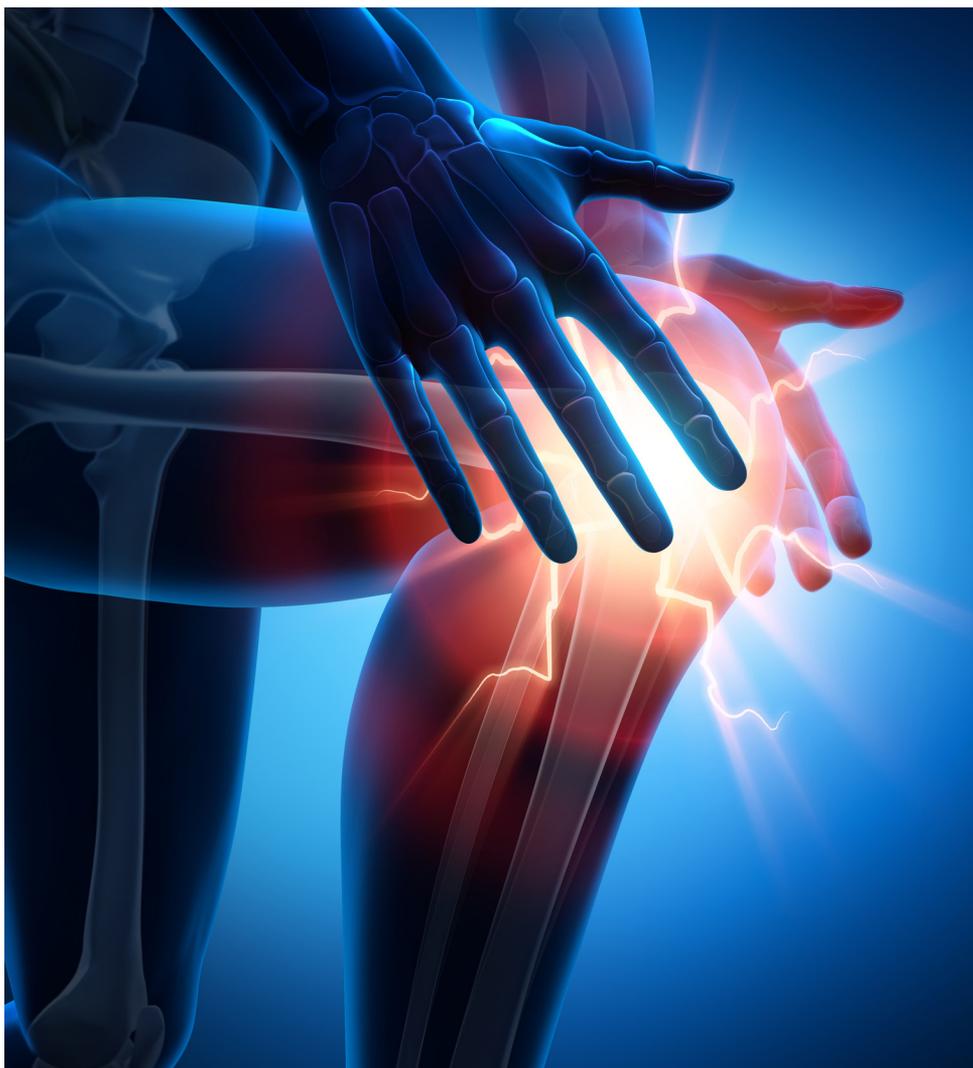




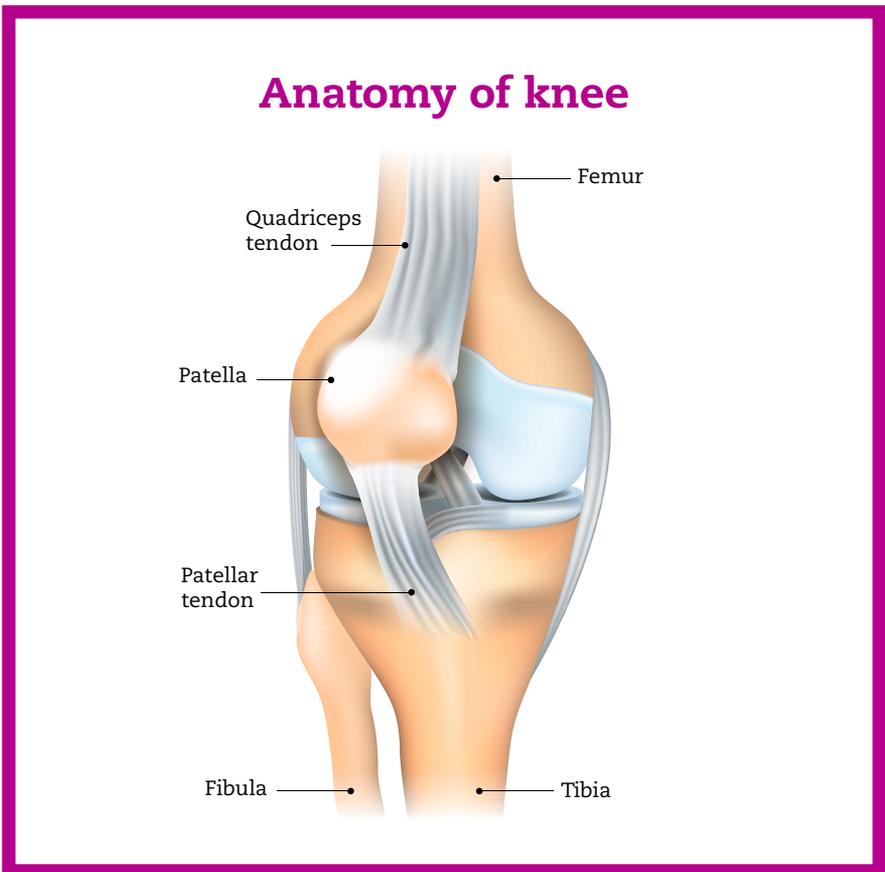
What to expect when you have Patella Instability

Patient Guide



Introduction:

The patella (kneecap) sits in the front of the knee. It is a sesamoid bone meaning that it is embedded in between two tendons — the quadriceps and patellar tendons. It protects the knee as well as helping the quadriceps (thigh muscles) to extend or straighten the knee. It is oval in shape with its undersurface being entirely covered with articular cartilage. As the knee moves the undersurface travels through a groove on the end of the femur (thigh bone) known as the trochlea. The trochlea is also covered in articular cartilage allowing the patella to 'track' or glide through the trochlear groove smoothly and easily in normal situations.



Patellar instability is a common problem in young athletes. It can occur as a result of a traumatic event or as part of a generalized joint laxity that some young individuals have, especially adolescent females. It is the most common joint to dislocate of the larger joints in our body. Dislocations can occur traumatically or can occur atraumatically in individuals who are ligamentously loose jointed. Acute or traumatic dislocations occur equally in males and females and can occur with a sudden twist or with a direct blow to the side of the knee. In loose jointed individuals much less force is needed to dislocate the patella so this can occur in even the simplest of settings. Dislocations in either situation occur most commonly between the ages of 10 and 30. When they occur the patella often relocates or reduces spontaneously when the quadriceps tighten and the knee extends.

Dislocations are painful and usually cause swelling inside the knee (called an effusion). In fact, the most common cause of a swollen knee in teenagers is a patellar dislocation. The pain and swelling make it hard to walk and make the knee feel unstable. Damage to the cartilage and bone of the patella and trochlea can occur when a dislocation occurs. Interestingly, damage usually occurs as the the patella is reduced into the trochlear groove.



Once a dislocation occurs the possibility of another dislocation increases significantly. It is even more likely, especially in ligamentously loose individuals, to have recurrent subluxations or partial dislocations. This is generally referred to as patellar instability. Patellar instability can be very disabling and often requires treatment to get back into sports and recreational activities.

Patellar instability treatment is initially directed at muscular weakness and tightness. This requires working on muscles and tissues connected to both the patella and the trochlear groove. The quadriceps are usually strong but may be unbalanced. Conversely, the muscles controlling the trochlea are commonly weak. Though not intuitive, the hip muscles control the trochlear groove position and stability as the groove is a part of the femur. The rotation of the femur is controlled entirely by hip muscles. Therefore, in order to improve the stability of the patellofemoral (kneecap) joint both thigh and hip muscles must be strengthened and conditioned. Patellar stabilizing braces. Especially during the early stages of treatment can be helpful by adding some stability and cueing of the muscles affecting the patellofemoral joint. Additionally, patellar instability can sometimes be improved by the use of orthotics with arch supports as significant pronation of the feet can increase the stress within the patellofemoral joint.



Treatment decision making

Conservative steps are often able to treat patellar instability, however, surgery may be required in some situations. As noted above, individuals with patellar instability and especially those who have suffered a patellar dislocation are had significant risk of having another dislocation or subluxation. Each additional event increases the risk that more damage is caused within the knee some of which might be permanent and not correctable.

The decision to perform surgery is a significant one as recovery time can be as long as 4-6 months. Additionally, while full recovery and return to sports is commonly possible, this is not universal. Some of the issues that affect whether do perform surgery and that need to be addressed surgically include:

- Laxity or looseness of the medial patellofemoral ligament (MPFL)
- Tightness of the lateral retinaculum (lateral knee capsule)
- Loose body within the joint (osteochondral fragment)
- Genu varum or genu valgum (abnormal angle of the knee)
- Shallow or dysplastic trochlear groove (groove on femur within which patella glides)

Individuals deciding to have surgery need to prepare for the surgery. This includes obtaining medical clearance for the surgery, deciding on a date for the surgery and setting up their home for their early post-operative recovery. The specifics of the surgery including the risks and possible complications should be understood. These should be discussed with your surgeon. Your surgeon will be able to review these options with you and help you decide which graft is best for you.

Day of surgery:

When you are planning your trip to the surgical center, be sure to wear loose-fitted, comfortable clothing. Shorts are recommended as you will come out of surgery in a brace. During cold weather months, baggy sweatpants that can go over the brace are recommended. Also make sure you wear sneakers and are not wearing flip flops or sandals. You will use crutches after surgery and loose shoes can increase your risk of a trip and fall.

The anesthesia team will perform a nerve block, which reduces pain immediately after surgery. Equipment that you may go home with include crutches, a post-operative brace, and often a cold therapy pad (cryocuff) that will connect to a cooler and helps with icing the knee by circulating cool water through the cuff.

First 24 hours post-operative:

You may feel drowsy for the first several hours after surgery, so try to get as much rest as possible. The pain after patellar stabilization surgery can be moderate to severe when the nerve block wears off. We recommend you stay ahead of the pain as best as possible, using a combination of prescription and non-prescription medications as recommended by your surgeon. Cold therapy helps reduce pain significantly and should be used often, particularly in the first 24-48 hours after surgery. Pain medication can cause constipation and other side effects. Discuss these side effects with your doctor or pharmacist and have a plan in place if you experience any of the adverse effects.

You will also want to keep your leg elevated as much as possible and sleep in a comfortable place such as your bed or couch. Ask for help when you go to the bathroom as you will feel unsteady while using your crutches for the first few days. Typically, during the initial stages of healing, you will be resting at home and not having physical therapy. The first follow up occurs usually 5-7 days post-operatively and physical therapy and rehabilitation can begin after that.

Rehabilitation:

Physical therapy and rehabilitation will progress in phases. The first goals are decreasing pain, increasing range of motion and initiating low levels of strength. Depending on the extent and different aspects of the stabilization procedure will determine how you progress through the rehab process. It is important that during the whole rehabilitation process that you listen to your body and your therapist who is directing your care.

After the first phase of rehab, which usually is 6 to 8 weeks in length, your physical therapist will transition you to more strengthening activities, advancing you as you achieve goals, milestones, and phases of the protocols that are evidenced based and practiced daily. It is at this point that you will go through your first phase of testing to gauge how you are doing and where you are in the process. This is a good time to discuss your goals with your rehabilitation team.

The second time you will be tested, Phase II, occurs around the 12-to-16-week post-operative mark. This testing series looks at how you are moving, your ability to reach through and outside your base of support, your baseline strength, and your overall balance and proprioception score. Strength testing will be performed with state-of-the-art equipment and the team will look not only at your knee but also at the muscles around your hips and core. The goal is to return you to function before returning you to your sport.



After Phase II testing, you may be referred into the Bridging the Gap program, where the goal is that you are in your strengthening phase and exercise physiologists who are certified as strength and conditioning specialists, will take you through guided strength and conditioning program. This allows you to save your Physical therapy visits for the return to sports phase of testing. If you do not meet the criteria for referral into the Bridge program that means that you still have opportunities to improve under the guidance of your physical therapy team. Re-testing will occur periodically until you qualify for bridge programming.

Things to expect:

- Running does not usually occur until the 4-month mark
- Return to sports is usually around the 6-month mark
- We have available a Bridge Program that will return you to your sport once you have completed your physical therapy





Treating the whole athlete

Hartford Healthcare Sports Medicine Specialists believe there is more to your treatment than the knee. We have specialists in Behavioral Health and Sports Nutrition to help optimize your recovery.

Behavioral health

Over the last several years an emerging theme in the scientific literature about the psychological effects of not being able to participate in sports and your normal daily activities while recovering from your surgery has occurred. One of these findings is the lack of psychological readiness to return to sport and that this may contribute to risk of re-injury. Recovery from surgery can be challenging for athletes for a variety of reasons including lack of engagement is active coping via sport, disconnect from social network, and perceived loss of identity. As such, behavioral health services can assist throughout an athlete's recovery via the following:

- Normalize an athlete's emotional response to injury via supportive discussion.
- Teach skills to cope with emotional distress associated with recovery pre- and post-surgery.
- Provide collaborative care to assist athlete in navigating pain sensations through different phases of care.
- Educate family and supports to best assist athlete in psychologically recovery from injury.

Sports nutrition

Nutrition is one method which may counter the negative impact of exercise induced injury. The field of nutrition support for exercise induced injury is a newly emerging topic in the scientific literature. It is clear that deficiencies in energy (calories), protein and other nutrients should be avoided. While somewhat obvious and intuitive the current literature concerning proper nutrition is extensive, but the evidence remains unclear as to its specifics.

Energy expenditure for athletes during sport is significant. After injury the level of exercise decreases significantly and with it a decrease in energy expenditure. However, the stress of surgery and the healing process does increase energy expenditure by as much as 15% to 50% depending on the type and severity injury over baseline levels. For instance, when on crutches the energy needed to move around is 2-3x higher than walking without them. Protein is the most prominent nutrient analyzed for nutrition support for injuries. Reduction in protein intake is detrimental to muscle metabolism. A great starting point for athletes is consuming at least 1.6 gram/kilograms of athlete's bodyweight of protein to maintain protein synthesis following the injury.



It is quite clear that careful evaluation of the athlete's situation and injury must be conducted and nutritional services from a registered dietitian can assist throughout an athlete's recovery from surgery via the following:

- Assessment of energy intake and avoiding energy deficit.
- Assessment of overall protein intake as well as bioavailability of sources.
- Provide individualized care to assist athlete with individualization of nutritional needs based on religious/cultural dietary needs, dietary eating style (vegetarian, etc.), food allergies and more.
- Advise to limit (exclude) variety of nutrients which may delay healing process (ex. alcohol).
- Educate family to best support athlete with nutritional needs to recovery from injury.
- Assist athletes with meal preparation and meal ideas which meets energy and protein needs with use of food processing database software.



We are here to help.

The Bone & Joint Institute Sports Medicine Specialists are here to help you become not only as good, but better than you were before your injury.

Call for a referral to one of our:

- Orthopedic Surgeons
- Physical Therapists
- Athletic Trainers
- Strength & Conditioning Specialists
- Sports Psychologists
- Sports Neurologists
- Sports Cardiologists
- Sports Dentists
- Integrative Medicine Providers
- Sports Nutritionists
- Biomechanists

Functional testing available:

Golf swing, tennis, throwing, running, and vocational training



Our Team of Experienced Providers

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