A study to assess the effect of DogStreamZ collars on elbow and stifle joint angles

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Introduction

Magnetic resonance therapy uses a triple independent energy field to deliver energy to target cells. For cells to function, they need a continuous supply of energy, and magnetic therapy saturates cells with energy which stimulates new cells to grow. Since a therapeutic effect has been seen in humans, an industry has grown with a variety of products for both humans and animals, including horses and dogs to help their lives whether they are companions or playing more active roles in sport and agility. A variety of products are available such as bracelets, boots, rugs or pads, all of which have the common aim to increase blood flow and hence tissue repair. StreamZ Global launched their first magnetic product in 2013, the Equ StreamZ fetlock band, (Streamz Global, 2017) and have since launched a version for humans and dogs. Although these bands are similar to other magnetic products available, StreamZ Global claim that it operates in a different biological mechanism. The Dog StreamZ collar is designed to fit around the neck in a full circle, allowing the technology to create a "360° spin" of the StreamZ smart-material containing five separate multi-directional low-frequency polarity fields (Aspden, 1997). This "spinning" motion is referred to as a "Cyclotron Effect" leading to an increase in the impact of the magnetic fields on the body (Liboff, 2013). This study looks into the effects of the Dog StreamZ collar in elbow and stifle joint angles in dogs before, during, and after wearing the collar for a 2-month period, and then data were collected using anatomical body markers and analysed with Quintic biomechanics software.

Method

- 20 sporting dogs were recruited meeting the following requirements: over 2 years old, varying breeds, weighing between 15-25kg, and deemed fit and healthy by a vet.
- Anatomical markers were placed on the shoulder, elbow and carpal, hip, stifle and hock on both sides of the dog. The dogs were trotted past the camera with the Quintic light reflecting off the markers which recorded their movement at high speed.
- Measurements were taken on day 1, after which the dogs were given a DogStreamZ collar to wear 24/7 for the duration of the study. Repeat measurements were taken at week 4 and week 8.
- Data analysis will be performed using SPSS software once the data has been extracted from the Quintic software.

Plate 1: Locations of anatomical markers.

Results

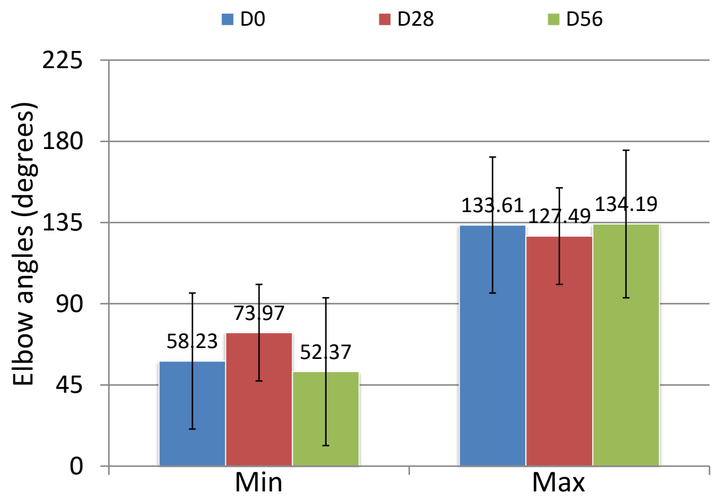

Figure 1: Elbow flexion and extension angles for Day 1, week 4, and week 8.

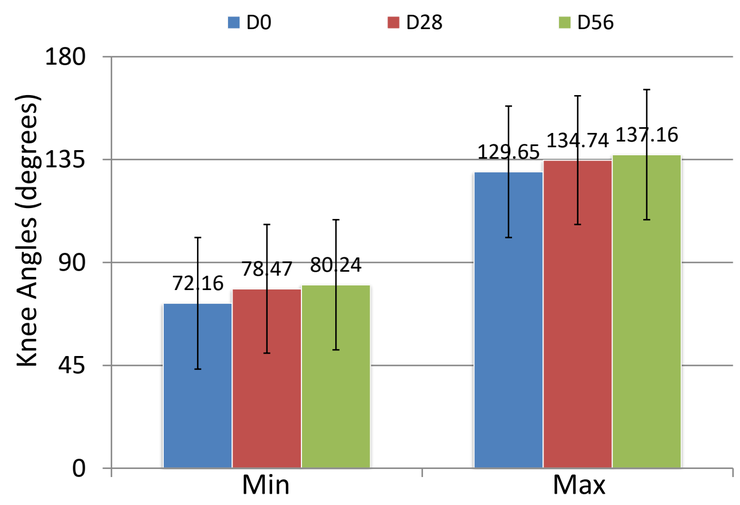

Figure 2: Knee flexion and extension angles for Day 1, week 4, and week 8.

Discussion & Conclusion

The results so far indicate a improvement between the StreamZ technology and range of motion in both elbow and stifle joints. Once full analysis of data has been performed, either by using a one-way repeated measures ANOVA (if data are parametric), or using a Friedman's test with a post-hoc analysis using a Wilcoxon's test (if data are non-parametric) it will then be possible to determine whether there are significant differences that will aid confirmation of the claims made by StreamZ Global. A limitation of the study was that the dogs all trotted at various speeds, and future studies could rectify this by the use of a treadmill at a set speed. Future studies might also consider stride length (smaller dogs would be separated from larger dogs), weight distribution and advanced gait analysis would make for an even more accurate experiment to support StreamZ Global and their cyclotron effect mechanism. More stringent criteria for further studies would be required such as a specific fitness level, or criteria for prevalence of injury, would improve the quality and strength of findings.

Acknowledgements

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References

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