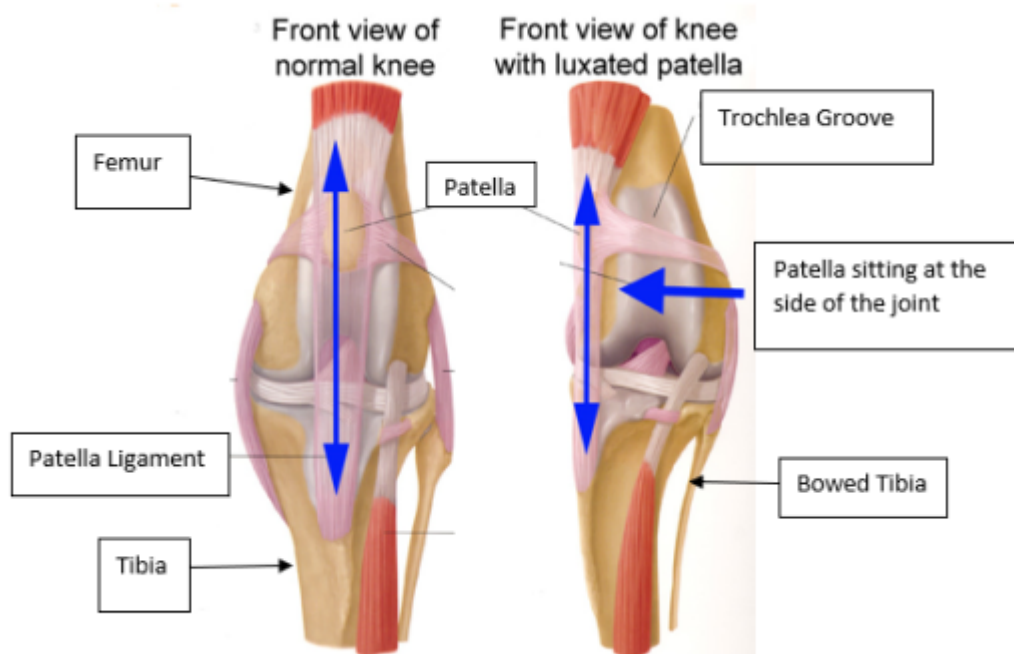




Dislocating Knee Cap (Patella luxation)

What Is Patella Luxation

Patella luxation is where the kneecap (patella) can slip out of the normal groove of the knee (stifle) and end up sitting on the side of the femur. It primarily affects small breed dogs however, it can also affect larger breed dogs as well. Patella luxation affects both knees in approximately 50% of dogs, although not all dogs will show discomfort in the early stages. Selective breeding for a bow-legged conformation has led to dogs being genetically predisposed to develop the condition. Traumatic events such as car accidents can damage the supporting structures of the stifle joint leading to patella luxation.



The patella (kneecap) is a small bone that is positioned immediately above the tendon of insertion of the quadriceps muscle group onto the top of the tibia (shin). The patella acts as a pivot point during normal extension of the knee joint. It glides up and down within a groove (trochlea groove) that forms the front of the lower thigh bone (femur). Animals are born with normal knees, but begin to develop abnormalities of the bones and muscles of the hind limbs early in life. The commonest direction of inappropriate movement of the patella is to the medial (inside) aspect of the knee joint. When the powerful quadriceps mechanism starts to displace in this direction, it acts like a bowstring and causes the bones of the thigh (femur) and shin (tibia) to deform into a pronounced outwards bow. The groove that normally houses the patella does not develop properly, and the limb deformities become self-perpetuating at this stage. Dogs with luxations can often be seen skipping from time to time as they walk on the affected leg as the patella slips out of the groove. Bilateral luxating patellas won't always appear lame as they often adapt their walking style to not bend their hind legs and have more of a waddle.

Patella luxations are graded 1-4 depending on their severity:

Grade 1: The kneecap can be moved out of place manually but will fall back into its natural position once the manipulator lets go.

Grade 2: Same as grade 1 except that the kneecap does not move back to its normal position when the manipulator lets go. Even if dogs are not showing constant discomfort the repeated flicking of the patella over the groove causes erosion of the smooth cartilage and leads to the development of arthritis as they get older. We would usually recommend these dogs to have surgery.

Grade 3: The patella is out of place all the time but can be manipulated back into its normal position manually (though it will not stay there).

Grade 4: The patella is not only out of place all the time but cannot even be manipulated back into place by hand. Dogs

with this have extreme difficulty extending their knees and will walk with their knees bent virtually all the time.

What can be done about it?

Dogs with grade 1 patella luxations and some dogs with grade 2 can be treated conservatively using Physiotherapy and pain relief as and when discomfort flares up. Most dogs of grade 2 or above would benefit from physiotherapy and surgery. The surgery usually consists of three parts:

Part 1: This involves deepening the groove the patella sits in, which requires us to remove some of the bone from the trochlea groove.

Part 2: Here we realign where the tendon pulls over the groove in the femur. Here we cut the bone the patella tendon is attached to and realign it to make the knee straighter. This technique is usually needed in most grade 3 luxations and above and in some grade 2 luxations depending on the conformation of the knee.

Part 3: Is to tighten the tissues around the knee joint. This helps to hold the patella closer to the groove. Each case is a little different so we would go through the likely surgery on an individual basis.

What happens after surgery?

Straight after surgery, your pet is likely to have a shaved leg and usually, there will be no visible sutures holding the skin. They will often be a little reluctant to use the leg immediately but will usually start placing the foot down within a few days.

The recovery time from surgery depends on what we have needed to do. If we have only needed to perform the first part of surgery then we wait for the soft tissues to heal which is around 10-14 days. After this physiotherapy is used to help your dog get back to using their leg normally and building up their exercise tolerance.

If your dog's conformation requires further stages of surgery to realign the tendon pull then this requires us to cut bone. The rest period then is usually 6 weeks as we have to wait for the bone to heal. A postoperative radiograph needs to be taken at 5 weeks to check how things are healing. Dogs can be walked for 5-10min 3x daily on a lead but off-leash exercise, jumping and running must be prevented until we can see the cut has healed ok.

Potential Complications

Complications are rare and most will sort themselves out if given time to rest and anti-inflammatories. It is important to remember though that we are never going to make the joint perfect. However well the surgery and recovery goes the joint will not be as good as a dog that doesn't have the condition. If something is happening that you are not sure about the first step is to get back in touch with us but I have outlined a few possible complications.

Continued discomfort - Following surgery a small number of dogs will show continued discomfort with the leg. The exact cause of discomfort can sometimes be difficult to diagnose. Often there are secondary changes such as arthritis in the joint which can be a permanent change. Surgery can't remove this arthritis but it does tend to reduce how fast it develops. Most dogs with discomfort following surgery do improve over time with pain relief. If it continues, we may need to investigate with x-rays.

Implant rejection - When we perform the surgery usually two pins are placed into the top of the tibia to hold it in place. Very rarely the body will view these pins as foreign material and try to reject them. This is extremely rare but when it does happen, we usually need to re-operate to remove them. We do occasionally see this reaction to some of the suture material that we use.

Infection - We work to very high standards of sterility and generally use intravenous antibiotics during surgery to try and reduce infection. It is almost unheard of to get infections post-surgery but it is still possible, especially if surgical sites get licked or wet when they go home. It is possible with infections to need to remove certain implants, which would require another surgery.

Cruciate rupture - Patella luxation does increase the risk of dogs developing a ruptured cruciate. This is due to the knee not function properly so they are put under more strain. Surgery does appear to reduce the risk of this happening but it doesn't totally stop it. I have certainly operated on dogs for ruptured a cruciate that have had patella alignment surgery.

Recurrent luxation - It is possible that continued remodelling further up the leg as the dog gets older for the knee cap to start to dislocate again as they get older.