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Gaida et al. (2025), in *Veterinary Radiology & Ultrasound*

Products
Equine Standing Multidetector Computed Tomography of the Distal Thoracic Limb and Tarsus Has a Lower Cumulative Radiation Dose than Digital Radiography.

Hospital / Authors
Julia L. Gaida, Tim Steinberg, Susanne M. Stieger-Vanegas, Roswitha Merle, Christoph J. Lischer
Tierklinik Luesche GmbH, Bakum, Germany; Department of Clinical Sciences, Carlson College of Veterinary Medicine, Oregon State University, Corvallis, USA; Clinic for Horses, General Surgery and Radiology, School of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany

Clinical Background
This study tests the hypothesis that MDCT radiation exposure to veterinary technicians will be equal to or lower than DR, challenging the belief that MDCT produces higher radiation exposure.

Aim of Study
To compare radiation exposure during MDCT and DR scans of the equine distal thoracic limb and tarsus, hypothesizing that MDCT will result in equal or lower exposure.

Cohort Study
24 Warmblood horses (12 each for MDCT and DR) were included, with imaging performed on the distal thoracic limb and tarsus for lameness or prepurchase exams between May 2021 and June 2022.

Link to paper

Results

- **MDCT** provided lower radiation exposure for most dosimeter locations (**thyroid**, **hands**, **feet**) compared to **DR**, supporting our hypothesis that radiation to veterinary staff during standing **MDCT** scans would be at least equal to, if not lower than, **DR** imaging of the same body area.
- The highest radiation exposure for MDCT occurred at the **gonads** during distal thoracic limb imaging, but overall exposure remained within safe limits.
- The **average cumulative dose** for **MDCT** was **0.61 µSv**, while for **DR**, it was **1.43 µSv**.
- MDCT scans took longer (approximately **20 minutes**) compared to DR (around **3 minutes**), which increased overall technician exposure, but this does not outweigh the lower cumulative dose.

Summary

- The findings support the hypothesis that MDCT is at least as safe, if not safer, than DR concerning radiation exposure to veterinary staff.
- The study emphasizes **radiation protection** strategies, such as increasing **distance** from the radiation source and using **shielding techniques**.
- MDCT, with its setup and protective measures, reduces radiation exposure to veterinary technicians compared to **DR**.
- **Continued improvements in shielding** and **staff positioning** are recommended to minimize radiation risks.
- MDCT offers a safer alternative for equine imaging, resulting in **lower cumulative radiation doses** compared to **DR**, ensuring better safety for veterinary staff.

Source: Gaida, J. L., Steinberg, T., Stieger-Vanegas, S. M., Merle, R., & Lischer, C. J. (2025). DOI: 10.1111/vru.13016, in *Veterinary Radiology & Ultrasound*.