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OBJECTIVE: To investigate gender, age (<6yrs vs >6yrs) and laterality effects on joint ROM and any relationships to BVA/KC hip score.

OUTCOME: Joint ROM measures may be a useful measure to monitor limb joint junction in dogs as an indicator of sub-clinical changes related to movement dysfunction and progression of CHD

INTRODUCTION

- Hip Dysplasia (HD) is one of the most common orthopaedic diseases in dogs
- Dogs afflicted with HD can often show minimal to no clinical signs.
- Passive joint range of motion (ROM) demonstrates the integrity of the joint capsule, ligaments, fascia and articular surfaces of the joint without the influence of muscle activity.
- Goniometry is a reliable, economical, non-invasive method to provide repeatable measurements of passive joint ROM and validated in dogs (Jaegger *et al*, 2002)

METHODOLOGY

- 16 KC registered, healthy, sound, mixed gender, single breed (Siberian Husky) dogs that lived and worked together were selected.
- A Goniometer measured angles (degrees) of passive flexion and extension of shoulder, elbow, hip and stifle joints on both sides, using specific bony landmarks. Triplicate measures were taken.
- The investigator had been tested for acceptable measurement repeatability.
- Data was analysed using Students t-test and Pearsons Moment Correlation

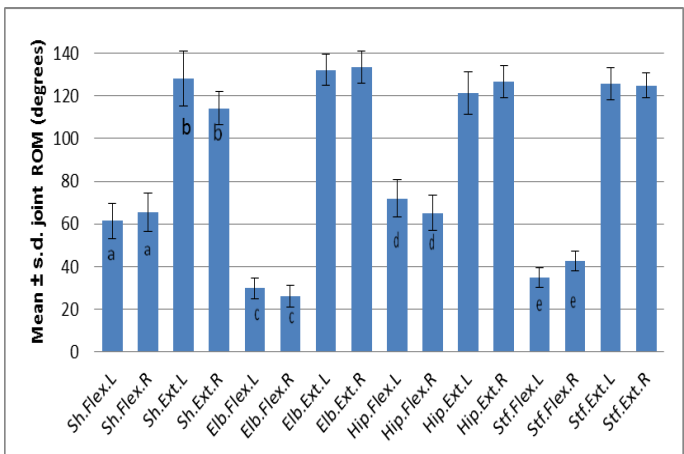
REFERENCES

Jaegger, G., Marcellin-Little, D.J., Levine, D. 2002. American Journal of Veterinary Record. 63(7) 979-986.

RESULTS

- Gender and age (<6yrs vs >6yrs) had no significant effect ($p > 0.05$) on joint range of motion measures for flexion or extension of the shoulder, elbow, hip and stifle joints.
- For all dogs, there were statistically significant differences between the left and right side ROM measures. Hip joint ($p < 0.01$), stifle joint ($p < 0.01$), shoulder joint ($p < 0.001$), elbow joint ($p < 0.05$). Joint flexion was the dominant effect.

Figure 1: A bar chart showing the mean joint flexion and extension ROM for all animals



- There was a significant correlation between joint ROM means and both total and right side* BVA/KC hip score for: right hip extension ($r = 0.703$, $p < 0.01^*$), left elbow extension ($r = 0.606$, $p < 0.05^*$)
- There was no significant ($p > 0.05$) laterality effect for neither hip or elbow extension ROM.

CONCLUSIONS

- Bilateral ROM measurement is important to consider.
- Dogs with a higher BVA/KC hip score on a particular side, may predispose to an increased extension range of that hip joint and the contralateral forelimb elbow extension
- Further investigation is warranted on larger cohorts of cases and different breeds.