Knee Surgery Information

We believe it is important for pet owners to be well informed about the procedures, the results that can be expected and some of the complications that can be seen in the short term and the long term. Having this knowledge can help you, the pet owner, to understand how your pet may act in future.

Terminology and Acronyms
ACL – anterior cruciate ligament
PCL – posterior cruciate ligament
MCL – medial collateral ligament
LCL – lateral collateral ligament
MMC – medial meniscal cartilage
LMC – lateral meniscal cartilage
PT – patellar tendon
TTA – tibial tuberosity advancement
TPLO – tibial plateau leveling osteotomy
FSG/LSS – fascial strip graft with lateral suture stabilization
MPL – medial patellar luxation (dislocation)
TTT – tibial tuberosity transposition
TDS – tibial derotation sutures

Will my pet have a normal knee?
The first and most important fact is that no matter what the injury or condition is (most commonly ACL tearing), we cannot give your pet a normal knee. They may be able to function at a level that you cannot distinguish from normal, but they will never have a “normal” knee. That was decided at the time of their injury or at the time they were born (if it is a congenital abnormality).

Will my pet develop arthritis?
Years of research have shown that once tearing of the ACL begins, whether it is full or partial, arthritis begins to develop. Most pets that present for ACL tearing already have some degree of arthritis. No matter whether they have established arthritis or not at the time of surgery, and no matter what procedure is done, arthritis will develop and will progress. The type of procedure that is performed will influence the speed and severity of arthritis development and progression.

Will my pet have any lameness (limping) in the future?
Most pets do very well post-knee surgery and are sound enough that owners feel they are normal. The occurrence of lameness depends mostly on the degree of arthritis present at the time of surgery, the amount of damage in the joint at the time of surgery, the procedure performed, the pain tolerance of your pet, whether post-op instructions are followed, and the activities your pet takes part in.

What complications may occur post-knee surgery? Most importantly, complications are uncommon. In the short term, patients can develop incision swelling, fluid pockets, incision drainage, and most uncommonly, infection. These tend to be relatively minor and are usually easily resolved. Repair and/or implant failure are major complications usually requiring further surgery. This complication is influenced by a host of factors beyond the scope of this information sheet, but it is most commonly associated with failure to adhere to activity restriction and/or failure of the tissues holding the implants.
In the long term, knee surgery in pets is just like it is in people in that they can re-injure the knee. Although this is uncommon, it does happen. Additionally, structures that were normal at the time of surgery can be injured down the line. The most common scenario is tearing of the MMC later that was normal at the time of surgery. Statistics report that no matter what procedure is done for an ACL surgery, if the MMC was normal at the time of surgery, there is about a 2% - 8% chance that it will tear at a future time, requiring further surgery.

For knee injuries repaired with a soft tissue procedure (FSG/LSS or TDS) if there is complete failure of the fixation due to re-injury, lameness usually will persist and likely requires a second surgery. This is very uncommon.

For hard tissue repairs that require cutting of bone (osteotomy), such as TTA or TPLO, if re-injury occurs, lameness will usually resolve within about 7 – 14 days, unless tearing of the MMC has occurred.

Complications unique to TTA and TPLO – in both of these surgeries, the end result is the elimination of cranial tibial thrust (back to front movement of the lower bone, the tibia). This is the main motion that is restricted by a normal ACL. However, the ACL also is an important restrictor of rotation between the lower and upper limb. We cannot eliminate this motion with TTA or TPLO. As a consequence, dogs that do a lot of pivoting while playing or working, can develop short term lameness of a few days duration. Additionally, we typically will leave the un-torn portion of the ACL in place if it appears to have only a 30% tear or less. In some of these dogs, we can see further tearing and intermittent lameness of short duration, if they subject their knee to a lot of rotational and/or abnormally high back to front movement. This should resolve in about 5 – 10 days. The jury is still out on whether to always remove all the ACL if it only has small amounts of tearing. Oddly enough in dogs that do continue to tear the remaining portion of ACL, once they complete the tearing, the recurrence of lameness usually drops or ceases.

Most Common Procedures
Dogs – FSG/LSS, TTA, TPLO, TTT
Cats – LSS, TDS