

OSU TPLO Study

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



**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/cm²

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

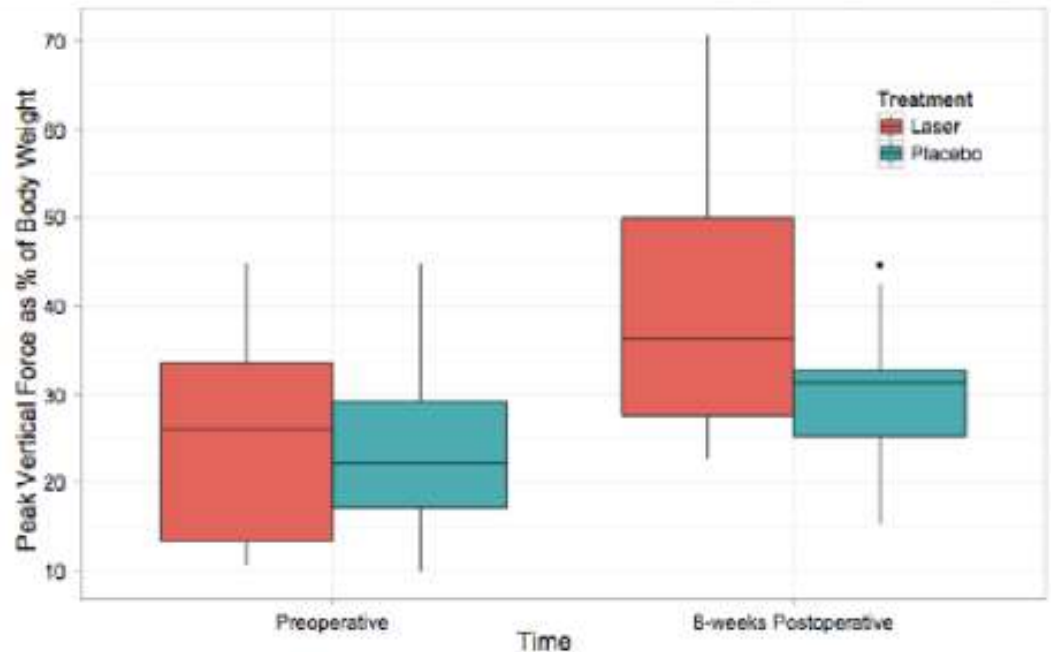
- 27 dogs with Cranial Cruciate tears
- Half were given one K-Laser therapy session to their damaged stifle joint prior to surgery, half were not given any laser therapy = placebos
- In order to have a true blinded trial – no post operative laser sessions were given (unlike usual protocols)
- Same team 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

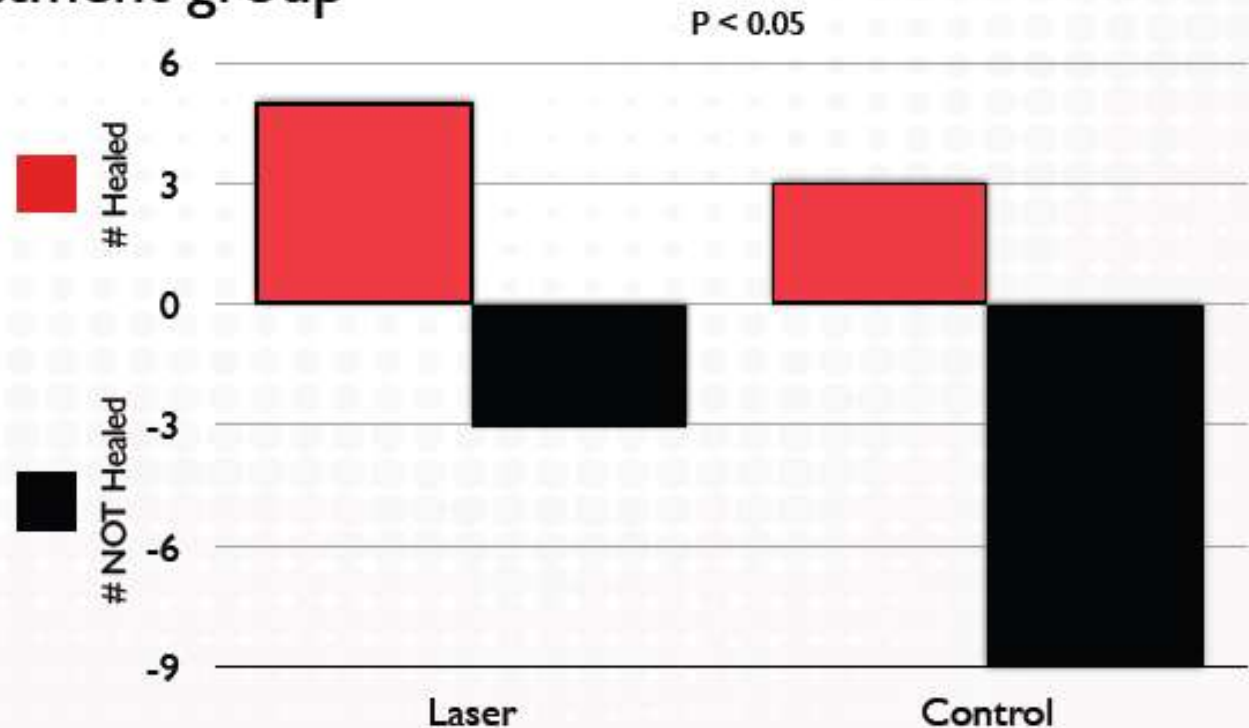
P<0.01 Laser Treatment



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