

TIBIAL TUBEROSITY ADVANCEMENT

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The cranial cruciate ligament (CCL) stabilizes the knee joint and limits the tibia from sliding forward in relation to the femur. Damage to the CCL is one of the most common injuries in dogs and can occur bilaterally. Uncorrected CCL deficiencies are associated with meniscal damage and degenerative joint diseases.

The Tibial Tuberosity Advancement (TTA) is an orthopedic procedure to repair deficient cranial cruciate ligaments in dogs.

The objective of the TTA is to advance the tibial tuberosity and change the angle of the patellar tendon in order to neutralize the tibiofemoral shear force during weight bearing. By neutralizing these forces, the joint becomes more stable without comprising joint congruency.

TTA appears to be less invasive than some other procedures such as TPLO (Tibial Plateau Leveling Osteotomy) and TWO (Tibial Wedge Osteotomy).



The bone just below the knee or stifle joint is the tibia. The bone above is the femur. The top of the tibia is the tibial plateau. The patellar tendon attaches muscles on the femur to the tibial tuberosity.

During weight bearing, the femur slides down the tibial plateau. The ACL stops this downward movement, and is under constant tension during weight bearing. This biomechanical stress results in ACL rupture and is directly related to the angle between the tibial plateau slope and the patellar tendon. A more perpendicular angle results in a more stable joint.



TTA involves an osteotomy in the non-weight bearing portion of the tibia, just behind the tibial tuberosity. The tibial tuberosity is advanced to achieve a perpendicular relationship between the tibial plateau slope and patellar tendon. This relationship results in a stable joint.

The advanced tibial tuberosity is secured using titanium implants. A bone graft is packed in the open area of the osteotomy. Healing takes about 8 weeks.

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