

Patellar Luxation

By Dr. Karen Becker

Hi, this is Dr. Karen Becker. We're going to discuss patellar luxation, which is also called luxating patella or floating kneecap. It's most often seen in small and tiny dogs. Actually, the condition can kind of sneak up on you, because oftentimes your dog seems just fine. There's no injury. There's no limping. There's no pain. These dogs are usually very, very active. They run and play normally.

Sometimes the only subtle sign that you can tell that your pet may be dealing with this genetic defect is that she skips or hops on a walk. They're walking along fine and then you see them pick up a back leg and maybe hop for a step or two and then put it back down and be completely normal, and that's it.

Usually, what happens is you have no idea that this genetic condition is going on and your small- to medium-sized dog is playing, and then suddenly yelps, cries out and picks up a back leg. He's holding it off the ground, hops along. He's clearly in distress, and then tends to put the leg back down and keep walking like everything was fine.

It's like acute lameness, and then the whole issue goes away, which can be, of course, concerning, because their recovery is just as amazing and profound as the apparent injury was. It can be super confusing to pet parents, where their dog is suddenly injured and then appears to have this amazing recovery instantaneously – probably luxating patella.

What you have just witnessed in these episodes is your dog's kneecap pops out of its groove or out of place, which causes him, of course, to stop in his tracks, hold up the leg, and try and relieve the discomfort. In many of those instances, the kneecaps pop back in place when the dog picks up their leg. Once the kneecap is back in its original location, they're completely fine. These super confusing episodes are very, very common for pet parents who own a dog with a luxating patella or a floating kneecap.

Many people regularly tell me, "My dog was suddenly lame." They call the hospital and say, "My dog is suddenly lame, and now they're fine. But the fact that they were suddenly lame is really concerning for me." This condition is very, very common. Oftentimes, you have no idea what's happening until there's this acute episode.

What's happening physiologically is your dog's kneecap sits like a little pea in a pod at the same place in her leg that yours does, which is at the distal end of the far edge of the femur or thighbone. The patella helps the quadriceps muscles move smoothly across the joint between the thigh and the lower leg. The kneecap moves up and down in a wedge-shaped groove right on the thighbone.

The patella ridges hold the kneecap in place. As long as the ridges are deep, it really means that the kneecap can sit beautifully, kind of lodged where it needs to be, then there's no issue. But if

the kneecap – in many, many dog breeds, this is the case – where there are flat patella ridges, where there's not enough of a ridge to actually hold the kneecap in place, that means that the kneecap can move. It can move either to the inside or to the outside of the groove that it was originally designed to sit in.

In larger dogs, the kneecap tends to pop to the outside, called the lateral luxation, while in smaller dogs, the kneecap tends to pop to the inside, or a medial luxation.

Dog Breeds at Risk of Patellar Luxation

The genetic predisposition for floating kneecaps occurs in many tiny dogs, including miniature and toy poodles, the Maltese, Jack Russell terriers, Yorkies, Pomeranians, Pekingese, Chihuahuas, Papillons and the Boston terrier. Short-legged dogs, like basset hounds and dachshunds, don't have the genetic predisposition for this to occur, but because their femurs are so short, sometimes it can change the ergonomics of the knee. The dogs can end up with luxating patella, even though they have a deep groove or patella groove.

Large breeds actually have less of a genetic predisposition with knee cap issues than smaller breed dogs. Larger breed dogs typically have a nice deep groove for their patella to sit in. However, some large breed dogs are prone to hip problems. If the joint above the kneecap, which, of course, is the hip, or the one below the kneecap, like the ankle, develops a problem, then, actually, it can change the ergonomics of the knee as well. You can end up with a secondary luxating patella.

If there's a problem with your large breed dog's hips, it can eventually actually force the patella out of its groove. That can be a secondary luxating patella as well. Large and giant breed dogs do have hip dysplasia with secondary patellar luxations, because the hip joints were malformed, and then, of course, that shifts the joint of the knee, which can end up manifesting more so that the knee injury comes on first. When you're taking an X-ray of the knee, you'll [discover] that the dog has hip dysplasia.

Cats can also develop floating kneecaps. However, this situation is usually much less severe, because they're much lighter in body weight. Cats are actually much more flexible in their bodies. They can move very, very differently as well. A 10-pound cat with a kneecap issue is a significantly different problem than a 100-pound dog, especially because they do a really good job of shifting their body weight around, so that they can compensate much better.

Four Levels of Patellar Luxation

There are four levels of severity of a luxating patella. Grade 1 is the mildest. Grade 4 is the most severe. A Grade 1 luxating patella describes a kneecap that pops out, or can be manually popped out by the veterinarian, but pops right back in on its own. A Grade 2 luxating patella describes a kneecap that pops out of place and doesn't always pop in automatically, which means sometimes the veterinarian has to push it back in to re-seat it in its natural place.

A Grade 3 luxating patella is when the kneecap sits outside of its groove most of the time, but it can be pushed back into its normal place, where it will stay temporarily. A Grade 4 luxating patella is the worst-case scenario, which means the kneecap sits outside of the groove all the time. Even when the veterinarian tries to push it back in, it pops right back out. It's always seated in a very unnatural position.

It's important to understand that a displaced kneecap can cause intense pain for the animal. In fact, in young dogs often with strong, resilient joint cartilage, the patella can pop in and out without obvious signs of pain, except that original jolt when it moves out of its joint as it pops across the patella ridge. But then, of course, the pain doesn't seem obvious.

Here's why: The femur and the kneecap are covered with cartilage. Cartilage doesn't have a nerve supply, so the pain of the bone sitting in the incorrect position isn't fully noted until the cartilage is completely gone. And then when there's nerve-to-nerve contact, there is intense pain.

This can become the case where you have a young dog, where you notice that they're intermittently limping, but they seem totally normal in between. They're not having constant pain because they still have some cartilage that's protecting those nerve endings. As that cartilage wears thin, pain can become more notable and more consistent.

In young pets, as the cartilage wears down from the frequent travel of the kneecap in and out of its regular groove, which is basically the beginning of early arthritis, there will be some bone-to-bone contact at some point, early on in your dog's life if they have a significant kneecap luxation. Obviously, the speed at which degeneration occurs depends on the size of your pet, the severity of the luxation, and the amount of use and abuse that those rear limbs take.

The more well-muscled your dog is, the slower those changes tend to occur, because muscle tone holds your dog's skeletal system, including those kneecaps, in place. You can never underestimate amazing muscle tone for helping to slow down the progression of this condition.

If your dog is diagnosed with even a mild Grade 1 luxating patella, I recommend that you address it right away. The quicker you take a proactive approach to treating this condition, especially in young dogs, the better your chances of avoiding surgery down the road, as well as joint degeneration or arthritis, and a decreased quality of life.

Recommendations for Patellar Luxation Treatment

The first thing you should do for a dog that's been diagnosed with a floating kneecap is to help him achieve and maintain his ideal body weight. The heavier the dog, the more burden there will be on both of his knees. If your dog tends to be a little bit overweight, diet him down to his ideal body weight. Optimal body weight for your dog means a lot of lean muscle and a reduced amount of fat. Keeping him lean is just less stress on the joints.

Number two is it's very important to maintain your dog's motion. Maintaining excellent muscle tone will help give your dog's body kind of a cage around that knee that will help stabilize the patella.

Years ago, veterinarians actually advised dogs with floating kneecaps to not move, to kind of keep still and rest. We know that that's a really bad idea, because the muscle tone goes away and the knee ligaments can become more lax, which can actually exacerbate the condition. The more toned the muscles of your dog's legs, then the more stable the kneecap will be.

Building muscle is a really important part of reducing the clinical symptoms of a luxating patella. Muscle tone can't be bought, which means no matter how many supplements you put in your dog's mouth, it doesn't constitute a great muscle or great body tone. You must simply do the hard work, which means daily aerobic, heart-thumping exercise to intentionally build muscle tone.

An hour of exercise is my recommendation. It doesn't have to be a lot of jumping, but daily aerobic quadriceps-building muscle tone is really important. If you can't keep or physically do that, or if your pet is too painful or obese to move that well, then I highly recommend you send your dog to a physical therapist or a rehab therapist, who can get your dog into an underwater treadmill to begin building that critical muscle tone necessary to hold her kneecap in place, as well as support the other three limbs that are burdened by the dog offloading.

The third thing I recommend you do is to provide your dog with oral joint support, in the form of glycosaminoglycans, or GAGs. Glycosaminoglycans, GAGs – we just call them GAGs because glycosaminoglycans is a big word. These are the raw building blocks for cartilage repair and maintenance.

There are several different types of GAGs on the market specific for veterinary use. However, I typically use primarily human oral joint support supplements to help maintain the integrity of the knee cartilage while also improving joint fluid. Those include SAME, glucosamine, chondroitin, perna mussel, methylsulfonylmethane (MSM) and several different natural anti-inflammatories, which can help with pain, including curcumin.

I also recommend that you discuss this subject of luxating patella with your integrative or proactive veterinarian, who will be able to suggest and actually provide the right amount of supplements to rebuild and maintain strong, resilient cartilage, as well as appropriate joint fluid for your dog.

I also suggest that you talk about Adequan with your vet. Adequan is an injectable GAG, which is an injectable joint support that rapidly helps slow down premature arthritis, but also builds a lot of great joint fluids. It does a great job of slowing arthritis secondary to this condition.

Chiropractic and acupuncture can also be very beneficial for dogs with luxating patellas, in terms of reducing pain, as well as wear and tear on the rest of the body. If you have a puppy with this condition, there are some really effective chiropractic manipulations that can be performed to help the hips and knees be in good alignment that will also help reduce the progression of this disease. I recommend that you start chiropractic care as soon as the diagnosis is made.

I also recommend that you feed a nutritionally balanced, species-appropriate diet by feeding your pet a naturally anti-inflammatory diet, which means one that's very low in carbohydrate content. You can actually help reduce the amount of inflammation in your pet's body. Feeding a species-appropriate, carbohydrate-free diet can especially reduce inflammation.

Because carbs aren't listed on your pet food label, you are going to have to do that carbohydrate calculation, which should be in the article associated with this video. You're going to have to break out the calculator and actually do that equation, because I want to make sure that you're feeding your dogs less than 10 percent carbs if they have this inflammatory musculo-skeletal condition, because diet is a great way to help minimize pain.

Surgical Intervention for Patellar Luxation

Many veterinarians often recommend surgery for any grade of luxating patella, regardless of the severity of the condition. Sadly, I mostly hear about clients who have been told to do none of these above suggestions, but simply wait until the pain is crippling or the knee has degenerated to the point that the dog is totally lame, and then make an appointment for surgical repair.

As you can imagine, I'm not a proponent of waiting and doing nothing, nor am I a fan of doing surgery unless the condition is absolutely destroying your dog's quality of life. If your pup can't run or walk without intense pain, or is having lameness associated with a lot of decreased quality of life episodes, then absolutely, you should consider surgical correction, but not before you've exhausted all of these non-surgical options trying to improve your pet's quality of life.

There are two main goals for corrective surgery for a luxating patella. Usually, these occur between Grade 3 and Grade 4 luxations. One method is to deepen the trochlear wedge. If the joints are flat, the veterinarian carves a deeper wedge to help the kneecap sit in a more appropriate location. The other goal of surgery is to moderate the amount of tension in the patella capsule or ligament by tightening down the joint capsule.

My recommendation is to explore all possible non-surgical options to help stabilize your dog's knee before you consider surgical correction, but this should be done the minute that you see your dog is skipping on a walk and not after years of wondering, "Why is my dog skipping on a walk?" It's important you address those symptoms right away.

Risks and Complications of Patellar Luxation Surgery

Surgery for this condition carries the usual risks associated with, of course, anesthesia and infection, but there are a few other issues that can come about. Usually this comes about because of the pin that is inserted during this corrective procedure. If the pin that's usually placed to hold the joint caps in place migrates, that can be a problem. There also is a secondary risk of abscesses called a seroma that can also occur.

There can also be a repair collapse. Post-surgery, your dog can't run or move around for about two months to allow the site of injury and surgical repair to stabilize. This is, needless to say, really hard to do for some of these small dogs. It's not uncommon for the repair of a really active dog to break down during this period. Honestly, this is more owner failure than dog failure. When the surgeon tells you you must restrict exercise after these surgeries, it's really important that you follow the surgeon's orders. It's very, very important in reducing post-surgical complications.

Around 10 percent of dogs actually don't show improvement after surgical correction. They continue to experience pain. In addition, some kneecap repairs can actually cause problems with other joints and bones.

I have found, actually, in my perspective, that the majority of failed surgeries have two root causes: either the repair was done way too late, so the amount of degeneration and arthritis was really profound inside of that joint, or the surgeon was not experienced enough to actually do the procedure.

If you're considering having this procedure done, I strongly recommend that you contact a board-certified orthopedic surgeon or a veterinarian who has tremendous surgical experience, so that you can make sure that you're gaining the most potential out of this corrective procedure.

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