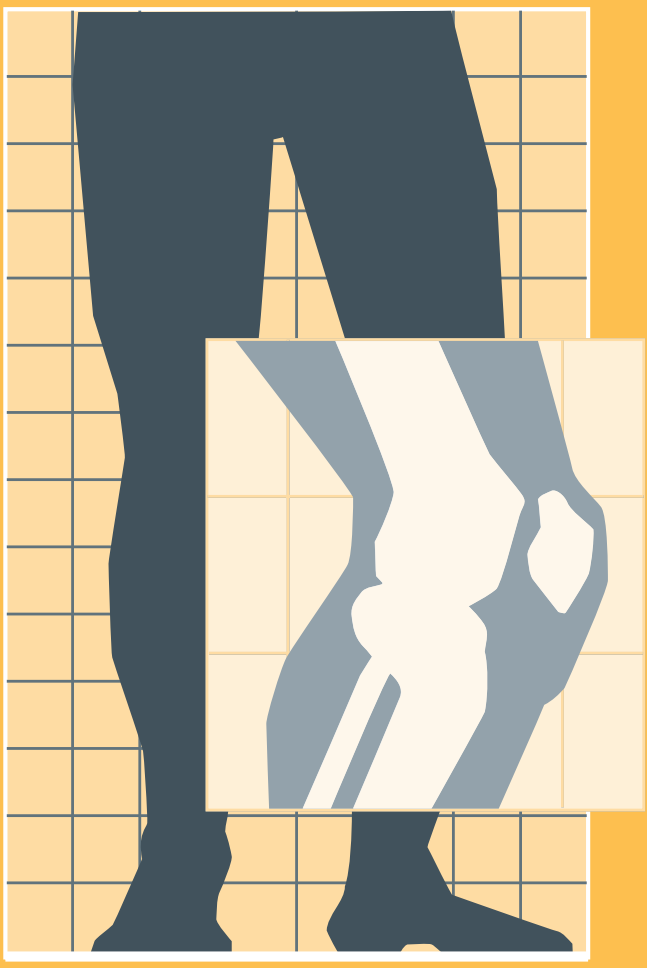
Taking Care of Your

KNEES

A Physical Therapist's Perspective



American Physical Therapy Association

Taking Care of Your Knees

When the mother of the hero Achilles dipped him in the river Styx, she held him by the heel, leaving that spot unprotected. For most of us mortals, however, that most vulnerable spot is two joints higher.

The knee is a relatively simple joint that is required to do a complicated job… to provide flexible mobility while bearing considerable weight. While walking down the street, our knees bear three to five times our body weight. When climbing stairs, that force can multiply to seven times our body weight.

That force is borne by compact structures of bone and cartilage, supported by muscles and ligaments. When the knee is overstressed in sports or in everyday activities, those structures can break down—and knee injury occurs.

This booklet will discuss knee injury and how your licensed physical therapist can help you recover function. We'll discuss ways you can prevent future injury and reduce your risk of knee injury in the first place.

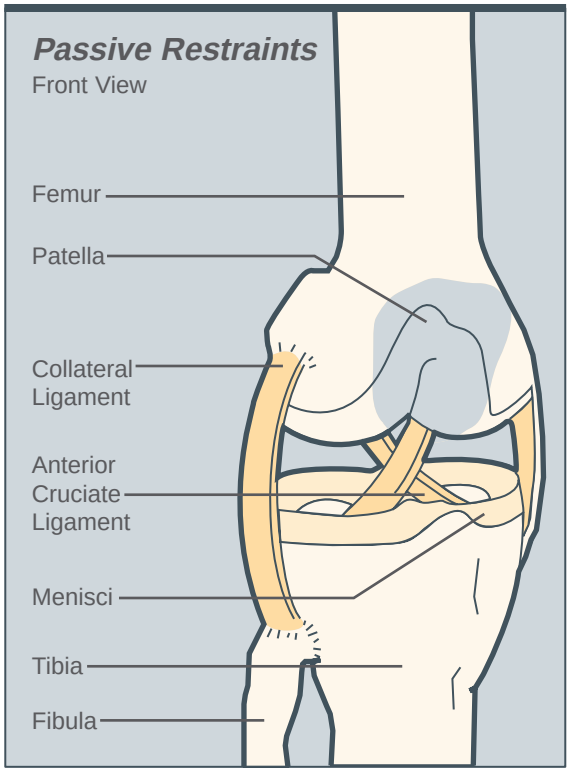
This brochure is not intended as a substitute for professional health care.

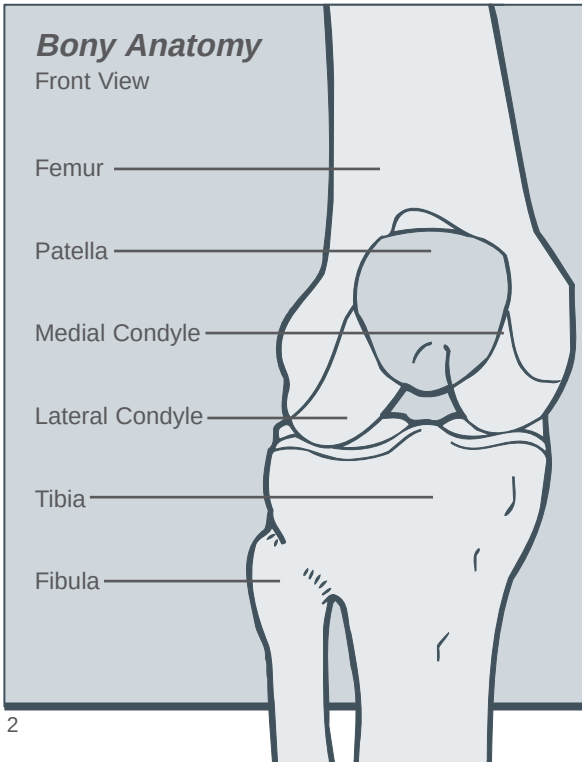
The Knee Joint

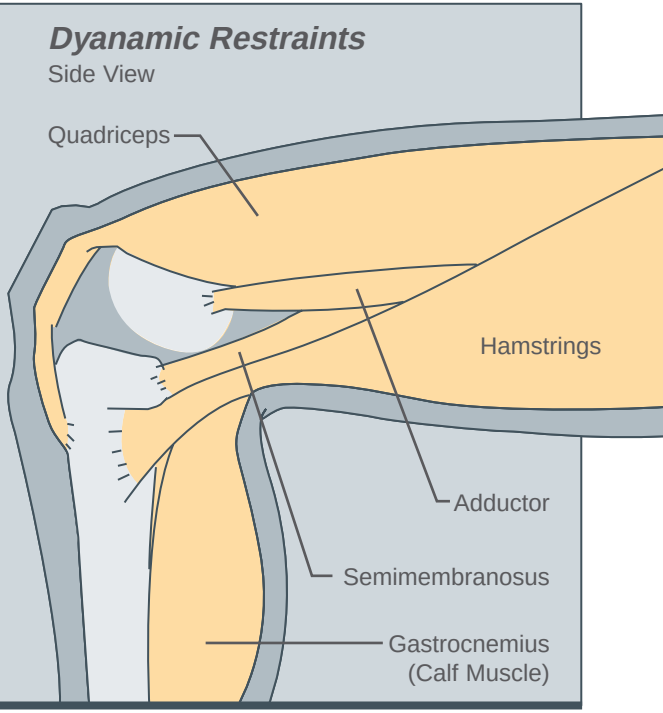
The knee joint is really *two* joints: the patello-femoral joint, where the large bone of the upper leg connects with the knee cap; and the tibio-femoral joint, where the upper leg bone hinges with the large bone of the lower leg.

These bones are held in place by a system of *passive restraints,* the fibrous *ligaments* that hold the joint in place. The joint is further supported by muscle tissue, a system of *dynamic restraints.* When conditioned and strengthened, these muscles apply forces that help hold the joint together.

The *menisci* are pads of cartilage that further stabilize the bones, and provide shock absorbency.





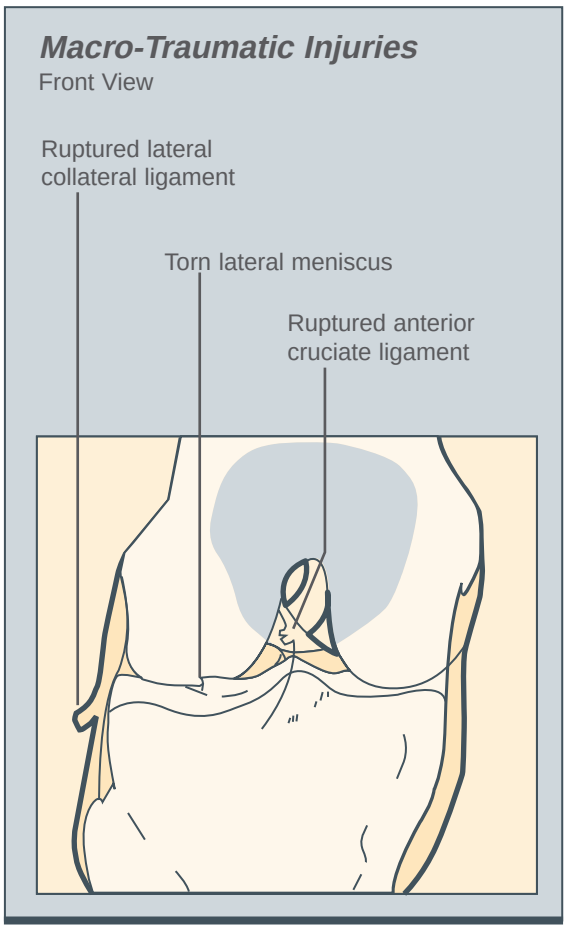


Anatomy of a "Bad Knee"

Injuries to the knee can be grouped into two categories: *acute macro-traumatic,* or injuries that result from a single event; and *micro-traumatic,* repetitive injuries that occur over time.

Acute Macro-Traumatic Injury

An example of this type of injury is a rupture or tear of a ligament, part of the passive restraint system of the knee. Perhaps most common among these injuries is rupture of the *anterior cruciate ligament,* a condition usually caused by over-rotation of the joint.

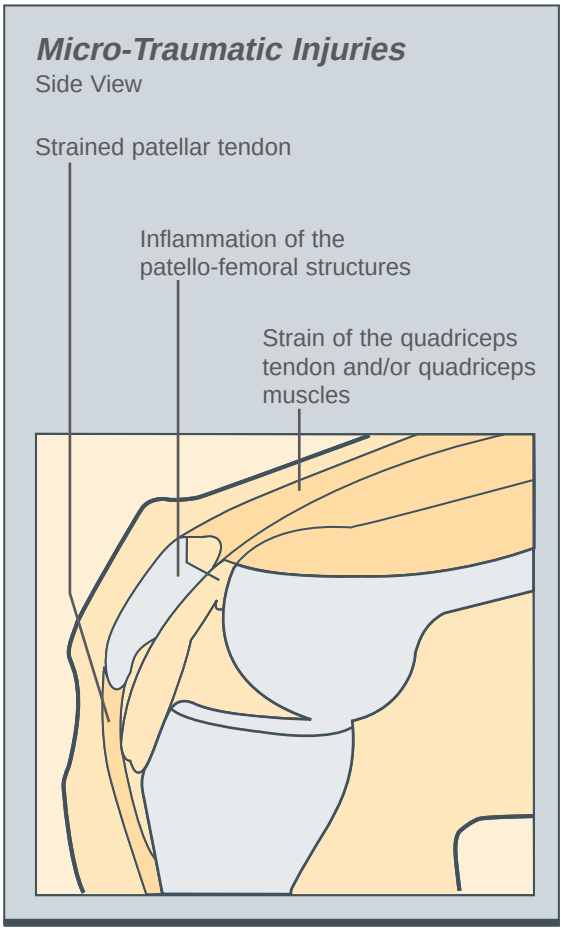


This type of injury can occur in both sports and occupations where there is excessive twisting.

Micro-Traumatic Injury

Micro-trauma is due to overstress of normal tissue. Instead of damage from one event, the knee suffers many repetitive injuries over a period of time. Another name for this condition is *overuse syndrome.*

Micro-trauma often occurs with a sudden increase in exercise level, such as when a runner increases distance or a tennis player plays extra sets.



Treatment of Knee Injuries

There is, unfortunately, no quick cure for a knee injury. Physical therapy plays a key role in treating and rehabilitating the knee, but *you* and your attitude toward recovery are the biggest factor in achieving a successful outcome.

Physical Therapy
Your licensed physical therapist will design a phased treatment plan with two main components:

1. *Maximum protection,* a series of exercises designed to help motion. Activities in this phase might include water walking, swimming, leg presses, and mini-squats; and

2. *Return to function and maintenance,* an exercise sequence to restore strength. These activities are a functional progression, that is, a gradual return to normal activities using exercises that simulate the knee stresses of your normal activities.

Surgery
Advances in surgical approaches to the knee joint have made repair to these structures practical in many cases. *Arthroscopic* surgery employs small incisions to access the joint. The surgeon views the damaged area through an arthroscope, hence the name.

These procedures are quick, involve a minimum of discomfort, and enjoy an excellent success rate. Such surgery is indicated when:

- Repair is needed for ruptured ligaments or torn menisci, or
- Some level of disability accompanies injury.

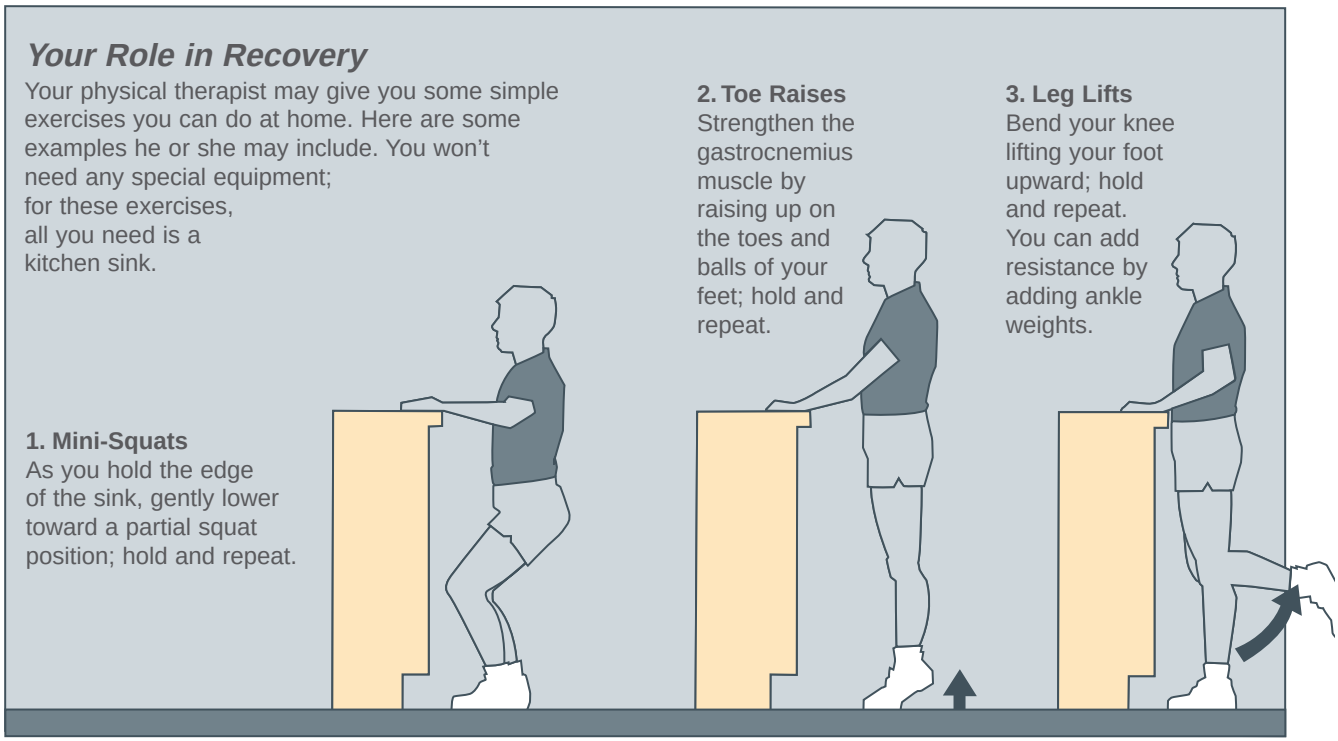
Your Role in Recovery

Your physical therapist may give you some simple exercises you can do at home. Here are some examples he or she may include. You won't need any special equipment; for these exercises, all you need is a kitchen sink.

1. Mini-Squats
As you hold the edge of the sink, gently lower toward a partial squat position; hold and repeat.

2. Toe Raises
Strengthen the gastrocnemius muscle by raising up on the toes and balls of your feet; hold and repeat.

3. Leg Lifts
Bend your knee lifting your foot upward; hold and repeat. You can add resistance by adding ankle weights.



Preventing Your Knee Injury

Your knee's tolerance for stressful activities will decrease with age and loss of conditioning. So, stresses that would not have caused injury last year could hurt your knee today. A decrease in your level of activity over a period of time will also contribute to the vulnerability of your knees.

But there are things you can do to help prevent injury so you can continue to enjoy sports and exercise. Pursuing an exercise program designed by your physical therapist, and applying some good common sense, can be your best protection from injury.

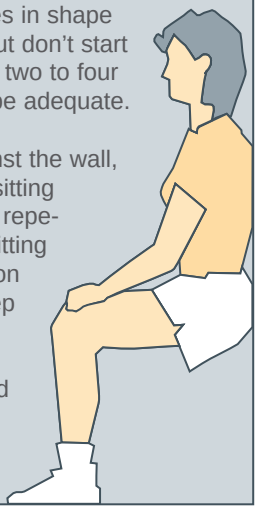
The first step in designing your exercise program is an evaluation by your physical therapist. He or she can identify your *predisposing factors,* those body traits that may make you more or less vulnerable to a knee injury.

Based on this assessment, your physical therapist can design a program that will help you gain your optimum levels of strength and conditioning.

Before Your Next Ski Trip

Here's an easy exercise that can help get your knees and muscles in shape before your next ski trip. But don't start the night before you leave; two to four weeks in advance should be adequate.

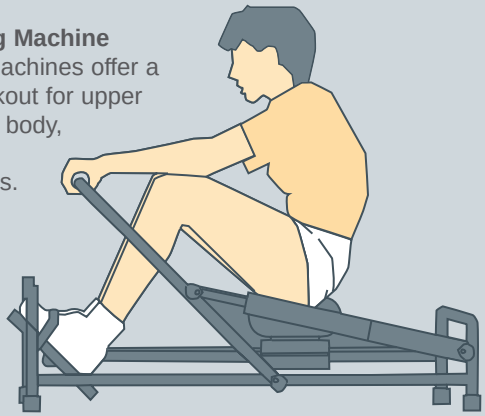
Stand with your back against the wall, then slide down to a near-sitting position. With practice and repetition, slide down to a full sitting position. Be sure to stand on a nonskid surface, and keep your feet in front of your knees. Hold 10 seconds. Repeat 10 times at first and work up to 30 repeats.



Your Exercise Prescription

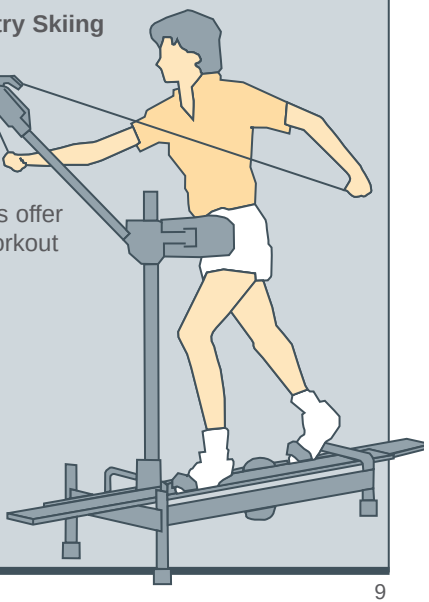
An exercise program is not generic. Because any particular exercise affects different people's bodies differently, your physical therapist will design the program that suits your body and your goals.

1. Rowing Machine
Rowing machines offer a good workout for upper and lower body, including your knees.



2. Cross Country Skiing

These machines offer a low-impact workout with variable resistance.



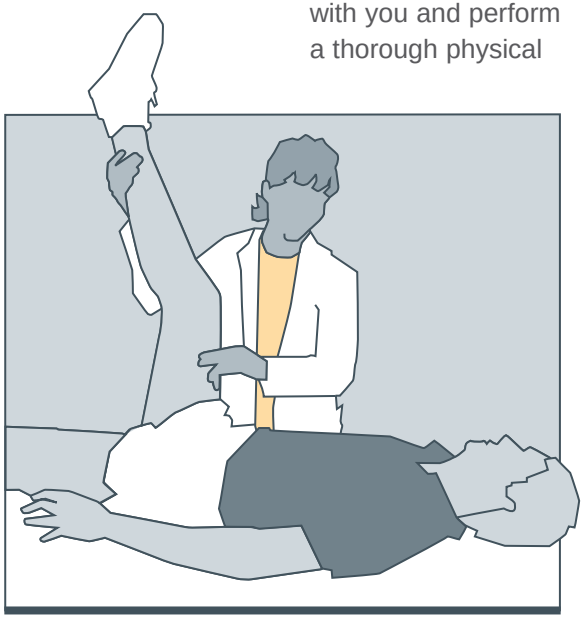
How Physical Therapy Can Help Your Knee Problems

One way to think about your physical therapist's role is as a coach — a caregiver and mentor to lead you through a course of action toward achieving your goals for your comfort and lifestyle.

It's important to recognize that you, the patient, are the most important participant in the healing and prevention process. They are, after all, your knees. Whatever treatment you receive from others, the treatment you give them, day in and day out, is just as important.

Whether you're currently suffering from a knee injury, or trying to avoid one, your physical therapist has the skills to help. It all starts with a careful evaluation.

Evaluation. Physical therapy places great emphasis on this process. Your therapist will take the time to talk with you and perform a thorough physical evaluation to identify your knee condition or predisposing factors.

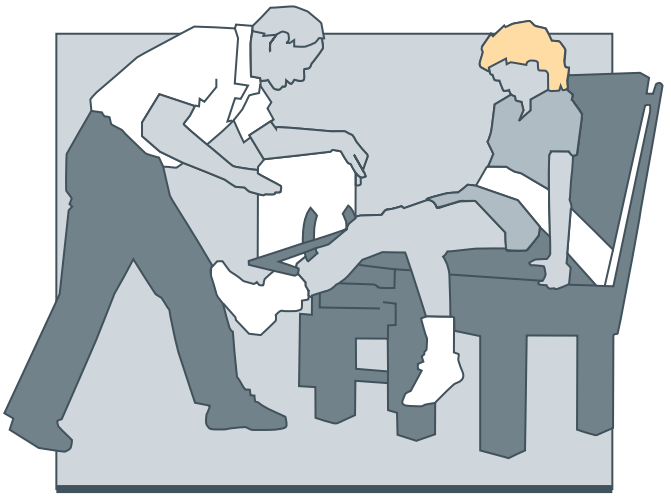


Therapy. Your physical therapist will plan a treatment regimen suited to your individual condition, and begin working to restore motion and muscular performance.

Teaching. You don't need to become an "expert" to avoid or overcome injury, but you may need to learn some new habits. Your physical therapist will help you continue therapy on your own, with a home program of exercises designed to fit your needs.

Aftercare. The goal of physical therapy is to return you to normal life as soon as possible, with the skills you need to prevent reinjury. You probably won't need to visit your therapist again unless you have another injury or pain.

As respected members of the professional health care community, licensed physical therapists work in private practice, hospitals, rehabilitation centers, industrial and sports settings, home care, and public schools.



About APTA

The American Physical Therapy Association is a national professional organization representing more than 74,000 members. The Association serves its members and the public by increasing the understanding of the physical therapy profession and its role in health care and by fostering improvements in physical therapy practice, research, and education.

Acknowledgements

Terry Malone, PT
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Other APTA Brochures

- ☐ Fit Kids
- ☐ Fit Teens
- ☐ Fitness: A Way of Life
- ☐ For the Young at Heart: Exercise Tips for Seniors
- ☐ For Women of All Ages
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