External Fixator Rehabilitation Program

The first goal of post-operative rehabilitation with an external fixator surgery is to get your pet bearing good weight on the operated limb with every step at a slow walk. Every pet, like every person, has a different tolerance for discomfort and a different “will” to work through the post-operative program. Some pets start using the leg very quickly and others hardly use the limb at all until all the pins are removed.

Initial “psychological training” to encourage limb use is vital therapy for your pet. Therapy should be done a minimum of two times a day but more are encouraged. Initially, your pet should be under your control on a short leash (two feet) at all times when they are not confined to a small area. Free running of the yard or house are not permitted at this time. Try to pick a time and area where there are no distractions.

Walk your pet in a very slow manner and give the command of “foot” while gently pushing down on the limb from the region of the upper scapula (shoulder blade) or upper pelvis for a front or rear limb respectively. Your pet is expected to bear significant weight on the limb at every step. Walking slowly up or down a hill will facilitate the use of the limb. When your pet bears weight on the limb give them exuberant praise. Use an occasional Milk Bone (green beans or light food nuggets for overweight patients) for a reward if necessary. You should be constantly verbalizing and giving praise for use of the limb but at all times this is occurring at a slow walking pace under the control of a short leash. Try to use the same place every session so that this becomes a consistent routine for you and your pet.

With cats this therapy is also done several times a day but with more of a “hands-off” approach allowing the cat to roam a confined region. As a mobilization aid for the cat one can use several cut portions of foam to cover the floor. This encourages the cat to bear weight as it negotiates the foam.

Sometimes when the fixator is applied to the radius/ulna (lower front leg) your pet will hold the carpus (wrist joint) in a slightly flexed position and not want to bear weight. When this occurs a short splint is sometimes incorporated into the full limb wrap to encourage early weight-bearing. This is usually only necessary for the first seven to fourteen days. Be sure to let the fixator technician know if this is happening with your pet.

Research has shown that early use of the limb is critical to rapid bone healing and lower complication rates.

When your pet is in the house and not on the therapy leash, do not insist that your pet bear weight on every step as this will lead to inconsistency and serve to confuse your pet. However, when the leash goes on and your pet and you go to the therapy environment your pet knows what is expected; controlled strong weight-bearing. As your pet is walking well with each session, gradually increase the duration of
each session. If in increasing the length of the session the animal begins to bear less weight, you should back off the duration. If your pet does not start using the limb well at the shorter duration there may be a problem with the fixator and you should have the fixator technician examine your pet. The goal is to have your pet use the limb more and more throughout the entire time the fixator is being worn. Again, some pets will remain slightly lame (especially in cold weather) until all of the pins are removed at the time of healing.

If can not be over emphasized that these daily sessions are the best early warning signs of problems with the fixator. Early problems can usually be corrected very simply without endangering the healing process of the bone. Advanced problems can be difficult and costly to repair.

<table>
<thead>
<tr>
<th>Week 6-8 (8-10 for cats)</th>
<th>First X-Ray</th>
</tr>
</thead>
</table>

At 6-8 weeks (8-10 for cats), we take our first radiograph in most cases. Some cases require a radiograph before six weeks but your doctor will let you know if this is necessary. Please do not give your pet any food or water after 10PM the night before the scheduled radiograph as sometimes sedation is required if pins need to be removed. Please schedule this as a “drop off” for the day and be sure to ask the fixator technician to coordinate this appointment with the surgeon as he may have to palpate (feel) the leg to assess the healing process.

One of the unique procedures that external fixators allow is the “staged disassembly” of the apparatus. Unlike pins, wires and plates which stay intact for the entire healing process, fixators with multiple pins can be slowly removed, sometimes one pin at a time, in order to allow the bone to take on more and more of the weight from the limb striking the ground. Bone healing requires very rigid support early to allow the proper nutrients and bone building cells to multiply and produce “callous” to bridge the fracture with very little motion to the bone. Once these are in place, less support and stability is needed as the bone takes on more of the stresses and strains associated with walking. Just like a small tree requires a large stake until it grows stronger, the bone requires a strong support structure while it is beginning to heal. As the pins are removed and more force is allowed to go up the bone, this force stimulates the bone to get stronger in a shorter period of time than if the pins were not removed. This is another reason getting your pet to use the leg during the healing process is very important. Slight “micro-motion” and weight bearing forces are absolutely necessary for fast healing and early fixator removal. You can call Rod Newman, MS, CCRP to schedule physical therapy to reduce recovery time at 615-414-4867 or email him at rnewman@caninerehabnashville.com.

(Program designed by Dr. Dennis N. Aron, University Of Georgia)