



Rehabilitation Plan for a Cranial Cruciate Ligament Repair

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PRIOR TO SURGERY

By the time that most cruciate ligament tears are diagnosed, there is already arthritis starting in the joint. Even after recovering from surgery there will always be some progression of arthritis over time. Even though that 3 months after surgery you will likely have trouble telling which leg had surgery, you can not cure arthritis and you need to consider that you will be managing the arthritis for the rest of the dog's life. Most dogs will have a very slow progression of arthritis over their lifetime. Through diet and supplements we will try to slow down the progression of arthritis even more.

Feeding: Since your dog is going to be inactive you need to reduce his or her calorie intake by approximately 20%. This can be done by changing to a prescription diet food or by replacing 20-25% of normal food volume with canned pumpkin. Simply reducing the volume of food may leave your dog hungry and begging for more. If your dog is overweight ask us about a concentrated weight loss program to help reduce the strain on the affected leg and reduce the chance of blowing the other knee. There are special prescription **arthritis diets** that have been developed. They contain high levels of Vitamins C&E and essential fatty acids along with nutraceuticals at therapeutic levels that have been proven to be beneficial. This can be fed if your dog is a fussy eater or if you do not want to have to give other supplements. They are also calorie reduced. We recommend, and can provide you with, **Royal Canin Mobility Support**.

Nutritional Supplements:

Glucosamine and MSM

Glucosamines are cartilage components and by taking these orally, the patient is able to have plenty of the necessary building blocks needed to repair damaged cartilage. It is also felt that these products may have some anti-inflammatory properties separate from their structural uses. MSM stands for methyl sulfonyl methane and represents another nutraceuticals anti-inflammatory agent. These supplements have no side effects but because they are classified as a food there is no quality control of the different products. Be wary of low priced supplements, they may have very little active ingredient in them. We recommend, and can provide you with, **Recovery SA**.

Omega 3 Fatty Acids

Certain fats have been found to have anti-inflammatory properties. While this finding has primarily been utilized in the treatment of itchy skin, many arthritic dogs and cats have also benefited from supplementation. While there are no toxic issues to be concerned with, these products require at least one month to build up to adequate amounts. EPA is the most important Omega 3 fatty acid and most often comes from fish oil. Much higher doses are needed for arthritis than is often indicated on the bottle. Because it is a fat the calories have to be taken into consideration in the overall diet!

Anti-inflammatory Drugs like Metacam or Deramaxx may be given in the days to weeks prior to surgery to help with pain. Do not give anything on the day of surgery.

POST SURGERY

Your dog has had cruciate ligament repair in its knee. Your dog's recovery and return to normal function is now up to you. Under our instruction, we will implement a comprehensive rehabilitation program. **Every dog is different and may not accept certain exercises or treatment. Depending on the type of surgical repair, we will tailor the program to fit your dog.** If your dog is too uncomfortable, do not force it. If it is doing well you can call us and we may alter the program. This outline is just a rough guideline that we will follow.

Immediately post surgery your dog's knee gets ice packed and has a K laser treatment to reduce pain and swelling. For more information on laser therapy please see day 7-21 below.

Day 1 – 7 Post surgery

Anti-inflammatory drugs and Pain killers: Give the medication as instructed. This will help reduce pain and encourage early usage of the leg.

Massage: Reduces pain, muscle spasm, swelling and helps your dog to relax. Using a kneading circular motion, work on the muscles starting from the toes up to the hip. Work for 5-10 minutes 3 times per day prior to starting exercises. We have a massage video that is available to teach you how to massage your dog.

Passive Range of Motion (ROM): 2 – 3 times daily. Movement of the knee is important immediately after surgery to increase healing and reduce swelling and pain. Place your dog on its side with the affected leg up. Start with flexing and extending the joints above and below the knee joint. Only flex the knee to the point where discomfort is shown. Then move the entire leg to simulate a normal stride. Do 10 repetitions of each joint 2 - 3 times daily.

Icing: 2 – 3 daily after the exercises for 15-minute sessions. We will provide you with a re-usable gel pack. They mold to the knee and can be refrozen. If your dog is sensitive to the cold, you can wrap the gel pack in a thin towel. Preferably ice after each exercise session or walk.

Walks: Your dog should not be outside off leash for at least 3 months. Depending on your dog, you can start light exercise the day after surgery. Short walks (5 -10 min) on leash ONLY, on even terrain, 3 times per day will increase circulation, encourage early weight bearing and discourage boredom. If your dog is unable to fully weight-bear, it should be supported with a towel or sling around the abdomen held from above.

Days 7 – 21: 2-3 visits per week

Cartrophen Injections: Cartrophen VetR (pentosan polysulphate) can mimic the cartilage-nurturing effect of glucosamine. This product provides pain relief because it helps repair cartilage damage, it boosts the synthesis of hyaluronic acid (the main component of joint fluid), and it inhibits the enzymes which contribute to inflammation. There are no significant side effects from Cartrophen. Injections are given once weekly for 4 weeks then every 6-8 weeks for life if necessary. For more information: www.arthritis.au.com/DMOAD.2006.FINAL.pdf

K Laser Therapy: Laser therapy has been used in humans for many years. The K Laser is a class 4 laser which is the most powerful therapy laser available. Laser therapy works by applying light energy at the cellular level to stimulate the cells and promote healing, increased blood flow and reduced pain. It is non painful and is applied several times over the 3 week post operative period. Many patients show almost immediate results. For more information: www.spot-check.com

Neuromuscular Electrical Stimulation: your dog will receive muscle stimulation sessions starting one week after the surgery. This involves placing electrodes on the thigh muscles and creating contractions to strengthen and help prevent muscle loss.

The combination of laser and muscle stimulation sessions will last about 20-30 minutes. **Please ask our staff to help with the booking.**

Land Treadmill: Starting in the second week we may put your dog on the land treadmill for a few minutes each visit. This encourages early weight bearing and accentuates extension of the stifle as it is “taken” away from the body by the belt.

Suture/Staples Removal: about 10 – 14 days after surgery, we will remove the staples/sutures and recheck the incision for any infection, swelling or fluid build-up.

ROM and Massage: continue range of motion and massage 2 times daily. If your dog is using its leg well the range of motion exercises can be decreased. Hopefully by week 2-3 your dog your dog is 70-80% weight bearing on the affected leg.

Weight Shifting – on a floor with good footing, with your dog in a standing position, rock the pelvis back and forth so that weight is forced on the affected leg. Start lightly first and increase force as your dog becomes more comfortable. You can also apply rhythmic downward compressions on the pelvis to stimulate weight bearing. Do 10 repetitions 3 times daily.

Underwater Treadmill Walking: this will be started soon after the stitches have been removed (14-21 days post op)

Walks: increase by 2-5 minutes each week if your dog is doing well. If your dog shows any signs of soreness, reduce amount of time.

Ice/Heat Anytime after exercise that your dog seems to be more stiff or sore go back to icing for 15-20min. If the increased lameness continues then cut back on exercise and call us. If your dog seems stiffer after rest then heat can be used before exercise. Soak a towel in hot water that will be tolerable and wrap it around the knee for 10 minutes. Reheat it if it gets cool.

Day 21– 4 weeks: 2-3 Visits per week

ROM and Massage: continue range of motion and massage 2 times daily. If your dog is using its leg well the range of motion exercises can be stopped.

Walks: increase by 5 minutes each week if your dog is doing well. If your dog shows any signs of soreness, reduce amount of time.

Sit to Stand: on a floor with good footing, ask your dog to sit and tuck the knee as close as possible to the body. Then ask your dog to stand as slowly as possible thus causing it to put weight on the affected leg. Do 5 repetitions 3 times daily. *Do not get frustrated in the first week as pain may inhibit some dogs from doing this in the first week.*

Weight Shifting: on a floor with good footing, with your dog in a standing position, rock the pelvis so that weight is forced on the affected leg. Start lightly first and increase force as your dog becomes more comfortable. You can actually apply enough force so that your dog takes small sideways steps to each side. Do 10 repetitions 3 times daily.

Unilateral Weight Bearing: Lift the unaffected limb off the ground. Hold for 10 – 15 seconds. Move the foot around and put your dog off balance if he/she tries to lean on your hand. Another way to do it is to tape an object (like a pen or syringe cap) under the uninvolved foot to force full weight on involved side – done with supervision.

Circles and Figure of Eights: While on a leash, get your dog on your left side and then walk in tight circles and figure of 8's. This encourages weight bearing on both legs and increases strength and balance.

Underwater Treadmill: After suture removal we can start on the underwater treadmill. This encourages early weight bearing due to the buoyancy in water and also it allows early strengthening due to the resistance of water. This should be done 2-3 times per week. **Actual swimming should not start until after 4-6 weeks in an extra capsular repair and 8 weeks in a tibial plateau leveling osteotomy (TPLO)**

Weeks 4 – 6: 2-3 Visits per week

Stairs: Starting after week 4, encourage your dog to go upstairs slowly. This encourages weight bearing. Use a leash if necessary to ensure your dog does not go up too fast. Slower is better. Start with 5 repetitions 3 times daily and increase by 5 reps every week

Walks: Introduce slopes and uneven terrain: increases weight bearing and rebuilds muscles. Walking up hills in a straight line really accentuates back and thigh muscle development. Zigzagging up hills increases balance and strengthening as well. Walking across hills forces weight on to the downhill leg.

Underwater Treadmill/Swimming: 4-6 weeks after a traditional repair and 8 weeks after a tibial plateau leveling osteotomy (TPLO) deep water swimming can be added. This enhances cardiovascular strength and allows the use of more muscle groups than when walking on the treadmill. Many dogs find it more stimulating to swim for toys than just walking. We combine treadmill and deep water swimming to maximize the benefits.

Weeks 6 – 12:

8 Weeks after TPLO repair we will take x-rays to make sure that the bone has healed. After 8 weeks and with healing well on its way we can really step up the exercise.

Dancing-pick up your dogs front feet and have him/her walk several steps forward and backwards. The higher that you lift the front legs the more weight is placed on the back legs.

Land Treadmill We could re-introduce the land treadmill at this time for greater intensity of work out. It can be inclined and the speed increased. After you get comfortable you can work the treadmill yourself at the SPAW or at home if you have a treadmill.

Tug-of-war or pulling This is one time that a dog that pulls on the leash can be useful. If your dog likes to play tug-of-war then use it. When he is pulling backwards that is a great balance and strengthening exercise. Or if she pulls on the leash resistance while pulling is a hind leg strengthener. Using a harness would be best to prevent pulling on the neck.

Continue to increase exercises. Increase repetitions, length of walks and intensity of swim sessions. At this time the surgery should be mostly healed and stable and so strength exercise can be increased. After week 12, you can let your dog off leash for short periods of time. If any limping or soreness becomes evident, reduce exercises. After 4 – 5months full exercise can be resumed.

Please do not hesitate to call if you have any questions!
604 856 7707 www.thespaw.ca

