Digital flexor tendon sheath injection with mepivacaine causes an increase in synovial fluid detectable on MRI for at least 72 hours. No effect of mepivacaine injection into the distal interphalangeal joint or podotrochlear bursa or of a palmar digital nerve block was detected in normal horses. Authors’ addresses: Clinical Studies, Ontario Veterinary College, Guelph, ON, Canada (Black, Crib, Nykamp, Trout); Biomedical Sciences, Ontario Veterinary College, Guelph, ON, Canada (Thomason); e-mail: belindab@uoguelph.ca. *Corresponding author. © 2011 AAEP.

1. Introduction
The effect of diagnostic anesthesia on the interpretation of MRI is unknown. Our objective was to determine if mepivacaine injection in the distal limb would cause variation detectable with MRI. We hypothesized that MRI will detect an increase in joint fluid at 24 hours but not 72 hours after injection and that abnormalities at needle site entries would be detectable.

2. Materials and Methods
Fifteen sound adult horses had baseline MRI performed up to 6 days before injection of the podotrochlear bursa (PB), digital flexor tendon sheath (DFTS), or distal interphalangeal joint (DIPJ) and of a palmar digital nerve block (PDNB). MRI was repeated at 24 hours and 72 hours after injection. Objective and subjective measurements were then evaluated.

3. Results
MRI measurements made ≥24 hours after mepivacaine injection of the DIPJ and PB and of a PDNB did not alter significantly from baseline values. Compared with baseline values, MRI at 24 hours and 72 hours after injection of the DFTS revealed a significant increase in synovial fluid volume. Control and injected PB fluid volume increased over time.

4. Discussion
Mepivacaine injected into the DIPJ and PB and a PDNB does not interfere with MRI interpretation ≥24 hours afterward; however, DFTS injection caused increased synovial fluid, detectable on MRI for at least 72 hours. The increased PB fluid volume over time may result from prior general anesthesia.