

# Validation of standing cone beam computed tomography for diagnosing subchondral fetlock pathology in the Thoroughbred racehorse

Curtiss et al. (2020), in Equine Veterinary Journal

## Products

Computed Tomography (CT) for subchondral fetlock pathology diagnosis.

#### Hospital / Authors

Alexandra L. Curtiss, Kyla F. Ortved, Barbara Dallap-Schaer, Sergei Gouzeev, Darko Stefanovski, Dean W. Richardson, Kathryn B. Wulster

Department of Clinical Studies, New Bolton Center, University of Pennsylvania, Kennett Square, Pennsylvania, USA

## Clinical Background

Subchondral bone pathology is a major cause of lameness and poor performance in Thoroughbred racehorses. Early detection is crucial to prevent progression to fractures and osteoarthritis. CBCT offers a standing diagnostic alternative to fan beam CT (FBCT), eliminating the need for general anesthesia.

## Aim of Study

To assess the accuracy and reliability of CBCT in diagnosing fetlock subchondral pathology, comparing it to FBCT and evaluating interobserver agreement.

## **Cohort Study**

25 Thorough bred fetlocks underwent CBCT and FBCT imaging, analyzed by an imaging specialist and a surgeon. Interobserver and intermodality agreement were statistically evaluated.

## Results

- **CBCT** and FBCT showed strong correlation in identifying **subchondral lesions**, with significant interobserver agreement.
- **CBCT detected lesions** missed by radiographs, improving early diagnosis of **bone pathology**.
- Standing **CBCT provided detailed imaging** without the need for general anesthesia.
- Some small lesion discrepancies were noted, indicating areas for further training and refinement.
- Findings support CBCT as a reliable tool for diagnosing fetlock pathology in Thoroughbred racehorses.

## Summary

- CBCT effectively identified fetlock pathology, showing strong agreement with FBCT.
- Early detection and diagnosis can improve intervention strategies and reduce injury risk.
- **Standing CBCT** offers a safer alternative to FBCT, eliminating anesthesia-related complications.
- Further validation and training for interpretation will enhance clinical applications.
- Findings support CBCT's role in equine diagnostics, helping prevent severe injuries.

#### Link to paper