杆以保持平衡，把身体重心移向手臂。
2. 让头处在伸直的手臂之间尽量下垂从

2. Allow your head to sag deeply between outstretched arms to create a stretch in your lats.
3. To contract, pull down with your arms.

In the weight room do this stretch with seated lat pulls to chest, chest press, and seated rows.

而拉伸背阔肌。

3. 要收缩肌肉，就把手放低。

举重房里，在坐式下拉，胸部平推和坐式划船练习中使用这种拉伸。

Squat

(Low Back, Calves, Quadriceps, Gluteus)

1. Using your bike for balance, squat down keeping your heels on the floor. (This is easier with cycling shoes off)
2. Allow your butt to sag close to your heels as your rock forward. Hold this position for about thirty seconds. (There is no contraction for this stretch)



Figure 13.4 Squat

Do this stretch during back extension strength exercises in the weight room.

下蹲式

(下背部，小腿，股四头肌，臀大肌)

1. 使用自行车平衡身体，下蹲并保持脚踵不离地。
2. 让臀部尽量下落贴近脚踵。保持这个姿势 30 秒（这个姿势没有收缩动作）。

图 13.4 下蹲式

举重房里，在背部伸展练习中使用这种拉伸。

Wall Lean

(Calves)

1. Lean against a wall with the leg to be stretched straight behind you and the other forward holding most of your weight.

推墙式

(小腿)

1. 后退伸直，前腿承受重心，斜靠墙。
2. 后脚踵保持不离地，脚趾向前。
3. 你的臀部越靠前，小腿的拉伸强度越

2. Keep the heel of the rear foot on the floor with the toe pointed forward.
3. The farther forward your hips move the greater the stretch in your calf.
4. To contract the calf, push against the wall as if trying to push it away using your leg.
5. Repeat with other leg.

- 大。
4. 要收缩小腿，就推墙好象要用脚把它推开。
5. 换另一条腿重复以上动作。

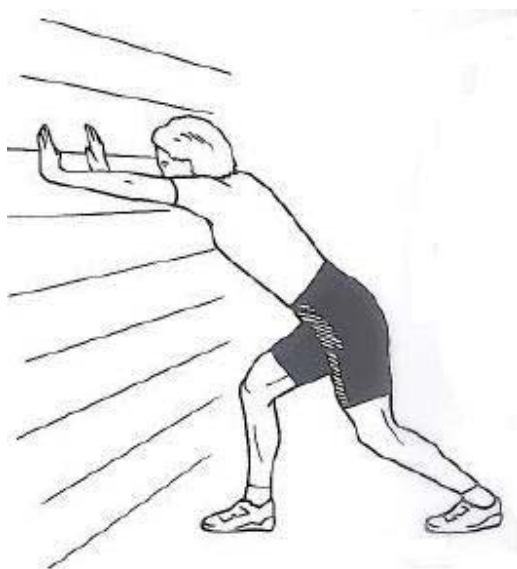


Figure 13.5 Wall lean

Use this stretch in the weight room during the heel raise exercise.

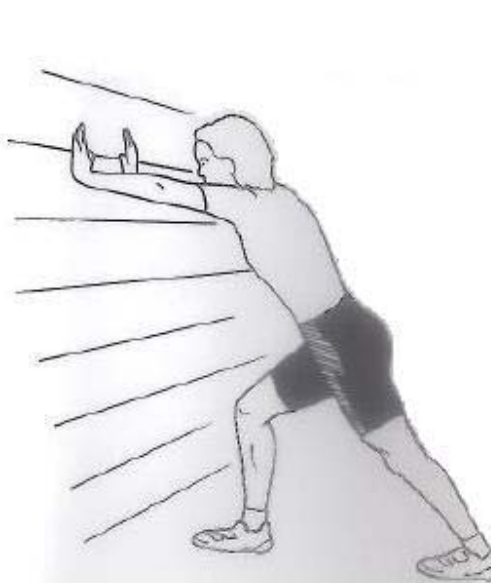


图 13.5 推墙式

举重房里，提踵练习中使用这种拉伸。