

## Patellar Luxation in Small Breed Dogs

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Patellar Luxation (or “loose knees”) is a common condition in dogs, especially small breeds. The dog knee is very similar in structure to the human knee, with the patella (kneecap) sliding in a groove in the femur (thigh bone) within the patellar tendon. Depending on the severity of the condition, when the patella luxates, or slides out of its groove, it may be sudden and painful, or it may become chronic and spend most of its time out on either side of the knee. In small-breed dogs, the patella most often slides medially, or towards the dog’s midline, is usually seen in both knees, and can produce a bow-legged deformity of the rear legs. This medial sliding of the patella puts abnormal forces on the bones and muscles of the leg, causing progressive deterioration of the cartilage in the knee joint and eventual arthritis. These abnormal forces also cause the tibia (calf bone) to rotate inward, further worsening the condition.

Dogs with luxating patellas may show intermittent rear leg lameness in the affected leg(s), and are unable to fully extend their knee(s). They will often skip or hop for a few steps while the patella is dislocated, and then resume a normal gait when the patella pops back into position. Dogs with more chronic luxations, where the patella is out of its groove most or all of the time, may carry their affected leg, or walk with a stilted gait with their rear feet turned inward and their weight shifted forward if both knees are affected. Patellar luxation may be diagnosed in puppies as young as eight weeks, or may not become obvious until the dog is older. Regardless of whether the condition is diagnosed in young puppies or adult dogs, it is both congenital and genetic, and although the exact mode of inheritance is unknown, it is thought to be polygenic. Affected animals should not be bred.

### **Diagnosis via The Orthopedic Foundation for Animals (OFA):**

The dog is examined awake, and chemical restraint is **not** recommended. The OFA will assign a permanent database number to normal dogs 12 months of age and older. Dogs under 12 months may still be examined, but will be treated as consultations, and no number will be assigned. The OFA grades serve to classify the degree of patellar luxation and bony deformity.

Grade 1: Upon manual examination, the patella easily moves from the patellar groove with the leg at full extension, but returns to the groove when released. There is minimal rotation of the tibia, and no palpable arthritis in the joint.

Grade 2: Frequent patellar luxation occurs, and it can become permanent at this stage. The dog may either bear weight or carry the leg(s). It is possible to manually return the patella to its groove, but the patella will re-luxate when the leg is released. The tibia is rotated up to 30 degrees, and the dog may have a cow-hocked appearance. Some arthritis will be palpable in the joint(s). If both legs are affected, the dog will carry more weight on the front.

Grade 3: The patella is permanently luxated, but the dog may use the limb with the knee semi-flexed. The tibial crest is rotated between 30 and 50 degrees.

Grade 4: The tibia is medially twisted, and the patella is permanently luxated. A space can be felt between the patellar ligament and the end of the femur. The leg is carried, or the dog moves in a crouched position if both legs are affected.

**Summary:**

The OFA method is commonly used in North America, and can be performed by your veterinarian. Surgical correction is recommended for Grades 2 or higher to relieve pain and prevent further arthritis of the knee joint. The exact surgical procedure depends on the degree of bony deformity of the knee and legs (rotation of the tibia, deformity of the femur, etc.). Radiographs (xrays) taken before surgery can identify these bony abnormalities. Dogs with Grade 1 luxations are generally monitored, and do not require surgical intervention unless they progress.

**References:**

[http://www.vssoc.com/client\\_info\\_caninepatellar.html](http://www.vssoc.com/client_info_caninepatellar.html)

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[http://www.offa.org/pl\\_overview.html](http://www.offa.org/pl_overview.html)

<http://www.upei.ca/~cidd/intro.htm>

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**About the Author:**

Regina R. Allen DVM graduated from the Virginia-Maryland Regional College of Veterinary Medicine in 2001, and has worked in small animal and emergency medicine, and for the United States Department of Agriculture. She breeds Toy Manchester Terriers under the Regal prefix, and shows her dogs in conformation, agility, obedience, rally, and musical freestyle.