# Combined standing low-field magnetic resonance imaging and fan-beam computed tomographic diagnosis of fetlock region pain in 27 sports horses

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**Products**
Low-field Magnetic Resonance Imaging (MRI) and Fan-beam Computed Tomography (CT) for diagnosing fetlock region pain.

**Hospital / Authors**
Annamaria Nagy, Sue J. Dyson
University of Veterinary Medicine Budapest; Centre for Equine Studies, Animal Health Trust (formerly)

**Clinical Background**
Fetlock region pain in sports horses is a common cause of lameness and can result from various subchondral bone lesions and joint pathologies. MRI and CT imaging provide differing but complementary insights into bone and soft tissue structures.

**Aim of Study**
To evaluate the clinical utility of combining low-field MRI and fan-beam CT in diagnosing fetlock region pain, with a focus on detecting resorptive lesions and densification patterns across 52 limbs in 27 lame horses.

**Cohort Study**
Imaging studies were conducted on 52 limbs (31 lame, 21 nonlame) from 27 horses. MRI and CT were performed to detect bone abnormalities, with diagnoses graded as significant, potentially significant, or nonsignificant based on clinical findings, response to diagnostic analgesia, and literature review.

**Results**

- **Resorptive lesions** were often **only visible on CT**, even when **MRI showed no abnormalities**.

- CT consistently detected **subchondral bone resorption** in the **third metacarpal bone** and **proximal phalanx**.

- **Densification** was clearly identified as **hyperattenuation on CT**, compared to less distinct MRI findings.

- In cases of **multiple-location lesions**, CT findings helped determine the **primary pain source**.

- CT revealed **tripartite configurations** and **linear hypoattenuations** not seen on MRI, aiding in **fracture risk assessment**.

**Summary**

- CT provided **superior sensitivity** for detecting **subchondral lesions** that MRI often missed.

- CT was more effective at identifying **early-stage or subclinical pathology**, particularly in **nonlame limbs**.

- CT offered **clearer structural detail**, improving the accuracy of **lesion localisation and classification**.

- CT findings supported more **targeted clinical decisions**, especially for **incomplete fractures**.

- The study confirmed CT as a **critical tool** in diagnosing **fetlock-related lameness**, with **greater diagnostic value** than MRI alone.

Link to paper