



## CRANIAL CRUCIATE LIGAMENT DISEASE (ACL INJURY)

*The Tibial Plateau Leveling Osteotomy (TPLO), the Tibial Tuberosity Advancement (TTA), and The Lateral Suture Technique*

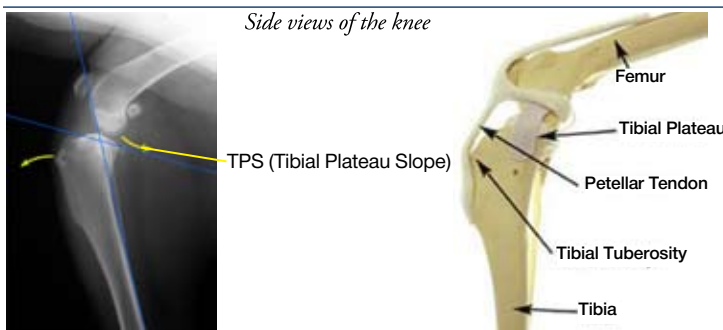
### WHAT IS IT?

- **ACL** (*Anterior Cruciate Ligament or Cranial Cruciate Ligament-CrCL*) injuries are the most common orthopedic injuries in dogs.
- The ACL acts as a primary stabilizer of the Stifle (*knee*) in conjunction with the PCL (*posterior cruciate ligament or caudal cruciate ligament*), the collateral ligaments, the patellar tendon, and the meniscii.



*Picture of the knee as seen from the front with location of Cruciate Ligaments*

- Muscles of the back leg, especially the quadriceps and hamstring muscle groups act as secondary stabilizers of the stifle.
- The ACL limits Cranial Tibial Thrust (**CTT**) or forward displacement of the tibia (*shin bone*) in relation to the femur (*thigh bone*).
- Primary contributing factors to CTT are the pull of the quadriceps muscle through the patellar tendon and tibial tuberosity and the Tibial Plateau Slope (**TPS**) when the animal bears weight.



### WHAT TO DO

#### TREATMENT

- Treatment involves a 3 tiered approach to achieve maximal limb function:
    - a) surgical stabilization of the knee,
    - b) post operative physical therapy, and
    - c) long term weight/dietary management.
  - Surgeries can be broadly divided into biomechanical or dynamic stabilization techniques and static techniques.
  - Dynamic Stabilization of the stifle after an ACL injury can be accomplished by:
    - a) altering the TPS (**TPLO**) or
    - b) changing the orientation of the patellar tendon to the knee (**TTA**).
  - Static Stabilization of the stifle can be accomplished by: Lateral Suture Technique.
  - Specific indications for a given procedure are made on an individual case basis and take into account the size of the dog, activity levels, and specific measurements from X- rays.
- PROGNOSIS**
- Prognosis typically excellent (*80-90%*) for full return to function after complete healing and re-habilitation.

**Limiting Factors:** Pre-existing severe arthritis and poor body condition scores (*Overweight*).