

## KNEES

IT SEEMS LIKE CYCLING SHOULD BE HARD ON THE KNEES. AT AN average cadence of 90 rpm, a rider churns out 5,400 pedal revolutions per hour or about 1.5 million pedal strokes in a 5,000-mile year.

Yet cycling is relatively benign for this complex joint because it's not a high-impact sport. There's no heel strike as there is in running. In fact, bike riding is the recommended activity for rehabilitation of most knee injuries. Even if you can't walk, run, or limp around the block on crutches, you can ride a bike.

This is because cycling isn't a full-weight-bearing activity. The pedals are always descending away from you, which means you're not putting excessive stress on your knees. Injured knees, knees that have been surgically repaired, and aging knees all want movement—and you want exercise. It all comes together on a bike.

Occasionally, however, cyclists' knees do become injured. After all, that's one hardworking joint! The good news is that most knee problems respond quickly to treatment. This chapter takes you through a list of common cycling-related knee injuries and tells you what to do about them. In most cases, core treatment consists of two key components:

- Icing
- Taking pain-relieving anti-inflammatory medication (NSAID)

## HOW TO ICE INJURIES

In general for injuries where icing is appropriate, apply ice as many as three times a day for 15 to 20 minutes each time. I frequently recommend icing injuries in this book. Here's the proper way to do it:

- Fill a plastic zip-shut food storage bag with crushed ice or small ice cubes. Place a cloth (a washcloth works well) on the skin over the injury. Lay the ice bag on top and use an elastic bandage to hold it in place (see Figure 5.1). Don't fasten the bandage too tightly or it will increase the cold on your skin, which could cause damage.
- Keep the ice pack in place for 15 to 20 minutes, then remove it for about 40 minutes, and reapply. (The general rule: Ice for 15 to 20 minutes each hour.) Repeat the process up to three times a day.

**TIP:** *Some injuries respond to focal icing—rubbing ice directly on the exact spot of the pain. Fill a small paper cup nearly full with water and put it in the freezer overnight. Once it is frozen, gently massage the afflicted area with the exposed end of the ice, like you're rubbing it with an ice cream cone. As the ice melts, peel away the paper cup to expose more ice (see Figure 5.2). Place a towel*



**FIGURE 5.1** Using an ice bag.



**FIGURE 5.2** Focal icing.

*under the injury to absorb the melting ice. Stop when your skin begins to get numb. Several 5-minute sessions per hour up to three times a day should provide plenty of therapy for your ailment without injuring your skin.*

Here's a related technique you can try for an inflamed tendon. First, ice the area. Then perform cross-friction massage by rubbing across the tendon fibers with your thumb for about 10 minutes (see Figure 5.3). Then reapply ice. Cross-friction massage may make the pain worse in the short term, but improvement will quickly follow.

**EXAMPLE:** *A member of the U.S. Cycling Team with a bad case of patellar tendinitis was flying to South America for a stage race. He didn't think he would be able to compete. I instructed him to perform icing and cross-friction massage on the plane. After two days of travel and self-treatment, he was ready to race.*



**FIGURE 5.3** Using the thumb to do a cross-friction massage of the patellar tendon.

## HOW TO USE A NSAID

Another frequent fix for cycling injuries is the use of a nonsteroidal anti-inflammatory drug (NSAID). Common trade names are Aleve, Motrin, and Advil.

**CAUTION!** *Although NSAIDs are over-the-counter medications, their use can be dangerous. Please obey the manufacturer's directions. In particular, excessive doses combined with dehydration can lead to kidney problems in some individuals.*

When using NSAIDs, you need to be especially careful riding on a tour or in periods of heavy training when you might become chronically dehydrated. Be sure you drink plenty of water when you're taking NSAIDs. Additionally, these medications can be tough on your stomach lining, so reduce the risk by taking them with food.

## PATELLAR TENDINITIS

### *Description*

Tendinitis is inflammation of a tendon, usually a result of overuse. Overdoing an activity places too much stress on the tendon before it is strong enough, and the result is microscopic tears in the tendon. The tears heal and become microscopic scars. The tearing and scarring cause the tendon to enlarge, producing an increase in friction in the tendon as it moves. The result is pain.

Patellar tendinitis refers specifically to an inflammation of the patella, or kneecap (see Figure 5.4). It's surrounded by the tendon structure that connects the quadriceps muscle group in the thigh to the lower leg.

### *Symptoms*

Symptoms of patellar tendinitis include pain in the front of the knee, below the patella, when you pedal or walk upstairs. The pain is usually stronger when you're descending stairs. You may also experience pain when you merely touch the tendon. There may be some swelling. The pain is

usually centered on the lower tip (inferior pole) of the patella where it connects to the tendon.

The tendon might squeak like a rusty hinge when you bend your knee. This worrisome noise is called crepitus and means the tendon's normal lubrication is in short supply.

If the tendinitis is severe, localized swelling may occur. It will look like a little grape at the end of your patella.



**FIGURE 5.4** The location of patellar tendinitis.

### *Causes*

This injury often appears after hard sprinting, climbing in a big gear, or off-bike jumping activities. It can also flare up after hard leg presses or squats. A combination of activities is often the culprit—riding hard early in the training season while also doing leg presses, for instance. A common cause is simply doing too much, too soon.

### *Treatment*

- Apply ice to the knee as many as three times a day for 15 to 20 minutes each time.
- Take a nonsteroidal anti-inflammatory drug (NSAID) with food.
- Check the height of your saddle and make sure you've got the proper fit.
- Pedal easily or stop riding for several days.

## SPRING KNEE

### *Description*

This is another form of tendinitis that often strikes the complex of tendons in the front of the knee (see Figure 5.5). It's an injury that results from overuse and placing too much strain on a tendon that is too weak. It