

Dogs Naturally Magazine

Treatment Options for Your Dog's Luxating Patella

By [Dr. Julie Mayer](#)



What is a Luxating Patella?

A luxating patella occurs when the knee cap moves out of its natural position. The patella (knee cap) lies in a cartilaginous groove at the end of the femur at the stifle. The patella in dogs is shaped like an almond and its purpose is to assist in knee extension. The patella resides in the tendon of the quadriceps muscle group which attaches to the bone below the femur, the tibia. When this muscle group contracts, it pulls on the tendon and the knee cap, thereby extending the stifle. If the patella is pulled out of its normal groove with knee extension, this is called a luxating patella.

The causes of this condition can be congenital, genetic, and/or traumatic. Breeds with a predisposition for luxating patellae are Miniature and Toy Poodles, Maltese, Jack Russell Terriers, Yorkshire Terriers, Pomeranians, Pekingese, Chihuahuas, Cavalier King Charles Spaniels, Papillons, and Boston Terriers. Large breed dogs prone to this condition include Labrador Retrievers, Golden Retrievers, Akitas, Malamutes, Boxers, Huskies, and St. Bernards. Apart from breed predilection, if a dog has poor conformation, such as no angulation in the hock, then this can also cause luxating patellae.

This condition is usually diagnosed early on. The initial symptoms include occasional limping, an intermittent skip in the gait, sudden loss of support on the limb, abnormal sitting posture with the knee placed outward; all of which are usually intermittent. Sometimes, chronic cases can lead to erosion of the cartilage on the femur from the constant friction, and eventually to osteoarthritis. In this case, pain is usually involved and lameness is more constant and severe.

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Occasionally, a luxating patella can lead to a ruptured cranial cruciate ligament. The literature states that at least 15% to 20% of dogs with patellar luxation will eventually rupture their cranial cruciate ligament. Two main reasons why this scenario may follow are:

1. a luxating patella will change the biomechanics of the knee and subject the cranial cruciate ligament to more stress and strain, and
2. if the luxating patella is chronic with arthritic changes, the inflamed environment inside the joint will cause a breakdown of the ligaments (especially cruciate ligaments).

A luxating patella is usually diagnosed by feel and is assigned a grade based on the severity of the condition. Grade 1 is the least severe and the knee cap easily slips back into place on its own whereas Grade 4 means the knee cap is actually stuck and fixed outside its normal resting position in the groove of the femur. A radiograph of the stifles can be performed to see if there is osteoarthritis present or any sign of cranial cruciate ligament damage.

Surgery is not always necessary for this condition. Many small dogs live their entire life with luxating patellae and it never results in arthritis or pain, nor does it interfere with the dog's life. Grade 3 or 4 luxations normally require surgery, as greater pain or discomfort will be involved, along with reduced function of the leg or associated damage such as a cranial cruciate ligament rupture. Every situation is different.

The surgical procedure usually involves carving out a deeper groove in the end of the femur so the patella will remain in the groove with movement. If a ruptured cranial cruciate ligament is present, it can be corrected at the same time.

If your dog suffers from this condition, you can't change his DNA but you can help him with supportive nutrients and exercise.

Important Vitamins

- Ascorbic acid (a kind of Vitamin C) is necessary for collagen synthesis and is an antioxidant.
- Mixed tocopherols (Vitamin E) stabilize cell membranes, stimulate deposition of proteoglycan, modulate the inflammatory phase of osteoarthritis, and are an antioxidant.
- Vitamins B1 and B6 are required for collagen synthesis.

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Important Supplements

- Omega-3 fatty acids (e.g. fish oil) are anti-inflammatory. They can also help regulate the cells in cartilage and may help protect against cartilage degradation.
- Glycosaminoglycans have anti-inflammatory properties and are needed for proteoglycan synthesis and collagen formation.
- Chondroitin sulfate is anti-inflammatory and stimulates glycosaminoglycans and collagen synthesis.
- Methylsulfonylmethane (MSM) is a source of sulfur which is required for collagen synthesis. It may inhibit pain impulses that travel along nerve fibers, acting as an analgesic, and has anti-inflammatory effects and helps reduce muscle spasm.
- Bioflavonoids (flavones, flavanoids, quercetin, rutin, procyanidins) found in colorful vegetables, fruits, and Green Tea have antioxidant and anti-inflammatory properties. They have been shown to inhibit inflammatory and damaging enzymes.

Important Minerals and Elements

- Manganese is an essential cofactor in the synthesis of glycosaminoglycans and is involved in the synthesis of collagen and proteoglycans to form the organic matrix of bone.
- Magnesium is required for collagen synthesis.
- Sulfur is necessary to make collagen.
- Selenium with fish oil (Omega-3) intake may reduce inflammation in the joint, which may benefit osteoarthritis; it is also an antioxidant.
- Iron is involved in collagen synthesis.
- Copper is involved in collagen synthesis.
- Zinc is involved in collagen synthesis.
- Calcium is needed for some enzymes to work and necessary for muscle contractions.

The Goals of Nutritional Support are to:

1. Promote healthy and functional connective tissue
2. Provide building blocks for collagen synthesis
3. Control inflammation and pain
4. Supply antioxidants
5. Prevent osteoarthritis

Herbs and Homeopathic remedies are also effective for reducing pain and inflammation, strengthening connective tissue, and promoting tissue repair.

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There are a few exercises that you can do with your pet to help strengthen the muscles and improve the stability of the knee. If the quadriceps muscles are weak, there is greater risk for luxating patellae. When the muscle is strong and the tendon is taut, the patella is less likely to slip out of position.

Exercises to Strengthen the Quadriceps Muscles:

- Have your dog move from a Sit to a Stand several times in a row.
- If you have stairs (preferably carpeted), have your dog ascend and descend the stairs three to five times, several times a day. You can also find a steep hill and have him walk up and down and zig-zag across the face of the hill.
- Teach your pet to army crawl. Have him get into a down position and slowly lure him forward with some food and encourage him to keep his rear end down.
- Walking over Cavalettis (a series of raised bars set up in a row) will encourage flexion and extension of the stifles.
- Leg weights can be applied above the hock and the dog can go for a walk or do his exercises with them on to provide resistance and improve muscle strength.
- Underwater treadmills or swimming are excellent ways to strengthen the surrounding knee structures. The resistance of the water will help build muscle strength and the buoyancy of the water makes it a safer workout.

Careful observation, good nutrition, and appropriate exercises can be very beneficial to the dog diagnosed with luxating patellae. If your dog is diagnosed with this condition, you may be able to avoid surgery altogether with supplementation and rehabilitation.

Dr. Julie Mayer has been practicing veterinary medicine since 1991. She has dedicated most of her career to holistic medicine and rehabilitation. Dr. Mayer owned Integrative Pet Care and operated Therapet, two rehabilitation and holistic centers in Illinois. Dr. Mayer was named one of "Chicago's Best Vets" by Chicago Magazine and most recently received the 2010 Iams Eukanuba AARV Award for excellence in the field of Veterinary Rehabilitation.

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