Canon

Aquilion Prime SP

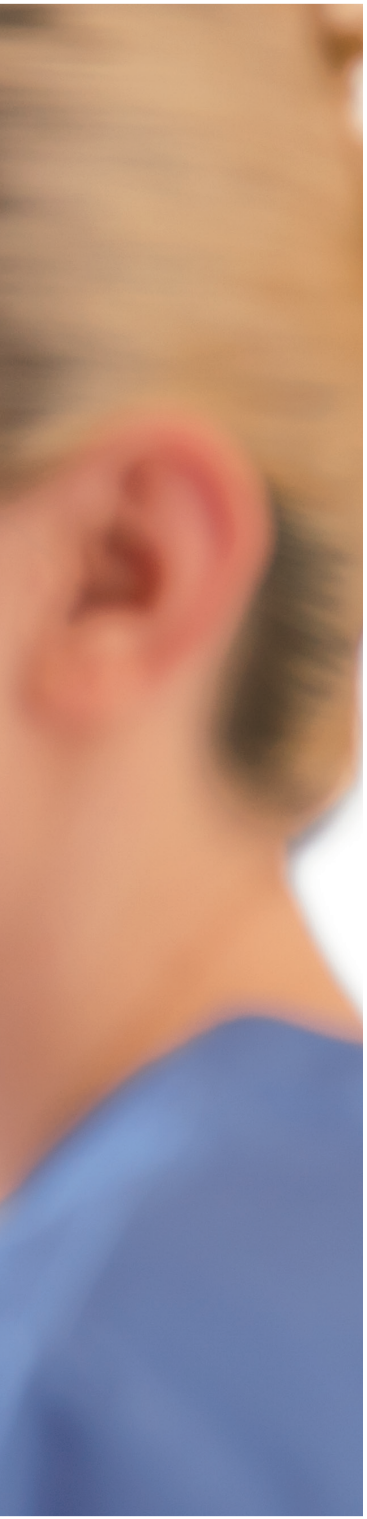
Complete Clinical Capability

160 slice Ultra Helical CT

Complete clinical capability
Assisted by AI technology

Expand your clinical capability
Enhance your productivity
Capitalize on your investment

Built with innovative AI-assisted technologies migrated straight from our most premium systems, Aquilion Prime SP is the CT solution of choice for all your imaging needs. Whether you're looking to streamline your workflow or enhance your clinical confidence with improved diagnostic capabilities, you will find everything you need in this one, intelligent solution. Even challenging cases, from pediatric to bariatric and beyond will benefit from world-class images reconstructed at speed with our latest Deep Learning innovation.



Expand your clinical capability

From complex to routine, Aquilion Prime SP is designed to keep pace with your work list, with optimized image quality provided at the optimized dose for every patient.

An expansive suite of protocol integrated application solutions enables the seamless and rapid adoption of advanced CT procedures into your clinical practice. Aquilion Prime SP can automate complex exams while delivering high-quality data.

Welcome to the age of AI-assisted CT

Advanced intelligent Clear-IQ Engine (AiCE) – Deep Learning Reconstruction

AiCE is an innovative approach to CT reconstruction that uses Deep Learning technology to match the spatial resolution and low-noise properties of advanced model-based iterative reconstructions.

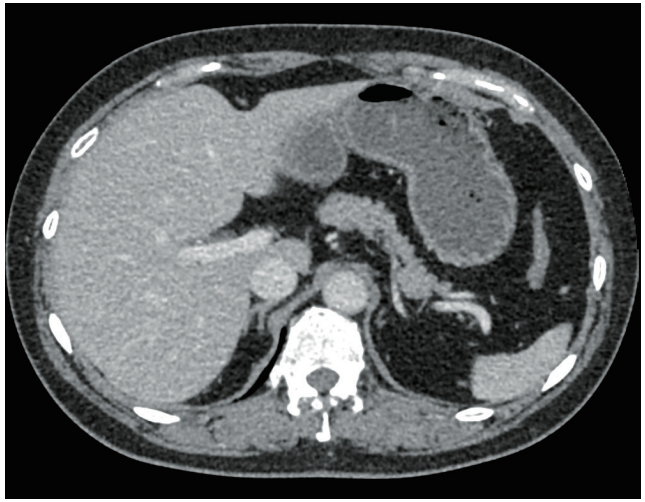
Trained using vast amounts of high-quality image data, reconstructed with an advanced model-based iterative reconstruction (MBIR) algorithm, AiCE distinguishes true signal from noise to deliver exceptional images without compromising on dose.

Furthermore, the technology has been streamlined to 160 slices, and has been integrated into existing Prime SP hardware as AiCE-integrated (AiCE-i), so you can make the most of improved image quality in a smart, cost-efficient way.

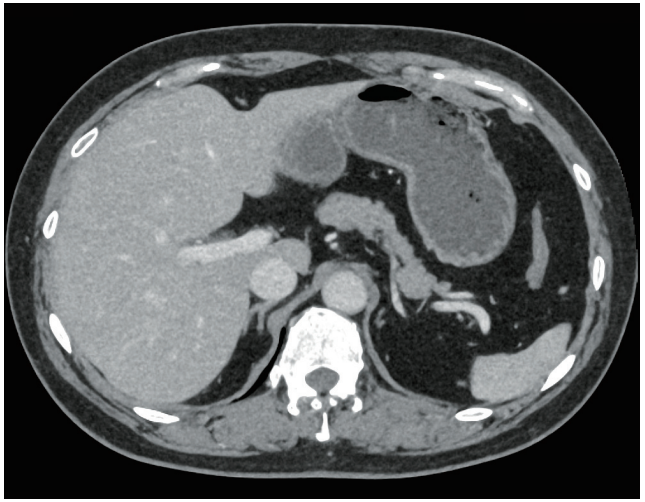
AiCE-i has potential to aid in fast and confident clinical results by providing:

- ☑ Low Noise
- ☑ Natural Image Texture*
- ☑ Sharp High Contrast Resolution
- ☑ Clear Low Contrast Detectability

AiCE
Integrated Intelligence



Hybrid IR

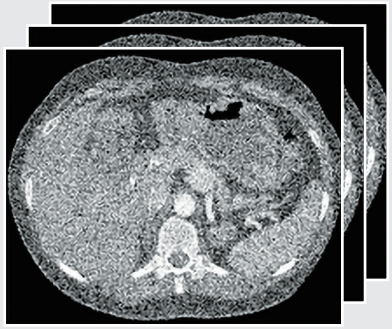


AiCE

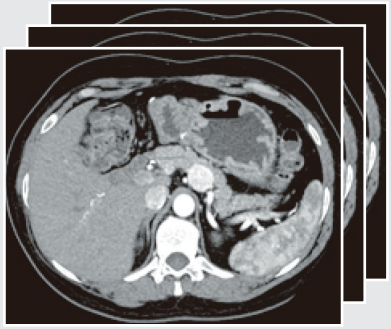
*Compared to MBIR

Training Phase in Factory

Using high-quality images AiCE learns to differentiate between signal and noise in low-quality images

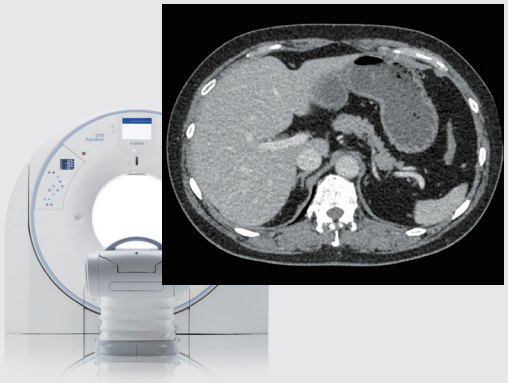


Low-quality Input Data



High-quality Input Data

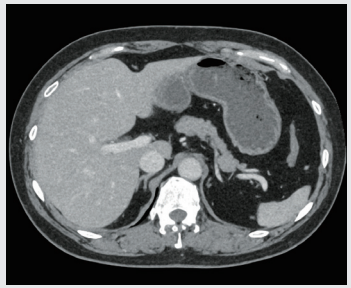
Operational Phase in Clinic



Low-dose Input

Boost / Enhance Signal

Reduce / Remove Noise



High-quality AiCE Output

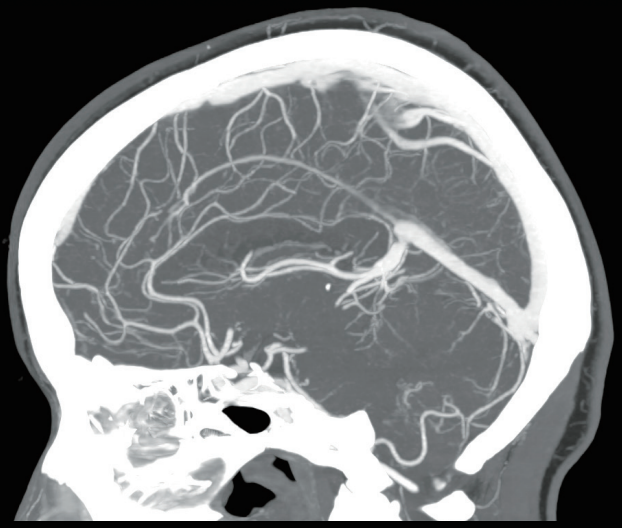
Using the intelligence from the Training Phase, AiCE has the potential to aid in fast and confident clinical results by providing high-quality images

Reduced noise, sharper images*

AiCE has been trained to reduce noise, boost signal to deliver sharp, clear and distinct images across many body regions.

Brain

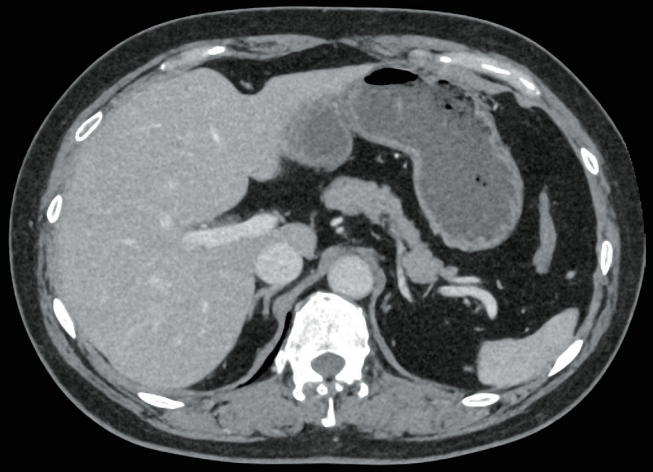
CTA



Lung

Cardiac

Body



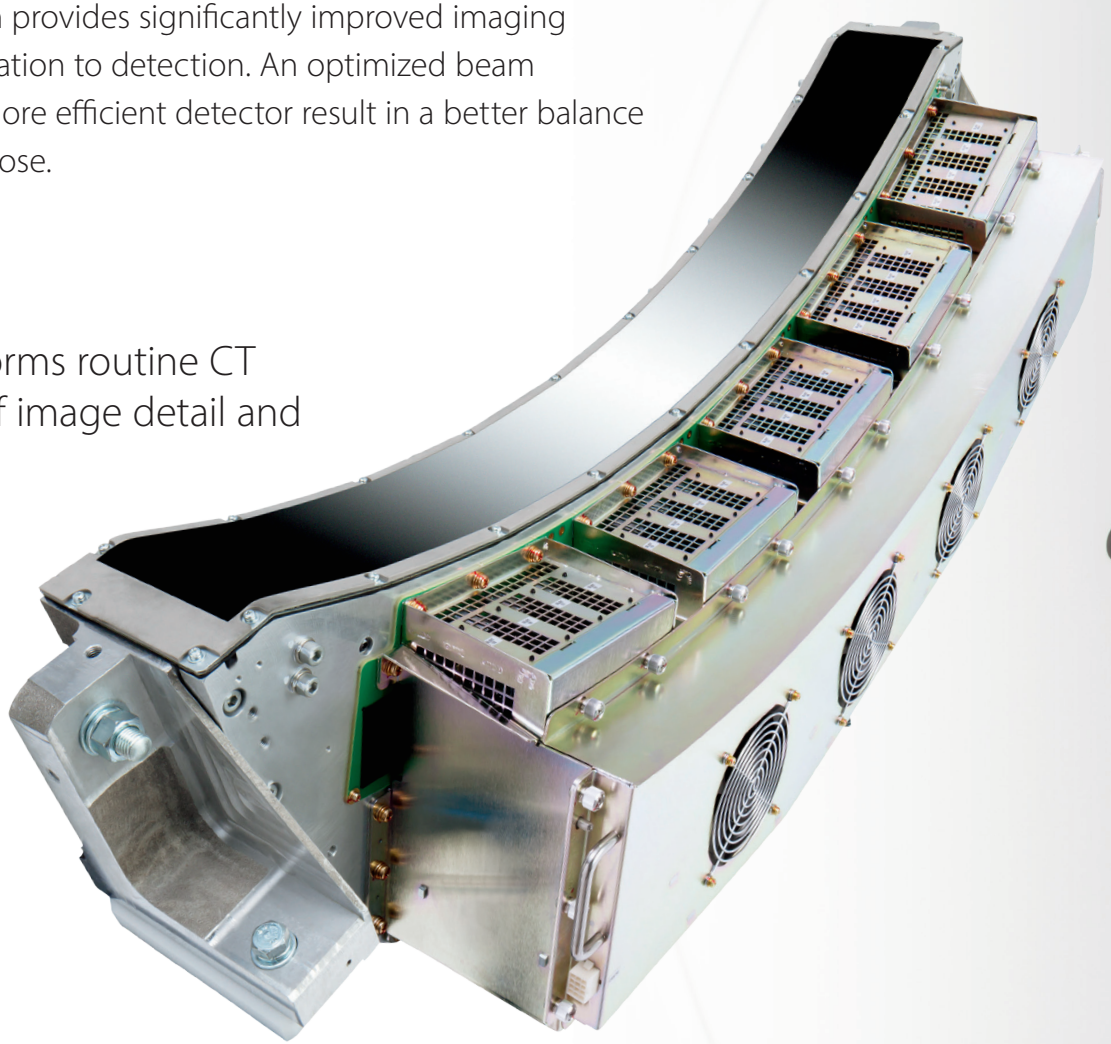
Bone

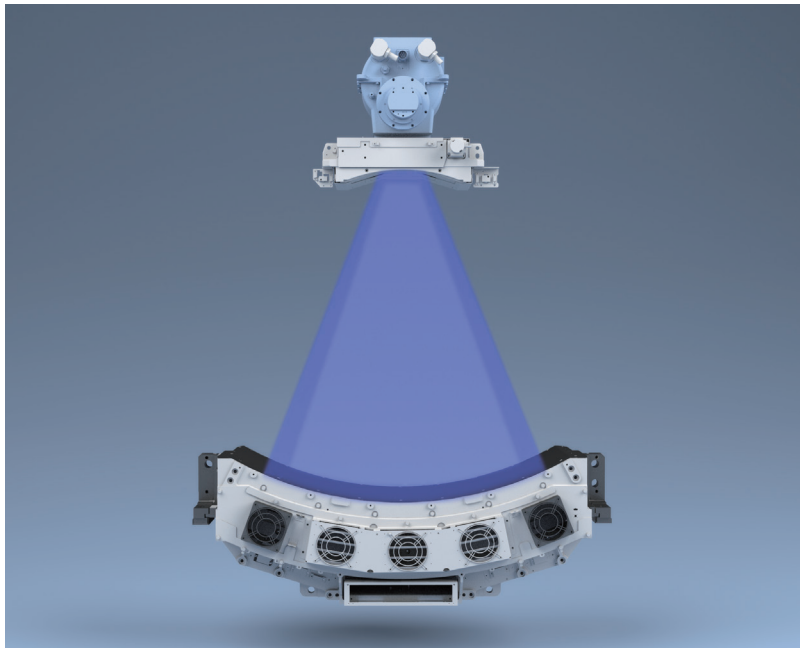
*Compared to hybrid IR

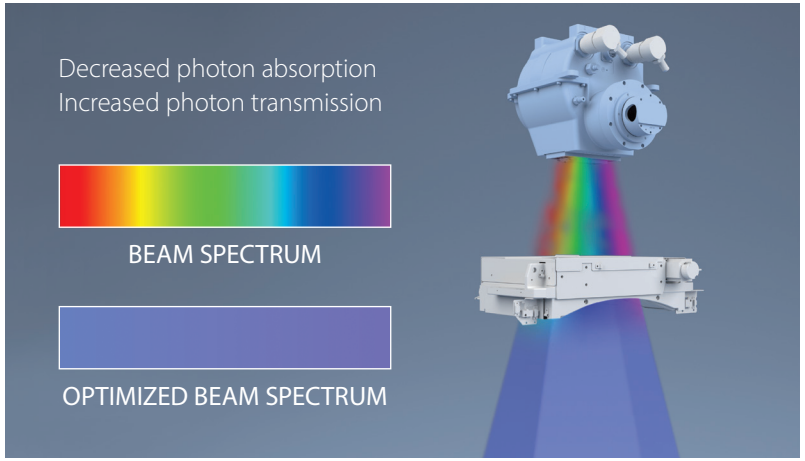
The right balance between image quality and dose for every patient, from the youngest to the largest

Our PUREViSION Optics solution provides significantly improved imaging efficiency from photon generation to detection. An optimized beam spectrum combined with a more efficient detector result in a better balance between image quality and dose.

PUREViSION Optics transforms routine CT imaging to new levels of image detail and low contrast resolution







Patient specific beam shaping filters provide an optimized X-ray spectrum and more homogenous distribution, improving low contrast detectability and lower overall dose requirements.

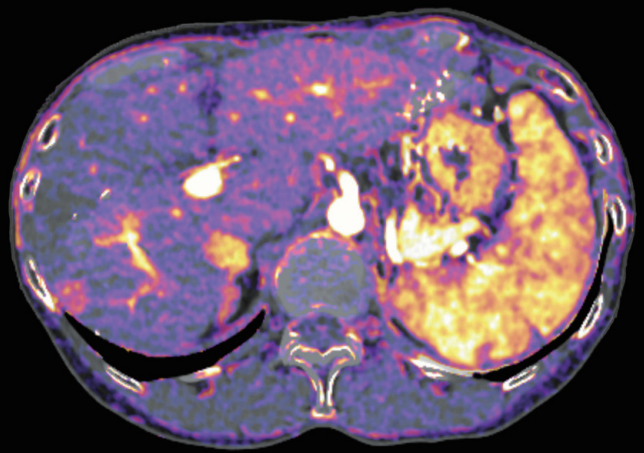
Wouldn’t you like to ensure high-quality diagnostic results no matter the complexity of the examination or the patient’s clinical condition?

Adaptive Diagnostics is our patient centric suite of unique imaging solutions, simplifying complex protocols and provide consistent quality results. These solutions improve workflow and decrease scanning complexity for the technical team.

Subtraction CTA*

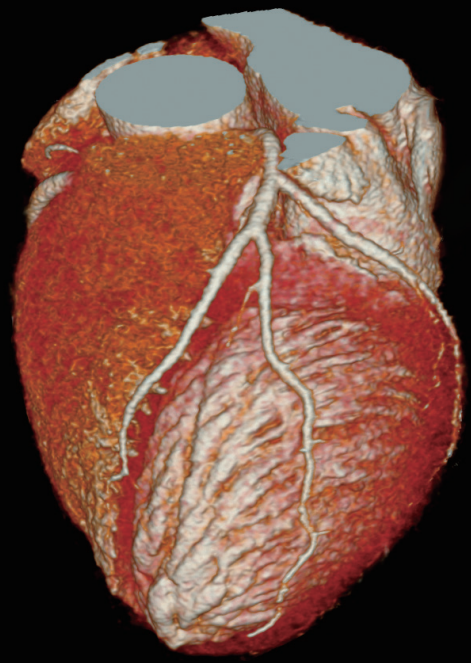
Excellent visualization in CTA with true subtraction of bone and calcification.

Iodine Mapping*



Clearly defined iodine distribution with color blood flow maps as a result of advanced registration and subtraction.

SURECardio*

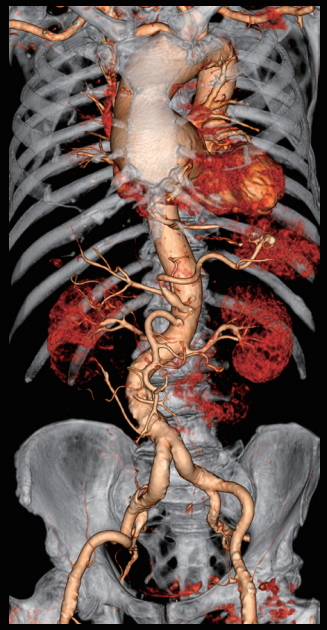


SURECardio Prospective helical acquisition can adapt to your patients’ heart rate automatically even overcoming unexpected arrhythmia.

Adaptive Diagnostics Clinical Solutions

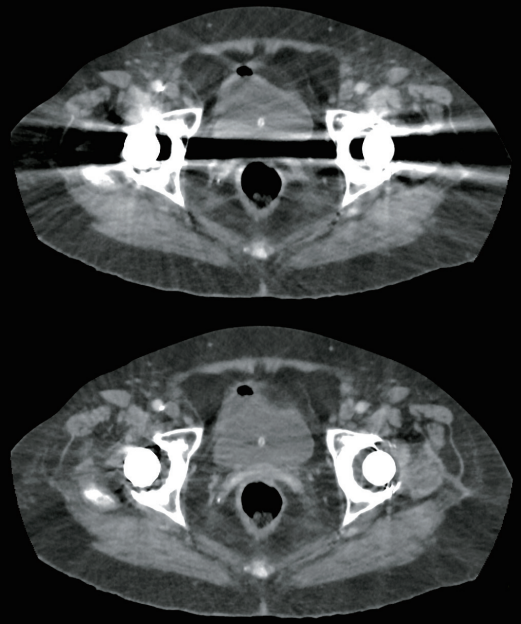
Solving Your Clinical Challenges

vHP 3 phase
(Variable Helical Pitch 3 phase)*



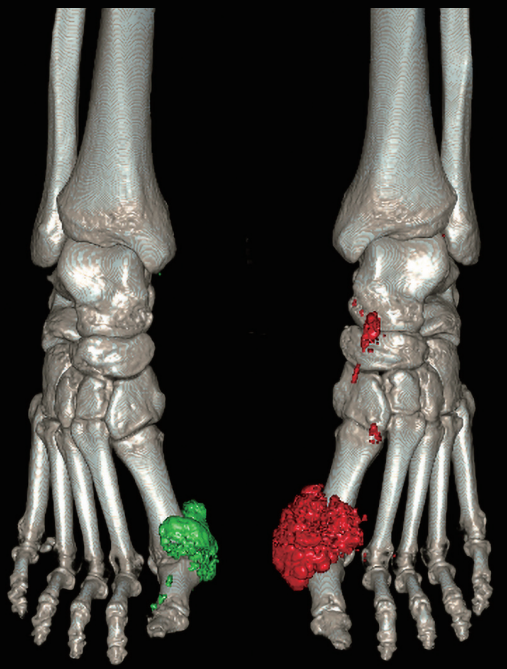
Easily combined gated and non-gated acquisition to assist with fast and low-dose TAVR exams.

SEMAR
(Single Energy Metal Artifact Reduction)



Improved visualization of bone and soft tissue- single energy raw data based metal artifact reduction.

Dual Energy Tissue Visualization*



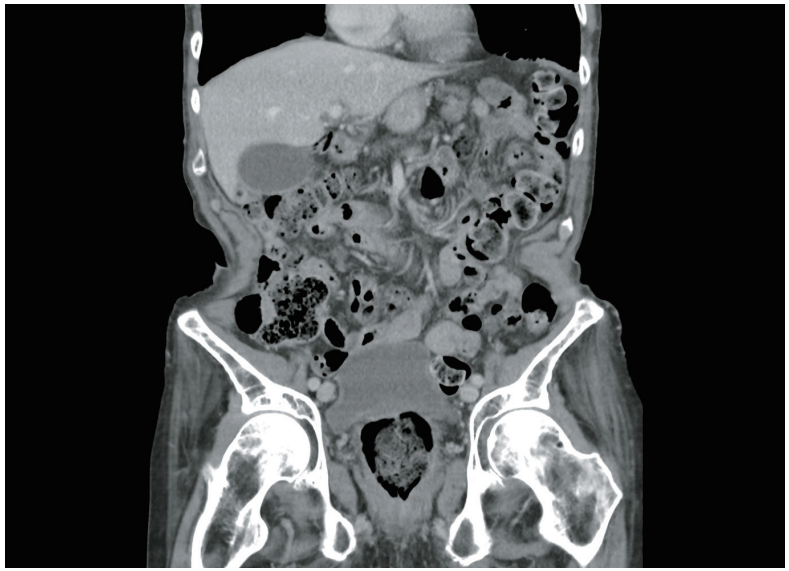
Tissue visualization with easy-to-use Dual Energy scanning.

*Option

Clinical capabilities you can rely on

Optimized dose for every patient for confident diagnostic image quality with every examination defines CT imaging on the Aquilion Prime SP.

AIDR* 3D Enhanced



Optimized dose for a confident diagnosis

The protocol integration of exposure controls and AIDR 3D Enhanced iterative reconstruction solution, automatically ensure excellent image detail at significant dose savings for the patient.

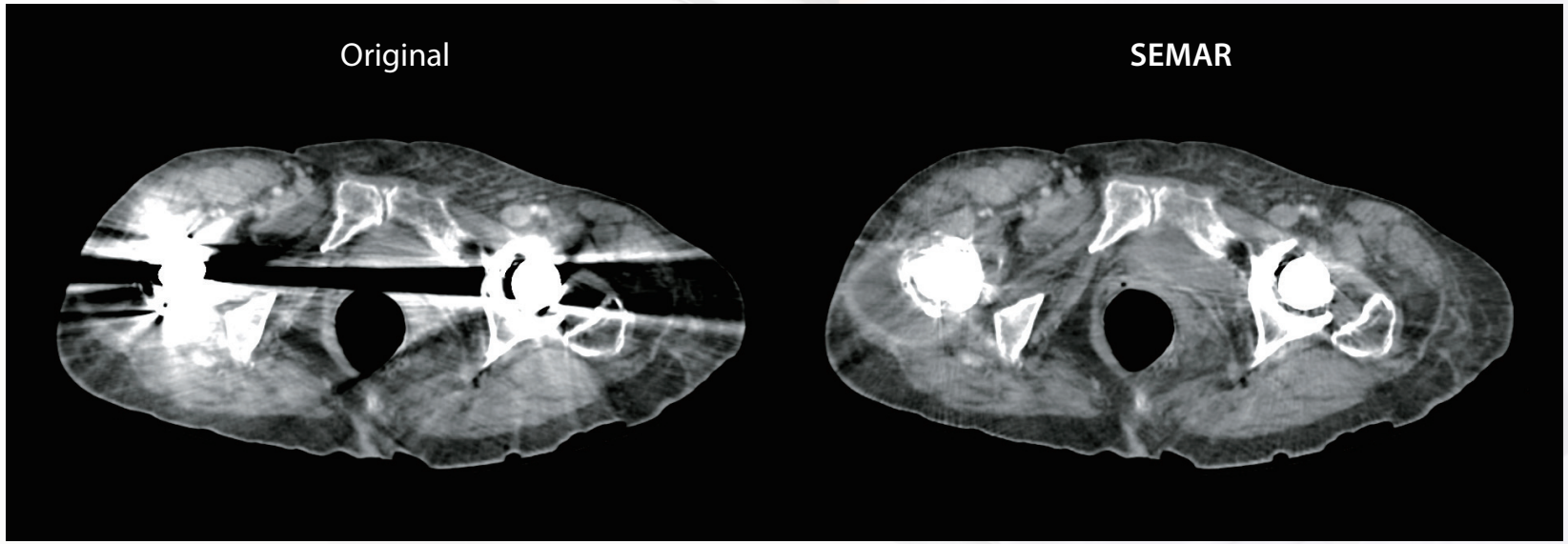
*Adaptive Iterative Dose Reduction

SURE kV

Kidney-friendly examinations

Aquilion Prime SP allows for automated kV selection based on the patient's size and the clinical task selected. As part of our SUREExposure technology, this function can help optimize the use of iodine contrast, decreasing cost and patient risk.

SEMAR

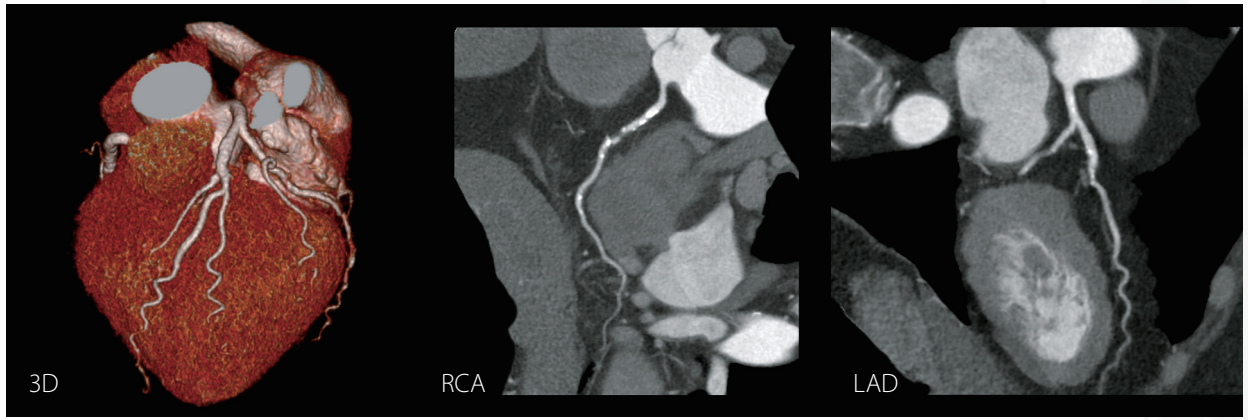


Worry-free metal imaging

Dose-neutral SEMAR utilizes a sophisticated reconstruction technique to reduce artifacts caused by metal and thus improves visualization of the implant, supporting bone and adjacent soft tissues for clearer and more confident diagnoses.

Robust cardiac CT examinations – automated, adaptive and easy

Cardiac CT imaging has never been more robust than with the Aquilion Prime SP. The intelligent SURECardio* engine is coded with the experience of thousands of cardiac examinations, ensuring scan and exposure parameters adapt exactly to your patients in real time.

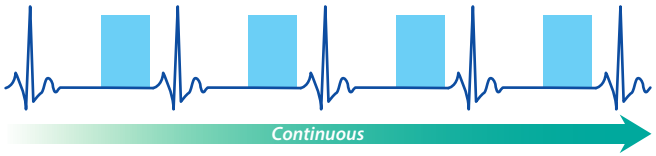


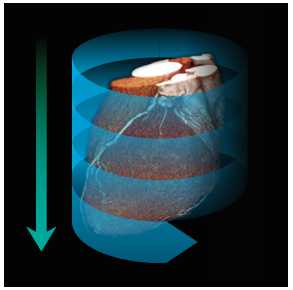
Prospectively gated ultra helical cardiac CTA

Prospectively gated ultra helical

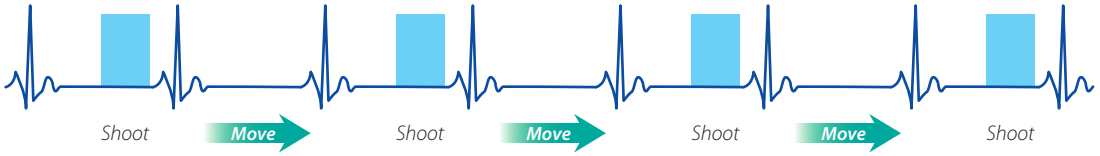
Combining the advantages of helical scanning with ECG narrow phase exposure, SURECardio Prospective offers excellent z-axis uniformity, short scan times, and the low-dose advantages delivered by prospective ECG scanning.

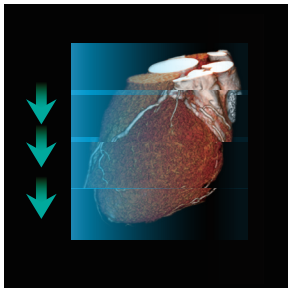
SURECardio Prospective: Faster scan for reduced contrast requirements and superior temporal uniformity.





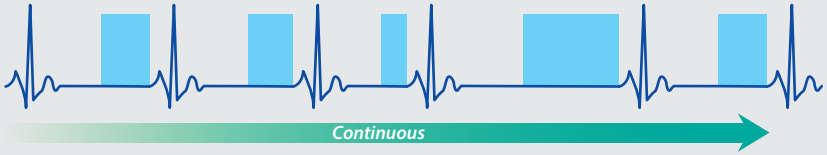
Step & Shoot: Longer scan time and temporally misaligned segments.





Real-time adaptive exposure

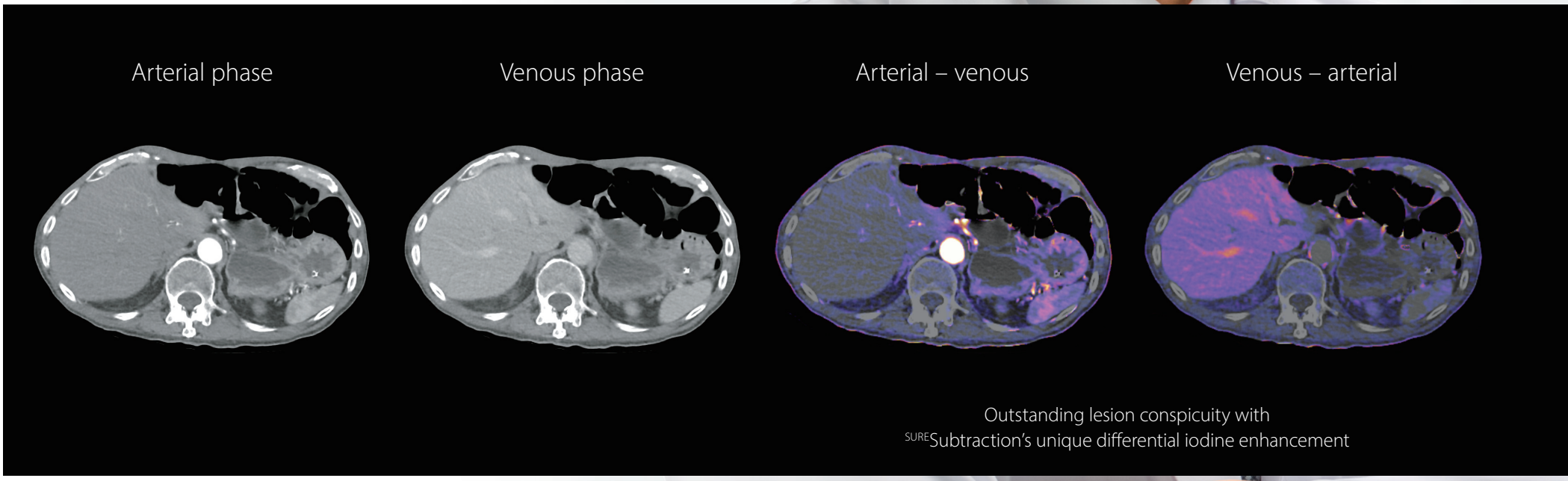
When detecting arrhythmia or an irregular heartbeat, the SURECardio engine compensates in real time by adapting the exposure window to ensure image reconstruction can provide a diagnostic examination.



*Option

Oncology imaging – from detection to treatment response

Aquilion Prime SP empowers you to detect, stage and track lesions with SURESubtraction iodine mapping* available for every routine multi-phased liver exam.



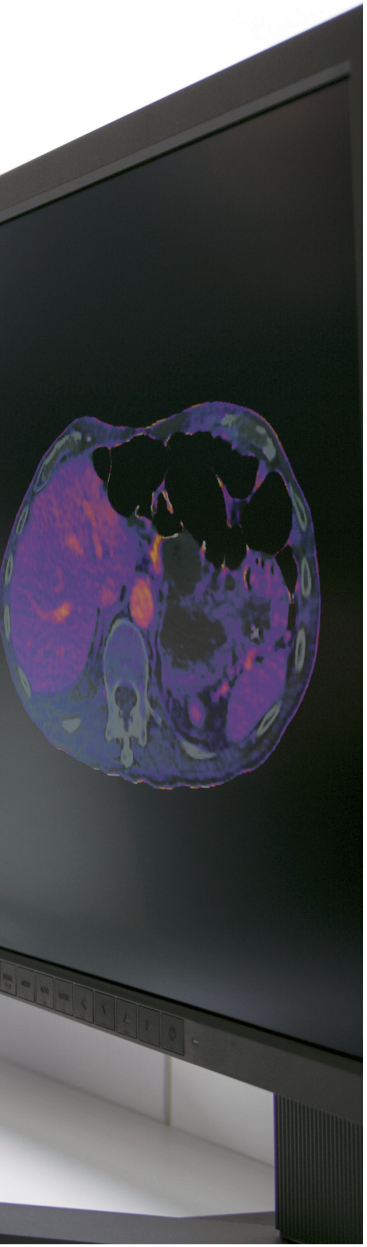
Outstanding lesion conspicuity with
SURESubtraction's unique differential iodine enhancement

Aquilion Prime SP's accessible gantry design, 4D respiratory-gated acquisition* capability and powerful advanced imaging applications deliver an ideal oncology solution from early detection and planning to intervention and treatment response verification.

Easy patient access with 78 cm large bore and 70 cm extended field-of-view* (FOV)

Workflow-automated volumetric CT Fluoroscopy* with iterative reconstruction

*Option



Enhance your productivity

From new graduates to experienced technologists, the Aquilion Prime SP's integrated workflow solutions render even the most complex of tasks easy. Through exposure control automation, vHP 3 phase scanning and automatic image processing, Aquilion Prime SP will be a powerful part of your imaging team.

Speed, quality, low dose – you can have it all

vHP 3 phase* allows three scans to be performed in a single acquisition, seamlessly transitioning between scan parameters optimized for each body region.

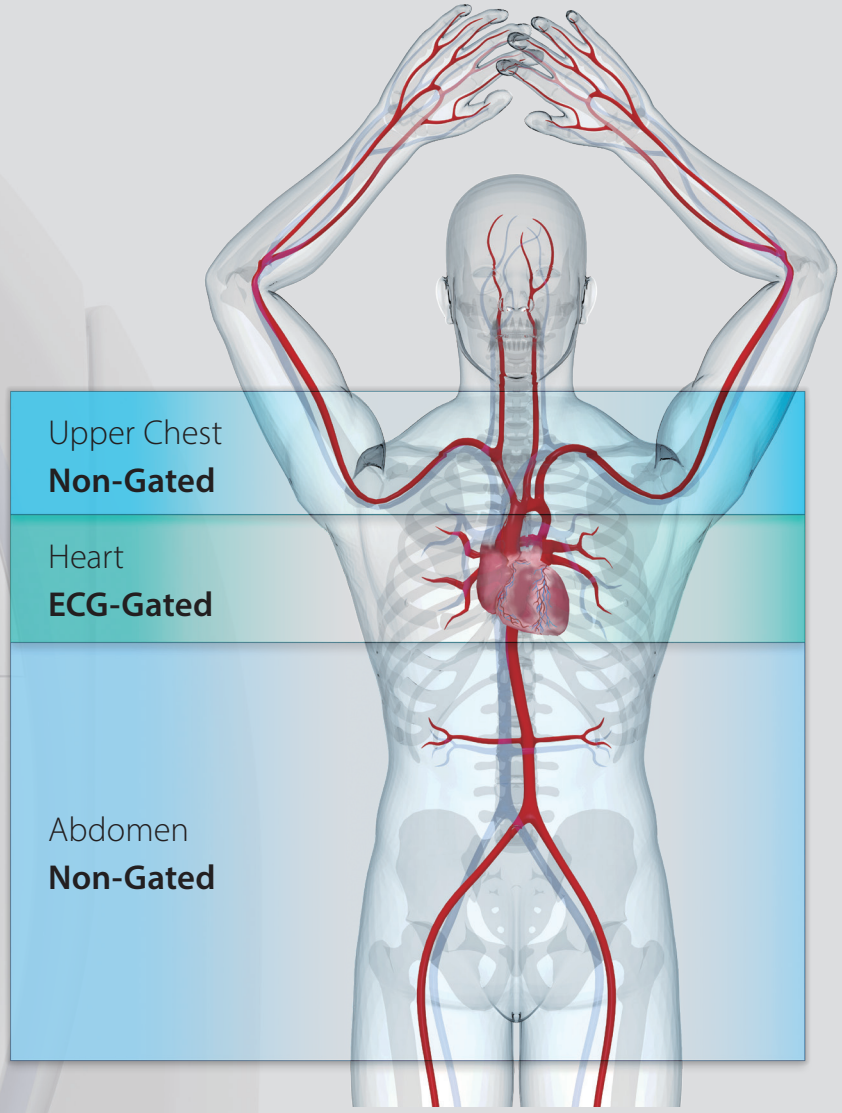
vHP 3 phase has potential for less contrast media and lower radiation dose by providing the flexibility to seamlessly transition:

- Between ECG Gating on and off during a cardiac scan
- Between dose and image quality during a CAP scan
- Between fast and detailed pitch during a trauma scan

Additionally, AiCE provides high-fidelity images through the entire scan range, overcoming the challenges of image reconstruction through the transition zones. With three scans in one, the single series reconstruction enables several studies to be interpreted simultaneously for faster reading.

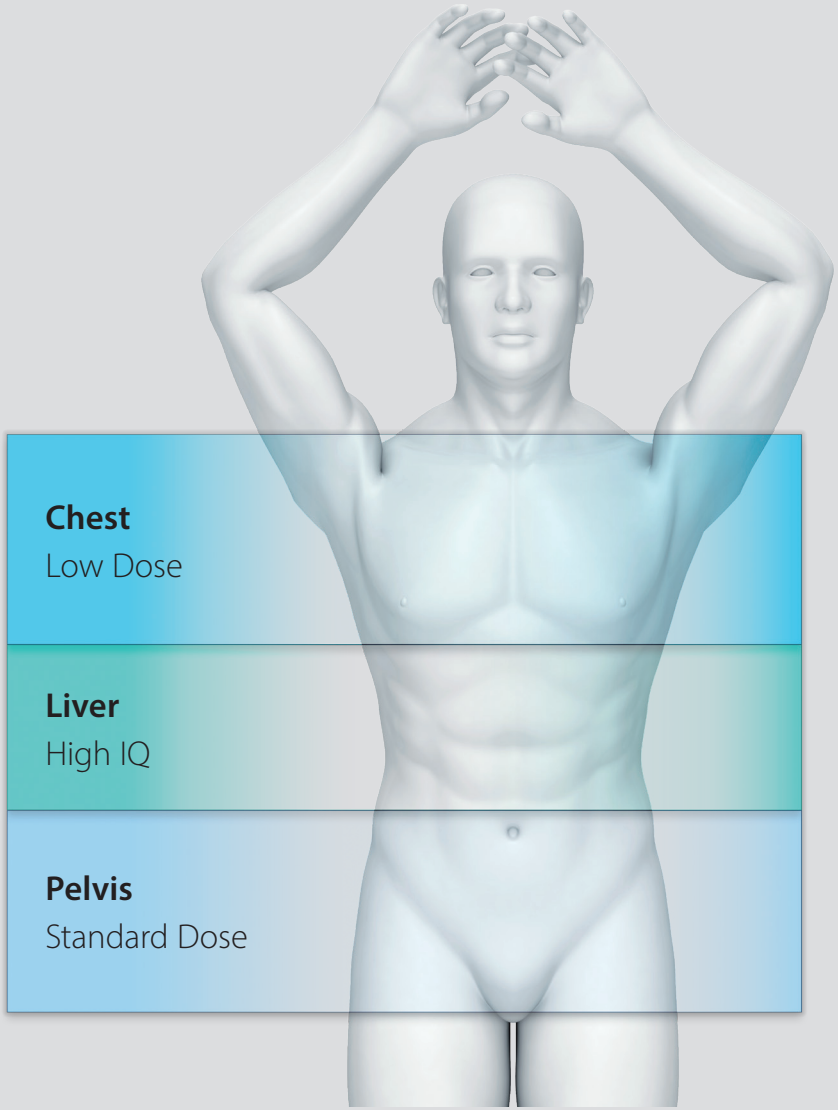
vHP 3 phase – Optimal Gating

Cardiovascular scan



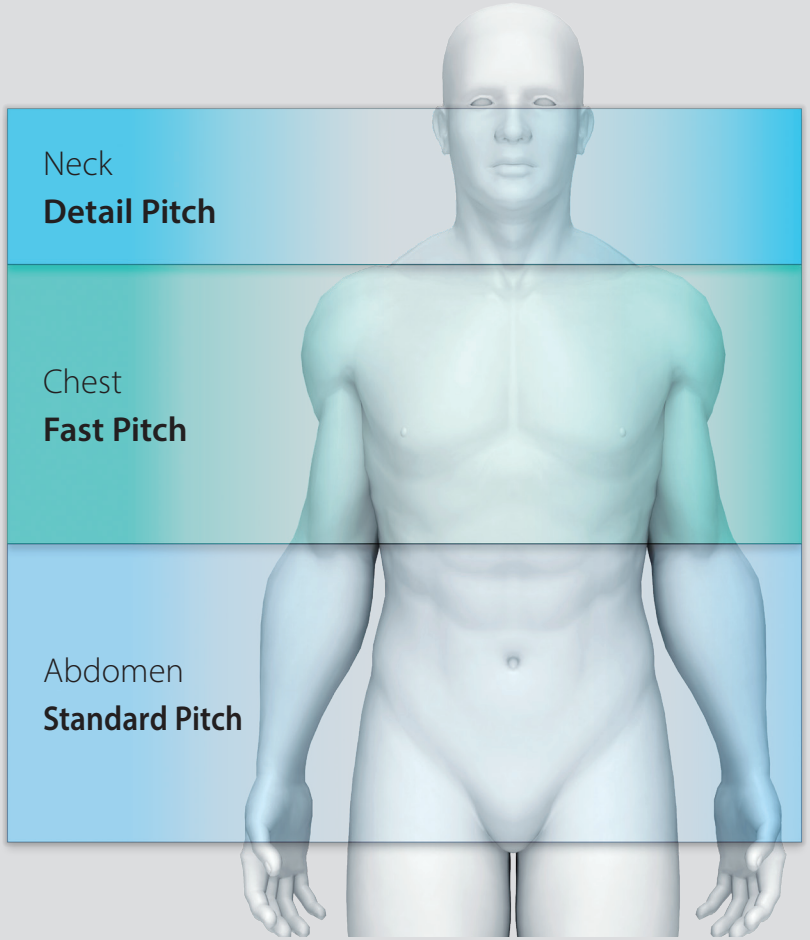
vHP 3 phase – Optimal Exposure

Chest, Abdomen, Pelvis scan



vHP 3 phase – Optimal Speed

Trauma scan



*Option

Power assisted patient positioning

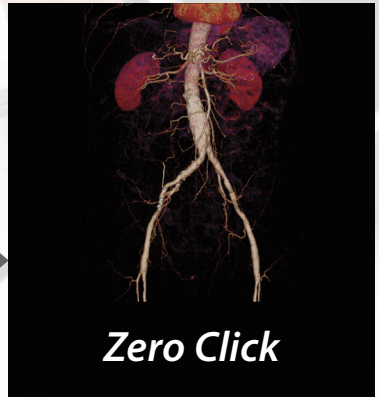
When every second counts you need imaging equipment to work for you. The Aquilion Prime SP power assisted positioning* expedites the set up of patients and reduces the heavy lifting required by the attending care team.

Workflow that makes you perform

Protocol integrated automation at every step empowers even a novice operator with the skills to perform brilliantly the first time – every time.

Select Protocol ▶ **Scan Planning** ▶ **Scan**

Automated	Integrated	FAST
Advanced Visualization	**Patient Dose Management**	**Results**
	kVp, mA, AIDR 3D, Dose reduction	Real-time reconstruction



*Option

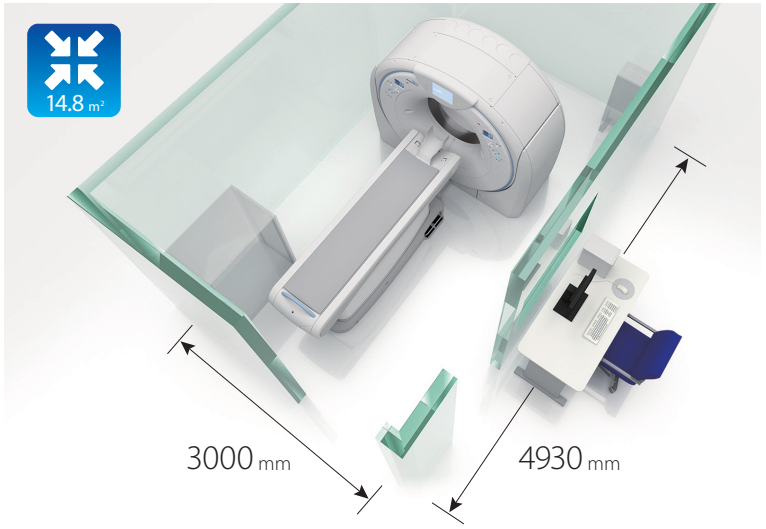
Capitalize on your investment

From installation to department expansion, the Aquilion Prime SP is the right economic choice. Designed to be more than efficient, Aquilion Prime SP checks all the boxes for a CT system capable of fast throughput, patient and technologist safety and a platform to expand any department's imaging portfolio for improved productivity.

Increased productivity, lower costs, enhanced diagnostic performance

Aquilion Prime SP is a total solution for all your clinical demands. A full host of innovative design features ensure outstanding patient accessibility, efficient workflow and low running costs. A wide range of robust imaging applications and workflow automation features provide exceptional diagnostic precision and clinical versatility.

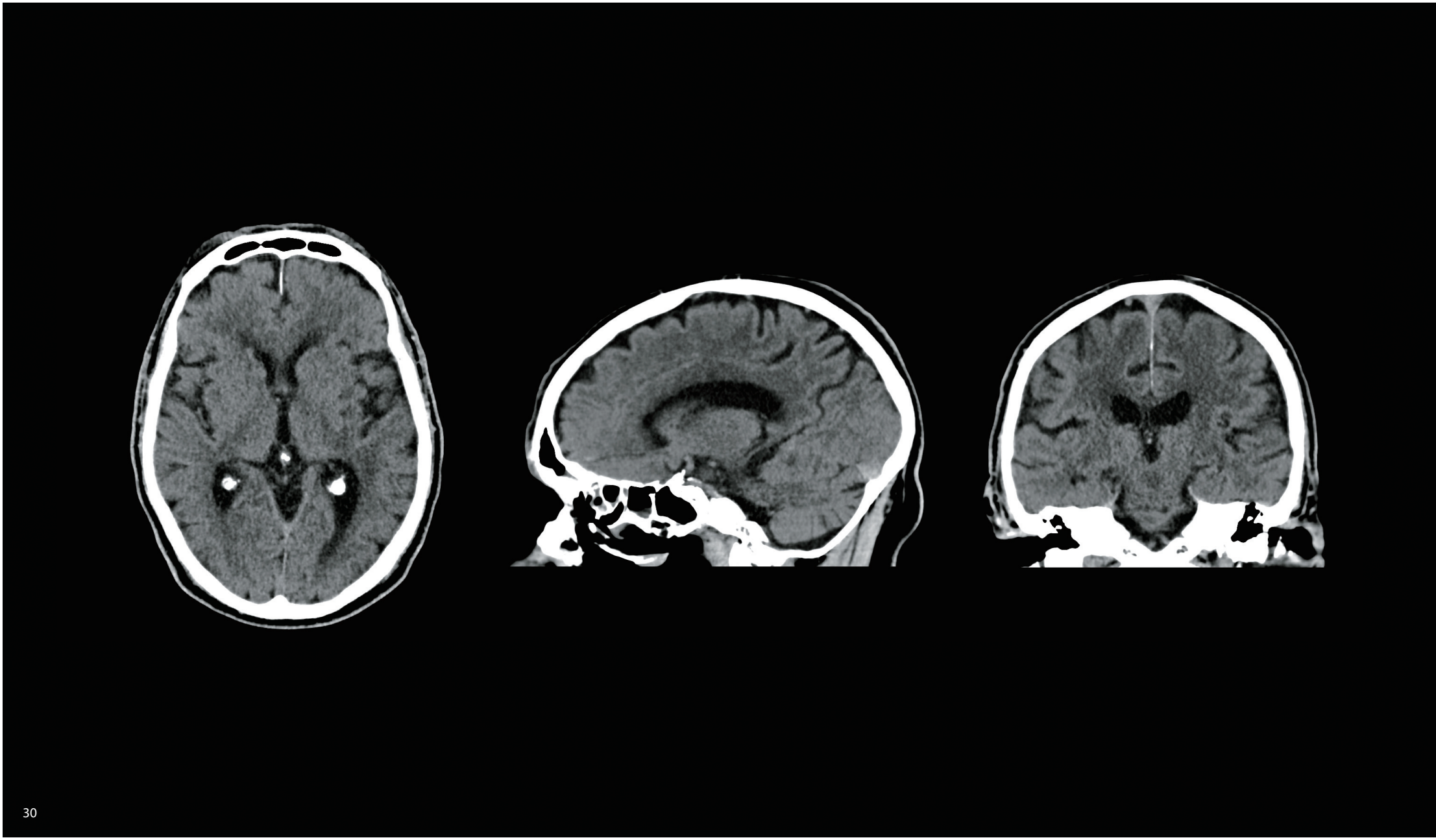
With only 2.0 dB above ambient noise level, the system's console is silent, providing radiographers with a calm workspace.



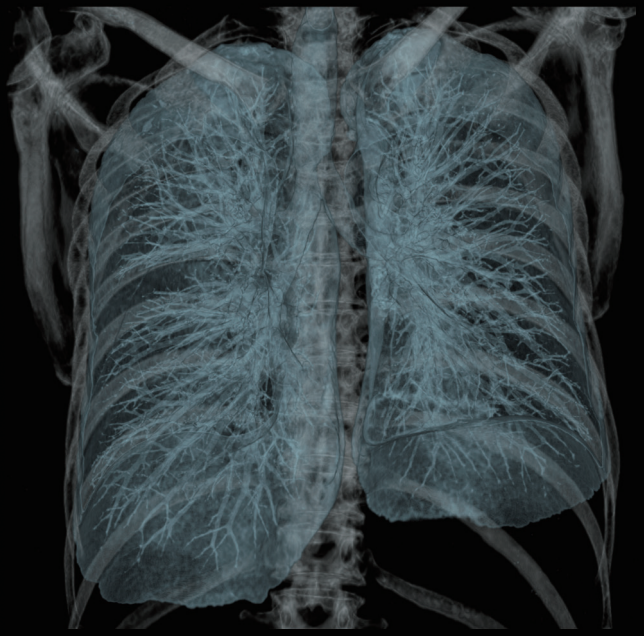
With a minimum installation space of just 14.8 m²*, Aquilion Prime SP provides you more space to work in.

*With short couch

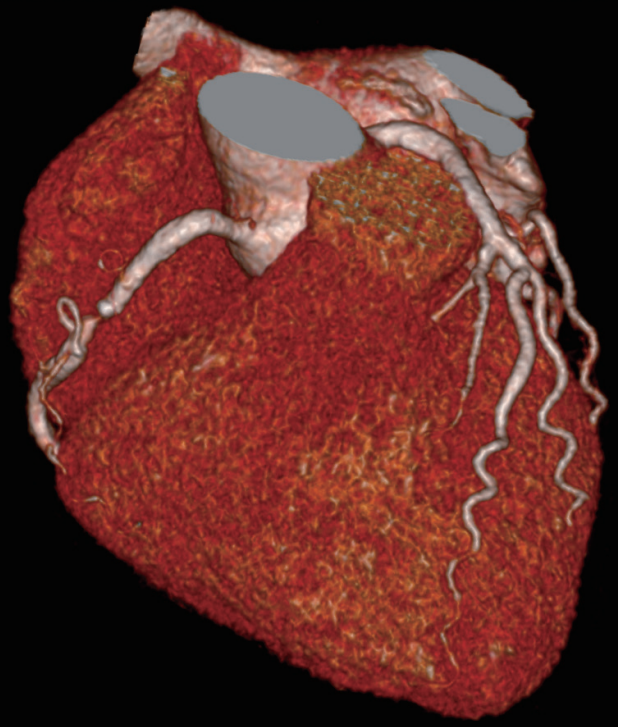
Brain



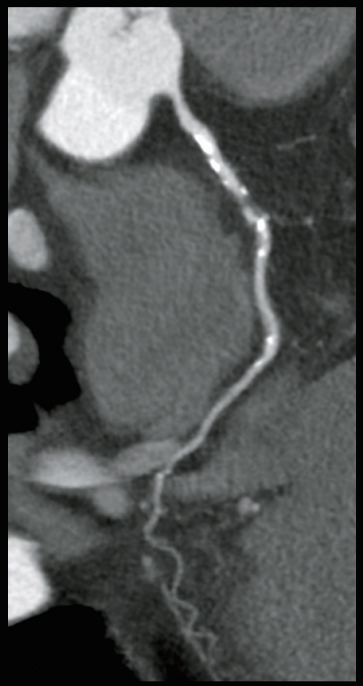
Chest



Cardiac



RCA



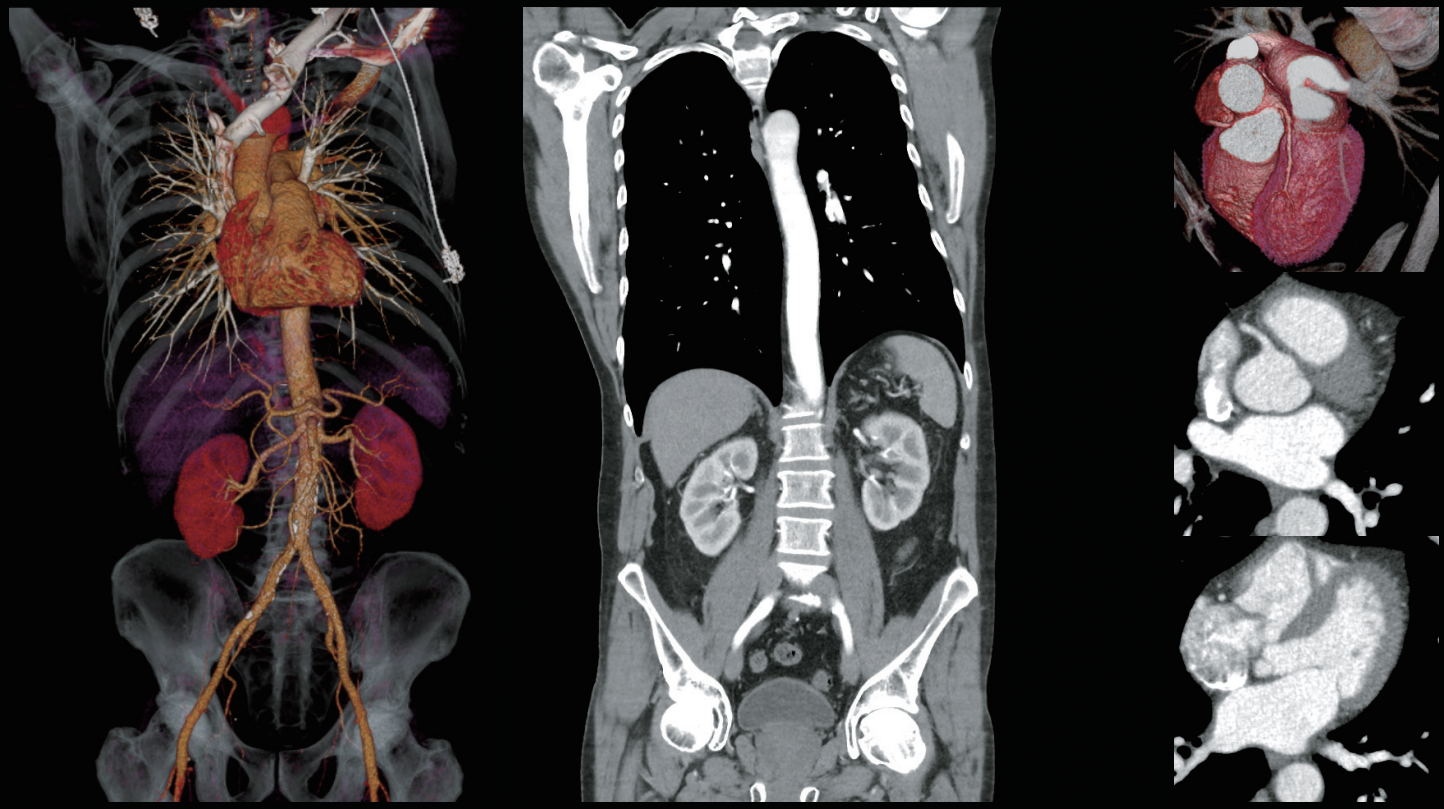
LAD

Cx

Upper Chest
Non-Gated

Heart
ECG-Gated

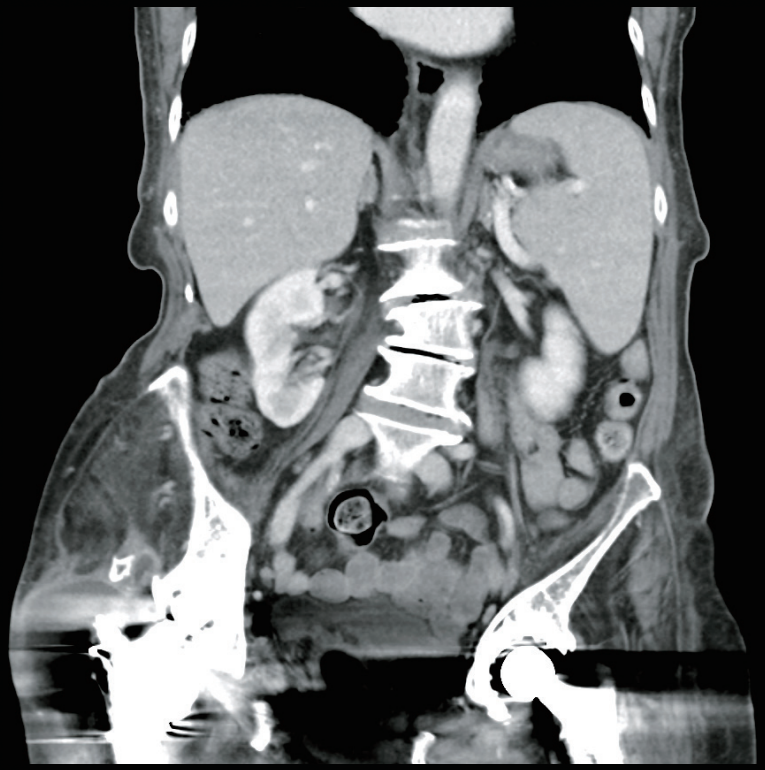
Abdomen
Non-Gated



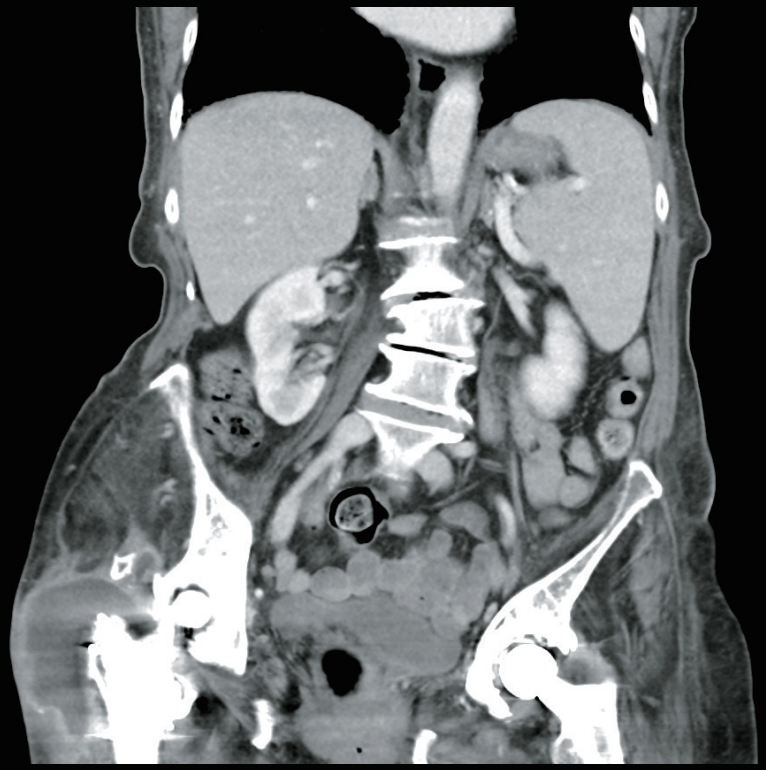
TAVR planning scan with vHP 3 phase for optimal gating

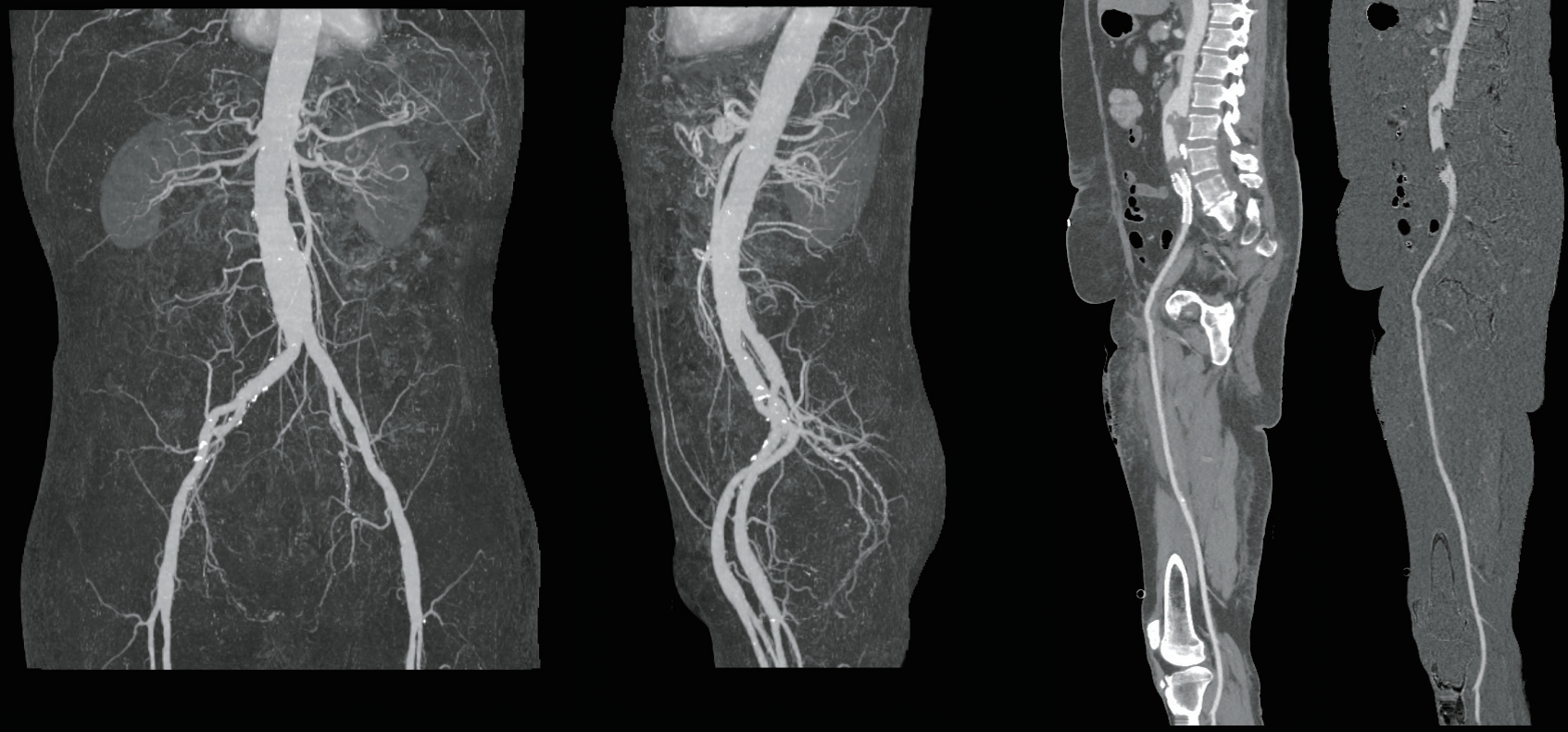
Body

Original



SEMAR

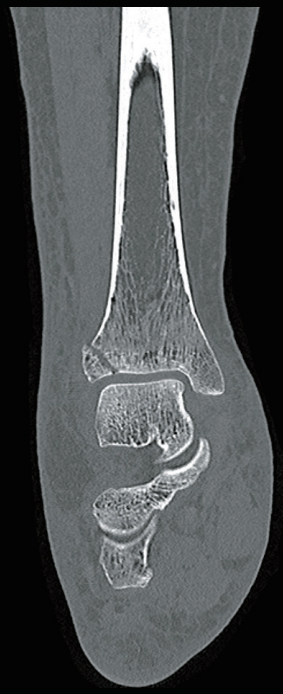


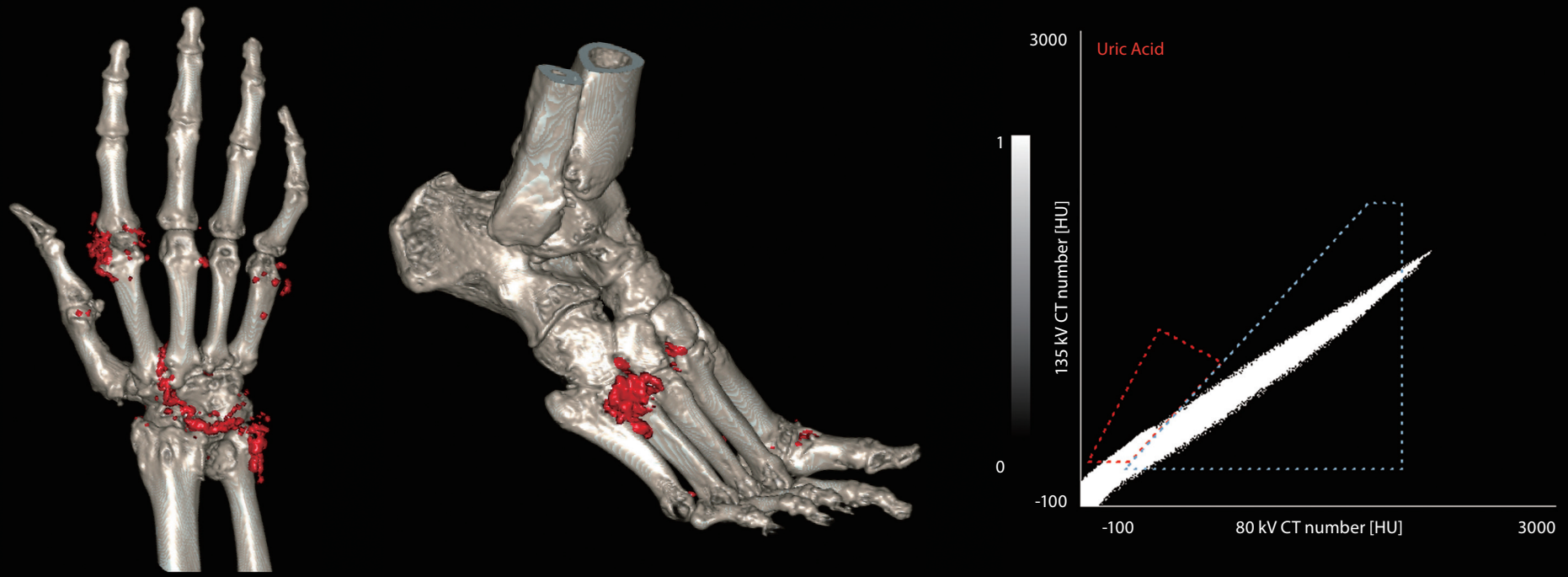


SURE Subtraction Angio* with automated bone, calcium and stent removal

*Option

Musculoskeletal





Dual Energy* mono-sodium urate visualization

*Option

Prime SP
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Main specifications

Detector		PUREViSION detector technology
		80 rows of 0.5 mm
Gantry	Rotation time	0.35 s
	Generator	72 kW
	Bore aperture	78 cm
	Tilt	± 30°
Patient couch	Max. load	220 / 315 kg*2
	Max. scan range	150 – 200 cm*2
Reconstruction speed	Helical	50 fps / 70 fps*1
Reconstruction	Deep learning reconstruction	AiCE*1
	Iterative reconstruction	AIDR 3D Enhanced
	FOV	500 mm, 700 mm*1
Installation	Power capacity	100 kVA / 110 kVA*1
	Min. installation space	14.8 m^2 (short couch)
Image quality	Spatial resolution	21.5 lp/cm at MTF 0%*3

*1 Option
*2 Depend on System Configuration
*3 For reference

Disclaimer: Any reference to X-ray exposure is intended as a reference guideline only. The guidelines in this document do not substitute for the judgment of a healthcare provider. Each scan requires medical judgment by the healthcare provider about exposing the patient to ionizing radiation.
In clinical practice, the use of the AIDR 3D feature may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

Due to local regulatory processes, some of the products included in this brochure may not be available in each country. Please contact your sales representative for the most current information.

Aquilion™ Prime SP

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