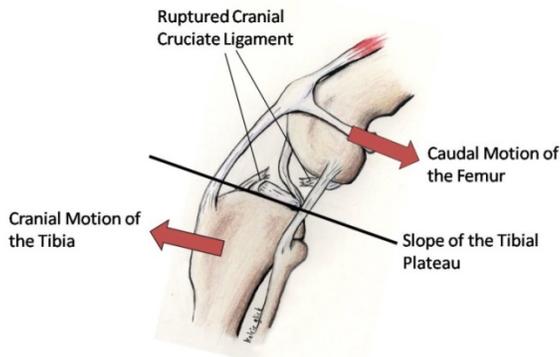


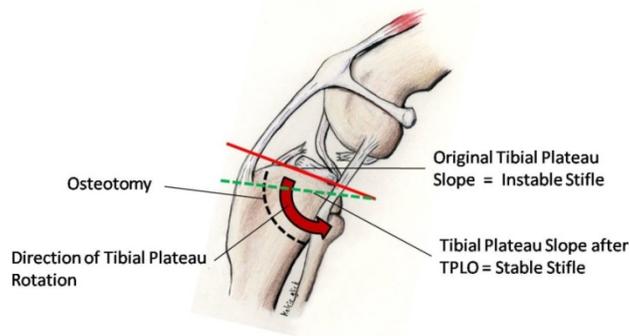
Tibial Plateau Leveling Osteotomy (TPLO)

! Please refer to our specific handout providing general information on cranial cruciate ligament rupture, including non-surgical treatment. This handout focuses on surgical treatment using the TPLO technique !

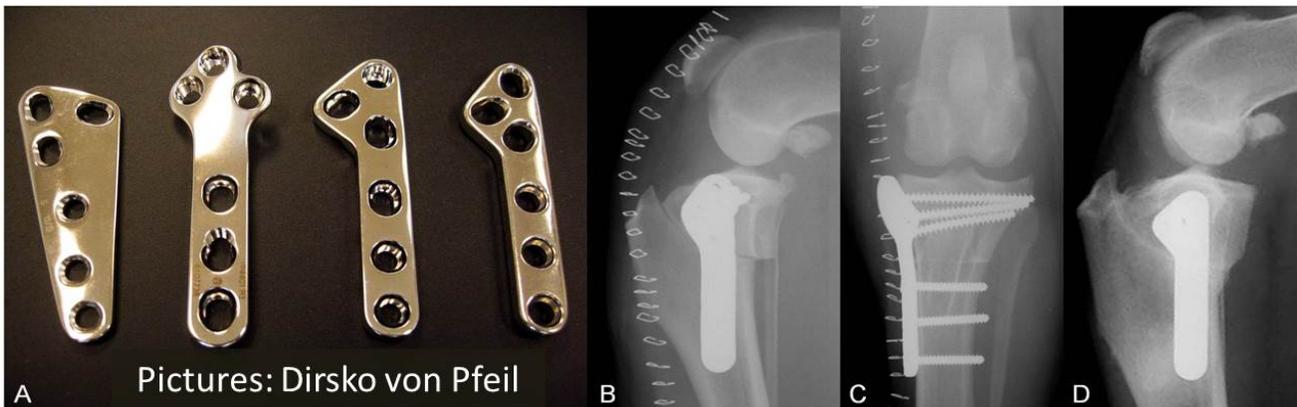
What is the Tibial Plateau Leveling Osteotomy (TPLO)? This procedure is recommended for dogs weighing over 15 kg (33lbs), for more athletic dogs, or for dogs with bilateral CCLR. The TPLO alters the biomechanics of the joint so the animal can bear weight and with a stable joint. If your dog is scheduled for TPLO surgery, we will obtain x-rays that can be used to assess the tibial plateau angle. Using a specific osteotomy (cut in the bone), the TPLO levels the slope of the tibia and reduces stress on the CCL (in the case of a partial tear) or eliminates the need for a CCL (in the case of a complete tear). The cut bone is stabilized using a specific bone plate. The alteration of the knee's biomechanics with TPLO, effectively achieve stability, supported by the caudal cruciate ligament and the active constraints of the knee, such as the quadriceps muscle group. Postoperative x-rays are obtained to assess the new tibial plateau angle, limb alignment, and implant placement.



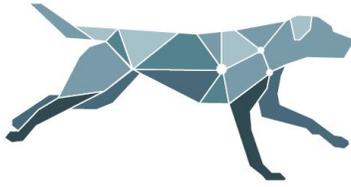
The caudal slope of the tibial plateau results in permanent instability of the stifle joint in animals with CCLR.



Decreasing the slope of the tibial plateau via a bone cut and rotation of the plateau results in a stable stifle joint.



Various TPLO implants (A). Radiographs of TPLO: After surgery (B and C), healed at 8 weeks (D).



What happens in surgery? First the cruciate ligaments and menisci are evaluated and treated appropriately. In many cases, this can be accomplished arthroscopically. Damaged structures are excised. If the meniscus is intact, a meniscal release is frequently performed. This will reduce the potential for subsequent meniscal injury. After the joint treatment has been completed, the TPLO is completed as explained in the text and drawing above.

What is the post-operative care after TPLO? Detailed discharge information will be provided after surgery. A staff member will meet with you upon dismissal to discuss post-operative care and explain exercises to help minimize postoperative swelling and discomfort and to help maintain range of motion in your pet's stifle. It is important to administer the prescribed medications, to leave the E-collar (cone) on the dog's neck to prevent any licking at the incision site and to return for rechecks at a minimum 10-14 days and 8 weeks post-surgery. It is important to limit your pet's activity for 8 weeks after surgery: while free walking on one level of the house is allowed, the patient is not permitted to run, or travel up or downstairs. Patients should be guided on a collar when maneuvering stairs, or ramp can be considered. Outside, leash walks only are permitted: initially 5-10 minutes, with slow increase to 40-60 minutes 2-3 times daily at 8 weeks. Rehabilitation services are available at SVOC through Five Elements Veterinary Alternatives and can be initiated once the incision has been declared sealed enough – this is typically the case by 14 days after surgery. We recommend physical therapy after all orthopedic surgeries; if possible 1-2x/week.

Radiographs are repeated at eight weeks after surgery. These allow us to assess healing of the osteotomy and stability of the implants. If the bone is adequately healed, your pet will be allowed to return to a higher level of activity. Once the bones are healed, further attention is focused on regaining muscle mass and overall conditioning. We generally encourage progressively lengthening leash walks at this stage. Most patients are able to return to their preoperative activity level at about 12 weeks after surgery.

What are possible complications after TPLO? Complications with TPLO are rare if performed by an experienced, board-certified surgeon. However, as with any surgery, risks include such associated with anesthesia and with TPLO complications may include but are not limited to development of seroma, dehiscence, infection, arthritis, pivot shift, implant related problems, septic arthritis, delayed- or nonunion, tibial tuberosity avulsion, patellar ligament desmitis, late meniscal tear, possible need for continued physical rehabilitation, less likely repeat surgery and very rare development of osteosarcoma. Some dogs can retain a certain degree of lameness and some will exhibit clinical signs associated with arthritis and may benefit from anti-inflammatory therapy and/or administration of joint health supplements. In general, Boxers seem to show delayed recovery compared to other breeds. The reason for this finding among surgeons all over the world is unknown.

The longer surgery is postponed in a patient with CCLR, the higher the risk to develop meniscal tears secondary to the stifle instability associated with CCLR. It is important to recognize that contralateral cranial cruciate ligament rupture (CCLR) is reported to occur in 50% of cases within 1-2 years after unilateral CCLR has been diagnosed. There is no preventative treatment.

What is the prognosis after TPLO? The prognosis for our patients undergoing TPLO surgery is very good. Your dog should be able to resume his or her preoperative lifestyle. When performed appropriately and once complete healing has occurred, 95% of dogs return to pre-injury activity level. Our patients can be seen competing in agility, field trials, returning to police or military work and accompanying their owners during daily activities and long hikes!

Comments: The authors have performed TPLOs since 2002, at times completing up to 15 of these procedures per week. In addition, both surgeons at Sirius have extensive research experience with CCLR; see links below:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Horstman%2C+cranial+cruciate+ligament>

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