

# OSU TPLO Study

- Wendy Balzer, DVM, DACVS
  - Force Plate
  - Radiograph
  - Lameness

- [Link](#)



**Preoperative Low Level Laser Therapy in Dogs Undergoing Tibial Plateau Leveling Osteotomy:  
Double-blinded, Placebo-Controlled Clinical Trial**

Baltzer, WI, Wheeler, A, Tennant, R, Simpson, J, Ruaux, RG, Warnock, JJ.



**College of  
Veterinary Medicine**

***n=27***

Double-blinded

Randomized

Placebo-controlled

**ONE K-Laser Tx:**

- Pre-Op
- 3 Watts
- 4 J/cm<sup>2</sup>

**Post-Op Medical Management**

- Carprofen (2.2 mg/kg BID x 2 weeks)
- Tramadol (3 mg/kg BID x 2 weeks)
- Cryotherapy (5 min q4hr x 24 hr)

# Oregon State University K-Laser Trial

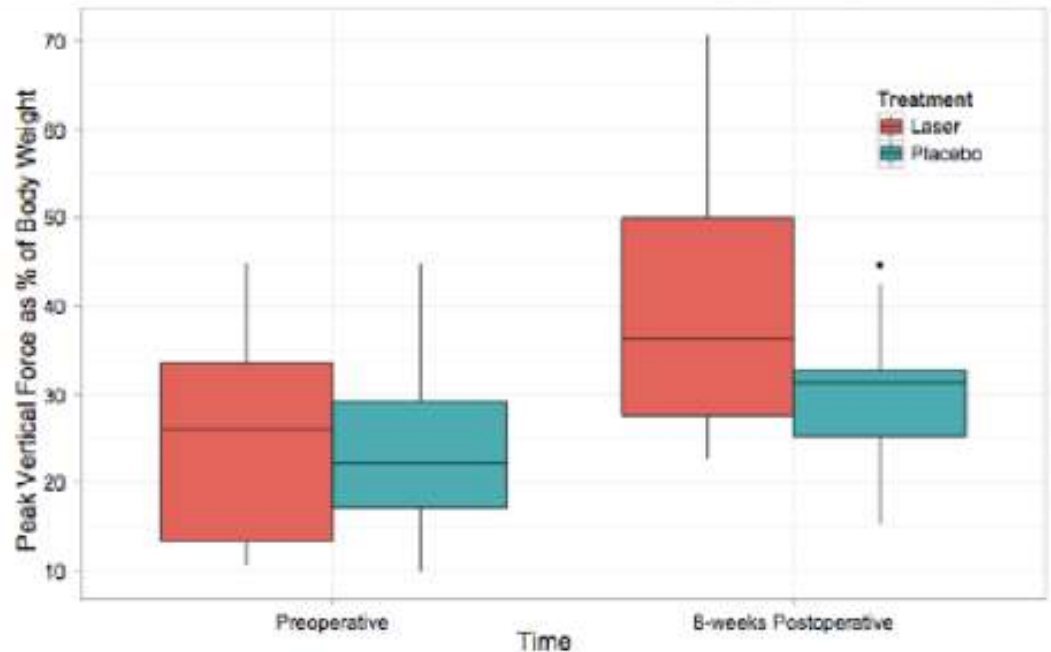
- 27 dogs with Cranial Cruciate tears
- Half were given one K-Laser therapy session to their damaged stifle joint prior to surgery, half were not given any laser therapy = placebos
- In order to have a true blinded trial – no post operative laser sessions were given (unlike usual protocols)
- Same team of boarded surgeons and radiographers reviewed the dogs lameness and radiographs at pre-operative and 8-weeks post-operative intervals
- All the dogs had same protocols after the initial laser

**Peak Force**  
(% Body Weight)

Preop:  
23.8% ± 3.6% control  
26.3% ± 3.7% Laser

8wk post:  
28.9% ± 2.6% control  
39.6% ± 4.7% treat

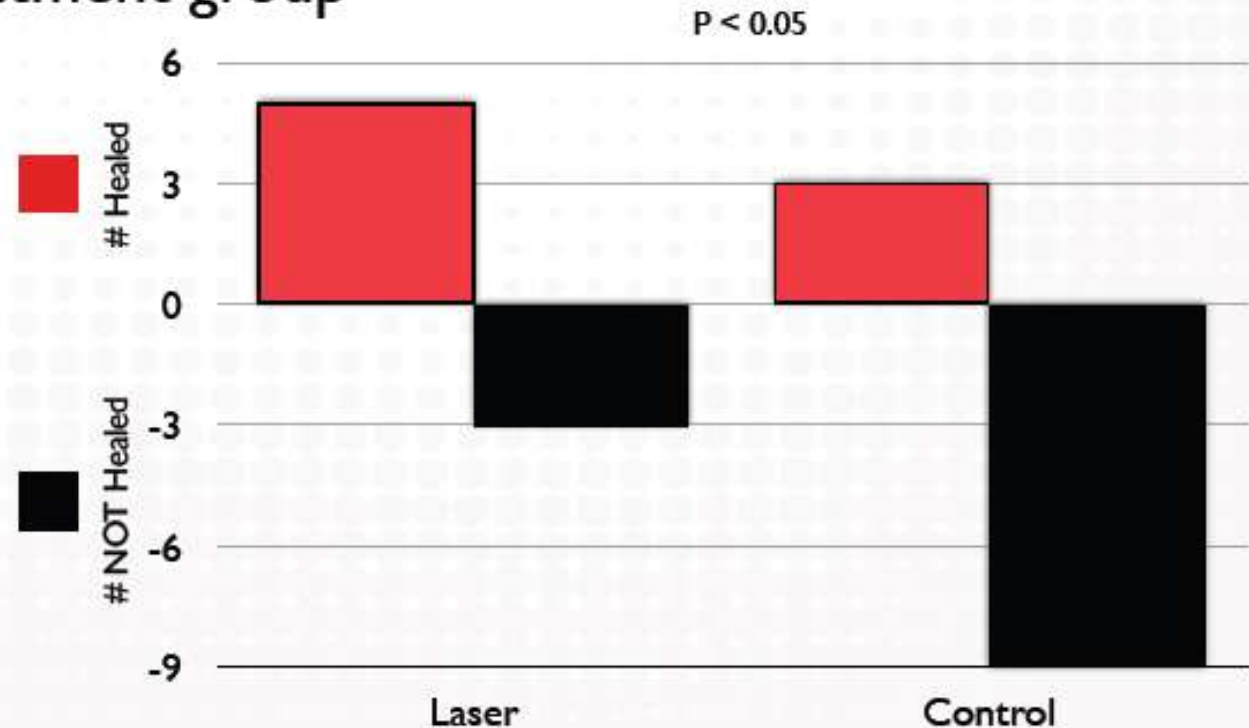
P<0.01 Laser Treatment



*26% in Placebo Group*  
**51% increase in Laser Tx Group**

## Radiographic Analysis: **8 weeks Post-Op**

- Remodeled fracture callus w/ smooth edges
- No sign of lucency at previous osteotomy site
- Stats: Two sided Fischer's exact test
- Scored: Healed or Not Healed
- Assessed independently by DACVS and DACVR blinded to treatment group



# Conclusion

- Pre-Surgery K-Laser therapy biostimulated bone and soft tissue cells
- Results indicate that this enabled better bone-metal healing post surgery versus non-lasered dogs
  - Less lucency under x-ray
  - Better bone-metal integration
  - Better soft tissue repair
  - Better Lameness scores on Force Plate Analysis ( $p < 0.01$  compared to non-laser group)
- Usually they would have 3-4 sessions post surgery as well to further benefit rehabilitation