ORTHOPETS®

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Mon – Thurs 9am – 5pm

Three Legged Carpal Considerations

What Options Do I Have If My Dog Is Not A Candidate For A Forelimb Prosthesis?

Many patients present with an amputation of the forelimb. Forelimb prostheses require 40% of the radius and ulna for suspension as well as a functional elbow joint for ambulation. Patients that do not meet this minimum requirement are not candidates for a prosthetic device. For these patients, we recommend a carpal orthosis to provide support and stability to the remaining forelimb. Over time, 3-legged patients will experience compensatory changes to the remaining forelimb such as carpal hyperextension and carpal varus/valgus. Our carpal orthosis can support carpal injuries and instabilities while preventing further breakdown of the carpal joint.

Clinical signs of carpal injury include lameness, swelling, and mal-alignment. Mal-alignment can include inability to extend the joint, hyperflexion, hyperextension and/or increased angling of the paw toward the midline (varus) or away from the midline (valgus). Minor injuries can resolve with rest and use of a temporary splint. More severe injuries require surgery or an orthosis. Common surgical approaches include repair of large ligament injuries when possible, screw fixation of fractures of the large carpal bones and partial or complete fusion of the carpus so that it no longer articulates. Orthosis options include designs with and without articulation or paw segments. The design of the device depends on the type and severity of injury. An orthosis is considered an excellent option when surgery is not appropriate, not necessary, or not possible.

Because an orthosis is not the correct therapy for all patients, before choosing an orthosis the following points are important to keep in mind:

1. Device design is paramount to success. Careful consideration is taken in prescribing a device and its specific components. Important clinical variables surround use of a paw segment and whether articulation by way of hinges is possible.

a. A paw segment is required in the following circumstances: short metacarpal bones, fracture of metacarpal bones, severe hyperextension, middle or distal joint hyperextension or carpal bone subluxation, more than one plane of instability, excessive dewclaws, deranged digits, flexor tendon failure or shortening at the digits, wounds associated with the paw. Without a paw segment these patients are at risk for poor control of their pathology and serious skin trauma/wounds due to uncontrolled pressure and friction.

b. Articulation (hinging) is ideal whenever possible in order to provide as close to normal limb use as possible. Articulation is possible at the carpus and the paw. When an orthosis is intended as an alternative to pancarpal arthrodesis, the articulated carpus device is a tremendous advantage. With this design, the carpus can flex if appropriate yet have abnormal extension limited if movement of the carpus is appropriate. This called an arthrodesis-on-demand. Articulation cannot be provided under the following circumstances: severe carpal mal-alignment, bone tumors near the carpus, metacarpal fractures, and non-reducible carpal bone luxation. When articulation is not possible patients will not have a completely normal gait in the device; however, an orthosis can provide significant improvement as a part of an overall treatment plan (see #5 and #6 below).

2. The device MUST be put on and removed daily. The orthosis stabilizes the carpus from the outside, while surgery does so from the inside. Therefore it is important to follow the wearing schedule provided by OrthoPets. Wearing schedules vary with type of injury. Initially, your pet may need to be assisted with a Help Em Up Harness or a rolled up towel while adjusting to the device.

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3. Adjustments are expected and are a normal part of the custom orthosis process. The device is custom-made for your dog. Every effort is made to accurately fit the device. If adjustments are required, it may be necessary to ship the device to OrthoPets. Much like hiking boots or new shoes, the device will require a break in period and fit issues may come up as your pet increases wear and activity with the device. Increased activity and activity intensity can expose fit issues requiring adjustment. Additional adjustments are most commonly required in the first few months and as time goes on (see importance of follow-up #4). Please follow all instructions with regard to monitoring the leg and contact OrthoPets and your veterinarian promptly if you have concerns.

4. Follow-up is critical to success. An orthosis is considered a "durable medical device." This means that proper use is necessary to meet therapeutic goals and to ensure its safe application over the lifetime of your dog or the duration of injury healing. In the first few months of fitting your doctor with the help of our OrthoPets team will see you and your dog for fit checks and coaching with regard to device use.

Annual to twice annual appointments, depending on injury, age and activity of your dog, are suggested. At these appointments your doctor will thoroughly assess your dog's orthopedic condition and evaluate the condition/fit of the device. Recommendations will be made for continued success in the device.

5. Rehabilitation, the first key for success. Most dogs adapt quickly to wearing an orthosis. However it is rare that we put on the orthosis and your dog immediately returns to full normal function like they had before their injury. Your dog will need to learn basic skills while wearing the device. These include: transitions (sitting, lying down, and getting up), stairs, getting into vehicles safely, managing on different types of surfaces (dirt, carpet, hardwood floor, etc.).

The best way to ensure the highest level of success with an orthosis is to follow a rehabilitation schedule. Each patient's condition and abilities are unique and as such an individualized rehabilitation program is needed. OrthoPets strongly advises working with a certified canine rehabilitation professional (CCRT or CCRP). Please consult your family doctors or surgeon for referral to a veterinary rehabilitation professional in your area.