



# FUSION VETERINARY ORTHOPEDICS

## THE USE OF CANINE STIFLE BRACES FOR CRANIAL CRUCIATE LIGAMENT INSUFFICIENCY

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Cranial cruciate ligament (CCL) insufficiency is the most common cause of hind limb lameness in dogs. There are numerous options for surgical management; however, surgery is not always an option. Concurrent medical problems, financial concerns, as well as other reasons for either forgoing or delaying surgical treatment. Recently, the use of canine stifle (knee) braces has emerged as a possible non-surgical solution. At Fusion Veterinary Orthopedics we have the experience to help guide decision making if an owner is considering a brace.

**However, it should be recognized that usage of a stifle brace is not meant to replace surgical correction, nor should the outcome be considered similar to surgical intervention.**

In human medicine, knee braces are commonly used for multiple conditions. Bracing of the human knee has been shown to enhance proprioception/joint position sense, permit the injured limb to relax, reduce fatigue in injured limb, provide some mechanical protection against impact, and slow movement down to allow muscles time to react and control motion.

Functional knee braces are utilized in veterinary medicine. The most common indication for canine stifle brace is cranial cruciate ligament insufficiency. However, other indications include post-operative support for medial or lateral collateral ligament instability, post-operative support for patellar tendon ruptures, and caudal cruciate ligament insufficiency.

Proper construction of canine stifle brace is imperative to create a comfortable and functional stifle brace. Since there are so many different shapes and sizes of the leg of a dog a custom brace is needed. Unfortunately, "off the shelf" type braces will not work appropriately. The most important step is to take a proper cast mold or a video (if 3D printing is being used) of the affected limb. Once the cast is made or a video obtained, it is then sent to the orthotists or 3D printing engineers for creation of the custom brace.



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Once the brace has arrived, a fitting appointment is scheduled. At the fitting appointment, proper fit is confirmed and owners are shown how to properly place and remove the brace. It is recommended that the brace be adjusted and checked by the owner frequently in the first 24 to 72 hours to help find the best fit. Patients usually take 24 to 72 hours to become accustomed to the brace and may alter their gait during that time. There may be some areas where the hair may rub off and form a callus. This is not unusual but should never progress to an open sore. If an open sore is noted, a re-evaluation should be scheduled as soon as possible. Should the brace become wet, it should be removed immediately and allowed to dry prior to placing back on the patient. The brace may be removed at night while the patient sleeps, which helps reduce the risk of swelling. In the first 2 weeks, the brace and areas of contact should be checked at least twice daily for any sores or damage to the brace. A re-evaluation appointment should be scheduled two weeks after the brace fitting to ensure that the brace still fits appropriately and that there are no concerns or problems.

Using a brace for CCL insufficiency is a lifelong need. Because the diseased ligament will not heal the brace is worn during periods of activity for the remainder of the dog's life.