



## E12 - Effect of Ambulation Following $^{18}\text{F}$ -fluorodeoxyglucose Injection on Standing Positron Emission Tomography of the Equine Digit

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### Research Abstract - Oral Presenter(s)



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### Abstract

**Background:** Standing  $^{18}\text{F}$ -fluorodeoxyglucose (FDG) positron emission tomography (PET) may be useful for diagnosis of laminitis. The effect of ambulatory activity (which is known to affect lamellar microvascular perfusion) following injection on FDG uptake in the lamellae needs to be established.

**Objectives:** Measure FDG uptake in the dorsal lamellae and associated tissues of healthy horses subjected to different ambulatory conditions between the time of FDG injection and subsequent PET image acquisition.

**Animals:** 8 healthy, university-owned adult horses

**Methods:** In a randomized crossover design, horses were walked (AMB) or cross tied (NON-AMB) immediately after injection with 3MBq/kg FDG until scan acquisition (45 minutes later), with steps quantified using an accelerometer. Standardized uptake values (mean [SUVmean] and maximum [SUVmax]) for regions of interest (ROIs) in the mid-dorsal lamellae and coronary band dermis were compared between AMB and NON-AMB using Wilcoxon signed rank tests.

**Results:** Median (IQR) step count for AMB (564 [500-644]) was higher than NON-AMB (63 [30-118])  $p=0.02$ . The SUVmean in the mid-dorsal lamellae was not different between AMB (1.9 [1.8-2.2]) and NON-AMB (1.7 [1.3-1.9])  $p=0.1$ . The SUVmax in the dorsal lamellae was not different between AMB (2.7 [2.2-3.0]) and NON-AMB (2.5 [2.0-2.7])  $p=0.5$ . Coronary band SUVmean for AMB (4 [3.6-4.2]) was not different to NON-AMB (3.8 [3.3-4.6]),  $p=0.5$  and SUVmax AMB (6.8 [6.4-7.6]) was not different to NON-AMB (6.5 [5.0-7.5])  $p=0.1$ .

**Conclusions:** Mean lamellar FDG uptake was approximately half that of the coronary band and was not affected by ambulatory activity post-injection in healthy horses.