EQUINA™: A CT SCANNER DESIGNED BY AND FOR EQUINE VETERINARIANS

December 7, 2020

AAEP Virtual Showcase

Dr. Sabrina Brounts, David Ergun

Asto CT

Equine Standing CT

Asto CT LLC
3300 Commercial Ave, Madison, WI 53714
www.AstoCT.com

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Company Overview

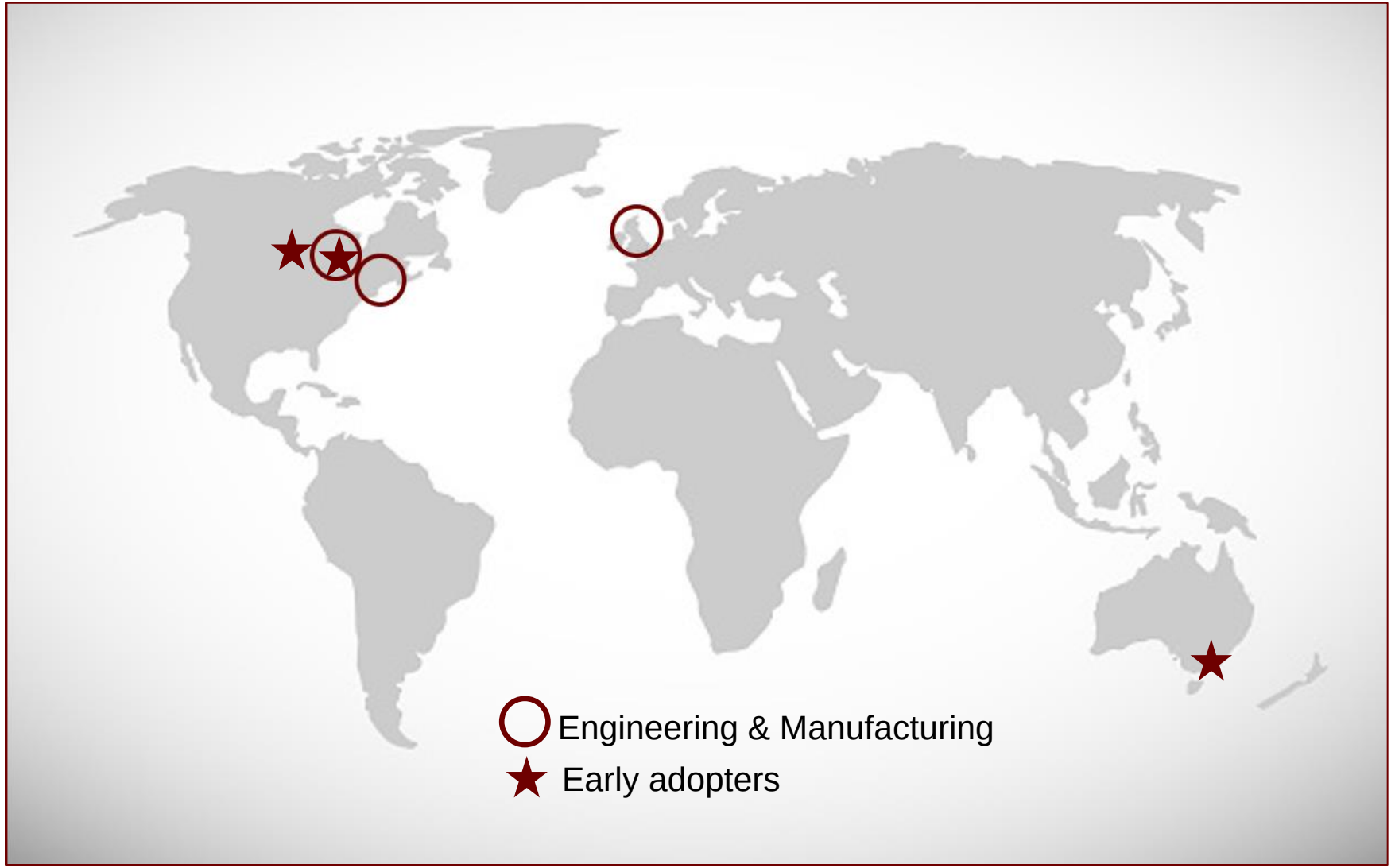
About Asto CT

Asto CT

Equine Standing CT

WISCONSIN

UNIVERSITY OF WISCONSIN-MADISON



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World-class Equine Team

Peter Muir
Co-founder
UW Vet School

Mark Markel
Co-founder
UW Vet School

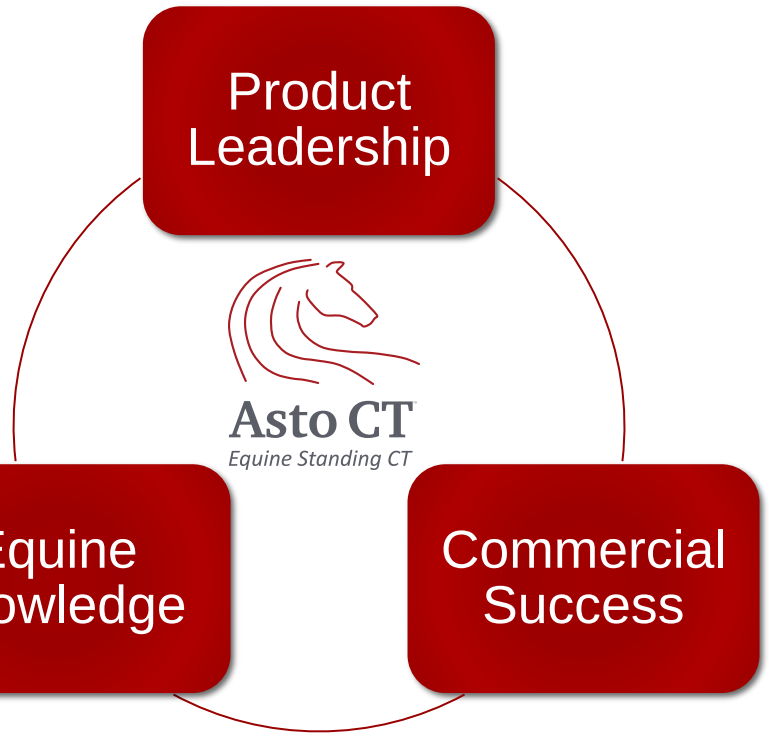
David Ergun
Co-founder;
CEO

Rock Mackie
Co-founder;
Chair

Stephen Towe
Co-founder;
Director

Sabrina Brounts
LA Surgeon/Rehab
Advisor

Cristina Ergun
LA Vet
Advisor



Olof Johnson
President PDSI

John Leja
Global Service
Manager

Harry Freeman
Chief Commercial
Officer

Megan Rothney
Marketing
Advisor

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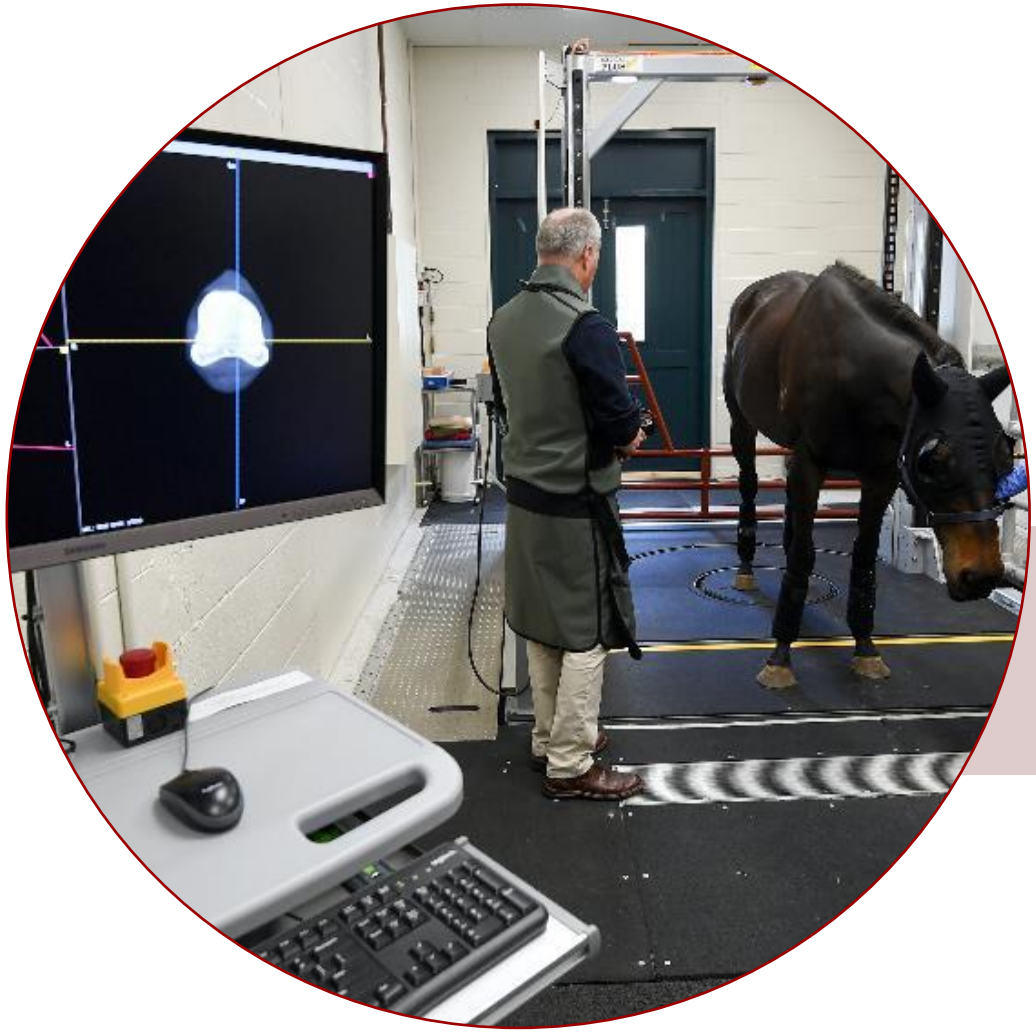
Asto CT: All About Up*right* CT Imaging



Asto CT Equina™

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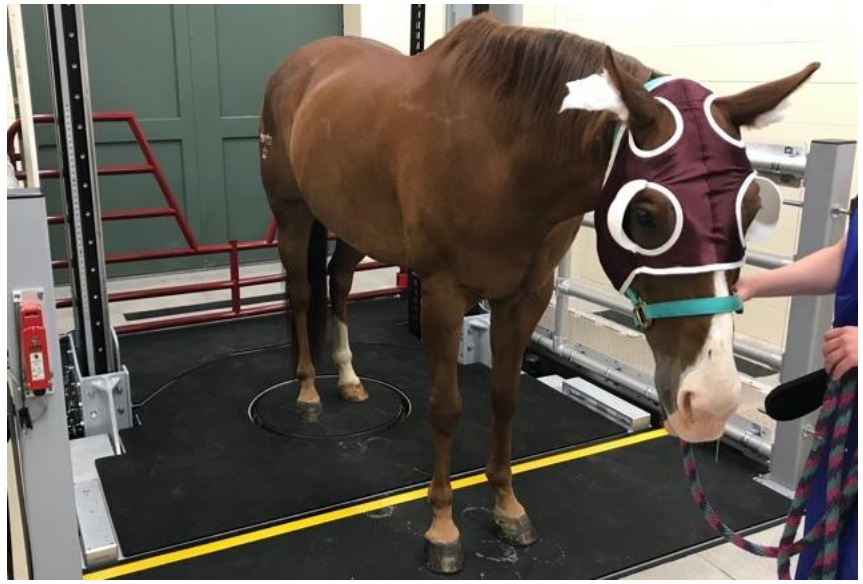
Product Overview

Equine Patients Deserve Better

The Problem — Current CT imaging is not optimal for equine patients

Asto CT Solution — The Equina™ CT images a standing sedated horse

Our Goal — Enable veterinarians to safely offer CT imaging



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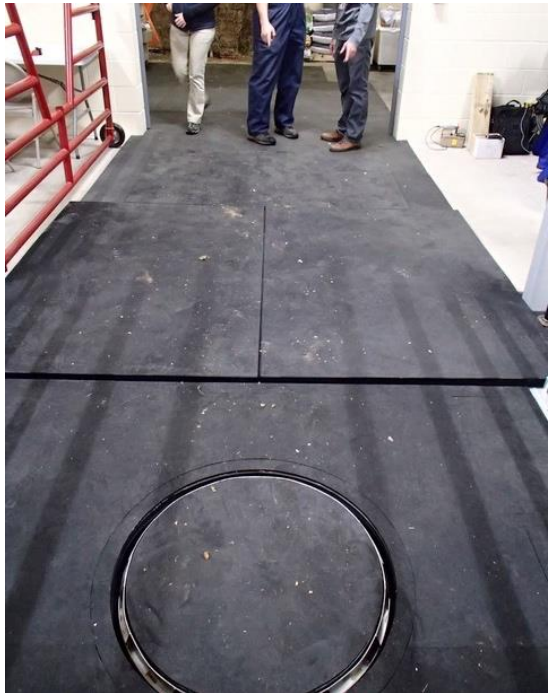
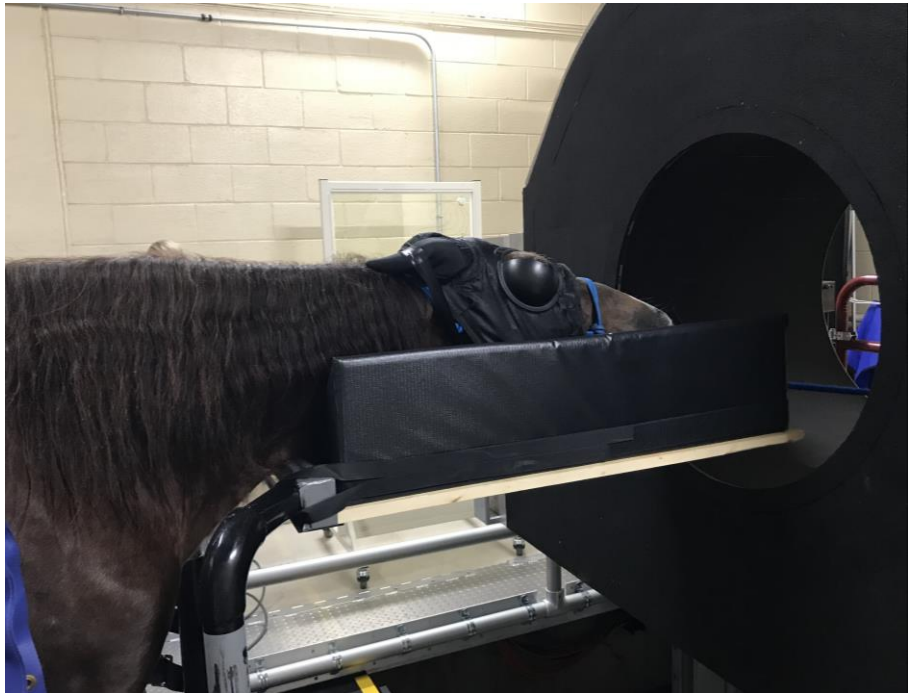
Acquiring Images is Simple

Step 1 Lead horse to target ring & sedate

Step 2 Position scanner & acquire images

Step 3 Lead horse off platform





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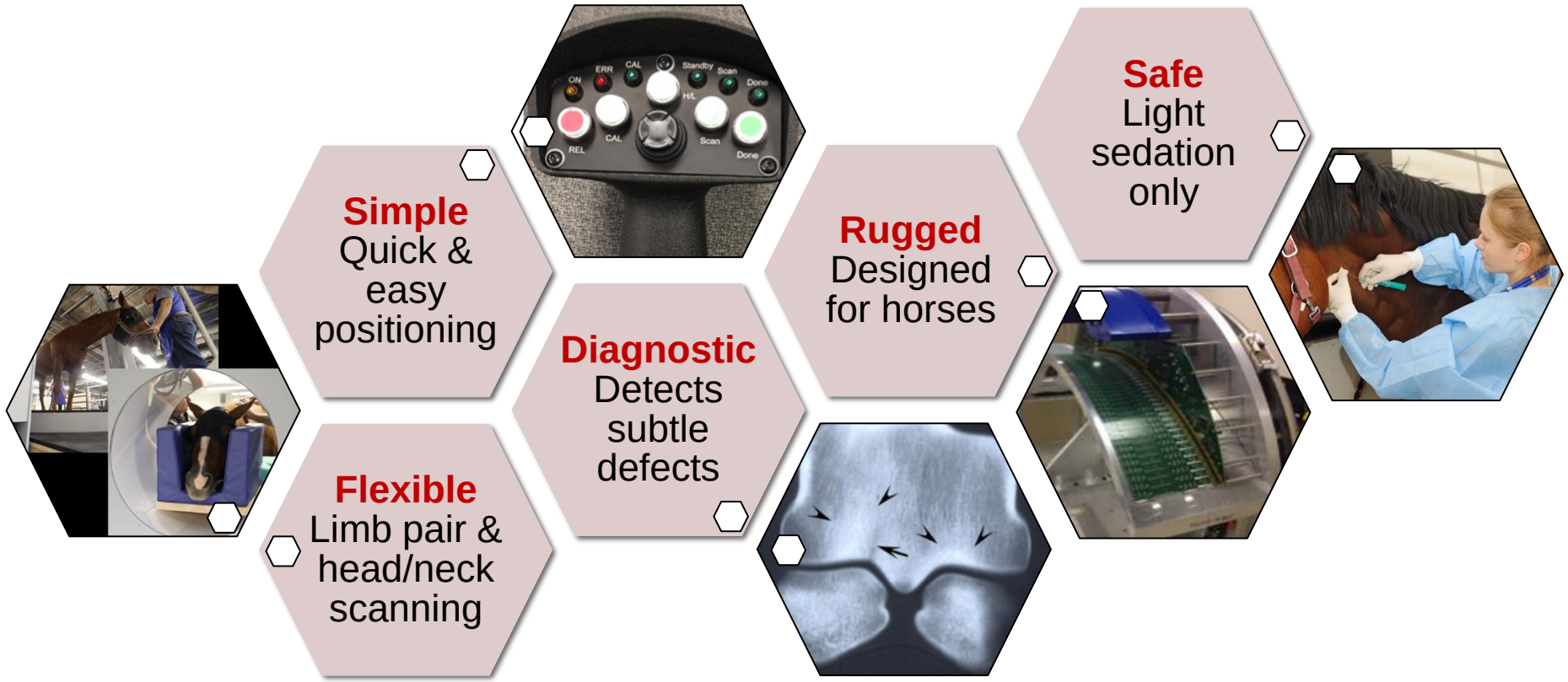
Competitive Advantages Set Us Apart



High-quality CT imaging without sacrificing the safety & versatility that equine veterinarians require

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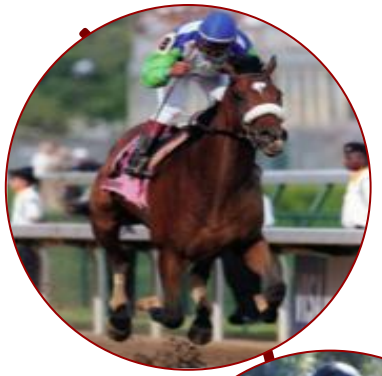
Equina™ Enhances your Equine Practice



Performance horses

Early fracture detection & effective training program management

Show & recreation horses

Easy identification & management of lameness and other musculoskeletal concerns

Older horses

Best-in-class diagnosis of dental & sinus problems

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Performance Meets Key Equine Needs

Efficient from head to hoof

- Head and neck
- Limbs to carpi/tarsi; two limbs at a time
- 30-sec scan times; no scout scans
- Simple push button controls

Rugged design

- Sealed gantry – air cooled
- Padded surfaces
- Withstands 1000kg strike force

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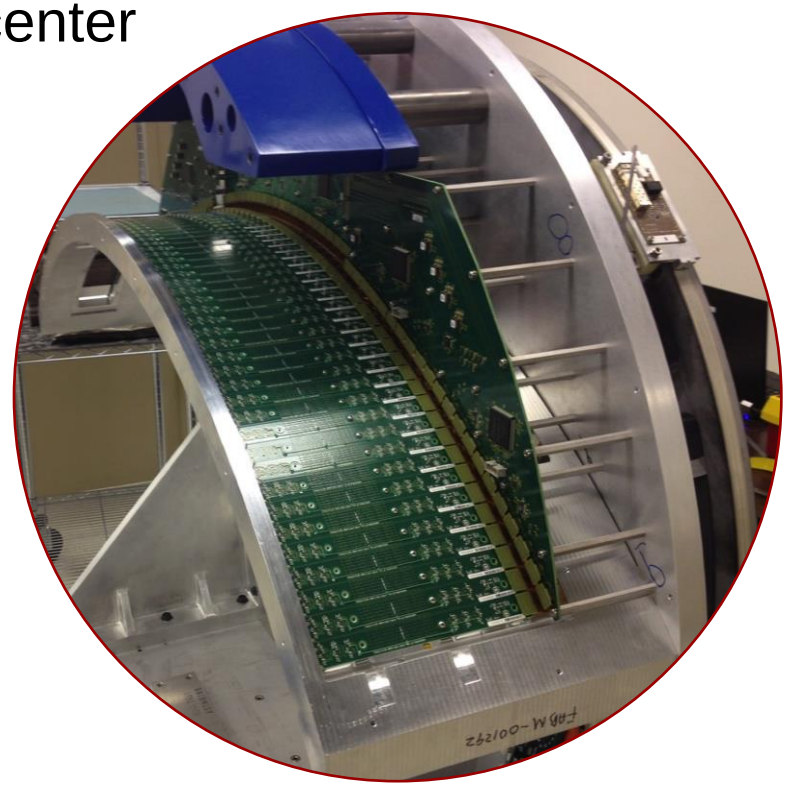
Advantages of New Industrial CT Technology

High-quality bone & soft-tissue imaging

- Fast acquisition (1-sec rotation)
- 24 detector rows; 0.75mm at isocenter
- Helical fan-beam; 36 slices/sec
- Variable helical pitch; 1mm slices

Safe for patient & handler

- Self-shielded gantry
- Low radiation levels
- CTDIvol < 20 mGy



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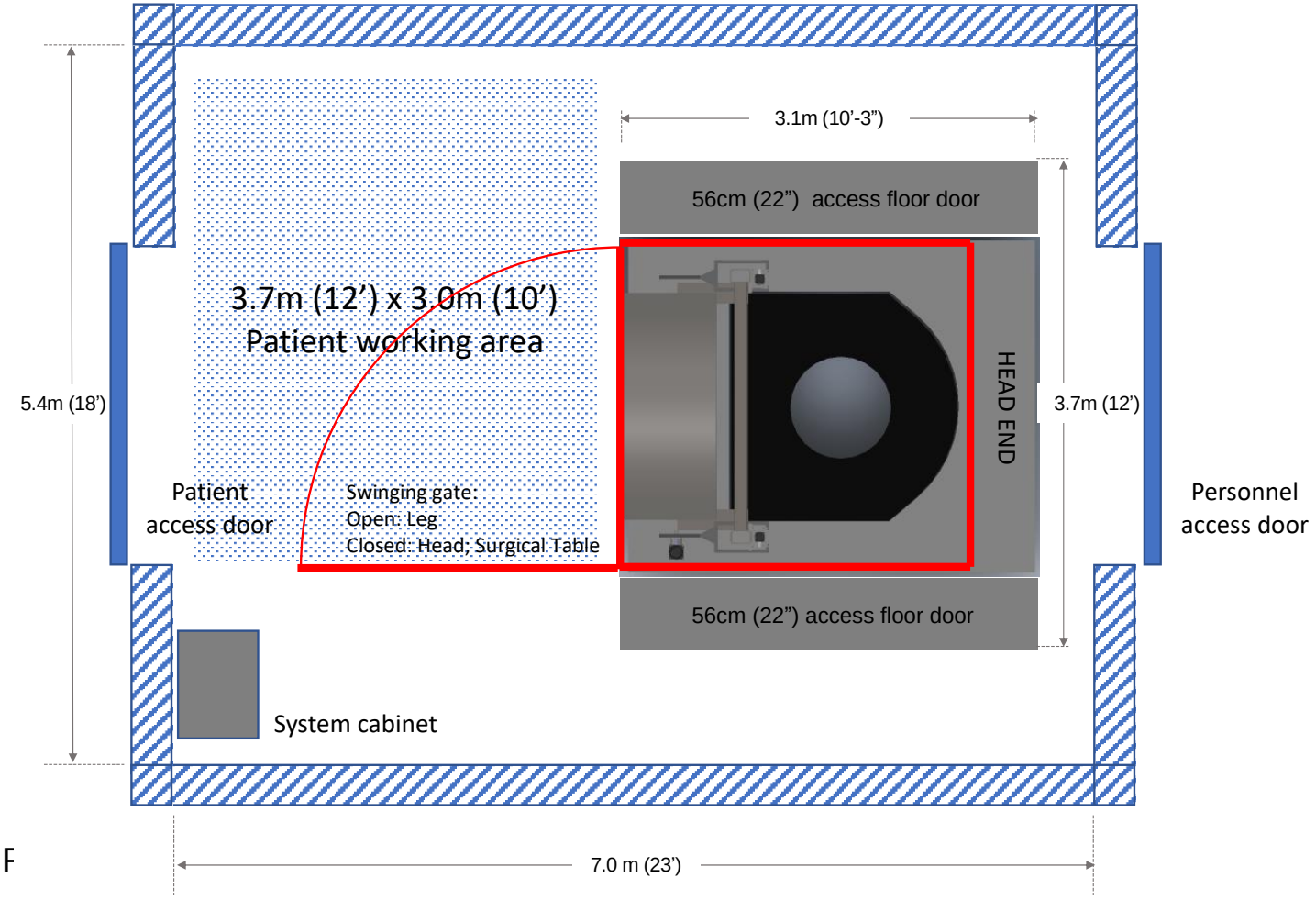
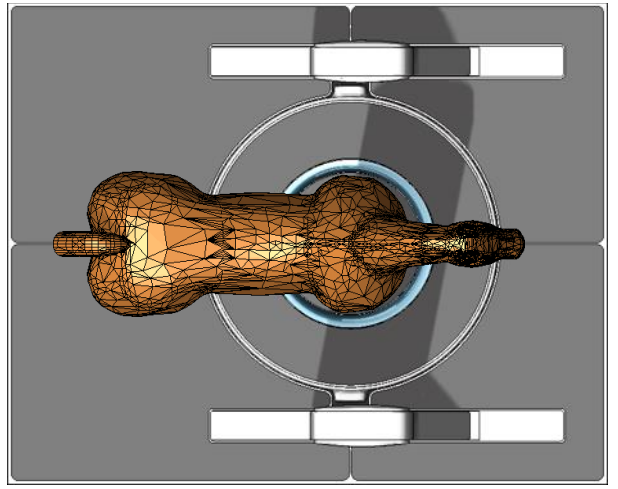
Easy Siting Requirements

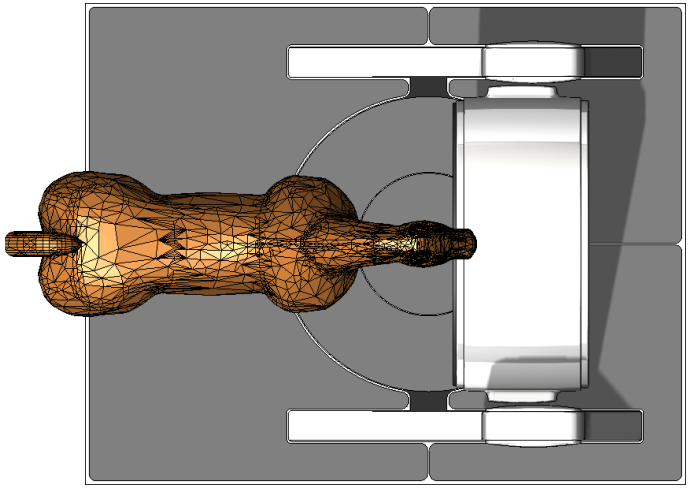
Example 18’ x 23’ room



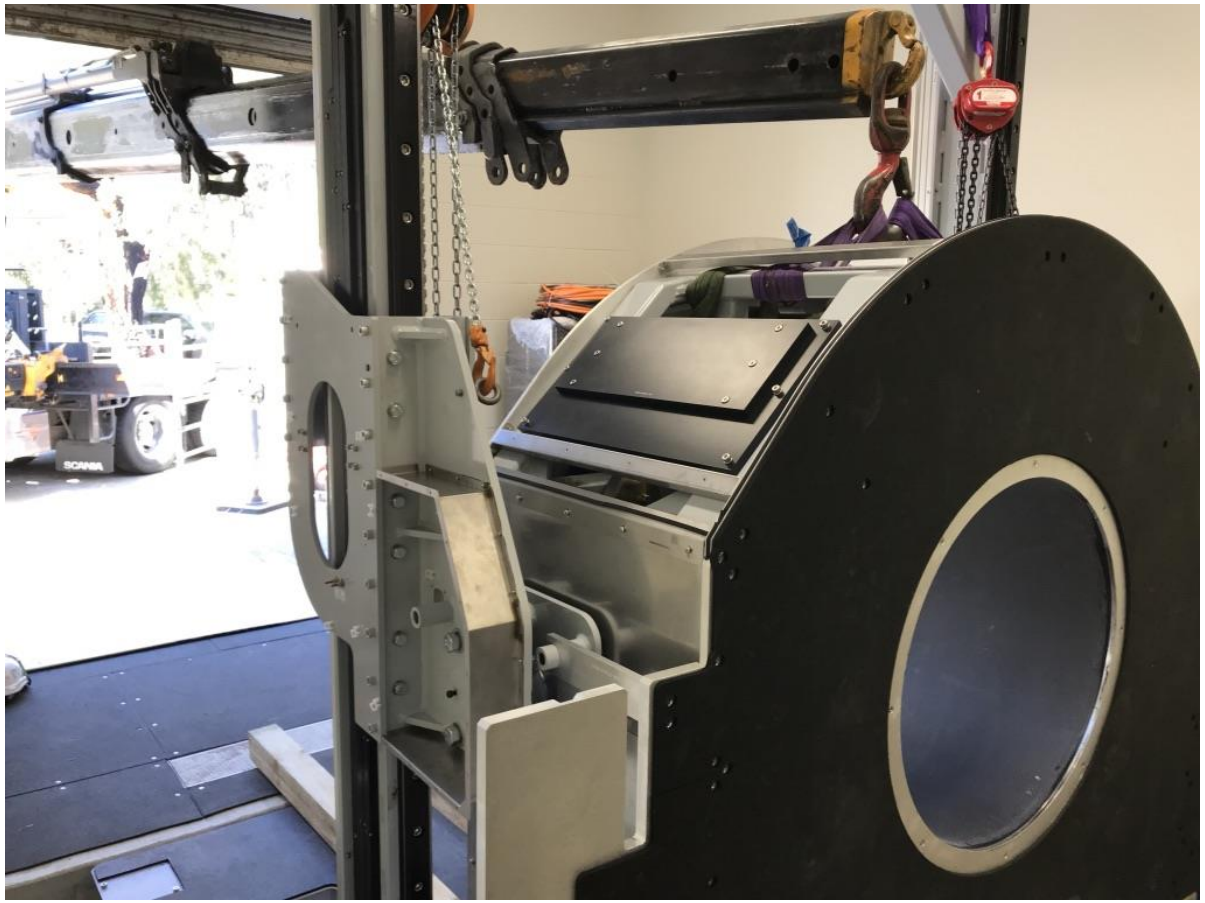
Limb scan



Head scan



Proven Install Roadmap



Pre-Install	Site Planning Guide Pre-installation Checklist
Install	Installation Checklist
Training	User Manual Trainiing Certificates
Acceptance	Acceptance Test Checklist Customer Acceptance Test
First Use	Customer sign-off

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Clinical Applications

Equina™ in Clinical Use

- Rapidly building equine database
- +800 patients since Jan 2019
- Results demonstrate
  - More detail for patients with Pos Rad Dx
  - Findings with patients with Neg Rad Dx

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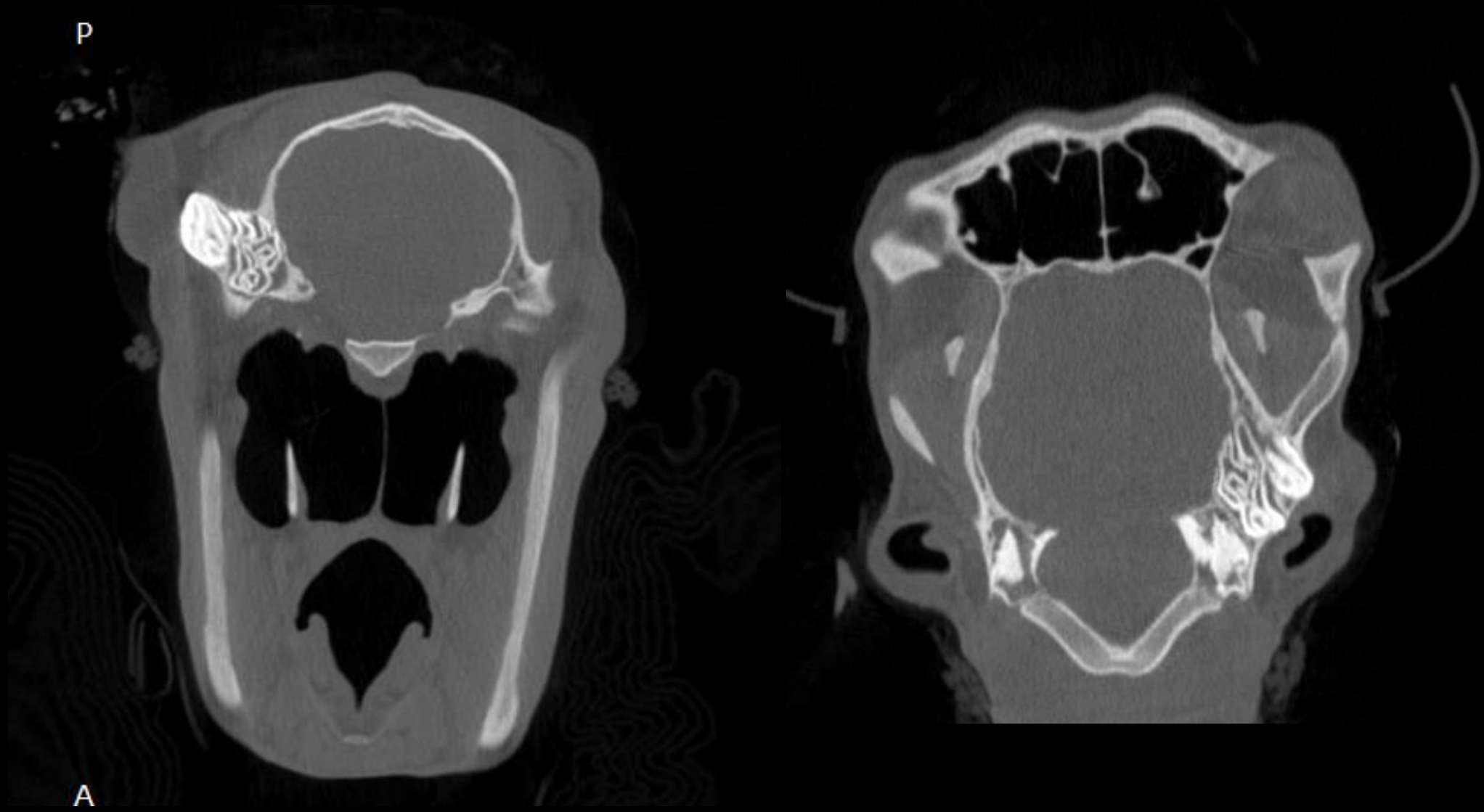
Equina™ in Clinical Use

Head & Neck

18yr-old Tennessee Walker with advanced OA of TMJ

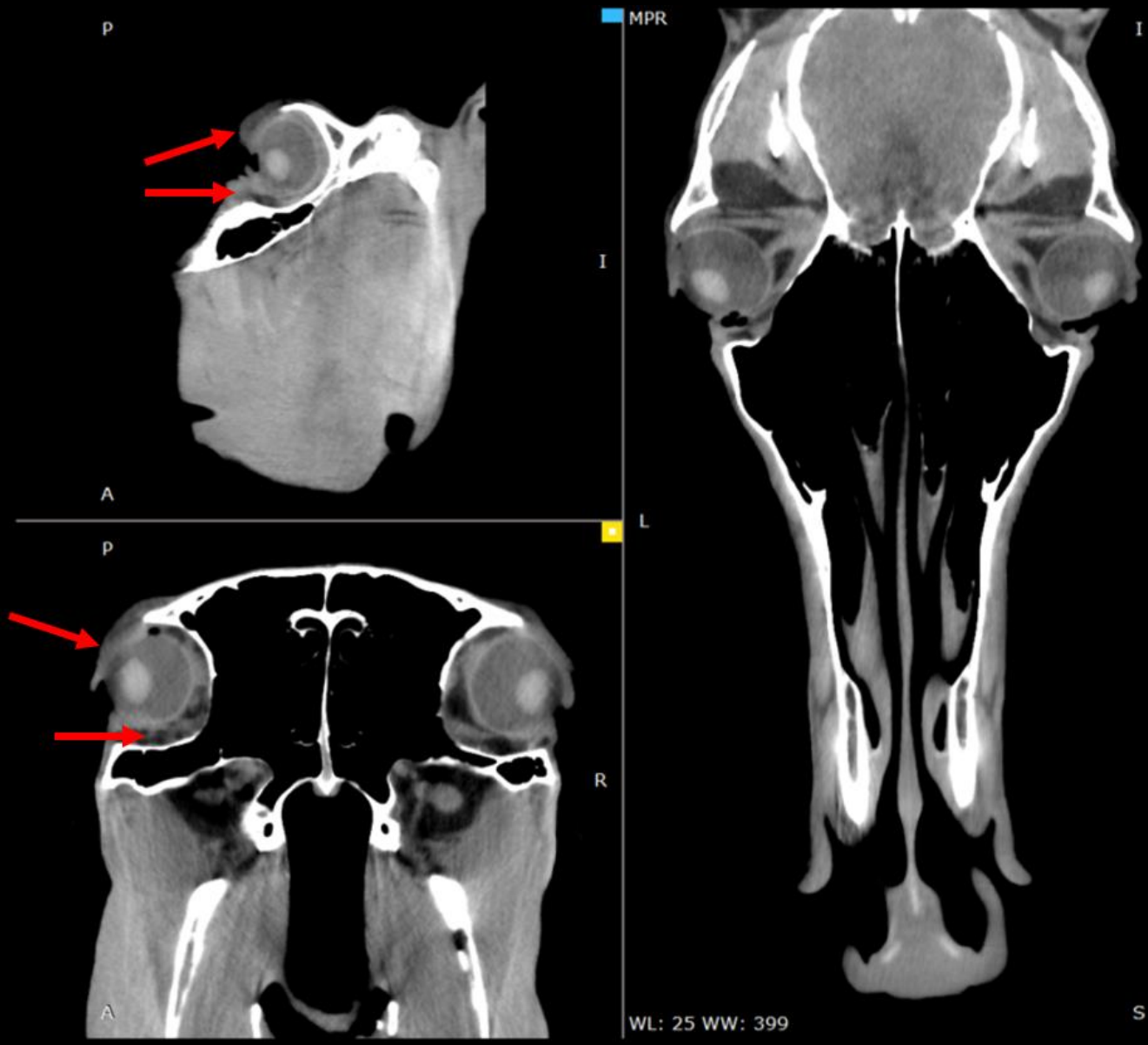
2yr-old Islandic horse with dentigerous cyst



14yr-old Appaloosa with subluxation of C2-C3

Dorsal recumbency
under GA

23yr-old Standardbred with SCC - Soft Tissue



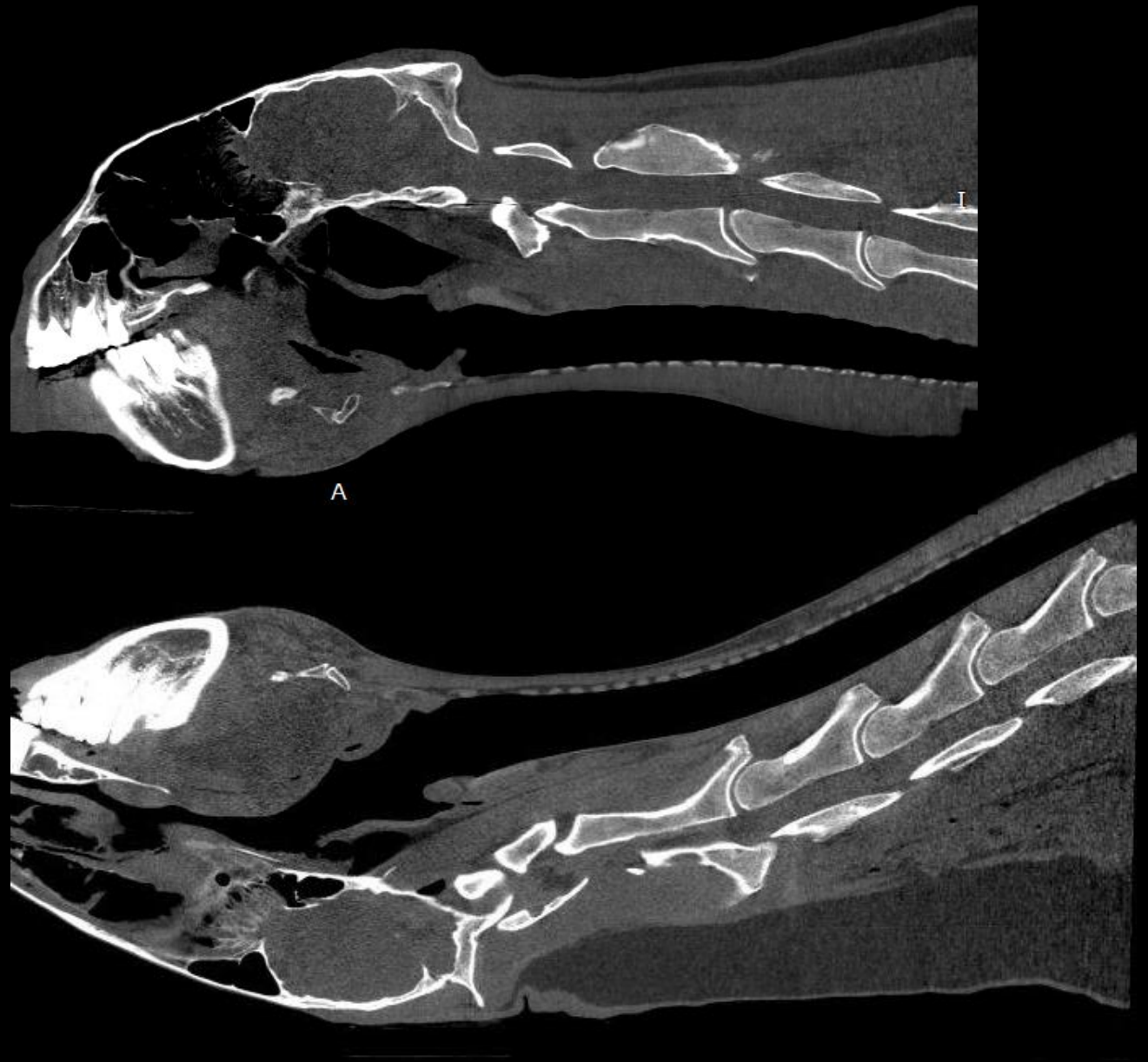
2yr-old Morgan w/ Neurologic Disorder – Bone

- Caudal C2 end-plate destruction & proliferation
- C3 sclerosis
- Narrow disk space

Normal neck in a horse

Standing

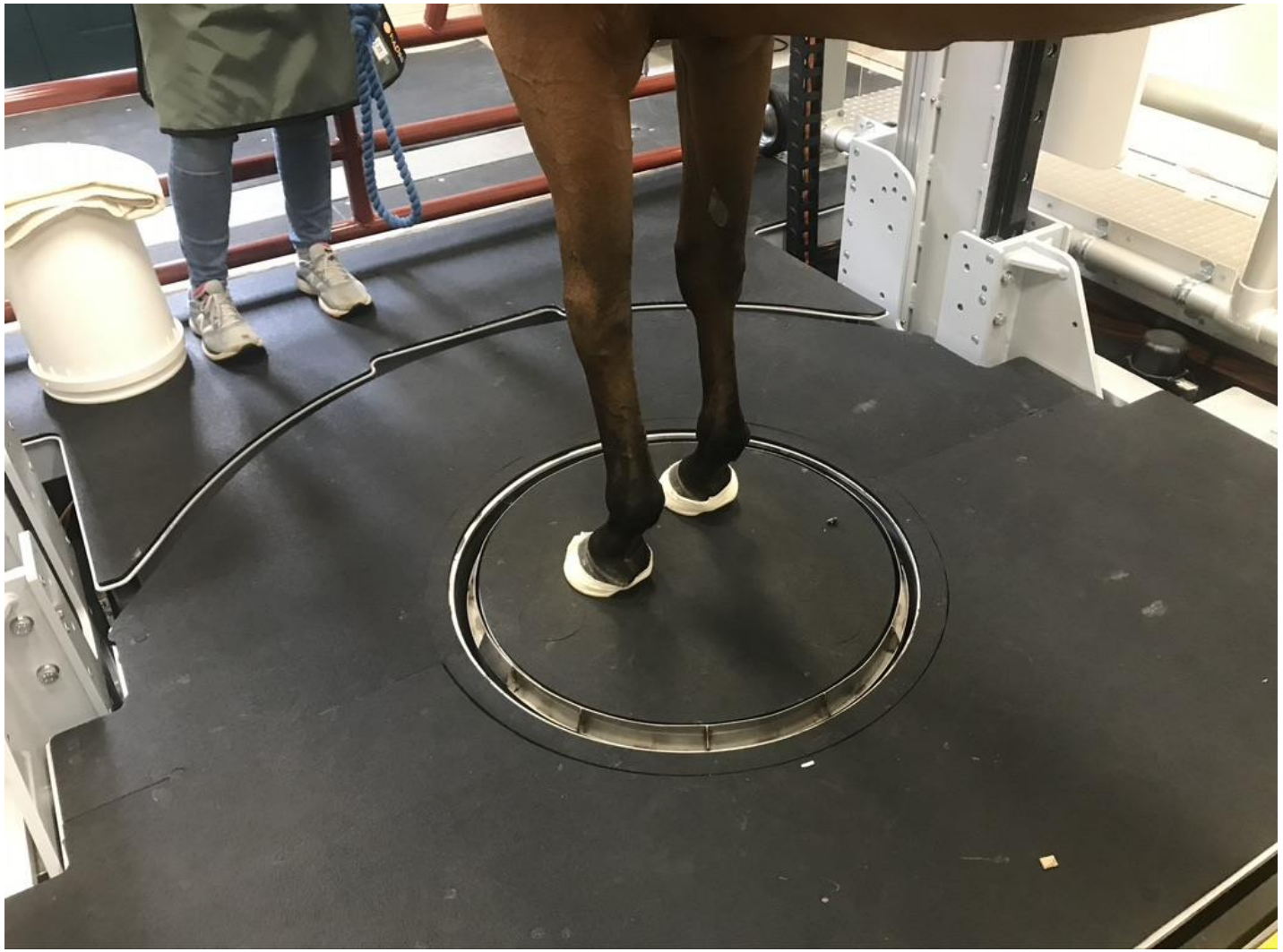
Dorsal recumbency



Normal myelogram in lateral recumbency

Equina™ in Clinical Use

Distal Limbs



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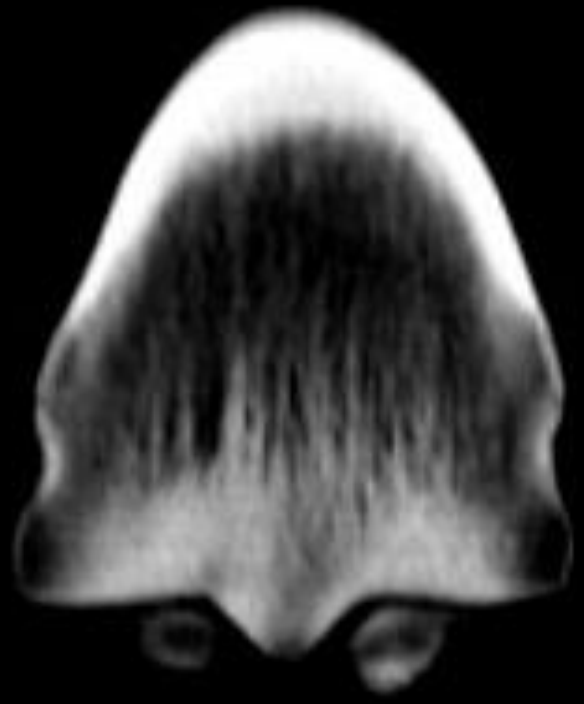
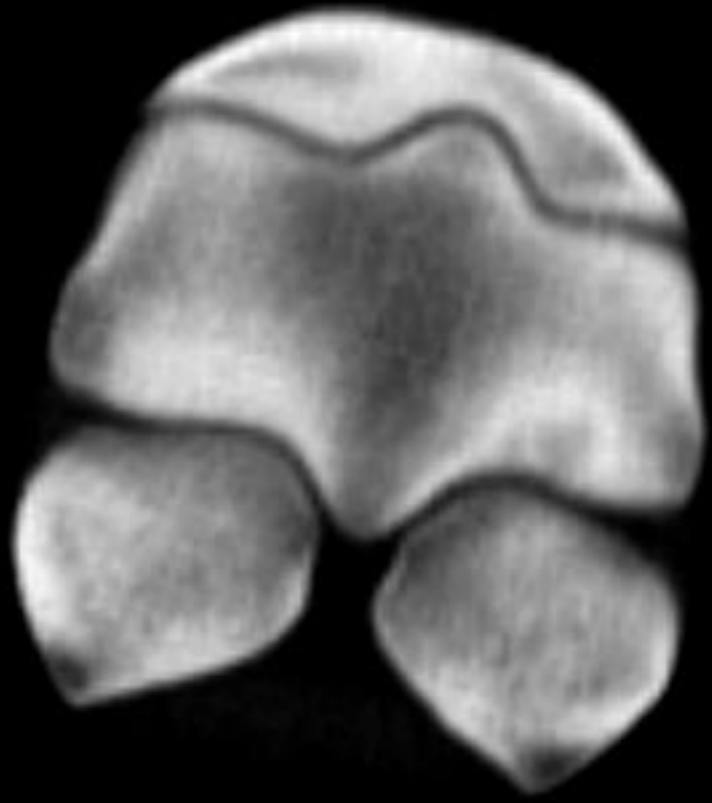
TB with parasagittal lysis & surrounding sclerosis



RF Fetlock Obl Dorsal



LF fetlock trans

TB with spiral medial condylar fracture

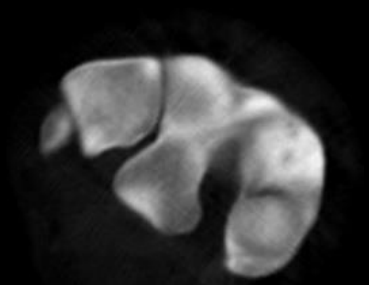
LF MC3 frontal

LF MC3 trans

TB with lesions: radial carpal & 3rd carpal bones in both midcarpal & carpometacarpal joints

RF carpus dor

LF carpus dor



RF carpus tra

LF carpus tra

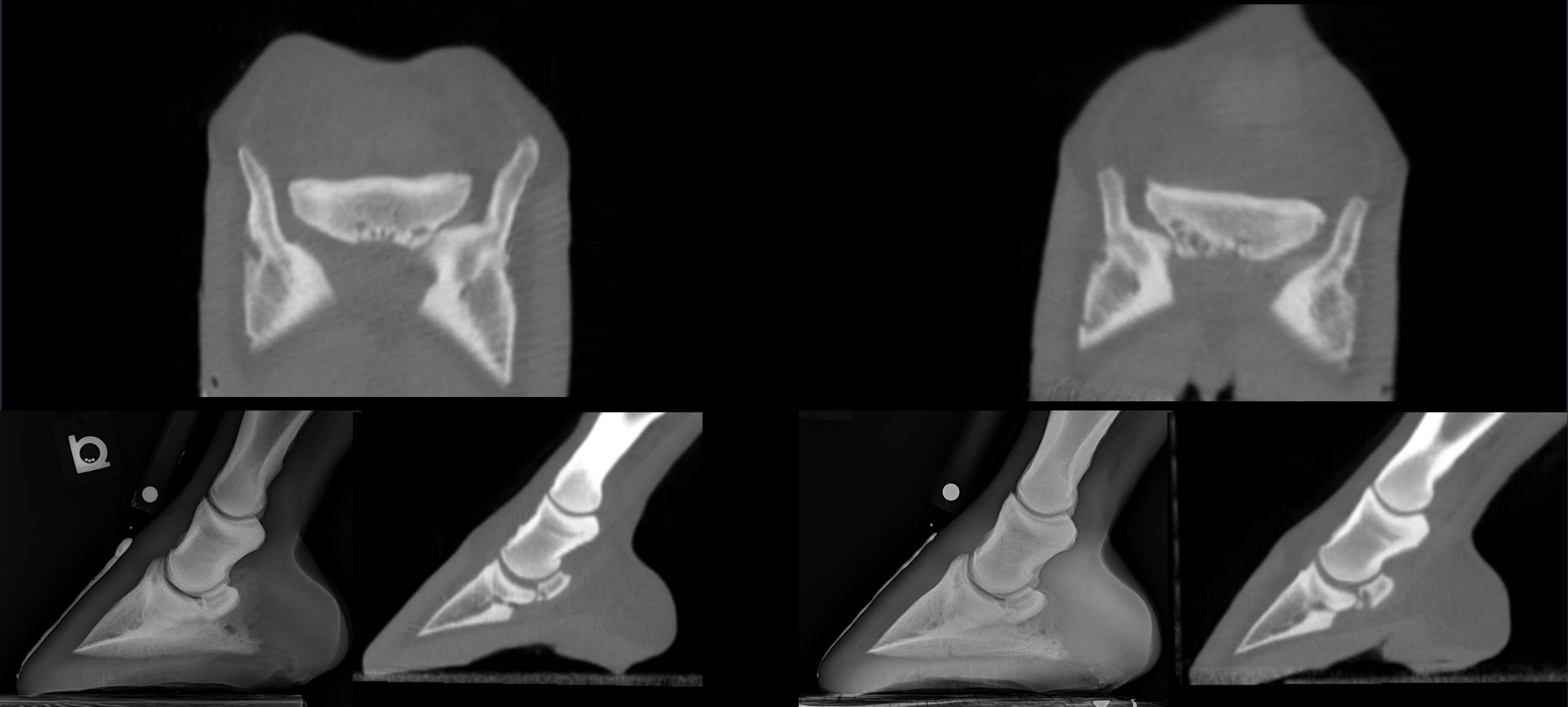
RF carpus sag

LF carpus sag

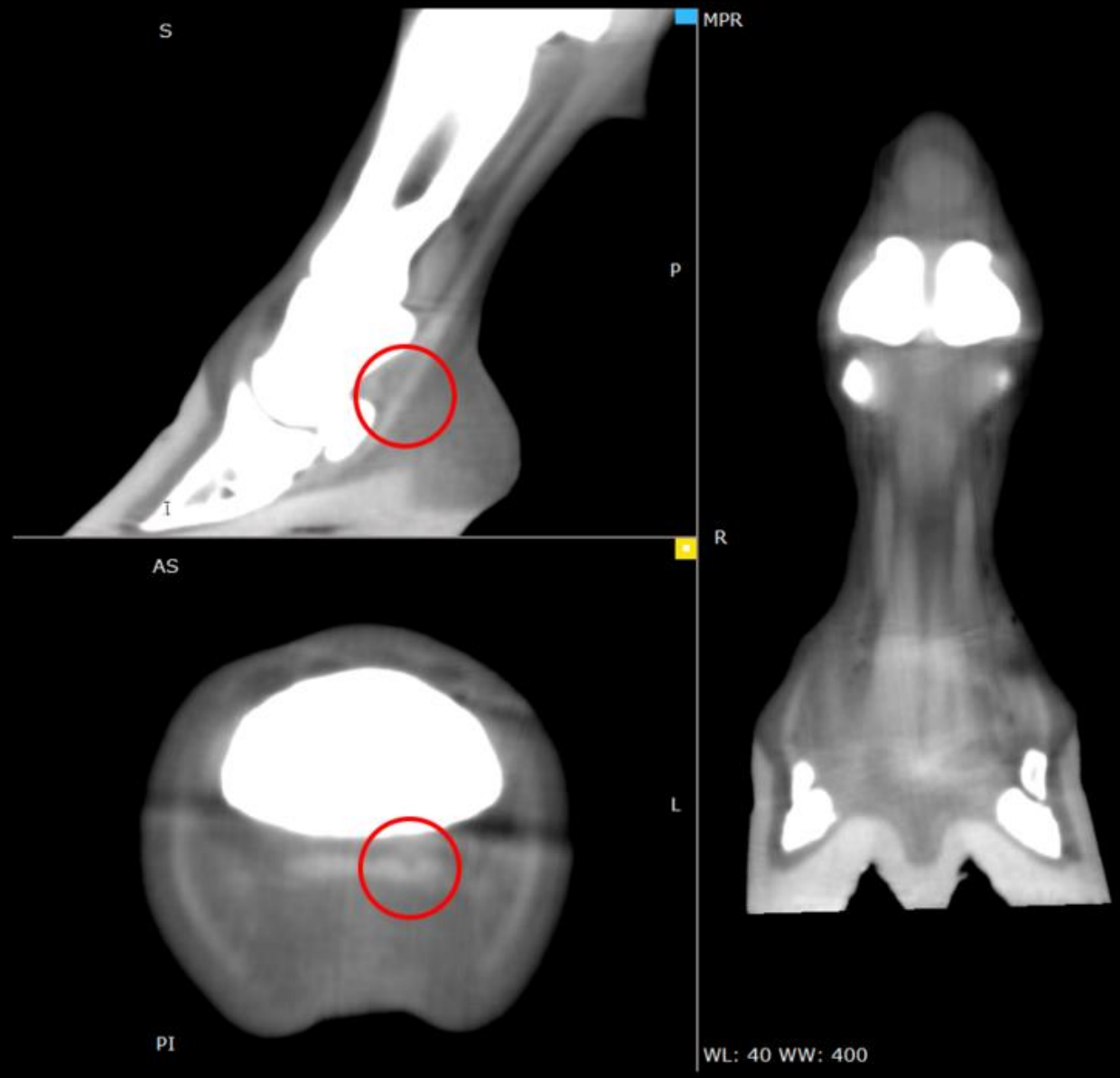
LF carpus sag

10yr-old Irish Warmblood with bone cysts

11yr-old Lipizzaner with distal border fragments of navicular bone bilateral

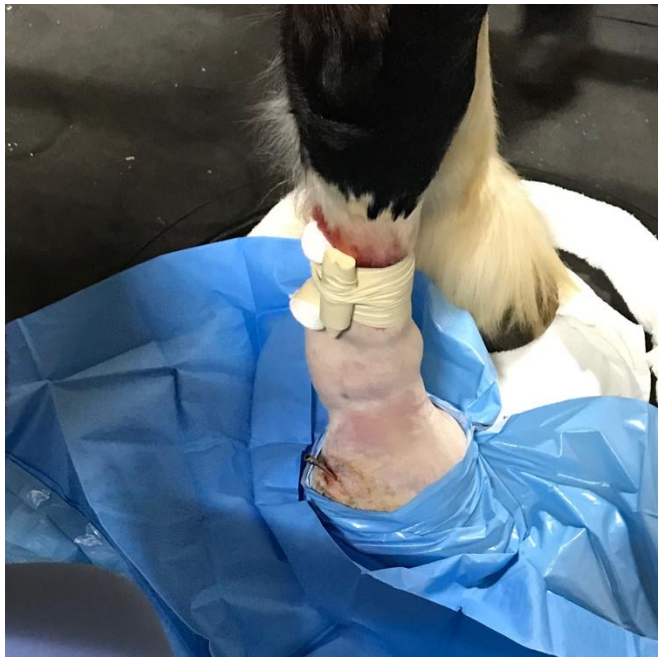


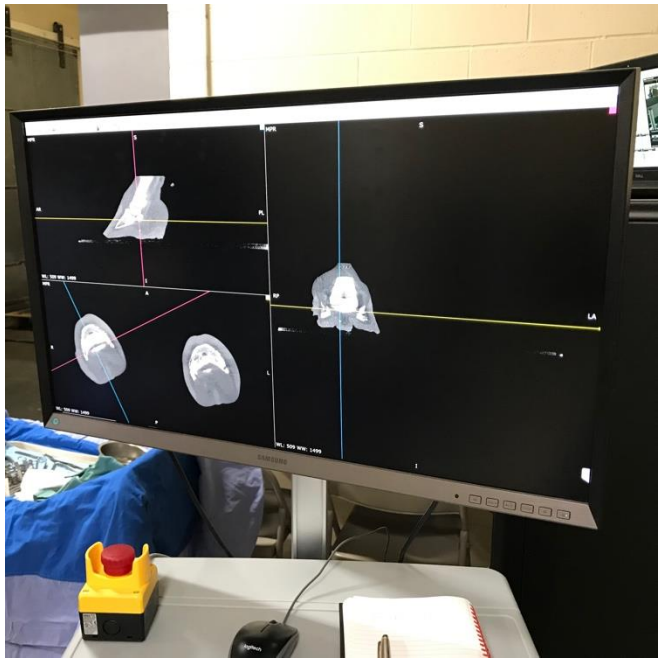
13yr-old QH with tendon lesion – Soft Tissue



Normal stifle in lateral recumbency

CT Gantry can Support Patient & Handlers





- Routine tasks, e.g., patient positioning, contrast studies
- CT intraoperative imaging for surgical procedures
- Cushioned & cleanable surface to work on

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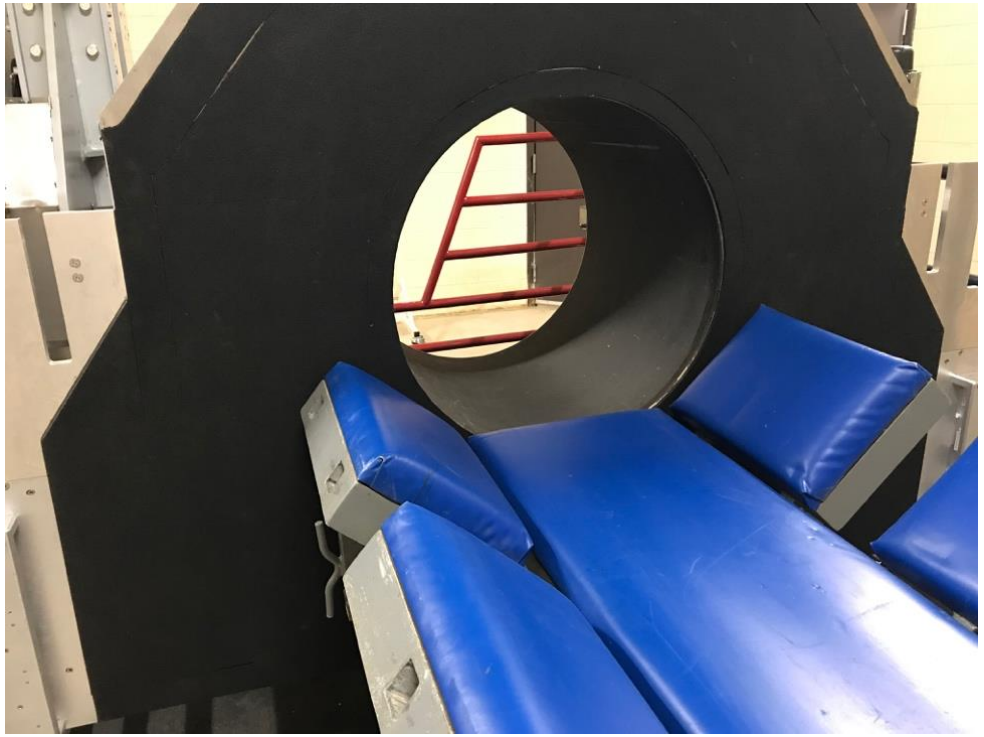
Moveable Transport/Table



- Robotics accommodates moveable transport for large & small animals

- Convenient for use of anesthesia equipment or other apparatus

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Contrast Venograms

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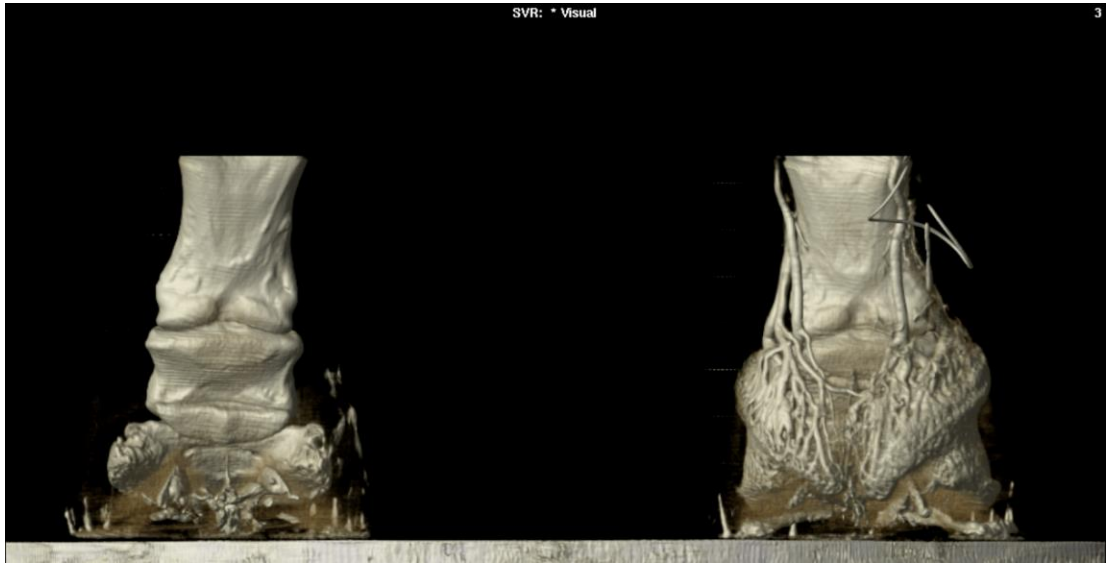
Contrast Venograms



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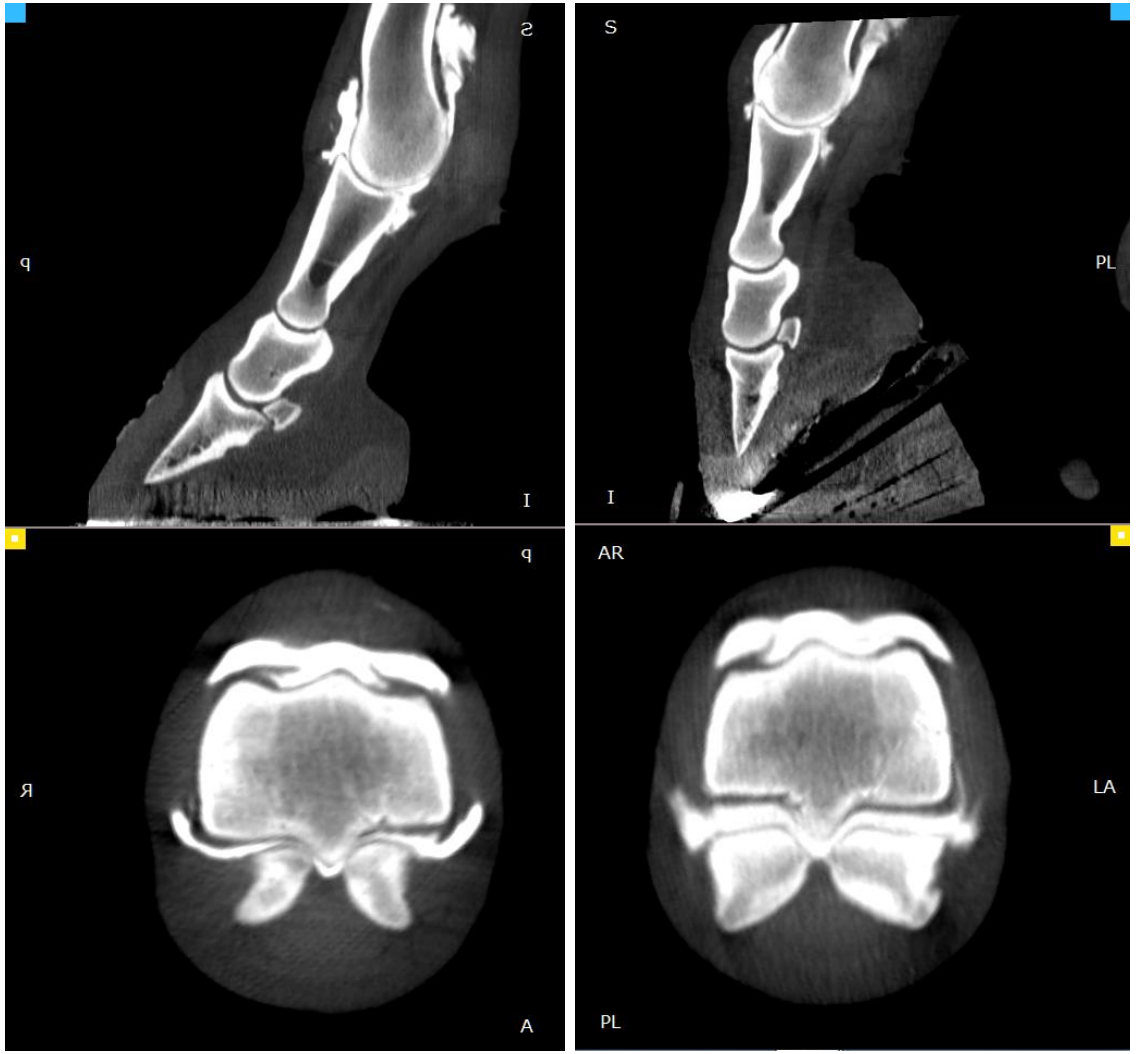
Contrast Arthrogram



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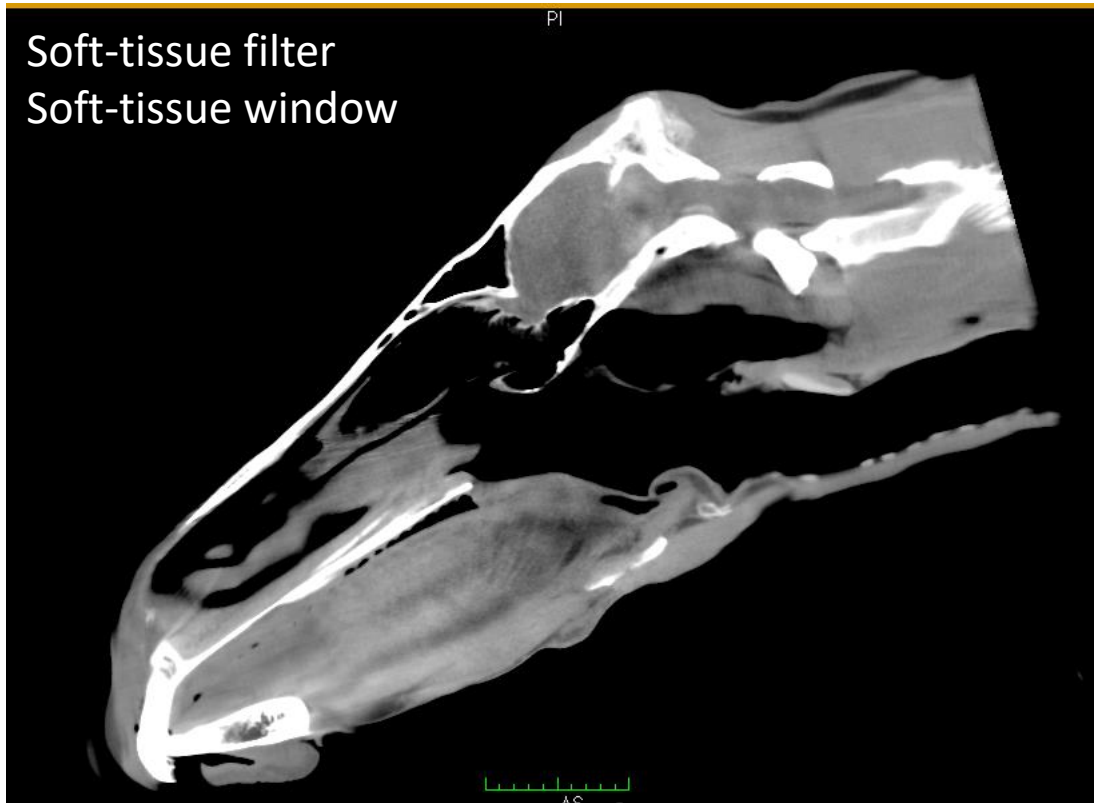
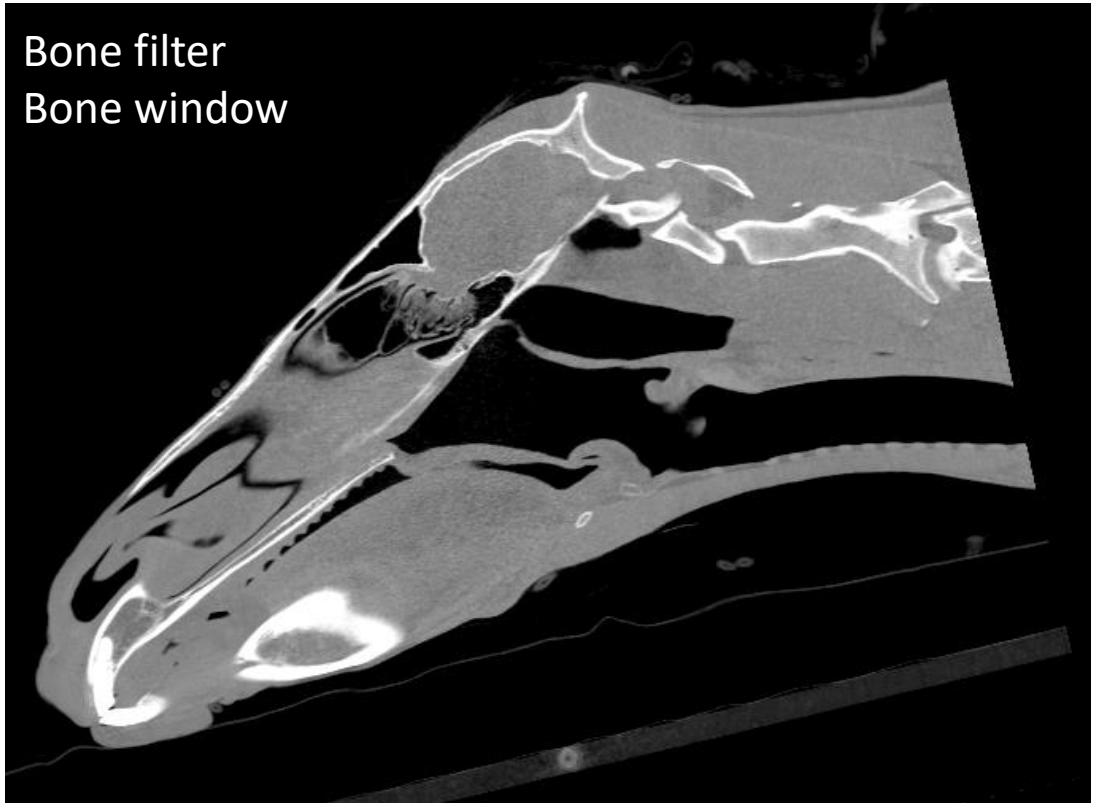
Latest Features

Enhanced Processing for Bone & Soft-tissue

- New Retro Recons: Bone & Soft-tissue filters
- 2x parallel re-binning & auto-cropping (876x1168 or 1168x876)





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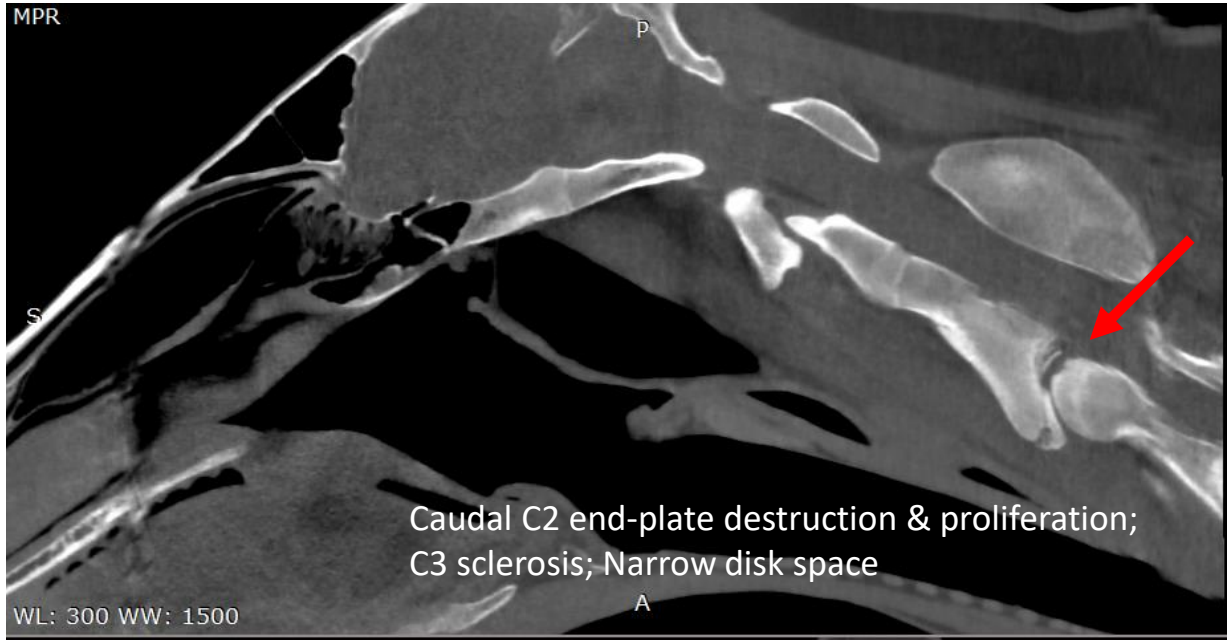
Bone Filter

- Enhanced detail in bone architecture
- Better interpretation of fractures, cysts and bone remodeling, e.g., sclerosis



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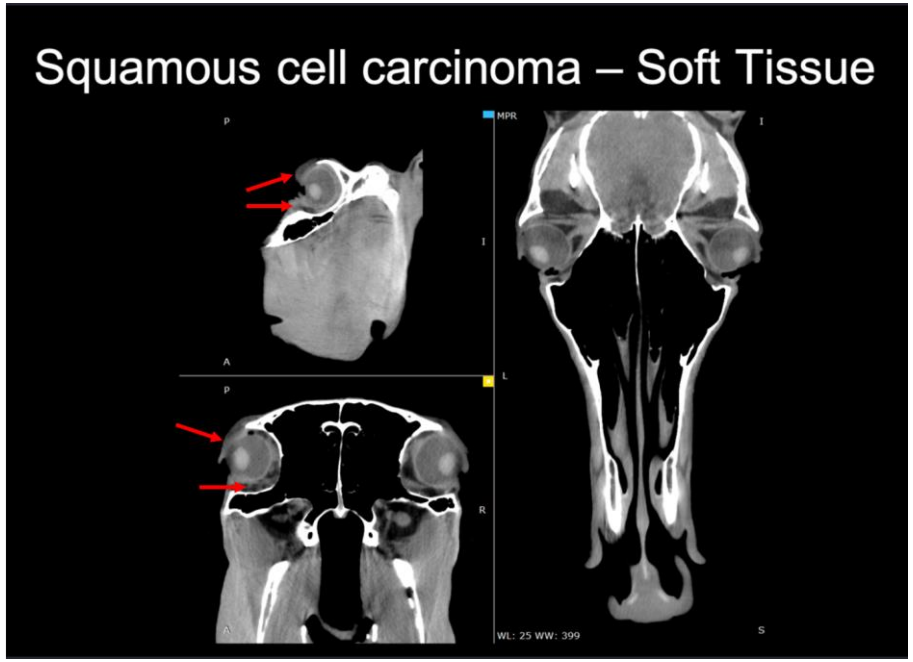
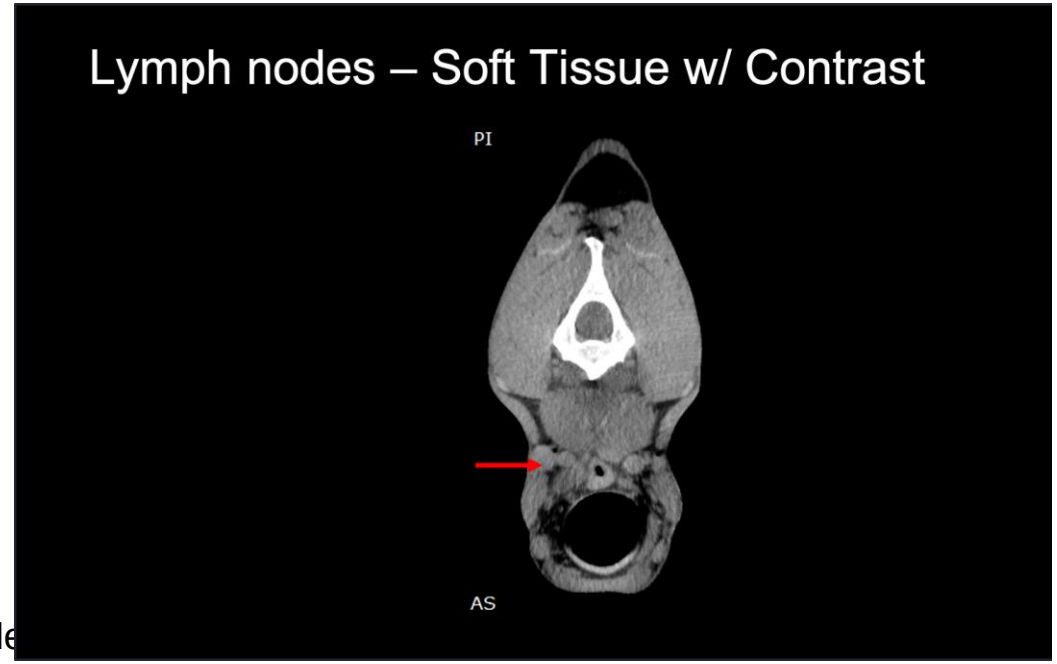
Soft-Tissue Filter

- Improves soft-tissue visualization for trauma, infections, neoplastic disease
- Visualize/utilize contrast for lesions, vasculature & synovial structures





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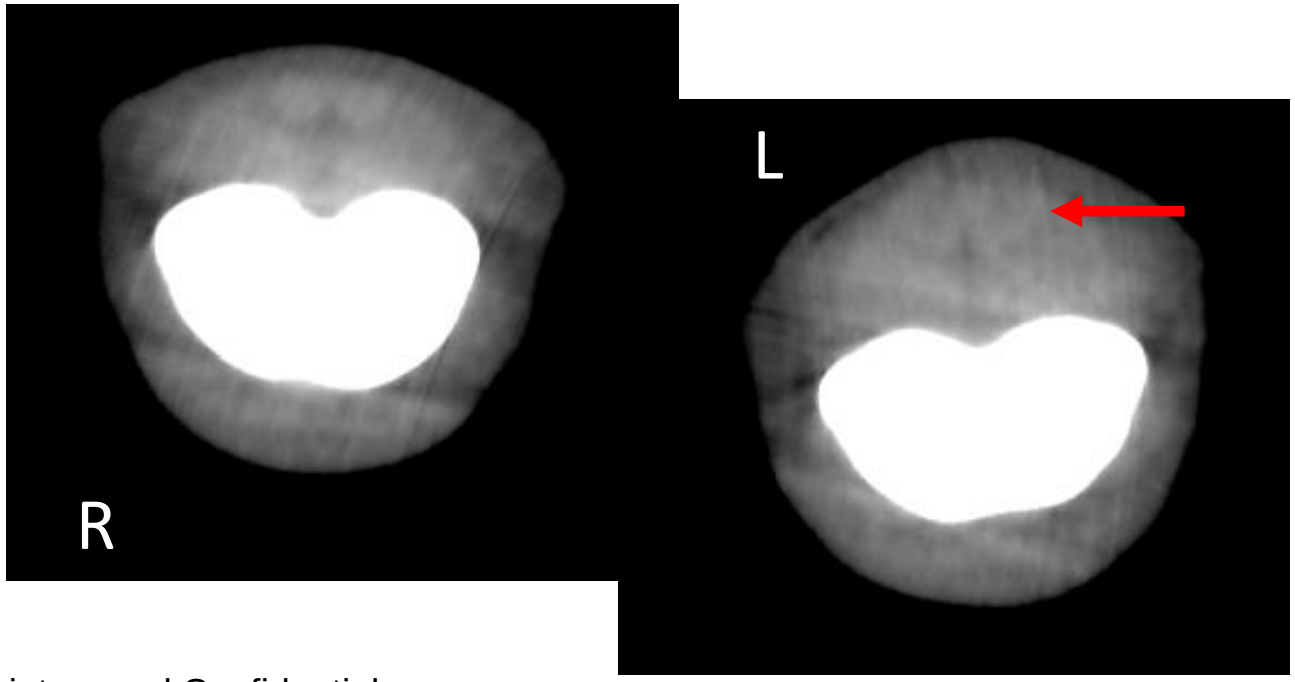
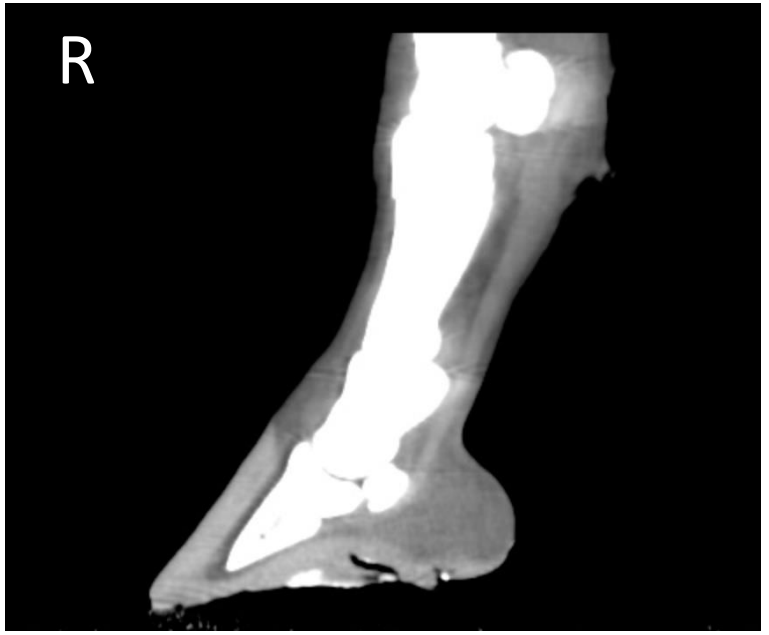
DDFT Tendinopathy of LF Limb

- Enlargement & tearing at level of middle phalanx
- Severe but hard to see
- Excellent example of L/R comparison





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Low-pitch Mode for Soft Tissue

- 1 rotation/sec (0.5 cm travel)
- Helical pitch = 0.1375
- 5 slices/rotation; 1 mm slice spacing

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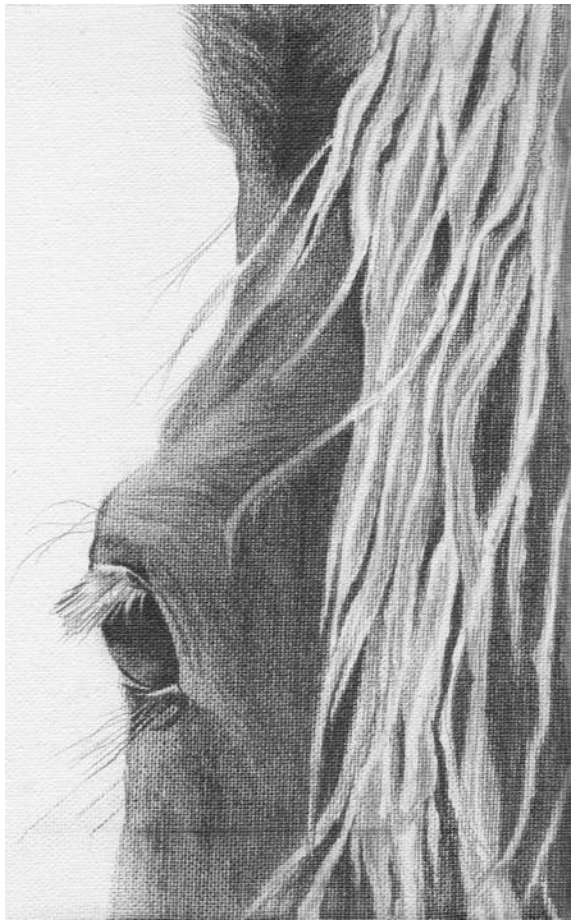
Summary

Summary

- Asto CT is transforming the standard of care in equine imaging
- Equina™ offers safe, high-quality CT imaging to the equine community
- Equina™ is a versatile system that can be used for all equine applications



Please join our race to end equine fractures!

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Equine Standing CT

Asto CT

Preventing equine fractures with safe, high-quality CT imaging

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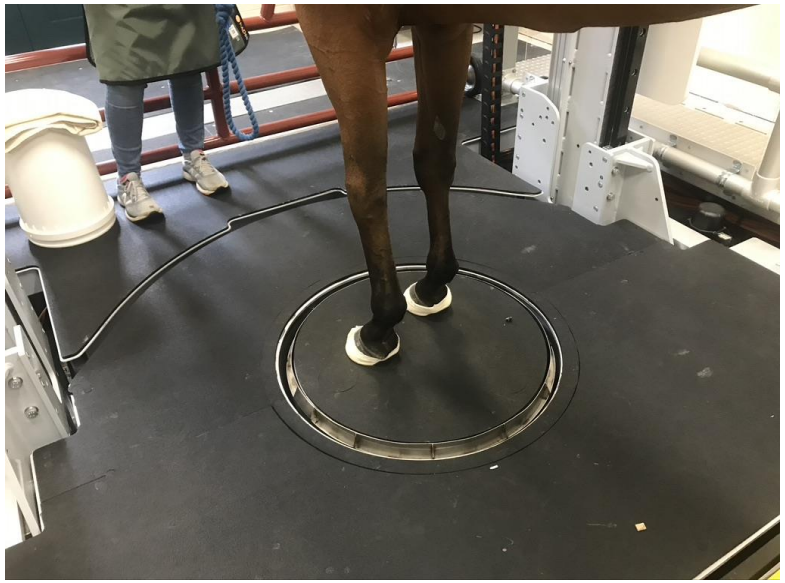
Equina Highlights

Designed for Equine Use

- The only bi-axial *Equine Standing CT* designed to withstand the rigors of veterinary practice



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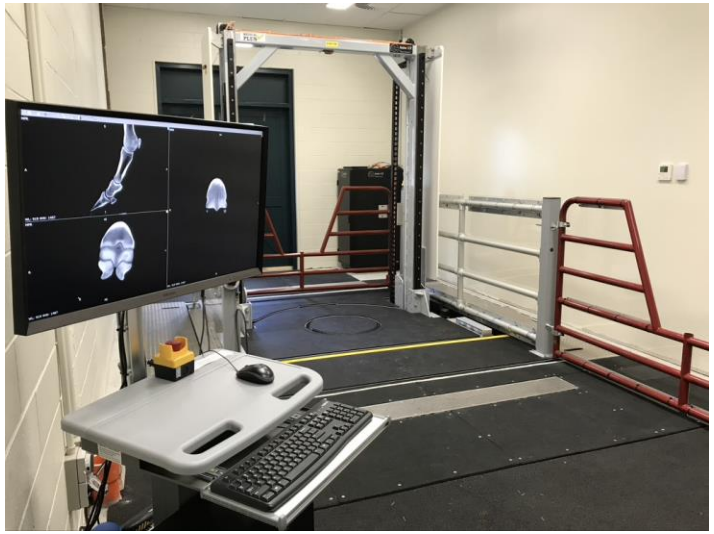
Key Features

- Non-slip shock-absorbing surfaces
- Easy-to-use push-button system pendant controller
- User-friendly moveable operator console (OC)
- Open walk-through design for safe and fast standing limbs
- Enclosures are sealed to IP53 standard for easy cleaning and use in dusty environments



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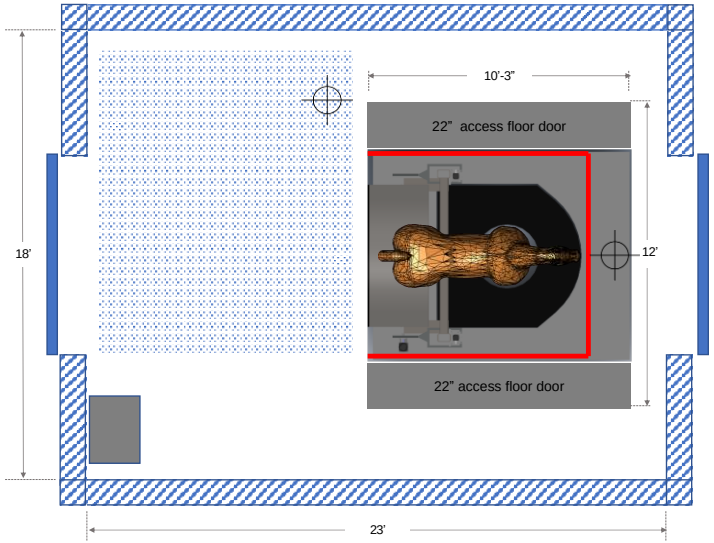
Very Low Power Levels

Front Limb – scans downward



Scale: 1' = ¼"

Indicates railings

Indicates where a staff member would stand

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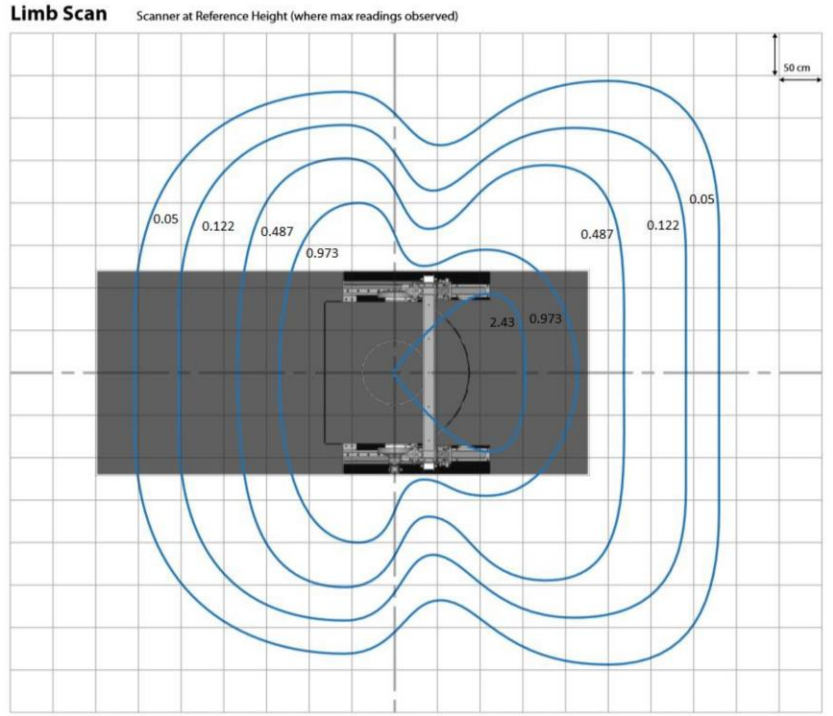

Figure 3: Typical scatter levels for limb scan (top view). Values in µGy/s, detector positioned at a height of 1 m from platform, scanner at reference height where max signal observed.

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Diagnostic images

- Proven high-quality diagnostic images at very very low tube current (mA)
- Allows operators & handlers to safely stay with the equine patient during a scan and back-to-back scans to be taken if necessary, with no waiting time between scans

Built from the ground up for equine imaging – not a repurposed human-use scanner

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