Post-operative Information: Tibial Tuberosity Advancement (TTA)

Surgical Findings:

- LEFT / RIGHT cranial cruciate ligament; PARTIAL / COMPLETE tear; ligament PARTIALLY / FULLY debrided
- Caudal horn of the medial meniscus WAS / WAS NOT damaged; partial meniscectomy WAS / WAS NOT performed
- Arthritis: NONE / MILD / MODERATE / SEVERE.

ACTIVITY RESTRICTION x 8 weeks

- Please keep your pet in a comfortable, safe indoor location with no free access to stairs for the initial 24 hours following the procedure. Your pet may be groggy for the next few days. He or she may whine or appear more anxious than usual; this may indicate pain/discomfort or side-effects of the medications. Please call your veterinarian for assistance with any medication adjustments or return for an examination and additional pain medications as needed.

- Confine to one level/section of the house on carpeted floors. Limited, supervised access to stairs is recommended for 8 weeks; use baby gates to prevent free access. Use a belly band/sling for safety when walking across slick floors, going up/down stairs and during all physical therapy activities to prevent falling (continue use until pet is steady on operated leg).

- Please always use a short (6 ft) leash when taking your pet outside to urinate/defecate during this restriction period. Confine your pet to a small area/room/crate when unattended. Please do not allow your pet to run or jump during this restriction period.

- Your pet should start touching his/her toe down within the first 2 weeks. Thereafter, leg use should steadily improve. If you notice a sudden deterioration or he/she stops using the leg at any time after surgery, please call your veterinarian for advice. An exam and/or x-rays may be needed to determine if an infection or implant failure has occurred.

- Your pet will feel like using the leg normally before the bone is well healed. Please continue the restriction during this difficult time when he/she is feeling "too" well! Failure to do so can result in serious healing problems.

INCISION CARE

- Please look at the incision once daily after the bandage is removed. It should be dry, slightly red along the margins, and slightly swollen/thick on the edges. Over several days, it should lose redness and swelling. *Problems to call your veterinarian about*: a) gapping (the edges should be exactly touching); b) discharge (other than light crusting); c) swelling (other than slightly raised skin near edges). Some bruising is normal and will resolve in 5-7 days.

- Do not allow your pet to lick or chew the incision as this can compromise the incision and predispose to infection. If necessary, please use an *E-collar* if you must leave your pet unattended. No bathing until sutures are removed.

BANDAGE CARE (if present)

- A bandage *may have been* applied to the operated limb. The goal of the bandage is to provide pressure to the surgical site to reduce swelling and improve patient comfort for the first few days. Place a plastic baggy over the foot whenever you take your pet outside to prevent soiling of the bandage; immediately remove when indoors. You may remove the bandage in 2-5 days. If the bandage slips below the incision or becomes soiled or wet *before this time*, please remove it by simply cutting away one layer at a time (use caution/avoid skin; or return to your veterinarian). It does not need to be replaced.

PROGRESS EXAMS

- Please make an appointment to see your veterinarian 10-14 days following surgery for a progress exam. Knee function will be assessed at this time, skin sutures will be removed, and questions regarding physical therapy can be addressed.

- Please see your veterinarian in 8 weeks for progress x-rays. Adjustments may be made to the physical therapy schedule based on these results. Your pet may need an additional x-ray 12 weeks after surgery.

- Complications with this procedure are rare, but possible. *We recommend returning to the Inver Grove Heights Animal Hospital for re-evaluation if post-surgical progress is slow or problems arise at any point in the rehabilitation period.* An examination and/or x-rays may be required to fully assess your pet's surgical site.

****Please note these follow-up services (exams, x-rays, etc) are not included in your pet's original surgery fee and will result in additional charges****

DIET

- Ideally, keep your pet on the thin side of normal his/her whole life. Any orthopedic condition can progress with arthritis over time due to excessive wear & tear due to extra body weight. Good parameters for body condition are: 1) you should be able to feel the ribs and pelvic bones, but not see them; 2) your pet should have an "hour glass" figure when viewed from above looking down; 3) your pet should have a tucked up belly when viewed from the side.
- Glucosamine/chondroitin/MSM/EFAs supplements may have some beneficial effects in these patients, but this has not been clearly established. You and your veterinarian should discuss whether or not these products would be beneficial for your pet.

PHYSICAL THERAPY REGIMEN (Studies have shown that a formal program can decrease post-operative recovery time. Please let us or your veterinarian know if you are interested in a professional physical therapy referral in the Twin Cities.)

- Our lives are often very busy, so if you must err, err on the "do less" side of these instructions. Less physical therapy will result in a slower return to function, but more aggressive physical therapy by a non-professional too early may result in failure of the implants and surgical repair.

- *Week 1*: Range of Motion (ROM) Exercise— Have your pet lie on his/her good side. Grip the front of the thigh with one hand and hold the foot with the other. Slowly push the foot up into flexion of knee and then slowly pull the foot and push the thigh down and back into extension of knee. Concentrate on the extension movement. Repeat this motion slowly and smoothly *10 times once daily*. Flex and extend only to your pet's comfortable limit. Do not go to the point of creating pain or resentment. Following ROM, apply ice packs (wrapped in thin cloth) to incision area. Baggies of frozen peas work well for this, or make an ice pack by freezing 2 parts isopropyl alcohol to one part water in a ziplock bag.

- *Week 1*: Walking— Lay out a path that will allow you and your pet to turn corners and walk around objects on one level of the house with non-slip flooring or in the yard. Place your pet on a short leash. Walk slow enough so that your pet has to put each foot down and does not hop. If he/she is barely putting foot down, stop every few steps and ask your pet to back up a few steps. Walk your path for *5 minutes twice daily;* **add 5 minutes each week** until your pet is walking a normal pace at least 20 minutes twice daily and using the operated limb every step. Use small treats to encourage participation. Avoid walking locations that will result in uncontrolled activities, such as meeting other dogs, etc.

- Week 2: Expanded ROM Exercise—Have your pet lie on his/her good side. Apply a warm compress to knee for 5 minutes. Grip the front of the thigh with one hand and hold the foot with the other. Slowly push the foot up into flexion of all joints; hold for 5 seconds. Slowly pull the foot and push the thigh down and back into extension of all joints; hold for 5 seconds. Repeat this motion *10 times twice daily* for 4 weeks. Again, do not go to the point of creating pain or resentment. Follow each session with 5-10 minutes of ice packs (see Week 1).

- *Week 3*: Sit/stand Exercise (for dogs)—Have your pet repeatedly sit and stand for *10 repetitions twice daily*. Use small treats to encourage participation. Do not push down on his/her rump. To encourage proper knee flexion squarely under his/her body, have your pet sit next to a wall so the knee doesn't swing out to the side. Continue 4 weeks.

- *Weeks 4*: Massage—Your pet may stand or lie down. Perform both superficial skin massage & deeper muscle massage. Skin massage around the knee joint involves using your hand loosely conformed to the surface of the skin; enough pressure is applied to move the skin relative to the underlying tissues. Muscle massage of the thigh and shin involves deeper kneading and pushing of the muscles. Perform massage for *10-15 minutes twice daily* for 4 weeks.

- *Week 6*: Active exercise—Place your pet on a short leash and have him/her walk at your side. Walk outside on even/solid footing for *20-30 minutes twice daily*. You may add hills and flights of stairs at this time. Continue 4 weeks.

Confirm appropriate healing with your veterinarian prior to the following increased physical therapy activities.

- *Week 8*: Jogging exercise—On a short leash, intermittently jog and walk your dog for *10 minutes twice daily*. Continue 4 weeks, gradually increasing time and distance.

- *Week 10*: Light play exercise—On a long leash, encourage playing and romping with your dog for 15 minutes twice daily. Use toys for teasing and tugging. Continue 2 weeks.

- Swimming is wonderful rehabilitation exercise when performed correctly. You may allow controlled swimming after week 6. Controlled swimming requires that your pet not jump or leap into the water; please walk your dog into the water until he/she is deep enough to swim. Throwing balls to fetch often results in sudden jumping and lunging, which can cause serious problems in the healing phase. Do not over extend your pet; start with short excursions (5 min), increase duration/frequency gradually.

LONG TERM LIFESTYLE

- The prognosis for dogs treated with a TTA to correct a ruptured cranial cruciate ligament is good to excellent. The majority of dogs return to a normal gait, level of activity, and endurance. Following the 12 week recovery period, there are no recommended limitations to their lifestyle.

- It is very common (30-40% of patients) for both knees to develop this ligament injury. Prevention is difficult; the *most effective thing you can do* toward prevention is to maintain your pet on the thin side of a normal body weight and condition.

Some patients will damage a cartilage pad in the joint (i.e. meniscus) even after surgical stabilization; this may require a second surgery in the future.