# AAEP 2008: Tendon Angle and Lameness

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Why might one horse suffer from injury to the deep digital flexor tendon (DDFT) in the navicular area while another doesn't? A recent study suggests that the angle of the DDFT as it passes over the navicular bone might have a lot to do with it. Justin McCormick, MS, a senior veterinary student and assistant at the University of California, Davis, completed a retrospective study with colleagues comparing the DDFT angles of horses with confirmed DDFT lesions in the navicular area to those of sound horses. He presented the results at the 2008 American Association of Equine Practitioners convention, held Dec. 6-10 in San Diego, Calif.

McCormick noted that DDFT lesions in the navicular area can cause heel pain with variable lameness that resolves with a palmar digital nerve block. For this study, authors examined 20 horses with this presentation, good-quality radiographs (X rays) that offered no explanation for the lameness, and moderate DDFT lesions just proximal to (above) and at the level of the navicular bone (detected with computed tomography). They were compared with 20 sound horses of similar age and breed that were presented for purchase examinations during the same time.

The researchers found that horses with DDFT lesions had more acute (smaller) angles between the tendon surface of the navicular bone and a horizontal line from the insertion of the DDFT across the bottom of the navicular bone (palmar border of the flexor cortex). Also, lame horses tended to have a steeper angle of the coffin bone and other phalanx bones, although this was not a statistically significant finding.

"The angle of the DDFT (over the navicular bone) may have biomechanical implications that influence tendon function," McCormick noted.

Well-positioned lateromedial radiographs (taken from the side) that show a steep angle of the navicular bone's tendon surface might raise suspicion of DDFT injury in the pastern region of horses with no other radiographic explanation for their lameness, the researchers concluded.