Exercise for Stronger Knees and Hips

Exercise is more than just a good health habit; it's also a specific and effective treatment for many knee and hip problems. Strength in the muscles around a damaged knee or hip can help support that joint by taking over some of its responsibilities. For example, your hips have to do less work to support your body weight if your quadriceps, gluteals, hamstrings, and abdominal muscles are stronger. A strong quadriceps can take over the shock-absorbing role usually played by the meniscus or cartilage in the knee.

The proper balance of strength in the muscles can hold the joint in the most functional and least painful position. With any knee or hip problem, the first muscles to lose strength are the largest antigravity muscles, the quadriceps and gluteals, so an exercise plan for any injury is likely to focus on these.

Muscles work in pairs — one contracts while the opposing one relaxes. For example, when you straighten your knee, your quadriceps on the front of your thigh contracts, and the hamstrings on the back relax. Imbalances in the function of paired muscles can cause joint problems and invite injury. If your hamstrings are tight, your quadriceps can't contract fully and may weaken, so exercise the quadriceps and hamstrings (the opposing muscles) equally. Flexibility exercises (to stretch and relax specific muscles) are an important part of an exercise plan to improve joint function.

Closed-chain exercising

Physical therapists have emphasized the distinction between open-chain and closed-chain exercises. The chain referred to is a series of body parts, such as a hip, knee, ankle, and foot. In an open-chain exercise, the body is stationary while the limb moves. In closed-chain exercise, the limb is stationary while the body moves. For example, a squat is a closed-chain exercise because your feet stay stationary while your quadriceps do the work. In contrast, a seated leg extension is an open-chain maneuver, because your seated body is still, but your leg moves as you extend it.

Open-chain exercises may be more effective for particular therapeutic goals such as increasing quadriceps strength after ACL injury. But overall, physical therapists are incorporating more closed-chain exercises into rehabilitation programs and recommending them for people with painful joints because these exercises involve more muscles and joints and help to create stability around a joint.

Exercising with a physical therapist

Physical therapy is often part of treatment for arthritis and other joint problems. A physical therapist individualizes your treatment program to restore or maintain your physical functioning and carries out specific instructions from your orthopedist. A physical therapy session may involve pain-relieving treatments using ice, heat, massage, or other approaches. The physical therapist supervises you in doing exercises and teaches you exercises you can do at home. Depending on the therapy center, there may be a pool and a variety of exercise equipment to use.

Gait retraining

Knee and hip problems can disrupt your normal walk by causing pain, restricting joint movement, or weakening muscles. A person's usual pattern of standing, walking, or running may also invite joint problems if weakness in key muscles, poor coaching advice, or bad habits throw off the gait. It may take many years of walking with an abnormal gait before joint injury occurs. Improper running leads to pain and injury more rapidly because it involves greater force with each stride.

A physical therapist analyzes your gait and helps you learn to walk more normally. Initially, the proper gait may feel odd; you will most likely need practice and continued instruction before it becomes comfortable. The physical therapist may suggest a change in shoes or specific exercises to strengthen muscles you may be trying to avoid using. If you have had a knee or hip replacement, gait retraining helps you relearn to stand up straight (the tendency is to lean toward your operated leg) and use both legs evenly. Gait

retraining may begin in the pool, where the water's buoyancy takes weight off the joint, makes it easier to stand up straight, and reduces the fear of falling.

Everyone into the pool!
Exercise in the water has special benefits:
The water supports your weight, reducing stress on your joints.
You can try out exercises before doing them on solid ground.
An 85° F pool is comfortable for exercise and soothes joints.
You can increase range of motion and endurance without strenuous effort or joint pain.

Exercising without stressing your hips and knees

If you like to exercise regularly but need to give your hip or knee a rest while an injury heals, here are some exercises you can do in the meantime. You can combine these exercises to create a routine lasting 30 minutes or longer:

Floor exercises, including abdominal curls, crunches, push-ups, or leg lifts
Hand weight routines, including repeated lifting of small hand weights in different directions
Exercise ball routines, including stretches, abdominal curls, or leg lifts
Swimming
Gentle yoga

Source: Harvard Health Publications – Harvard Medical School
http://www.health.harvard.edu/healthbeat/exercise-for-stronger-knees-and-hips

www.commonhealth.virginia.gov