

**INFLUENCE OF PHYSICAL REHABILITATION ON TIBIAL PLATEAU  
LEVELING OSTEOTOMY HEALING RATES IN LABRADOR RETRIEVERS**  
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**INTRODUCTION:** Veterinary physical rehabilitation has been used to aid in the recovery process of post-surgical small animal patients. The goals of physical rehabilitation are to promote the healing process of the body, recover lost muscle mass, as well as, return and/or maintain normal range of motion of joints, through a patient-dependent set of exercises that ultimately help return the patient to it's normal level of function, whether it is a performance or pet. In this retrospective study, we compared osteotomy healing rates of 10 dogs that had the Tibial Plateau Leveling Osteotomy (TPLO) and did receive post-surgical physical rehabilitation to 10 dogs that had the same procedure and did not receive any post-surgical physical rehabilitation. We hypothesized that patients who did receive post-TPLO physical rehabilitation had a faster healing time of the osteotomy.

**MATERIALS AND METHODS:** The study consisted of 20 Labrador Retrievers and Labrador mixes between the age 1 and 10 years old that had TPLO procedure at Veterinary Specialty Hospital (VSH) by either Drs. Spodnick or Lee. The mean age of all dogs in the study were 6.15 years. The median age was 6.5 years for the dogs that were rehabilitated and 6 years for the dogs that were not rehabilitated. We reviewed post-operative radiographs of 22 TPLO surgeries, 10 (45%) of which were treated as inpatients at VetHab, Inc. until recovery, 12 (55%) that only received post surgical discharge instructions from VSH, and one dog that had bilateral TPLO surgeries, but only received physical rehabilitation for one of the surgeries. All surgeries were reevaluated at VSH at approximately 8-weeks. At this time radiographs were made. The mean number of days from surgery to 8-week reevaluation/radiology was 64 days. Three investigators, using the radiographs made at the reevaluation, assessed the osteotomy as healed or not healed.

**RESULTS:** The three investigators determined by looking at the radiographs made at reevaluation of the 22 TPLO surgeries that 14 (64%) had healed and 8 (36%) had not healed. Of the patients that received physical rehabilitation, 9 out of 10 (90%) had healed. Of the patients that did not receive any physical rehabilitation, 5 out 12 (42%) had healed.

**DISCUSSION:** Physical rehabilitation appears to have a positive response on the healing rate of the osteotomies in this study. These results suggest that the osteotomies of the patients who received physical rehabilitation were dramatically more advanced in their healing at their recheck evaluation than the patients who did not receive physical rehabilitation in this study. Early, controlled, positive stress on the tissue of interest is one theory of how physical therapy benefited these patients. The physical rehabilitation treatments included: massage, passive range of motion exercises, cyrotherapy, and strength building and weight bearing exercises such as underwater treadmill, land treadmill, and sport specific exercises. Although it is not conclusive that physical rehabilitation causes osteotomies to heal more quickly, these results suggest that further studies into the benefits of this discipline are needed.