

**Patellar luxations** are a common cause of rear limb lameness in pets. Although the direction of the luxation can be either medial or lateral, approximately 65% of luxations in large dog breeds are lateral. The majority of small dog breeds and cats have medial luxations.

**Q. What causes patellar luxations?**

Patellar luxations can be as simple as a torn joint capsule resulting from trauma. But there is often an underlying conformational abnormalities such as bowing in or out of the knee and internal or external rotation of the lower leg that predisposes the patella to luxate (Figure 1).

**Q. Do all luxations need to be surgically repaired?**

Patellar luxations are graded from 1 to 4 based upon the severity of the luxation. The recommended treatment for patellar luxation depends upon the luxation grade, degree of associated lameness, and concurrent injuries. Cranial cruciate ligament tears are found in 20% of patellar luxations. Most dogs with grade 1 luxations are rarely lame and do not require surgical correction. Patients with grades 2 or 3 luxations are more likely to suffer from intermittent lameness and will benefit from surgical correction. Treatment of grade 4 luxations can be complex and may involve corrective osteotomies and bone plating of the femur or tibia to accurately align the limb. A newer method of treatment is a Patellar Groove Replacement (PGR) implant (Figure 2).



## PATELLAR LUXATIONS GRADES

- Grade I:** luxates but snaps back into normal position
- Grade II:** normal resting position, can luxate and stay out
- Grade III:** luxated resting position, can be reduced to normal
- Grade IV:** luxated resting position, can not be reduced to normal

**Q. How is the luxation repaired?**

The patient is placed on the surgery table on their back so each step of the repair can be checked for alignment and effectiveness. Surgical correction generally start with a tibial tuberosity transposition to make the major alignment correction (Figure 3). Fine tuning of the repair is done with a medial or lateral retinacular imbrication or releases to allow free movement of the patella in all ranges of flexion and extension of the knee. Trochlear wedge recession is used to deepen the groove at the end of the femur if it never formed properly from the patella riding in the normal position over the femur.

**Q. Can both knees be repaired at the same time?**

In small and toy breed dogs and in cats we can repair both knees at the same time if the pet can be controlled in the postop period. This allows decreased anesthetic time and cost over separate procedures. It also allows compressing the time that the patient needs to be confined. However, the first week can be more difficult for recovery requiring more nursing care and potentially more pain control.

**Q. What if my pet has a concurrent cranial cruciate ligament rupture?**

Cranial cruciate ligament ruptures can be repaired at the same time as the patellar luxation repair. This can be done with lateral sutures, TTAs and TPLO repair methods.

**Q. What are common complications of patellar luxation repair surgery?**

Complications arising from patellar luxation repairs are uncommon in our hands. Large dogs have more potential complications than small dogs and cats. Some infrequent complications include relaxation of the patella, incision inflammation, rarely, infection and implant loosening or bending. We remove a small number of pins from the tibial crest of toy and small breed dogs and cats if they get movement of the pin after a few months.

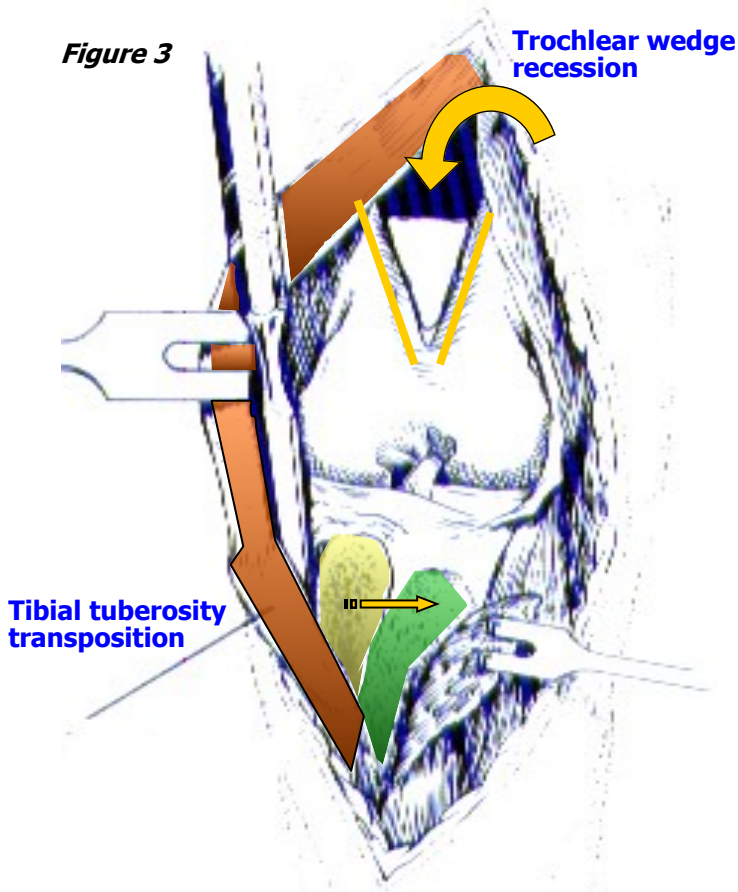
**Q. What should I expect when my pet comes home after surgery?**

It is common for swelling and mild bruising to occur at the surgery site. Most patients will be slightly toe touching the day after surgery, or at least by staple removal. The patient will be a little sore, but generally comfortable on anti-inflammatories and pain medication after the initial 12-24 hours on narcotics in the hospital.

**Q. What will be expected of the pet owner after surgery?**

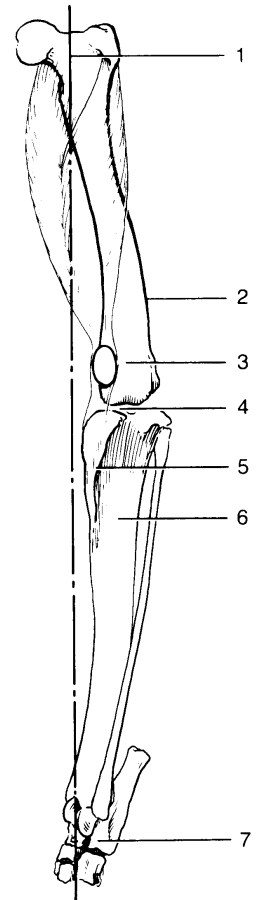
For the first two weeks after surgery you will need to help support your pet with a belly sling when going out to the bathroom. Otherwise, your pet should be strictly confined for the first 4 weeks. Cats are kept confined to a dog crate. Cold packing the leg for the first few days, then alternating hot and cold packing will decrease swelling and increase circulation to the surgery site. Passive range-of-motion physical therapy should be started after the skin staples are removed in about 10 days. Our rehabilitation experts will help show you how to perform the therapy. Controlled physical therapy is the key to your pet's recovery.

**Figure 3**



**Figure 1**  
**Medial Patellar Luxation**

1. *Coxa vara (hip)*
2. *Genu varum (knee)*
3. *Shallow trochlear groove*
4. *Joint tilt*
5. *Medial tibial torsion*
6. *Tibial valgus*
7. *Internal rotation foot*



**Figure 4**

*Postoperative lateral knee radiograph of a tibial tuberosity transposition with two k-wires.*

**Q. Can the surgically corrected leg be reinjured?**

The first six weeks are the most critical for healing and recovery. After the initial healing period, it is rare to have the knee reinjured. Occasionally the patella can relaxate, but this generally occurs within the first month, especially if the pet is too active. Osteoarthritis will eventually develop to some degree, but this is difficult to predict. Normally this will just mean your pet will need anti-inflammatories as they age.

**Q. What if I have problems once my pet gets home after surgery?**

Contact your family veterinarian or your local emergency hospital if you have an immediate problem. You can also email Dr. Huss directly if this is not a time sensitive problem.

**Q. Why are recheck exams and radiographs recommended?**

Recheck examinations are important to make certain your pet is recovering at a normal rate and not over-doing it. Minor problems can be addressed early, before they become severe. One month postoperative X-rays are important to make certain implants are in place and not loosening. Three month postoperative X-ray rechecks are used to evaluate bone healing prior to allowing more intense physical activity. If your pet's healing is not on schedule at one month, we will likely have you return for a two month recheck.



**Figure 2**

*Patellar Groove Replacement (PGR) implant by Kyon on a bone model.*



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