

ASTO CT[®]

SUPERIOR DIAGNOSTIC IMAGING

HEAD

NECK

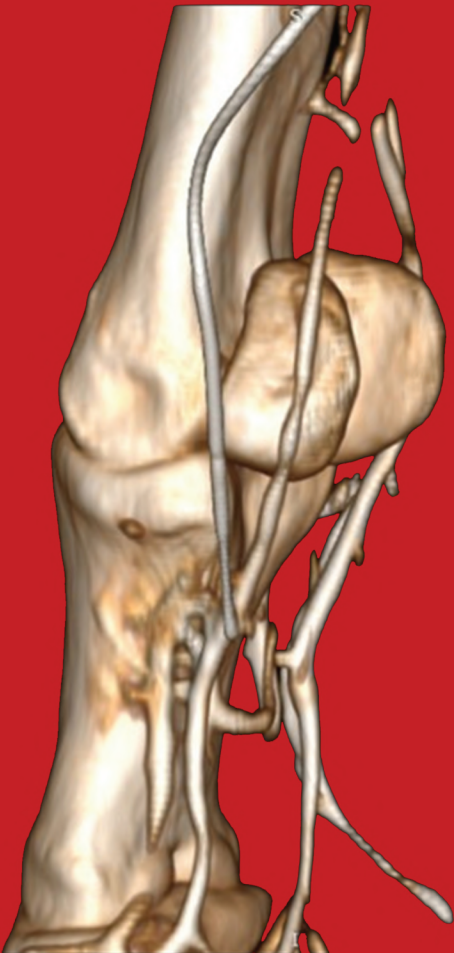
LIMB PAIRS



Asto CT[®]
Equine Standing CT

The New Standard Of Care in Equine Imaging is Here

Asto CT was founded on the principle of offering safe, high-quality CT imaging to improve quality of life for horses and ensure peace of mind for their owners. It is the world's first weight-bearing, fan-beam computed tomography (CT) scanner for imaging limb pairs and head & neck of a standing, sedated equine patient in as little as 20 seconds. With Asto CT there is no need for general anesthesia. Asto CT is Safe, Simple, and Standing.



Our Mission

Our mission is to provide veterinarians with the imaging tools they need to improve diagnosis and treatment of conditions of the distal limb and diseases of the head and neck in equine patients.



Safe

Equina offers very low radiation leakage and dose levels to allow handlers and operators to stay with the equine patient for greater safety.



Simple

Equina is accessed at ground level, allowing for rapid setup and scanning. Simply lead the horse to the target ring, position, and scan. Patients are in and out in 10 minutes.



Standing

Equina images bone and soft tissue of limb pairs up to carpus or tarsus of standing equine patients, making it ideal for detecting pathology under normal, weight bearing conditions.



Flexible

Equina's 92cm bore and an accompanying 75cm field of view makes it easy to image all sizes of horses, from ponies to draft horses. With a pivoting robotic gantry, Equina is flexible to allow head, neck, and limb pair imaging.



Rugged

Equina is rugged enough to withstand a 1000kg strike force or allow image guided surgery, making it uniquely designed for the rigors of veterinary equine practice.



Diagnostic

Equina uses 24 detector rows at fast (1 second) rotation for CT imaging of 36 slices per second. With wide continuous vertical and horizontal scan fields, Equina offers high quality, diagnostic imaging with no scout views.

THE Equina[®] By ASTO CT[®]

BUILT FROM THE GROUND UP, THE EQUINA[®] HAS THE WORLD'S ONLY WEIGHT-BEARING, FAN-BEAM CT SCANNER WHICH ALLOWS FOR SCANNING IN A NATURAL STANDING POSITION.

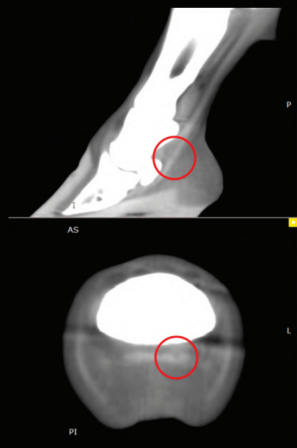
What makes the Equina different from other conventional CT scanners?

The Equina has been purpose-built in consultation with equine and large animal veterinarians to rapidly acquire CT images from equine patients of all conformations and sizes. The overall strength of the system includes consideration for the weight & power of the horse even in the extreme conditions of kicking or rearing up. Its horse-oriented design has informed the choice of colors, materials, sounds, and environmental conditions compatible with horses. **The Equina by Asto CT is NOT a repurposed human-use CT scanner.**

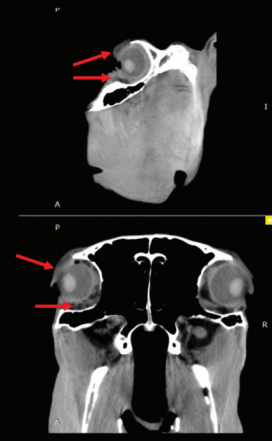


SCAN RESULT

Tendon Lesion



Squamous Cell Carcinoma



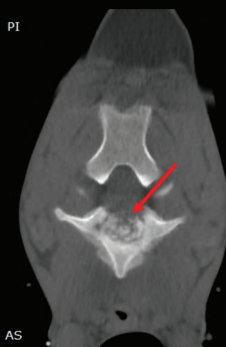
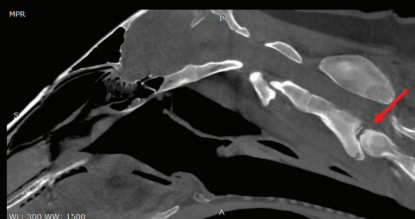
Soft-Tissue Filter

- Improved soft-tissue visualization
- New indications: trauma, infections, neoplastic disease

SCAN RESULT

Neurologic Disorder-Bone

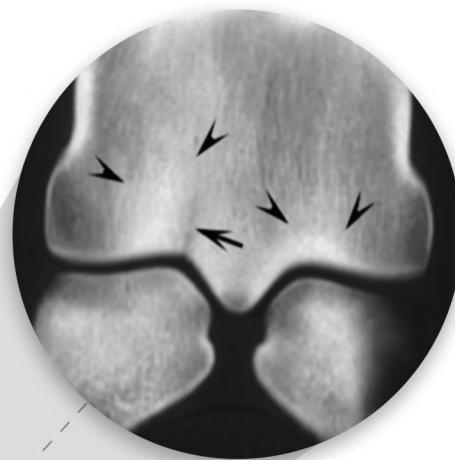
- Caudal C2 end-plate destruction & proliferation
- C3 sclerosis
- Narrow disk space



Bone Filter

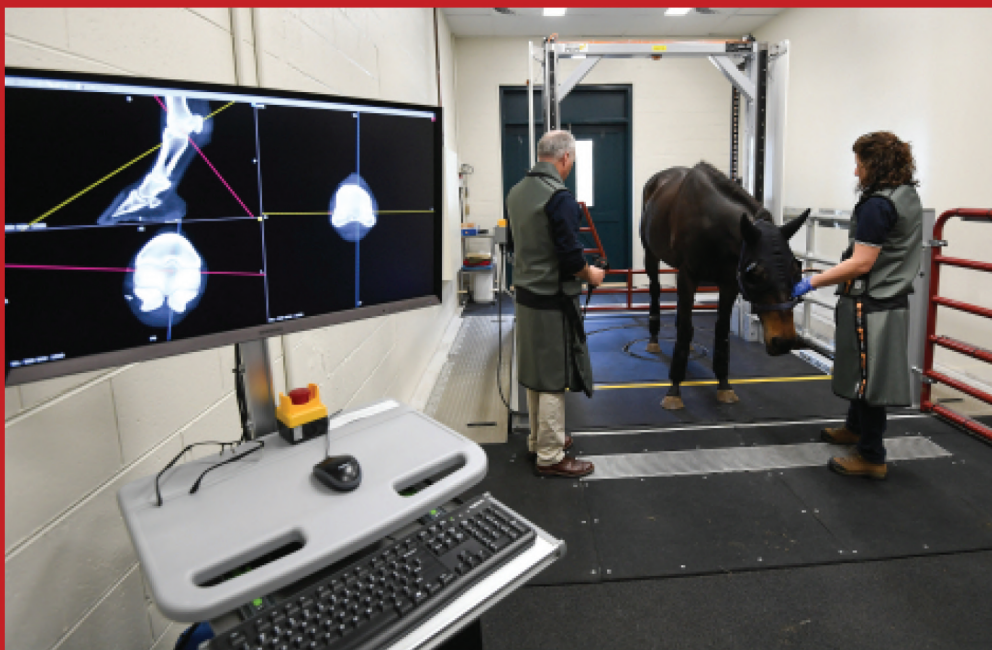
- Enhanced detail in bone architecture
- Earlier detection of fractures, cysts and bone remodeling

In The Thoroughbred Racing Industry



Asto CT[®]
Equine Standing CT

Equine Limb Injury Prevention Program



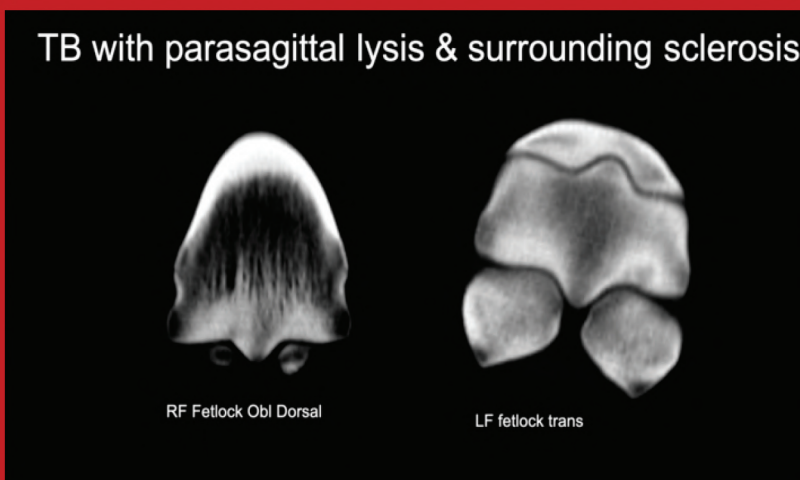
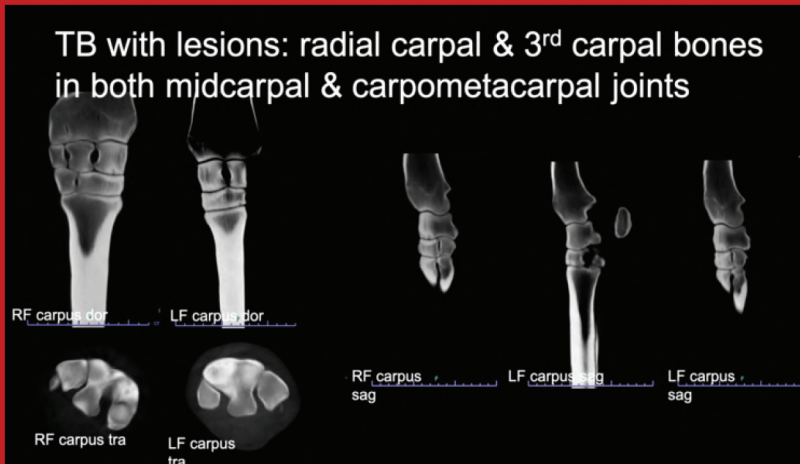
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"The large field of view and imaging of both limbs at once means we find lesions that we didn't expect that have important implications for prognosis, which fully assess the important joints even if they might not be the primary problem (for example fetlocks in racehorses), we see the bone and soft tissues, and foot balance all at once. This allows us to come up with a comprehensive plan for management."

—— **Dr. Chris Whitton** BVSc, FANZCVS, PhD, Professor and Head of Equine Center at the University of Melbourne Veterinary School. Head of the Equine Limb Injury Prevention Program.

What can the Equina[®] do?

The Equina[®] can quickly and safely evaluate a limb pair from above the knee or hock distally to the foot in a scan time of 20 seconds and generate high quality diagnostic images. Scanning a racing Thoroughbred with no interruption to the training regimen is safe, simple and straightforward enabling routine screening of racehorses for lameness and other suspected injuries.



How is the Equina[®] currently being used in Racehorse Clinical Research?

Early identification of at-risk horses will enable the attending veterinarian and the trainer to modify the training regimen and provide care that will promote bone healing and reduce risk of serious injury. To complement the routine use of standing CT imaging, researchers are currently developing new analytical methods to evaluate CT images to optimize identification of horses with concerning bone injury of the fetlock, a common site for serious stress fractures.

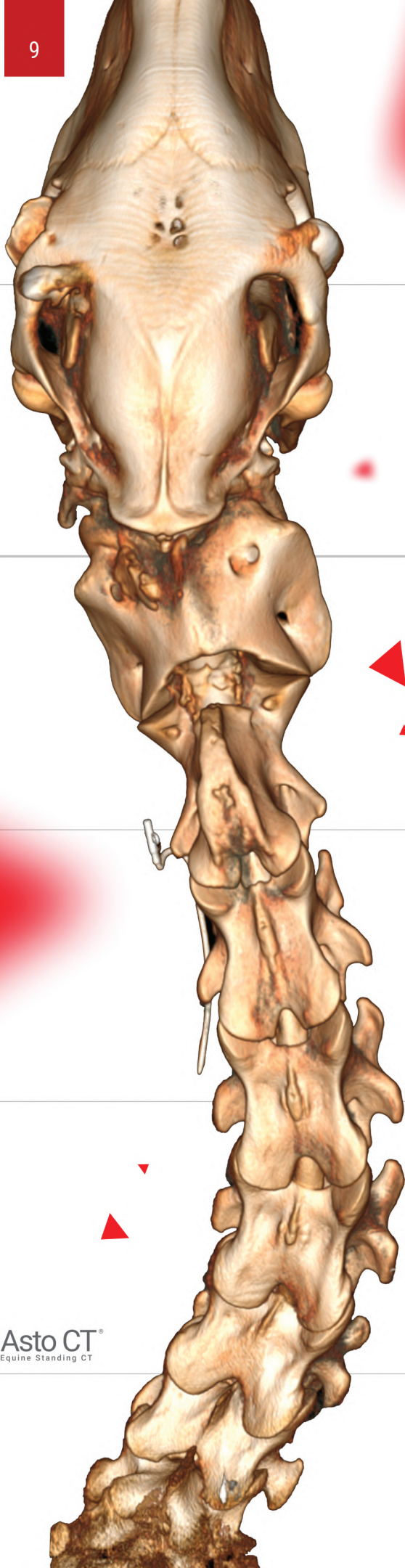
Asto CT is proud to support research related to substantially enhancing the health and safety of Thoroughbred horses during training and racing to effectively incorporate standing CT into clinical practice.

Why would racehorses benefit from a standing CT scan?

For Thoroughbred owners, who are heavily invested in their horses for racing and breeding, Equina can preserve the quality of life and financial value of racehorses in several ways, including:

- ▶ Pre-purchase evaluation of yearlings.
- ▶ Pre-race monitoring for bone injury and stress fractures in active racehorses.
- ▶ Monitoring during training to identify early signs of stress fracture as soon as they happen to enable smarter training. Early identification of concerning bone injury means that the risk of serious or catastrophic injury during training and racing can be dramatically reduced.





New 92cm Tapered Bore

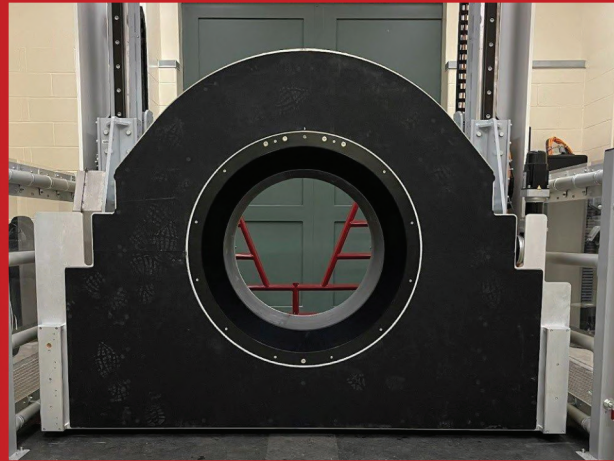


Equina[®] By ASTO CT[®]

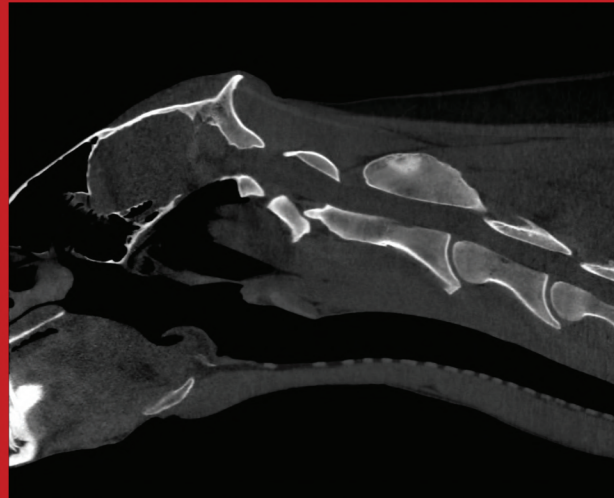
Equina is the world's first dual-axis computed tomography (CT) scanner for imaging limb pairs and head & neck of mildly-sedated standing equine patients.

O U R N E W T A P E R E D B O R E

**92CM OPENING MAKES
POSITIONING FAST & EASY**



**PROVIDES EXTENDED
CERVICAL & PROXIMAL
LIMB COVERAGE**



ENHANCED VERSATILITY

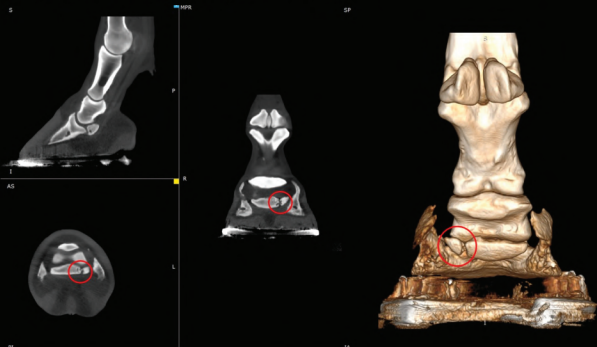


Image Gallery

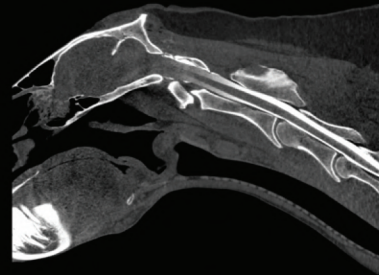
SCAN THE QR CODE
TO VIEW MORE
EQUINA IMAGES



Fractured Navicular Bone

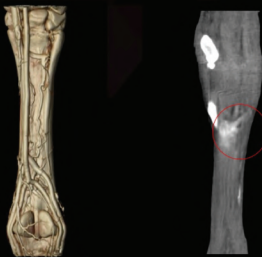


Normal myelogram in lateral recumbency



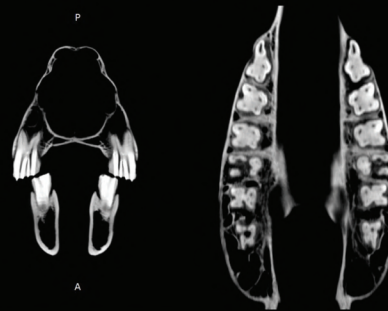
Contrast Venograms

Asto CT
Equine Imaging CT



- Contrast enhancement in a region of the proximal suspensory
- Indicative of desmitis

23yr-old Standardbred – images of the tooth root showing pulp chambers and surrounding alveolar bone



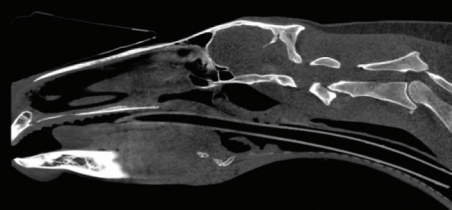
Contrast Study of the Navicular Bursa

Asto CT
Equine Imaging CT



- Navicular bursography sag
- Contrast extends proximal to the navicular bone

Subluxation of C2-C3

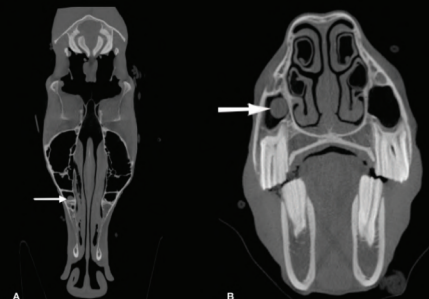


Dorsal recumbency under GA

Advanced OA of TMJ

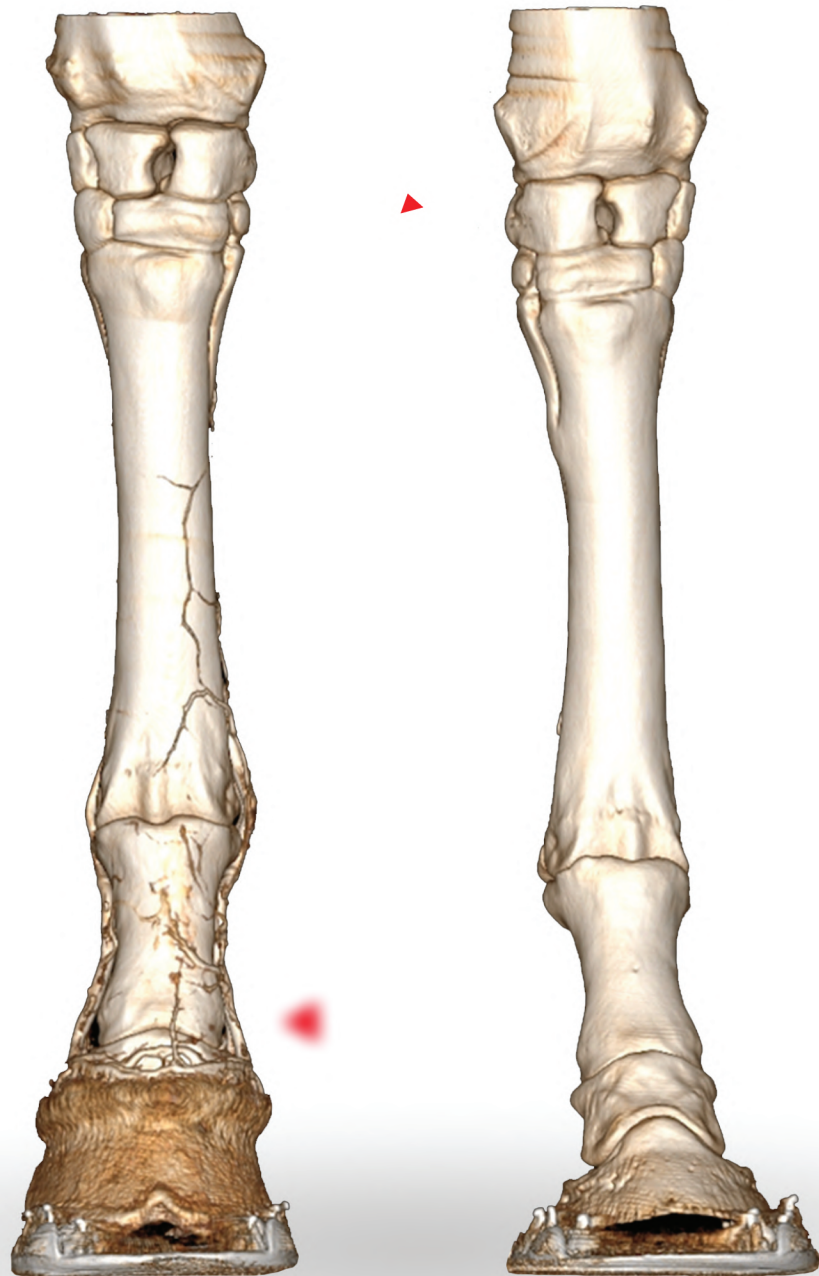


15yr-old Dutch Warmblood with small right cranial maxillary sinus cyst



Brounts SH et al., in review

Reaching New Lengths Detecting More Pathology



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THE Equina[®] By ASTO CT[®]

DESCRIPTION

Equina is a robotics-driven computed tomography (CT) system that can be used to scan a sedated standing horse. The system consists of a CT gantry, robotic motion system, and platform, an operator workstation and wireless controller to drive the system.

Equina provides CT acquisition & review tools to aid veterinarians in:

Preventing and diagnosing conditions affecting the limbs, such as fractures and soft tissue injuries.

Assessing and managing conditions of the head & neck, such as teeth and sinus problems.

APPLICATIONS

The Equina is designed to perform the following CT scans:

Lower limbs, from the carpus down in the thoracic limb, and from the tarsus down in the pelvic limb

Head and neck

Large and small animals under GA

Indications for use include:

Pre-purchase screening of horses at any age

Routine screening of racehorses before and during racing season

Screening of horses during other athletic events, such as jumping, and eventing

Diagnosis of lameness problems in thoracic or pelvic limbs

Diagnosis of equine diseases of the head, such as ethmoid hematoma, sinus and teeth problems

Diagnosis of equine neck diseases, such as spinal disease, osteoarthritis and fractures

Surgical planning and guidance

System Specifications

SYSTEM HIGHLIGHTS

Equine standing CT designed by veterinarians to withstand the rigors of veterinary practice

Multi-slice, helical CT with sub-millimeter resolution

Beveled gantry opening to allow for extended cervical spine and proximal limb coverage

Rubberized, non-slip, shock-absorbing surface

Easy-to-use pendant control for gantry motion and scanning

User-friendly, movable operator console

Open, walk-through design for safe and fast standing limb scans

Enclosures are sealed to IP53 standard for easy cleaning and operation in dusty environments

Width (base)	244 cm (96 in)
Length (base)	228 cm (90 in)
Height (uprights from existing floor)	385 cm (152 in)
Gantry pitch range (limb / head modes)	0 to 90 degrees

Scan velocity	2 cm/sec (0.8 in/sec)
Scan length – limb scan	75 cm (30 in)
Scan length – head/neck scan	92 cm (36 in)

Total detectors	24,576
Helical pitch factor	0.55

Rotation speed	1 sec (60 rpm)
Slice acquisition rate	36 slices/sec
Resolution at isocenter (x,y)	0.75 mm

X-ray tube focal spot	1.0 mm FWHM
X-ray tube peak voltage	160 kVp
X-ray generator power output	1280 W (continuous)
Reconstruction matrix size	1024 x 1024 pixel

PACS network connectivity	DICOM
Electrical supply	208-240 VAC single phase 30A max
UPS	YES
Gantry enclosure	Filtered air cooling with dust and moisture sealing (IP53)

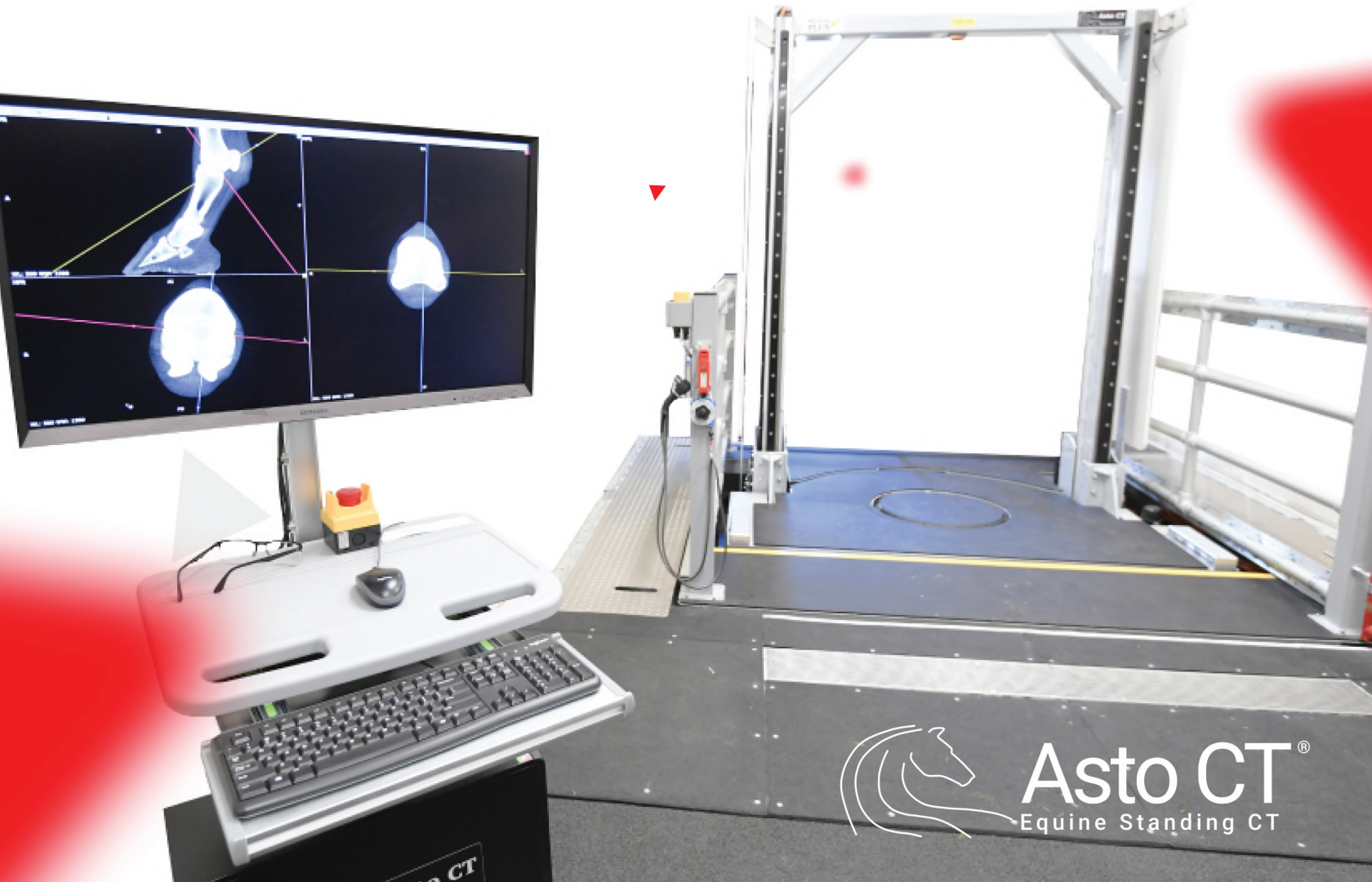
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S U P E R I O R D I A G N O S T I C I M A G I N G



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