

Luxating Patella in Cats

What is a luxating patella?

"The term *luxating* means "out of place" or "dislocated"."

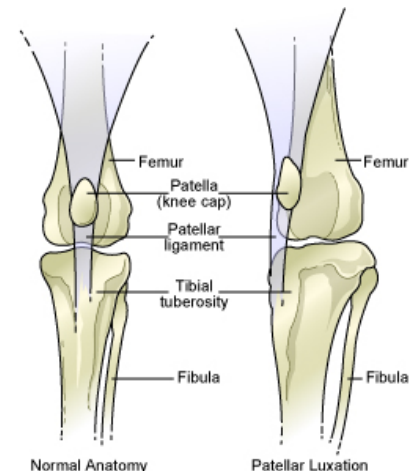
The knee joint connects the *femur*, or thighbone, and the *tibia*, or shinbone. The *patella*, or "kneecap," is normally located in a groove called the *trochlear groove*, found at the end of the femur. The term *luxating* means "out of place" or "dislocated". Therefore, a luxating patella is a kneecap that 'pops out' or moves out of its normal location.

What causes a patellar luxation?

The kneecap is embedded in the back of the *patellar ligament*, which holds the kneecap in place in its groove. The patellar ligament is a very strong ligament that attaches the *quadriceps muscle* of the thigh to the top of the tibia (shown on the illustration as the *tibial tuberosity*). When the quadriceps muscle contracts, it pulls on the patellar ligament and causes the tibia to straighten, resulting in extension of the leg. When the quadriceps muscle relaxes and the muscles along the back of the thigh contract, it pulls on the tibia causing the knee to bend or flex. During extension or flexion, the kneecap helps keep the patellar ligament in place.

The patella will luxate or slip out of the groove during extension of the leg if the trochlear groove is too shallow, if the cat is bow-legged or cow-hocked (i.e., the leg bones are excessively curved) or if the point of attachment on the tibia is off-center. Most of the time in cats, the patella luxates because the trochlear groove is too shallow, and the direction of luxation is towards the inside of the leg, and is called 'medial luxation'. Although any breed of cat can be afflicted with a patellar luxation, there may be a genetic predisposition to this problem in Devon Rex and Abyssinian cats. In some cases, patellar luxation may occur because of trauma to the bones or muscles of the hind leg.

There are 4 grades of patellar luxation, and a higher grade means that the condition is more severe. Grade I patellar luxation means that the patella can be luxated out of the groove by putting pressure on it, but as soon as the pressure is released, the patella goes back in place. Grade II patellar luxation means that the patella will intermittently pop out on its own, and will remain out until the leg is hyperextended and rotated so that the patella returns to the groove. With a Grade III patellar luxation, the patella is out of the groove the majority of the time, but it can be manually pushed back into the groove. With a Grade IV patellar luxation, the patella is permanently out of the groove and cannot be manually repositioned. In some affected cats, both kneecaps may luxate to a different degree.



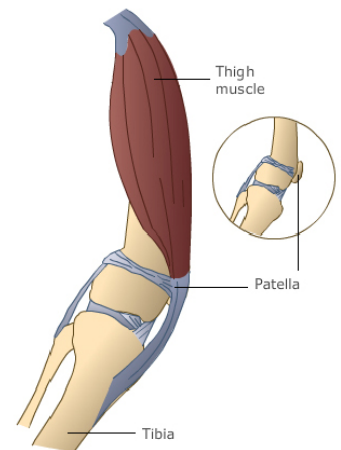
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What are the symptoms of patellar luxation?

The symptoms of patellar luxation include intermittent lameness, an unusual 'skipping' on the affected leg when the cat walks or runs, or difficulty in jumping. The lameness is what is called a 'mechanical lameness', meaning that the cat is lame because the displaced kneecap is causing abnormal pull on the bones of the leg, mechanically preventing the cat from walking properly. With a medial luxation, the lower part of the leg will usually be held out to the side as long as the kneecap is out of place. When it returns to its normal position, the cat will be able to resume normal walking. Many cats that have this condition learn how to kick the leg to the side, which causes the knee to hyperextend and snaps the patella back into place. Over time, the soft tissues around the joint become damaged and/or stretched and it becomes easier for the kneecap to pop out of place.

How is a patellar luxation diagnosed?

Your veterinarian will diagnose a luxating patella by direct palpation of the displaced kneecap (i.e., your veterinarian will feel the displaced kneecap). In some cases, particularly with young cats that have a congenital problem, your veterinarian will find this condition during a routine physical examination of your cat. In other cases, a medical history of intermittent lameness may be suggestive of this problem, and your veterinarian will confirm that the lameness is caused by a patellar luxation during examination of the affected leg. X-rays are usually performed to determine the extent of the problem and to detect whether there are any other changes or abnormalities in the joint, particularly if the luxation is caused by trauma.



Does a luxating patella cause any long-term problems for my cat?

"Patellar luxation predisposes the knee to other injuries, especially torn cruciate ligaments."

This depends upon the grade of the luxation and whether both legs are affected to the same degree. The higher the grade, the more likely the cat will develop long term problems. Some cats, especially with Grade I patellar luxation, can tolerate this condition for many years, even for their entire life. With advancing age, arthritic changes very often take place in the joint due to the abnormal movements and stress, resulting in pain or decreased mobility. Once arthritis develops, it cannot be reversed. In addition, patellar luxation predisposes the knee to other injuries, especially torn cruciate ligaments.

Can a luxating patella be corrected?

A luxating patella can be corrected surgically, especially if the patella luxates frequently. With mild Grade I luxation, surgery may not be necessary. For most cats with patellar luxation, surgery is recommended sooner rather than later to minimize the likelihood that arthritis will develop. The higher the grade of luxation, the sooner the surgery should be performed. There are several different surgical techniques that are used to repair a luxating patella, but all of them involve deepening of the trochlear groove so that the patella stays in place and tightening of the joint capsule and soft tissues that surround the joint to provide additional stability. If the point of attachment of the patellar ligament on the tibia is displaced, this will also be corrected.

Post-operatively, the recovery period is usually very rapid, especially with appropriate pain management.

What is the prognosis?

If your veterinarian performs surgery before arthritis or other knee injury occurs, the prognosis is excellent. Your cat should regain full use of its leg. However, if arthritis has already developed in the knee joint, your cat may experience intermittent pain in the leg and the arthritis may progress. Prescription medications, joint supplements or special therapeutic joint diets may slow the progression of arthritis and help control any discomfort.

This client information sheet is based on material written by: Cheryl Yuill, DVM, MSc, CVH

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