

# Cone-beam computed tomography produces images of numerically comparable diagnostic quality for bone and inferior quality for soft tissues compared with fan-beam computed tomography in cadaveric equine metacarpophalangeal joints

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## Products

Cone-Beam Computed Tomography (CBCT) and Fan-Beam Computed Tomography (FBCT) for equine joint imaging.

## Hospital / Authors

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## Clinical Background

CT technology is advancing rapidly in equine imaging. CBCT and FBCT are used for diagnostic imaging of equine joints, offering different advantages.

## Aim of Study

To compare CBCT and FBCT for imaging the metacarpophalangeal joint, evaluating image quality for bone and soft tissues.

## Cohort Study

Cadaveric equine metacarpophalangeal joints were imaged using CBCT and FBCT, with evaluations based on visualization tasks and observer preferences.

## Results

- **CBCT and FBCT provided excellent diagnostic quality for bone**, with observer-dependent preferences.
- **FBCT was superior for soft tissue visualization**, producing numerically better satisfaction scores.
- **CBCT allows rapid volumetric data acquisition**, offering practical advantages despite lower soft tissue clarity.
- **Findings support CBCT as a viable imaging option for equine joint evaluation, particularly for bone structures.**

## Summary

- **CBCT and FBCT produce comparable bone image quality**, making CBCT a practical alternative in equine imaging.
- **FBCT remains superior for soft tissue evaluation**, though CBCT provides rapid imaging capabilities.
- **CBCT's ability to capture volumetric data efficiently** makes it valuable for future equine diagnostic applications.
- **These findings establish CBCT as a viable option for equine joint imaging**, particularly when FBCT is unavailable.