A randomized blind placebo-controlled trial investigating the effects of photobiomodulation therapy (PBMT) on canine elbow osteoarthritis

Andrea L. Looney DVM, DACVAA, DACVSMR, Ethos Veterinary Health, Massachusetts Veterinary Referral Hospital, 20 Cabot Road, Woburn, MA 01801 USA

Janice L. Huntingford DVM, DACVSMR, Essex Animal Hospital, 355 Talbot St North, Essex, ON N8M2W3 Canada

Lauren L. Blaeser DVM, DACVS, Ethos Veterinary Health, Bulger Veterinary Hospital, 247 Chickering Road, Andover, MA 01845 USA

Sabine Mann DVM, PhD, DECBHM, DACVPM, Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY14853 USA

Corresponding Author: Andrea L. Looney, alooney@ethosvet.com

Acknowledgements: This study was funded by a Waltham Foundation grant. Equipment provided via Companion Therapy by LiteCure.

Abstract: The effect of photobiomodulation therapy (PBMT) or sham light therapy on pain, nonsteroidal drug requirement and lameness was studied in 20 dogs with naturally occurring elbow osteoarthritis. Dogs (n=20) were randomly assigned to receive either PBMT (group PBMT, n=11) 10-20J/cm^2 or a placebo treatment (sham light group S, n=9) treatment 0J/cm^2, to both elbows for 6 weeks. Lameness score, pain score, and NSAID (nonsteroidal anti-inflammatory drug) dose were recorded by blinded study personnel before (pre) and 7-10 days after (post) last treatment. NSAID dose reduction occurred in 9/11 dogs in the PBMT group, and in 0/9 of group S dogs ($P = 0.0003$). There was greater improvement in lameness score post PMBT vs S therapy ($P = 0.001$). A greater reduction in pain score was detected in 9/11 parameters in group PBMT ($P < 0.05$). Regularly scheduled PBMT at 10-20J/cm2/joint for 6 weeks was successful in improving lameness and pain scores, and in lowering NSAID requirement in canine elbow osteoarthritis patients.