Home Care Instructions

Home PT for the Post-surgical Knee

Direct Veterinary Surgery
Surgical Solutions Direct to You

One of the most useful and efficient ways to convey information to you about your pet is via the written word. We carefully craft these notes to give you helpful information and accurate expectations around your pet's surgical experience.

Please read this. *Please save it and read it during each stage of the recovery process.* Surprises make for a stressful time for everyone.

Photo and video examples may be found on our website: www.directvetsurg.com in the Pet Owner Portal under "*DVS Resources*".

Stifle (knee) surgery is very common in dogs, usually as a result of a torn cranial cruciate ligament ("ACL"—anterior cruciate ligament, as labeled in the human knee). Many dogs will effectively "rehab" themselves without specific help from the human world. But there are a fair number of patients who will clearly benefit from additional, focused physical therapy activities to improve their overall knee performance, or achieve optimal knee flexibility and strength sooner.

General Information

Dogs are quite distinct from humans in their tolerance and participation in physical therapy, since they "don't know what's good for them". Perhaps much like humans, the variation among different patients' acceptance of our attempts to help them is quite broad—for some it is "heck no!" and for others it is "whatever!" Recognize this challenge of physical therapy in dogs, and practice patience, creative problem solving, nutritional bribery, and again patience.

Professional veterinary physical therapy is a wonderful option to optimize patient post-surgical outcomes. With both customized professional techniques and equipment for your dog's therapy plan and demonstration/learning of homecare techniques you can use, professional PT is a valuable experience to consider.

Overview

Monitoring

The big picture during recovery from stifle surgery is overall steady improvement, with some good days (more and more) and some bad days (less and less) over a 12-16wk period. It is not typical for steady improvement to be followed suddenly by holding the leg up and hopping on three legs; this requires an investigation with exam and possible x-rays.

Typically, physical therapy treatments will make a joint more flexible but also more sore. Expect this and premedicate before each session to balance out the ups and downs of discomfort. Premedication also allows for a more comfortable session, so time your prescribed medications to the time you have planned to do your pet's PT (give 1-2hrs before); but do not exceed the maximum daily dose or give more frequently than advised.

The *Help 'em Up harness* (or other similar devices) is a very useful tool that your dog can wear during the restricted/PT period that allows you to have a quick "handle" to grasp by the shoulders and by the rump to assist your pet to rise, climb/descend stairs, save from a slippery floor, etc.

Treating Pain

Pain is a necessary sensation. It keeps us all safe from irreversible harm. But like everything, there is a range. In human medicine, we are very frequently asked about our pain on a scale of 1-10. There is a reason for this; it helps us understand our own pain and guides medical professionals when working with our pain.

Our dogs are the same; they have a scale. The challenge for us is interpreting that scale. In the post-surgical or post-injury time, we as owners and veterinary professionals need to find those fine lines that divide between pain that is protecting us from irreversible harm and pain that is a sign of healing; between pain that is intolerable/unbearable and pain that is surprising but manageable; between pain that is worth the risk of medications and pain that is tolerable and transient so not worth the additional risk. Our love and concern for our pets and patients must be tempered with this understanding and thinking about pain; otherwise, we run the risk of over-medicating and under-achieving postoperative outcomes.

Inflammation is a normal response in the body to some insult—from a bruise to sore throat to broken bone to skin burn, all have a common finding of "inflammation". One byproduct of inflammation is the triggering of pain nerves. This is why the most common and most effective pain relievers are a group called "NSAID"s (non-steroidal anti-inflammatory drugs). Aspirin was the first one used naturally and pharmaceutically in humans and animals; while useful, aspirin has/had its problems with causing stomach ulcers. Advancements in NSAIDs for dogs led to carprofen, meloxicam, grapiprant, firocoxib, deracoxib, robenacoxib, all specifically labeled for use in animals because of their relative safety and effectiveness (over other human labeled NSAIDs). Because of the way these drugs control inflammation

(and thus pain), all NSAIDs share a common risk profile (stomach, liver, kidney complications). They are useful tools in the toolbox; use when necessary.

Cold therapy targets the inflammation reaction in injured tissue too. By keeping blood flow away from the injured area temporarily, the overwhelming influx of cells that are being called to the site can be reduced. The result is a reduced number of pain nerves being triggered by inflammation. After a major injury or surgical insult, cold therapy can be helpful in the immediate 3-5 days when large scale inflammation signals are being sent out. During the recovery timeframe, cold therapy is helpful immediately after physical therapy sessions when inflammation is flared up a bit. The challenge with dogs is their variable acceptance of adequate cold therapy, i.e. *will they allow us to put enough ice on long enough for the cold to reach deep into the injured site?*

> Baggies of frozen peas work well for this, or snow in plastic bag, or make a flexible reusable ice pack by freezing 1part isopropyl alcohol to 2 parts water in half-filled, doubled up ziplock baggies (quart size for small and gallon size for large dogs). Place in pillowcase and wrap/conform to knee for 10-15minutes per treatment.

Warm therapy and movement both serve the same pain reduction purpose—softening and stretching and lubricating. If tendons, muscles and scar tissues are softer and more flexible, they are less likely to trigger pain nerves when moving through normal actions. An analogy is trying to do the splits—it hurts! That pain comes from those tissues that are too stiff, short, unused. If you take the time to stretch and soften those same tissues, doing the splits will not hurt (might take some time, but just watch a hockey goalie! Impressive.) Applying warm therapy before movement optimizes acceptance of those movements, making them more beneficial and achieving bigger results. And just moving, even small moving, of an injured/recovering body part is beneficial toward less pain (i.e. think about the concept of being stiff and sore when you first get up, then you "warm out of it" as you move.)

> Cotton socks half-filled with dry white rice and tied up then heated in the microwave work well for this purpose but ***MUST*** be thoroughly tested on your own skin before application to your pet's skin. Microwave for 15 second intervals with testing in between; massage and shuffle around the rice to distribute hotspots well.
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> *Confirm that this can be held on your inner forearm for 2 minutes comfortably before using for warm therapy on your pet.*

High-dose (medicinal dose) fish oil is a "natural" anti-inflammatory supplement that works by providing high levels of omega-3 essential fatty acids (EFAs). This supplement is not effective against major inflammation/pain, but may improve comfort in long-term, low-grade inflammation as seen with arthritic joints. Glucosamine/chondroitin supplements ("chondroprotectants") may have some beneficial effects in arthritic joints too, by reducing the cartilage disruption of degenerative joint disease. This has not been clearly established in the scientific literature, but the risks of use are very low. You and your veterinarian should discuss whether or not these products would be helpful for your pet.

Diet

Nutritional bribery is useful for enlisting your dog's participation in these physical therapy activities. Keep in mind that these bribes must be small, quick and motivating. And they should not be the equivalent of a Snickers bar or Big Mac. Peas, sliced carrots or apples, plain Cheerios, bits of pretzel sticks, or other pet training treats are all that is needed.

The **most** beneficial and **least** expensive treatment for arthritis (and general health) over the lifetime of your pet is maintaining your pet on the lean/thin side of normal his/her whole life. Any orthopedic condition can progress with arthritis over time due to excessive, wear & tear; carrying less body weight will relieve some of this stress from the joints. Good parameters to monitor 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.

Restrictions

Follow restrictions as previously advised on specific postoperative materials. *Restriction is not the same thing as rehabilitation*. Restriction prevents catastrophic injury to a joint and surgical site weakened by cutting and sewing. Rehabilitation is the process by which we regain the flexibility, strength and comfort of a healed joint and surgical site. The following PT activities can be integrated at home, the timing based both on time since surgery and stage of recovery.

Physical Therapy Regimen

Massage

- From week 1 onward
- As tolerated by patient

- Superficial skin massage near incision and up to 6" away—using palms and a relaxed but firm touch, move the skin around in circular motion and gentle bunching motion. Continue 5min several times daily, or longer as tolerated
- Deep muscle massage—using fingers and hands, kneed muscles of the calf, thigh (front and back) and rump using firm, slow motions of pushing and squeezing. Continue 5 minutes daily, or longer as tolerated.

PASSIVE ROM

- From week 1 onward
- As tolerated by patient; increasing degree of flex and extend until easily achieve full range.
- Warm therapy *before* and cold therapy *after*.
- 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 (hold 2 seconds) and then slowly pull the foot and push the thigh down and back into extension of knee (hold 2 seconds). 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 fighting or resentment.

WEIGHT SHIFTING

- From week 3 onward; add to daily routine multiple times daily
- As tolerated by patient and when foot naturally "toe-touching" when standing still.
- "Hip bump": While standing or squatting behind your dog, put your hands on either side of the rump/hip area. With right hand, push the right hip 1 inch toward the left; with left hand, push the left hip 1 inch toward the left. The goal is to have your dog shift weight between the right and left rear feet. Avoid pushing so far to activate the "I'm tipping over" response!
- "Rump bounce": While standing next to your dog, push your palm down onto their rump and bounce an inch or so. The goal is to have your dog shift their weight to accept this bounce with both rear feet. Some dogs will take this as their cue to sit; if this is the case, this exercise won't be useful.
- "Opposite lift": While standing or squatting in front of your dog, hold their head up with chin level to floor and pick up the front leg opposite their rear surgical leg. The goal is to have your dog shift weight onto both rear feet.
- "Elevated food": Simply placing your pet's food and water bowls in a higher position will encourage them to shift their weigh back onto both rear feet. Cut out the top of a cardboard box, stack phone books, place on a step, or use custom food dish "furniture" to elevate the feeding station.

- "Step up": Ask your pet to step up onto a curb or step and stand still. Repeat 5x before returning from a bathroom break. The goal is to encourage weight bearing on both back feet.

CONTROLLED WALK

- From week 3 onward; start 5 minutes 2x daily; increase 5 minutes each week.
- As tolerated by patient and when foot naturally "toe-touching" when standing still.
- "Slow walk": Lay out a path that will allow you and your pet walk on one level of the house with non-slip flooring or in the yard. Place your pet on a short leash. Walk slowly enough so that your pet has to put each foot down and does not hop. The slower you walk, the more likely they are to put the foot down on the ground. I
- "Walk back": If he/she is barely putting foot down, stop every few steps and ask your pet to back up a few steps. Moving a nutritional bribe toward their chest (under their nose) will encourage this movement.
- "Weaves": Adjust your path, as leg use improves each week, to include obstacles around which you must weave. Walk around corners, around bushes, around chairs, all while moving slowly such that all four feet are on the ground.
- "Circles": As leg use improves each week, add walking in large circles both directions, then smaller and small circles in both directions.

SIT-STAND

- From week 4 onward
- As tolerated by patient and when foot touches the ground with every step when walking.
- Have your pet repeatedly sit and stand for 10 repetitions twice daily. Do not push down on his/her rump. The goal is to achieve a natural sitting posture, so encourage proper knee flexion squarely under your dog's body. Have your pet sit next to a wall (or use your foot/shin as a blocker) so the knee doesn't swing out to the side. Add this activity to each return from a bathroom break and encourage with small nutritional bribes.

STAIR CLIMBING

- From week 6 onward; start with climbing stairwell 2x daily (or equivalent); increase 2x daily each week.
- As tolerated by patient and when foot touches the ground with every step and ROM exercises are comfortable.
- On a leash and with rear-end safety sling/strap, slowly walk up and down stairs, moving slowly enough to encourage all four feet touching the stairs. Stop and settle 1-2 times as you go up to allow weight to shift to both rear feet.

CONTROLLED SWIMMING

- From week 6 onward; start 5 minutes; increase 5 minutes each week.
- As tolerated by patient and when foot touches the ground with every step and ROM exercises are comfortable.
- 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.

EXERCISE WALKING

- From week 8 onward (after x-rays confirm healing); start 10minutes; increase 10 minutes each week.
- As tolerated by patient and when foot touches the ground with every step and ROM exercises are comfortable.
- Maintain a short leash and walk slowly enough so your dog maintains a walk or slow trot next to you. Walk on solid footing and away from distractions that will cause sudden lunging, etc.
- As leg use improves, increase difficulty by weaving on and off curbs, around trees, up small rises and over low obstacles.

UNCONTROLLED EXERCISE

- From week 12 onward; start 10minutes; increase 10 minutes each week.
- As tolerated by patient and when mild limp every step and ROM exercises are comfortable.
- Allow off-leash access to yard, etc. No ball chasing/fetching or rough play with other dogs.

WORKING OUT

- From week 16 onward; start 10minutes; increase 10 minutes each week.
- As tolerated by patient and when no limp during majority of day and ROM exercises are comfortable.
- Allow off-leash access to yard, etc. Free range of activities—fetch, rough housing, jumping.

Based on your own experience through this, we welcome and encourage suggestions to this information that may help future patients and their people. Pay it forward! *(directvetsurg@gmail.com)*

--The DVS Crew