

Techniques for Rehabilitation of Both Arthritis & Orthopedic Surgeries

Cryotherapy:

Cryotherapy is using cold as a therapy. Using cold to help the body heal after surgery has several advantages: it provides pain management, reduces inflammation, reduces edema and post-operative swelling, and overall just makes the affected area more comfortable.

One of the easiest things to do at home is to apply an ice pack. The two easiest ways to do this is either with a freezer bag full of crushed ice or with your own home-made ice pack. You can mix together in a freezer bag 3 parts water to 1 part rubbing alcohol and then put this bag in a second bag so that it is double-bagged. Make sure that all air is out of the bag before putting it in the freezer. The mixture should be slushy after freezing. If it's frozen solid, thaw it out and add more alcohol. If it's too liquid, then add more water.

Place the freezer bag inside a towel so that the cold isn't directly on the skin. Place the towel-wrapped ice pack against the leg for 20 minutes at a time, 1-4 times a day to reduce redness and inflammation. Check the skin every 5 minutes for pale or white skin. If you see these, remove the ice pack. Cryotherapy may be continued for the first week after your pet's surgery.



Too Much Cryotherapy...

Aquatic Therapy:

Aquatic therapy is when the therapy is done in water. In addition to swimming as a low-impact exercise once your pet starts to bear weight on its leg, passive range of motion exercises described later can be done in warm water to help reduce pain and increase how much the tissues can extend. Do not begin any aquatic therapy until after the sutures have been removed.

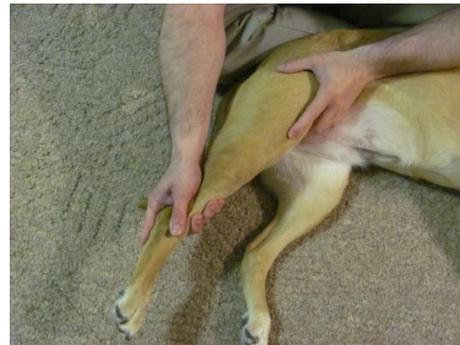


Massage Therapy:

Massage therapy is applying gentle pressure to the muscles in a rhythmic fashion. There are several benefits to massages, as anyone who has ever received one can attest to. Massage therapy helps to decrease muscle tension, decrease pain, increase circulation, and increase mobility. To massage, simply position your hands on your pet's affected leg and gently rub the muscles. If your pet seems uncomfortable, please discontinue or apply less pressure.

Passive Range of Motion (Passive ROM) Exercises:

Passive range of motion exercises are when you take your pet's limb and gently move them as they would normally move. Your pet should be ideally lying on its side and relaxed. By gently moving and stretching the limb, you are helping the limb to remain limber and helping to prevent the muscles from contracting down. It is important that you do not stretch the limb farther than it would normally move and if your pet appears uncomfortable, please discontinue. Passive ROM exercises can be performed 2-6 times a day. Techniques for passively moving the stifle (knee) and hip joint are shown below.



While supporting the femur (upper leg) in one hand and the tibia (lower leg) in the other hand, gently flex and extend the stifle.



While supporting the femur (upper leg) in one hand and the pelvis (hip) in the other hand, gently flex and extended the hip.



Exercise Therapy:

Exercise therapy is an active rehabilitation technique using the dog's natural abilities to perform activities. The purpose of exercise therapy is to return the dog back to normal function as quickly as possible. When starting out with an exercise therapy, it is important to begin with short duration, low impact exercises and to stop if the dog appears uncomfortable. Exercise therapy will gradually increase your pet's strength, endurance, range of motion, and balance.

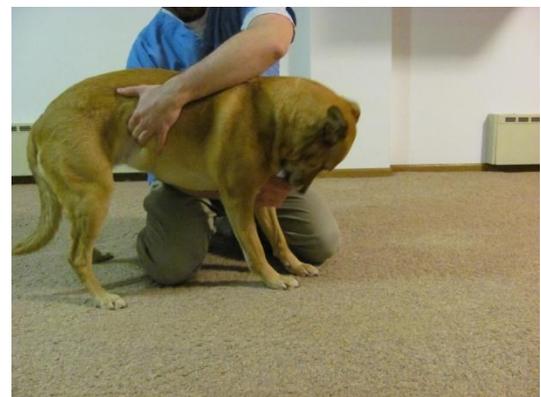
Until the dog begins to toe-touch, that is, no longer holding the affected limb in the air and is beginning to touch the ground with its toes, exercise should be limited to short leash walks. Once your dog begins to toe-touch or bear a small amount of weight on the affected limb, we are ready to begin.

There are several methods that can be used to encourage your dog to walk on the affected leg. If your dog is thrown off balance slightly, this will encourage them to use the affected leg for balance. You may gently try to shift the dog's backside towards the affected leg while at a slow walk. Following are other methods to stimulate your dog to use the affected leg.

Cervical flexion is a good way to increase your dog's balance. With the dog standing, hold a treat above the dog's head, then hold the treat between the front legs at the chest. Resist giving the treat for 5-10 seconds in order to hold the stretch.



Spine flexion is a stretch that will help to shift your dog's weight to its back legs. With your dog standing, hold the treat at the toes. Resist giving the treat for 5-10 seconds to hold the stretch.



Cervical and thoracic bend encourages the dog to shift weight to the leg on the opposite side. That is, if you want your dog to bear weight on its back left leg, then hold the treat on the right side. Hold the treat behind the shoulder blade or by the hip. Resist giving the treat for 5-10 seconds to hold the stretch.



Forcing your dog to sit and then stand (with or without assistance) also will help to strengthen the back legs.



There are other ways to encourage your dog to use the affected leg. If your dog has to really work to walk, then that encourages use of all legs. Depending on the time of the year, walking in snow or high grass will result in your dog needing "4-leg drive" to get through the deep stuff. If you attach a small ankle weight to the normal unaffected leg, this will feel weird to the dog and take its mind off of the surgical leg. You may also put a small bootie or tape something (i.e. a small stone or a small jar lid) to the bottom of the normal unaffected foot with an ACE wrap, this will be irritating enough that the dog will start to use the affected limb more.

Walk your dog in different ways to start to build strength. Start out with short walks on level ground. As the strength begins to come back, start to walk your dog up inclines and on rougher ground. The rougher ground will require the use of all limbs and by walking up hills, the back leg muscles will be getting more of a workout.



For the more hands-on owner, there are two other things that can be done to increase balance and gait.

The first thing to try to greatly assist with balance is to make a balance board. The board should be a flat surface, preferably rough or with some sort of traction on it, big enough to place both back feet on or even the entire dog for smaller breeds.



Underneath of the platform, either put another board or something that is high enough to make the board rock slightly but not so high that the balance board can roll over. It does not have to be a very high rocker.



Once your dog's back legs are on the board, rock it slowly side to side for 20 repetitions. Then turn the board and rock front to back for 20 repetitions. Your dog will contract muscles and shift weight to stay on the balance board.

The second thing that can be done to increase gait is with Cavaletti poles. Cavaletti poles increase range of motion, stride length, and stance time in the dog. These can be something as simple as a ladder, baseball bats or PVC pipes elevated off of the ground on some form of base.

Start with the poles approximately the same distance apart as the height of the dog's elbow. Trot the dog through the poles. Raise, lower, or spread the bars until the desired gait is reached.



As your dog's strength begins to increase, you may pick up the leg in front of the affected leg and the unaffected back leg and hold this pose for 10-15 seconds. Repeat this exercise 2-3 times, increasing the time and repetitions as the dog's strength increases.



Putting It All Together:

Now that we have the basics of how to rehabilitate our dog that just had surgery, how do we put it all together?

Initially after surgery, your dog will not use the affected leg for 1-4 days following surgery. During this initial period, cryotherapy, massage, and passive range of motion (Passive ROM) exercises are the best beginning therapies to help reduce inflammation and increase circulation. At any point, if your dog seems painful, please stop what you are attempting and give your dog a break. Also, it may be helpful to give your dog a treat or reward after each therapy session. This will help to reinforce the session as something that the dog looks forward to.

Once the surgical pain seems to lessen and your dog seems ready to toe-touch, you may encourage the toe-touching by walking in snow or tall grass, or the flexion exercises listed above. Massage or Passive ROM exercises prior to a short leash walk will help to loosen and relax the muscles and cryotherapy after a leash walk will help with any inflammation that occurs due to the walk.



As your dog begins to use the affected leg more often, the strength and balance will return. As long as the dog seems to be comfortable, you may slowly increase the length of the walks and the durations of the training sessions. You may also begin to mix up the terrain by walking up steeper inclines or walking from raised sidewalk, to pavement, to raised sidewalk again.

As your dog becomes more comfortable, you may phase out the cryotherapy, massage, and Passive ROM exercises. As your dog's strength returns and it begins to master walking up hills and is doing well with the sit and stand exercises, you may slowly introduce it to walking up stairs to further build its strength.

It is important to remember that our pets cannot talk and cannot let us know if things are hurting. Dogs also have the problem that their adrenaline will often override mild pain. This problem is for the owners in that it is sometimes very difficult for us to tell how painful our dogs truly are when they get excited about something. So, no matter how much our dog wants to or how good they look, they should not be let off the leash to run freely for at least 6 weeks following their surgery.

If the suggestions in this handout are followed (and stopped when your dog appears to be painful...), then your dog should be able to return to normal function faster and with more strength and vigor. If at any point you have any questions or concerns, please do not hesitate to contact us. We are always more than happy to address any concerns you may have.

Adam Hoover VMD

The Franklin Animal Clinic would also like to thank our model, "Reese" Hoover, for patiently putting up with many, many pictures for the small price of deer jerky...



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