



# REVOLUTION CT

Uncompromised.



The ability to explore inside the human body non-invasively is a modern day miracle. A miracle made possible for millions of people through work performed by CT imaging professionals and physicians like you.

As with any technology that advances over time, sometimes what's needed is more than just another step. We reach a point where only a great leap can take us where we need to go.

Every patient's need is different. What if your CT could address the needs of all your patients, even the challenging ones? What if your CT could help you deliver clinical excellence across all of your departments?

# IT'S TIME FOR A REVOLUTION.



# INTRODUCING REVOLUTION CT.

Uncompromised image quality and clinical capabilities across all of your clinical areas through the convergence of coverage, spatial and temporal resolution – all in one.

# WHERE THE ART OF INTUITION MEETS THE SCIENCE OF IMAGING.

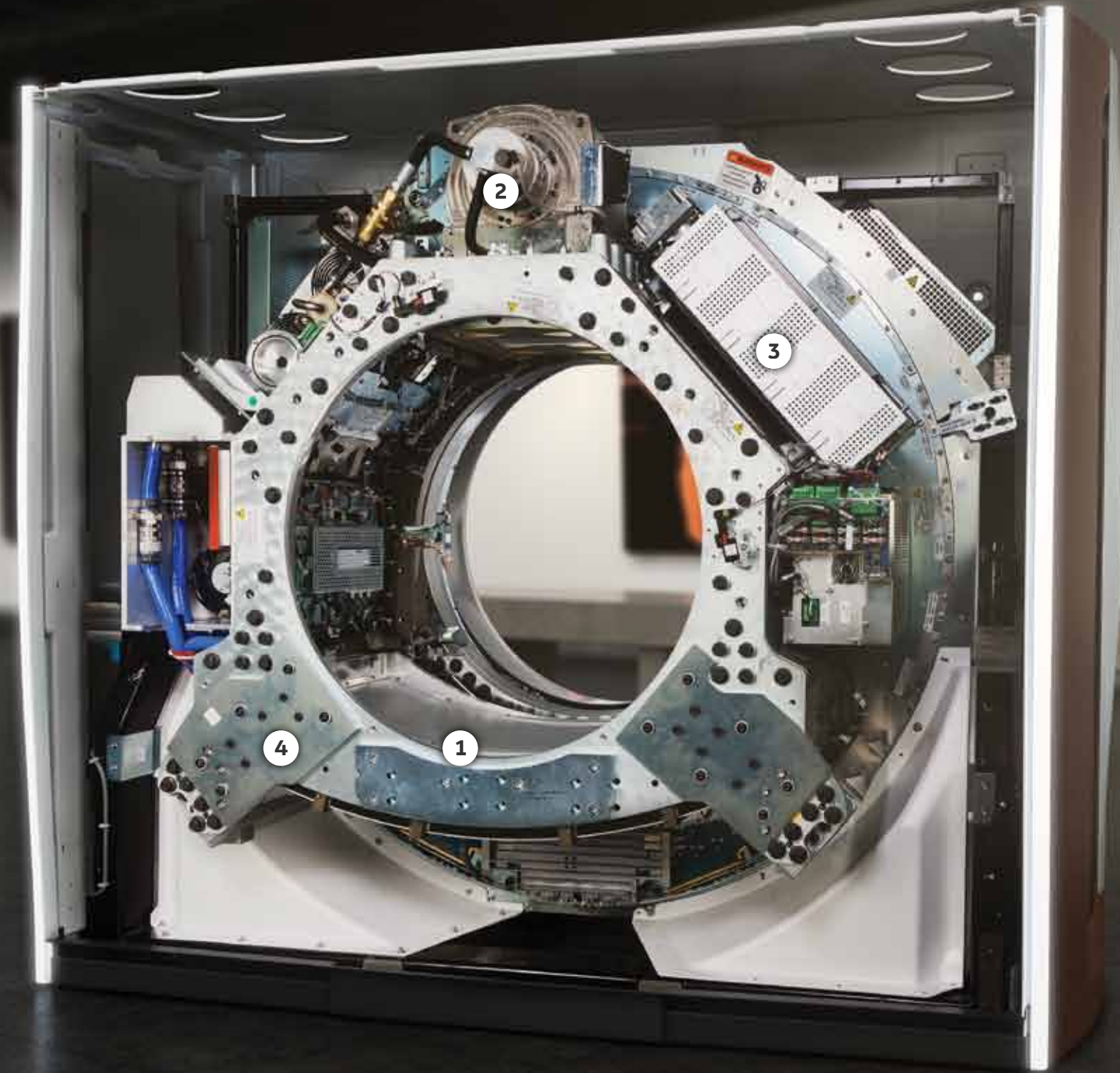
You leverage the art of your diagnostic intuition and the power of CT technology to convert black and white images into a confident diagnosis. To help you do this, we've developed a revolutionary CT platform that creates uncompromised images enabled by the latest technological and scientific advances. Images that may even be described as works of art.

Revolution™ CT is designed from the ground up to meet the needs of all your physicians by providing leading technologies for whole organ coverage, image quality and speed.



# TECHNOLOGY ENGINEERED TO WOW.

Revolution CT features a unique image chain hardware with Volume HD reconstruction and next generation ASiR-V™ technology to enable excellent image quality across the entire 160 mm coverage, while reducing dose up to 82%<sup>1</sup>.



1 Gemstone™ Clarity Detector for 160 mm detector coverage.

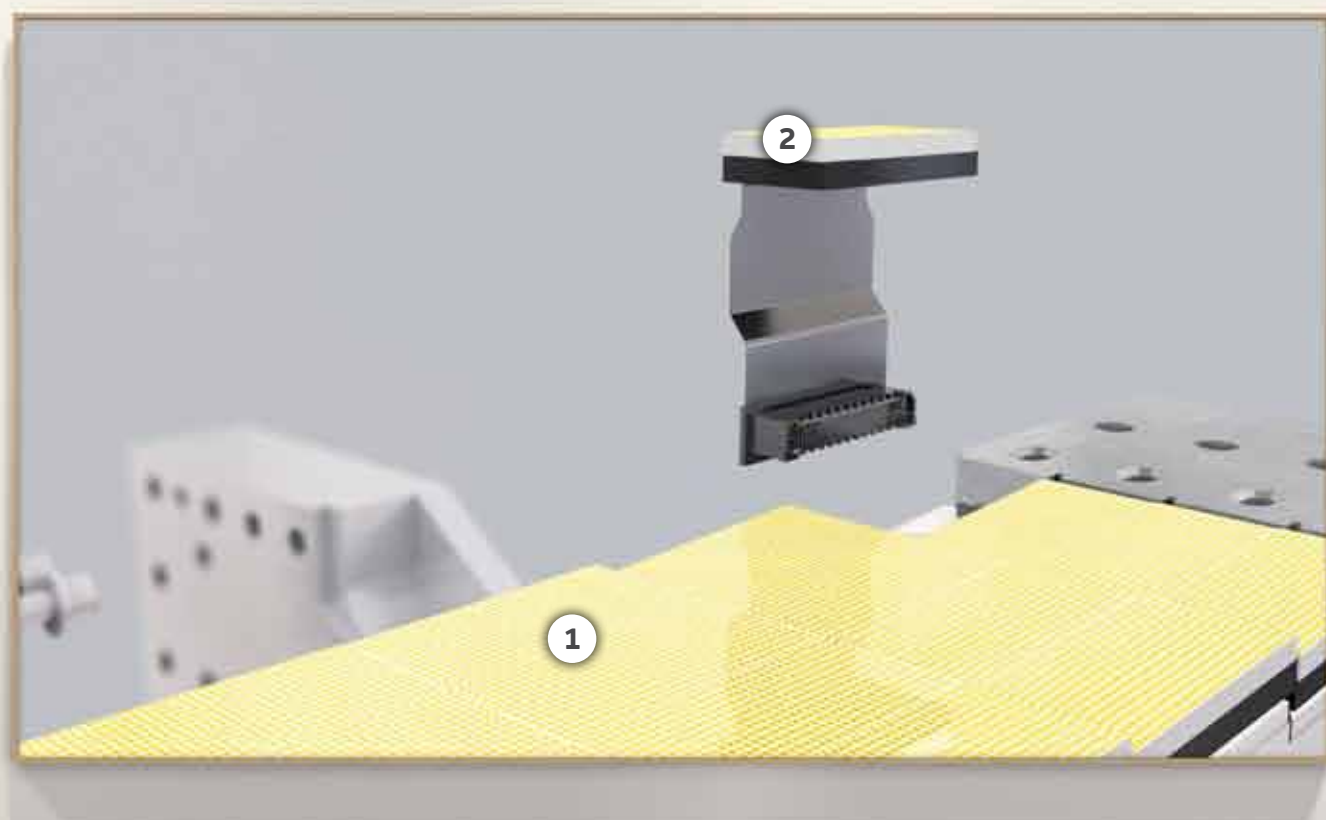
2 New tube for improved spatial resolution and consistent beam quality across the full 160 mm Z-axis coverage.

3 New generator to support ultra-fast kV switching.

4 Best effective temporal resolution enabled by 0.28-second rotation speed combined with intelligent motion correction for excellent cardiac imaging at any heart rate.

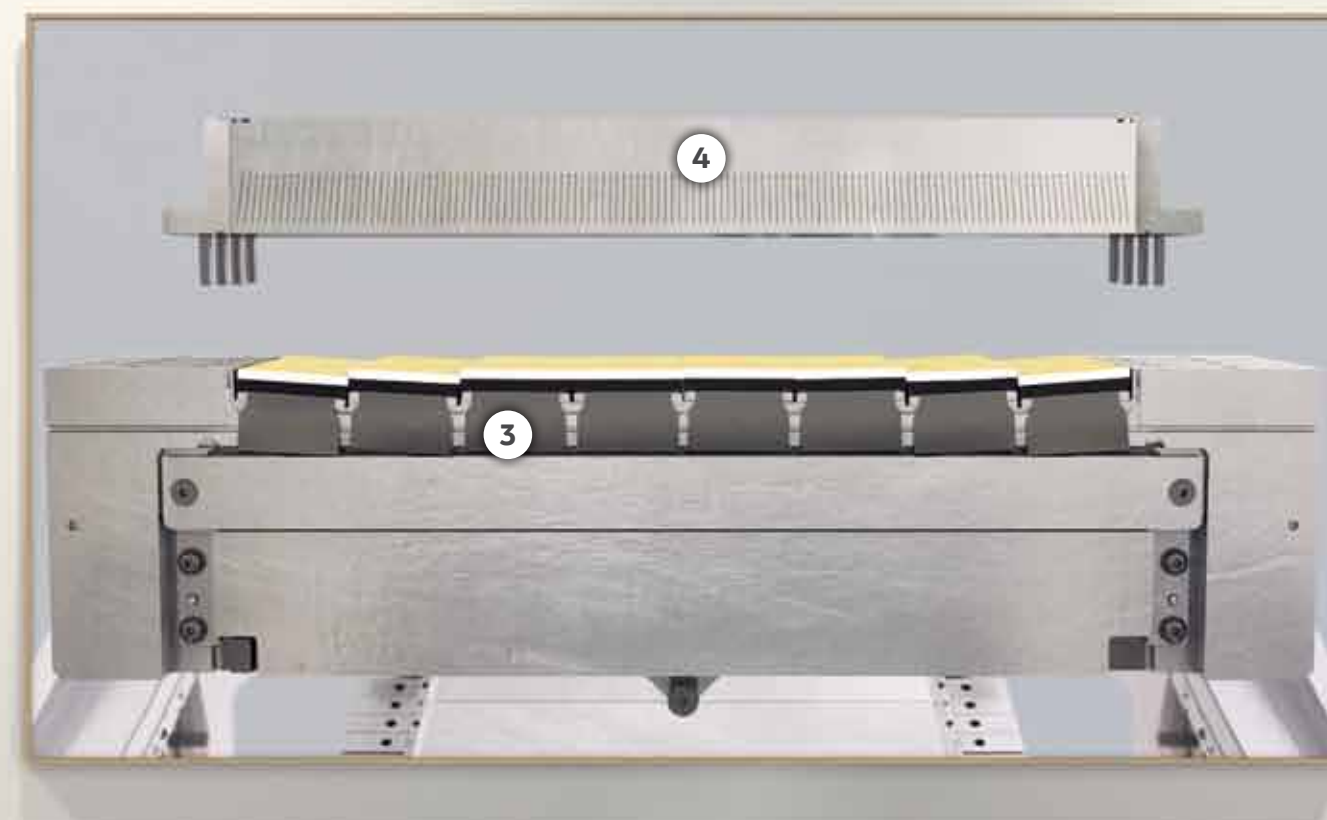
# NEXT GENERATION DETECTOR.

The groundbreaking Gemstone Clarity Detector enables 160 mm detector coverage with best-in-class spatial resolution<sup>2</sup>.



**1** With the industry's fastest scintillator, the Gemstone Clarity Detector enables high definition imaging and ultra-fast kV switching.

**2** Miniaturized detector modules are designed to reduce electronic noise by 25% which may improve image quality and reduce artifacts in low signal conditions, as may be encountered in large patients.



**3** Revolution CT utilizes a unique, focally aligned detector design to overcome limitations such as cone beam artifacts associated with wide coverage.

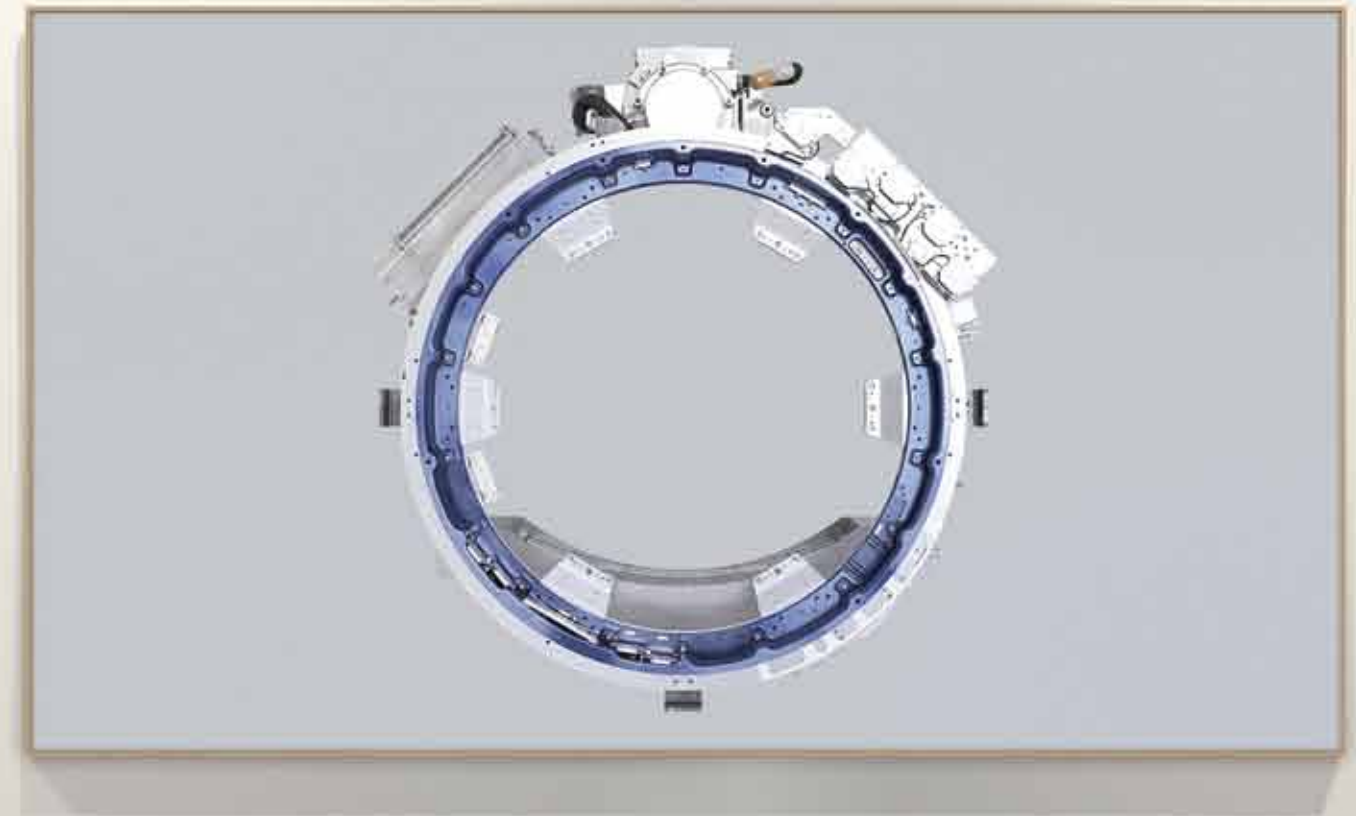
**4** A proprietary 3D Collimator ensures IV contrast uniformity and minimizes scatter and beam hardening artifacts associated with wide coverage systems – it reduces scatter to primary ratio by more than 50% compared to a 160 mm system with a 1D post patient collimator.

# NEXT GENERATION PLATFORM.

The Revolution CT gantry platform has been designed from the ground up to enable routine performance at the fastest rotation speeds.



Whisper Drive system to reduce audible noise during gantry rotations by more than 50%. Future proof platform tested to support 0.2 sec/rotation, 70 g of force, and ultra-fast kV switching.



Contactless slip ring to transfer data to and from the rotating side of the gantry to the stationary side through RF technology at 40 Gbps. Induction based, brushless slip ring to reliably transfer high voltage power.

# MAKING ADVANCED EXAMS ROUTINE AND ROUTINE EXAMS ADVANCED.

Thanks to its innovative design, Revolution CT will improve routine exams and enable you to deliver breakthrough clinical applications for all your physicians and your most challenging patients.

Make your routine exams advanced with best-in-class 0.23 mm spatial resolution<sup>2</sup> and built-in artifact reduction.

Capture the whole heart in a single beat, in high definition, with motion-free coronary images at any heart rate. One-beat acquisition for calcium scoring, coronary imaging or comprehensive cardiac assessment can be achieved with or without beta blockers.

Flexible scan modes to enable precise TAVR planning, delivering low radiation and contrast dose<sup>3</sup>.

Perform whole-organ dynamic perfusion studies of the heart, brain, liver, kidneys and other organs and tissues with up to 16 cm of coverage with uniform IV contrast. The flexible collimation and sampling rate minimizes dose and is particularly beneficial in localizing anatomy of interest.

Whole organ coverage enables 4D imaging for all anatomies to visualize vascular flow, organ motion or kinetic properties.

Deliver rapid and comprehensive trauma assessment thanks to the wide detector, fast table speed at up to 300 mm/sec and better access to patients through the wide 80 cm bore.



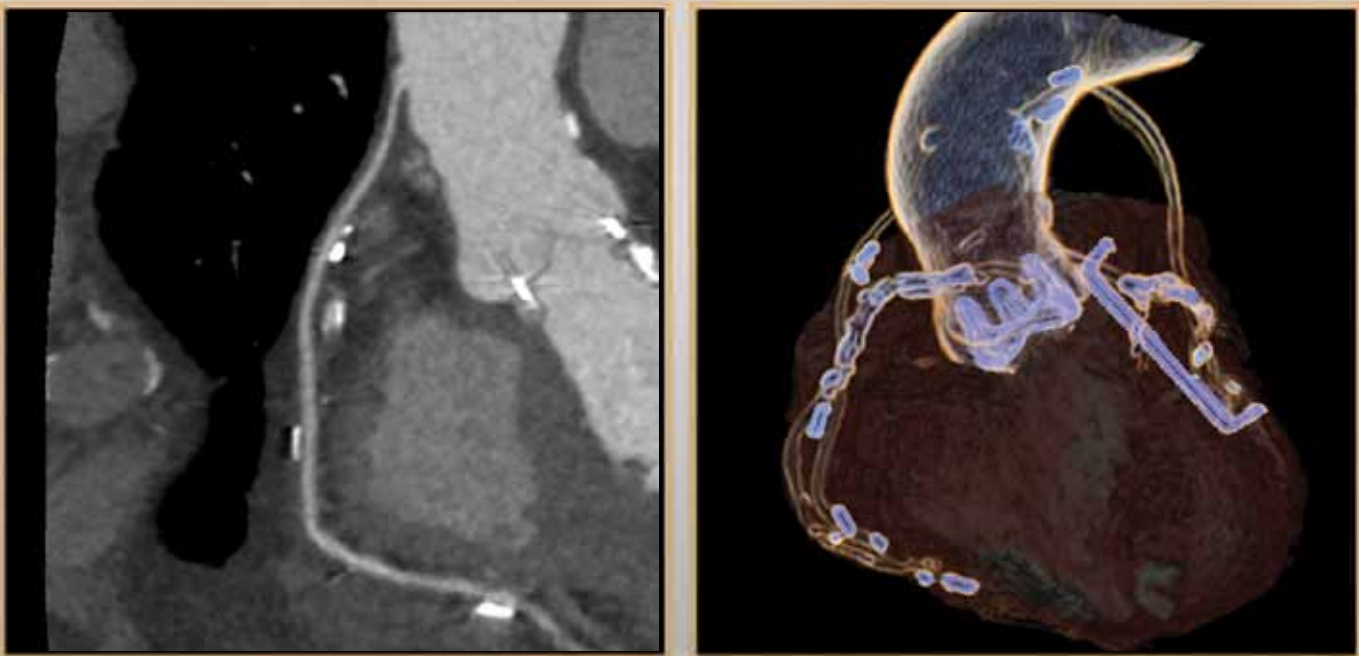
# CARDIAC IMAGING.

One-beat, low dose, high definition, motion-free, at any heart rate.



80 kV, 350 mA,  
69 bpm, BMI 21,  
0.6 mSv

One-beat, low dose, high definition, motion-free - even with challenging patients.



100 kV, 400 mA,  
79 BPM, 24 BMI,  
3.2 mSv

One-beat, low dose, high definition, motion-free - even with challenging patients.



100 kV, 325 mA, 42-145 BPM,  
29 BMI, 1.2 mSv patient with  
irregular heart rate

Comprehensive cardiac assessment: coronaries, myocardial perfusion and function in a single exam.

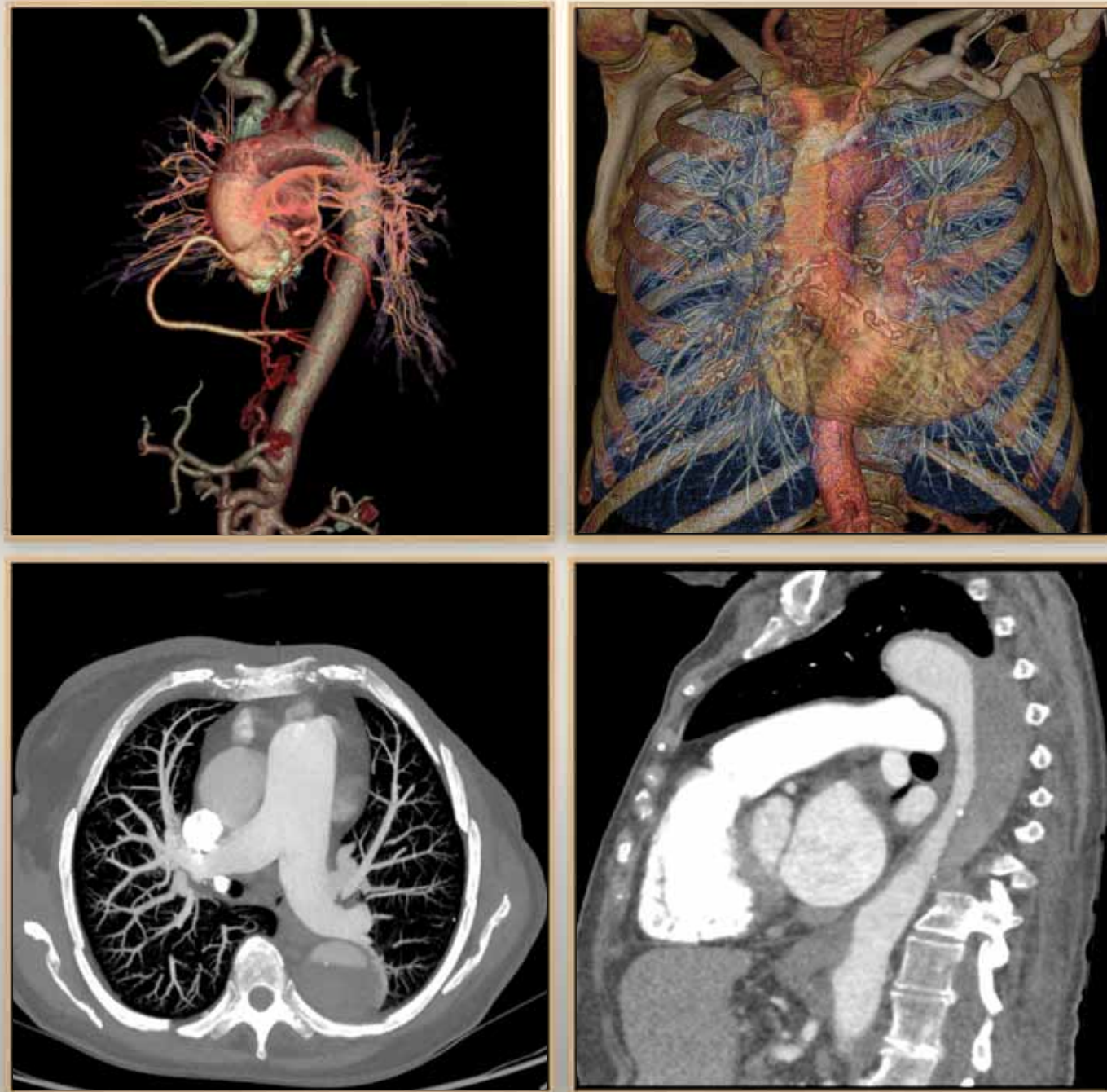


100 kV, 450 mA  
54 BPM, 28 BMI,  
1.6 mSv

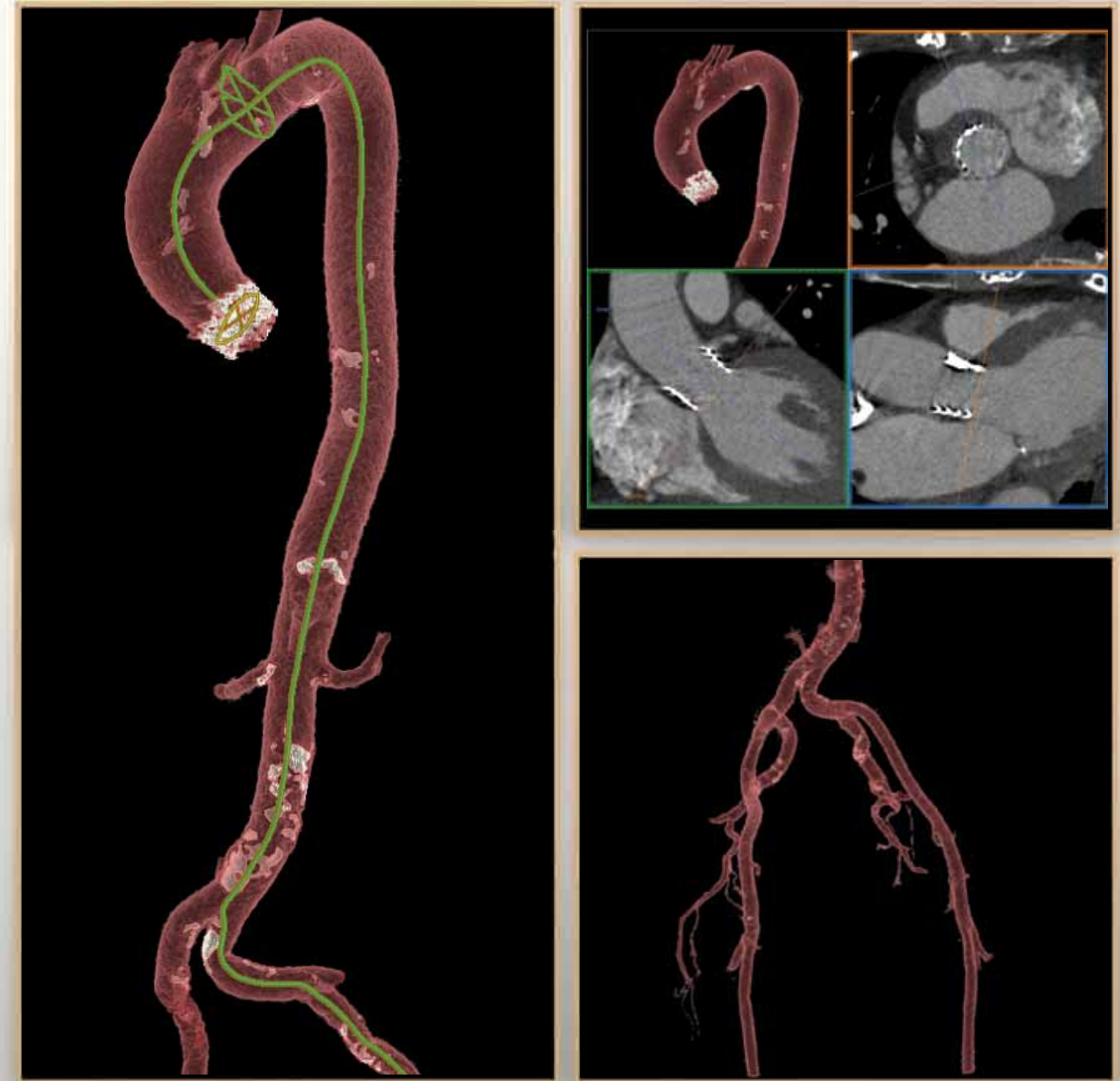
Images reconstructed using SnapShot™ Freeze.

# CARDIOVASCULAR IMAGING.

Robust, high definition triple rule out study for every patient with motion-free coronaries at low dose and a minimal breath-hold.



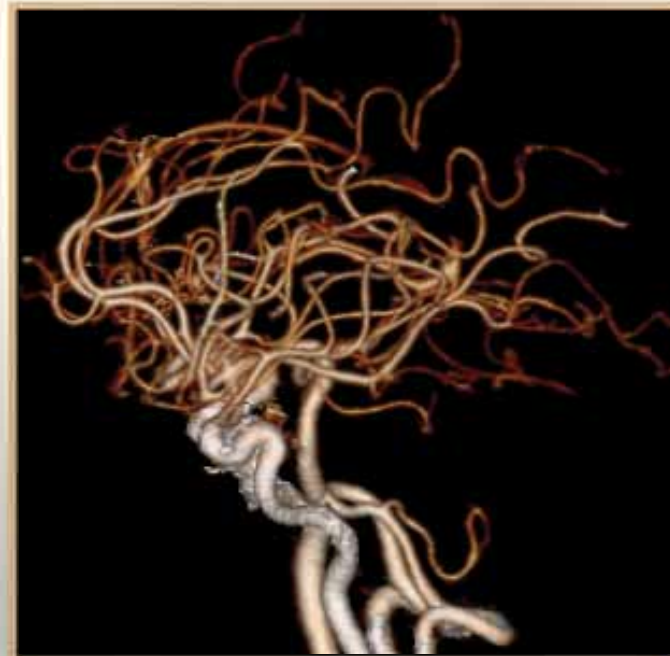
Flexible scan modes to enable rapid and precise TAVR planning, delivering low radiation and contrast dose<sup>3</sup>.



# NEURO IMAGING.

Routine low dose head imaging in less than a second with significantly reduced artifacts.

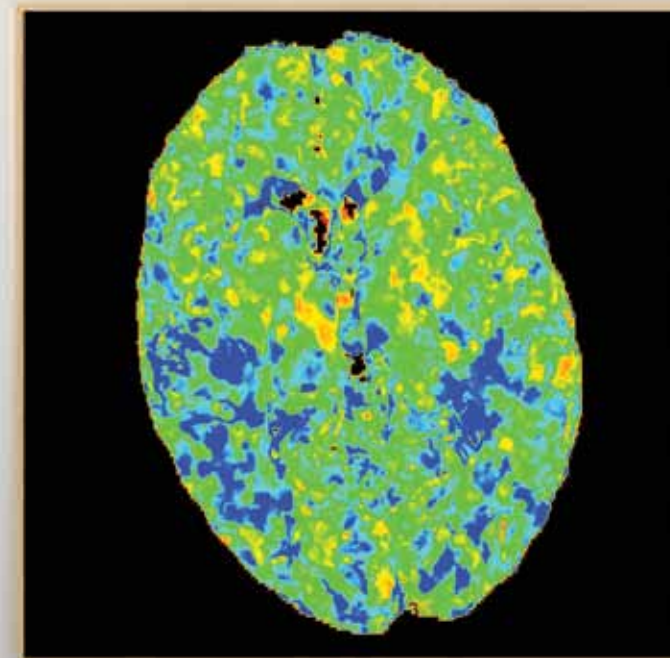
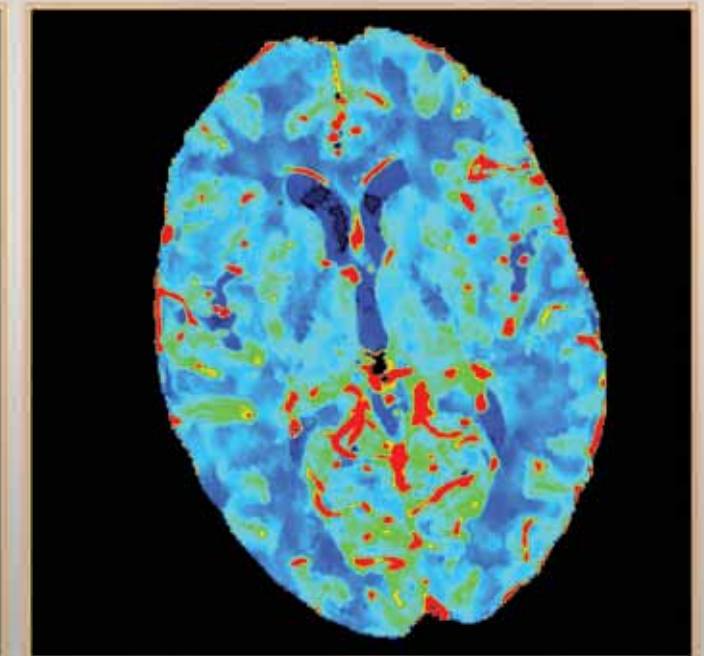
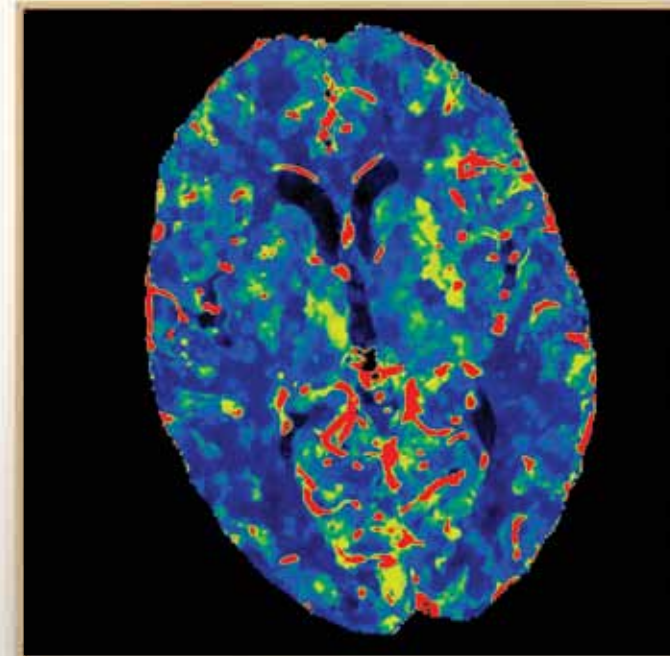
High definition CT angiography.



Rapid, comprehensive stroke assessment:

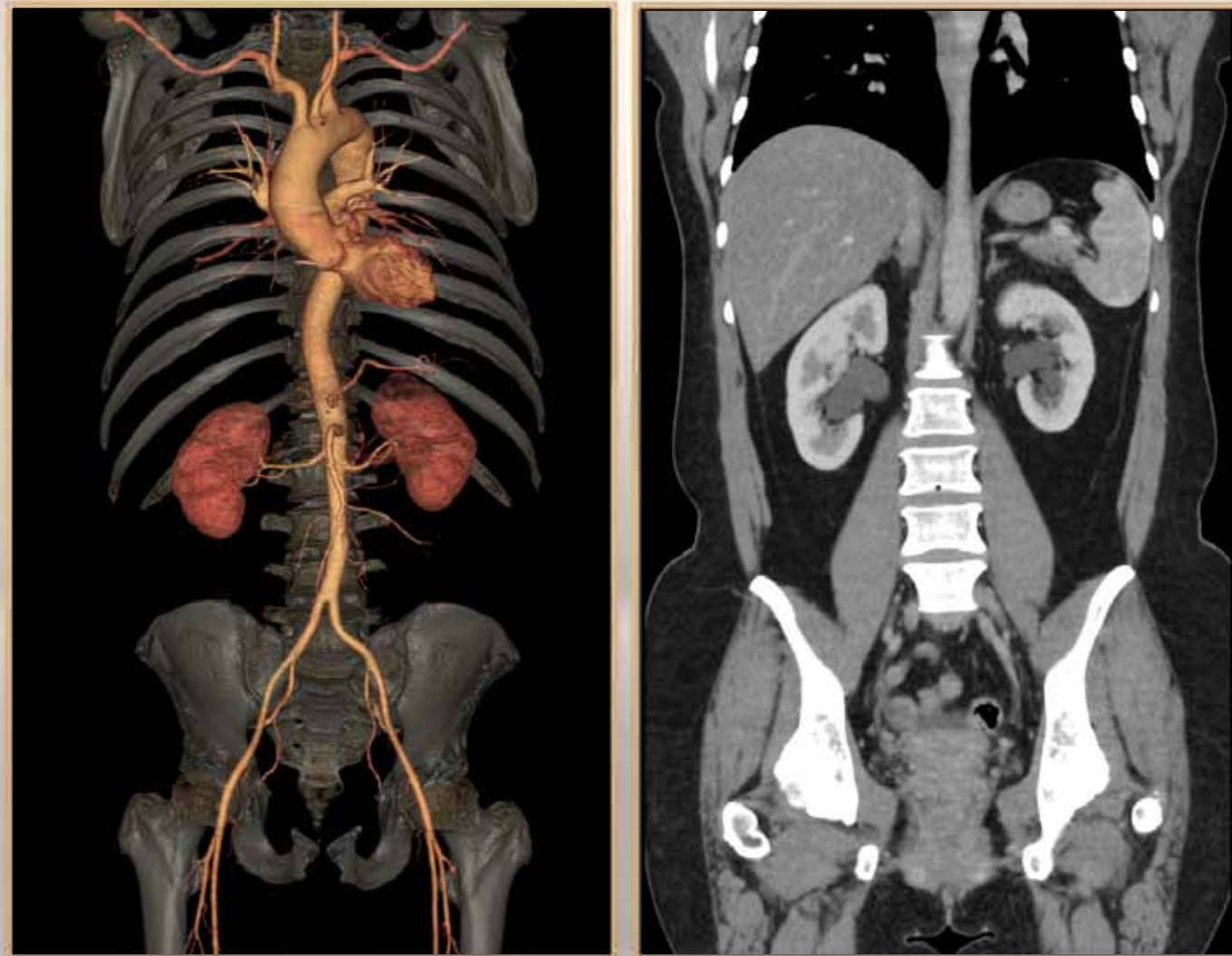
One exam for whole brain perfusion and dynamic CTA at a very low dose.

Personalized wide coverage without table motion and flexible sampling for low dose perfusion.

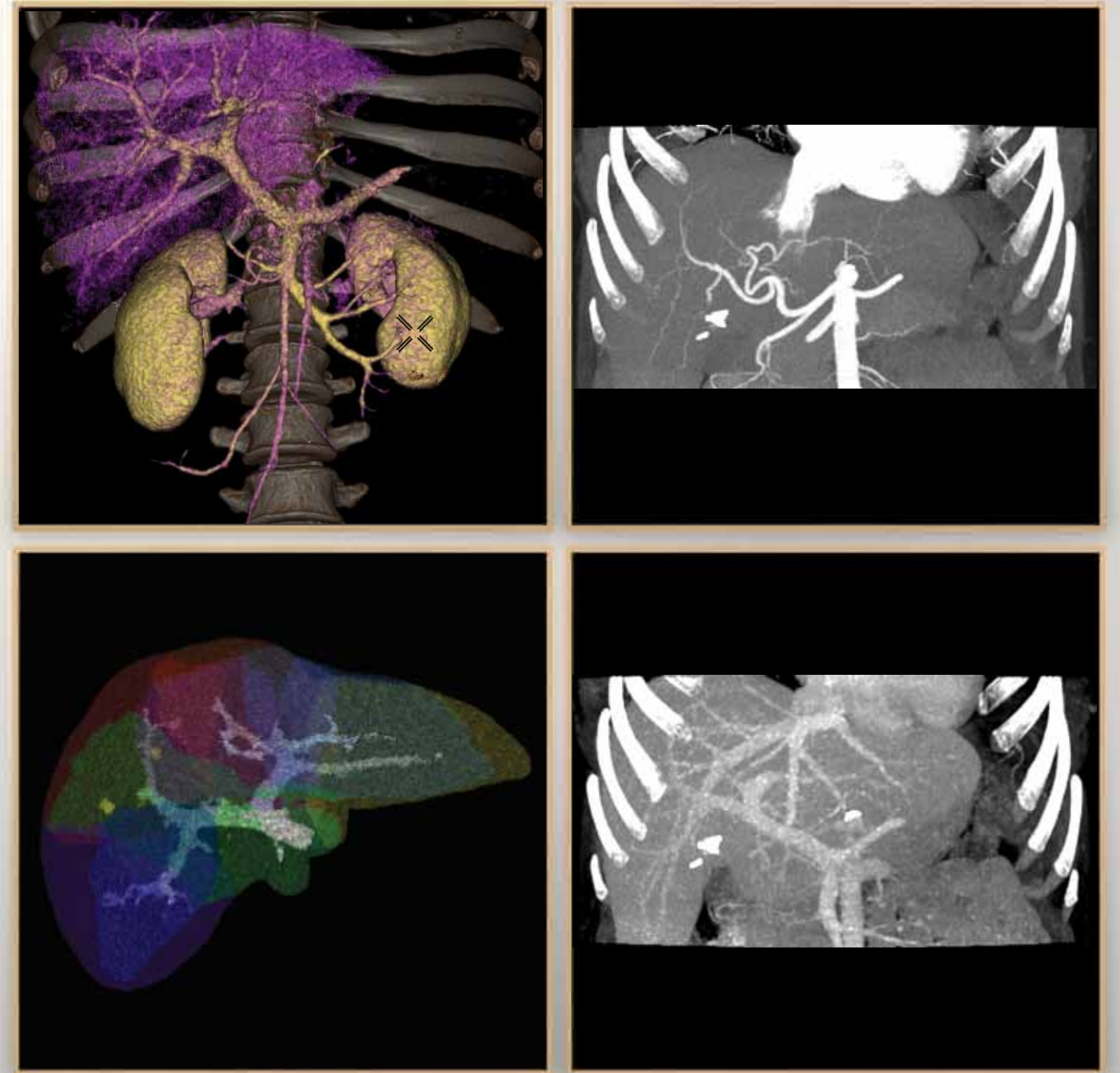


# BODY IMAGING.

Fast body scans with excellent image quality using multi-volume axial scanning with flexible collimation.



Dynamic imaging of the whole liver, kidneys and pancreas with variable sampling for perfusion and vascular flow analysis.

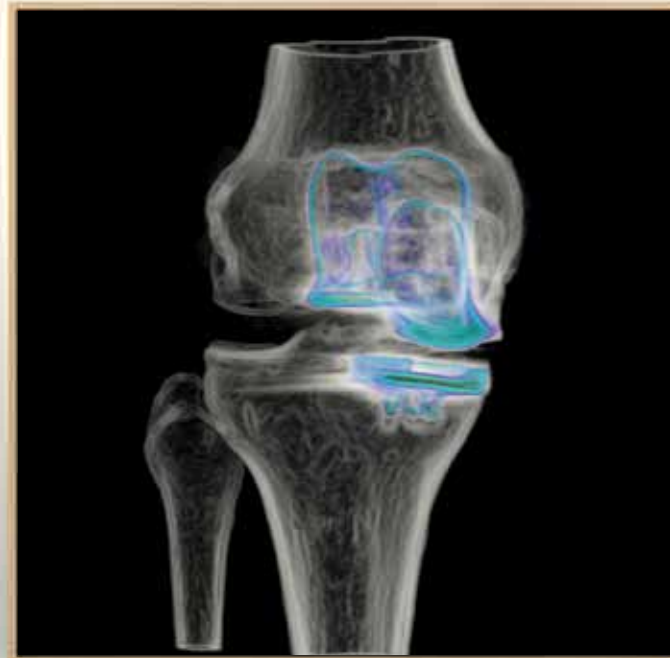


# MUSCULOSKELETAL IMAGING.

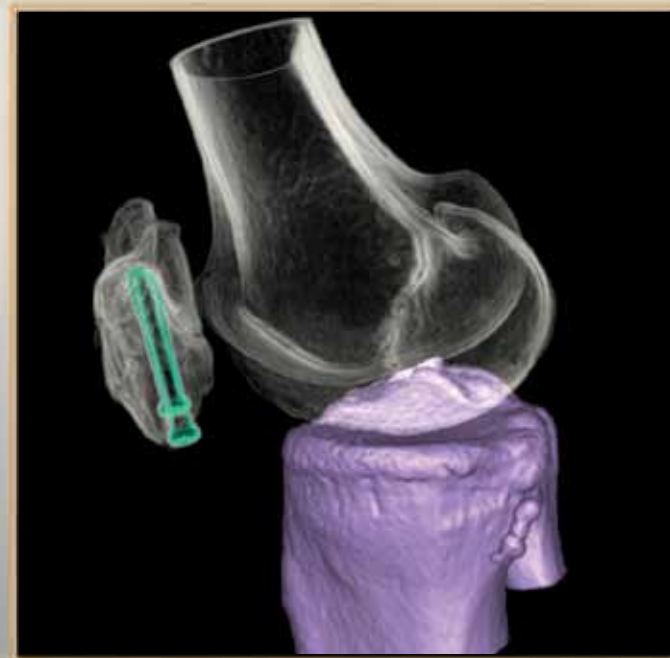
High definition bone imaging.



4D kinetic study to assess joint articulation through wide coverage dynamic imaging.



High definition bone imaging with significantly reduced artifacts from screws and metal.



# DESIGNED FOR RAPID TRAUMA ASSESSMENT.

Revolution CT helps you be prepared for the unpredictable with a comprehensive suite of dedicated trauma tools for patient setup, scanning and image review.

Better access to patients with a wide 80 cm bore.

Rapid setup with emergency department presets and scan modes.

Rapid scanning with automatic patient positioning and in-room scan start.

Ultra-fast speed enabled by wide coverage acquisitions, combined with fast table speed, reduces the effect of breathing and other motion.

Instant access to images with real-time reconstruction.



# DELIVER BETTER CARE AT A LOWER DOSE.

Revolution CT features the latest Smart Dose Technologies designed to help you acquire high quality images using lower doses of radiation. Smart Dose Technologies contribute to a more accurate diagnosis and lower exposure for patients across routine and advanced exams, including dynamic acquisitions for perfusion and 4D studies.

## Integrated ASiR-V

ASiR-V reconstruction technology reduces noise even at very low signal levels. This technology is designed to deliver reduced noise levels, improve low-contrast detectability and routinely reduce dose up to 82% for patients of all ages<sup>1</sup>.

## Pediatric imaging

Sedation free and minimal breath hold at a very low dose for pediatric patients. Whole abdomen and pelvis scanning in less than one second.

## Organ Dose Modulation

The system can also automatically modulate X-rays to reduce dose to radiation-sensitive organs and anatomical areas such as the eyes and the breasts without compromising image quality.

## 70 kV scanning

This enables the capability for low dose protocols, which are especially suitable for pediatric imaging.



# PRIORITIZE THE PATIENT EXPERIENCE.

Your patients expect more. They want quick, high quality results in a low stress environment. By giving more thought to the aesthetics that the patient sees, hears, and feels, Revolution CT can help your scan room feel less clinical and more inviting. And the technology inside helps you deliver a confident diagnosis with patient safety in mind.

Deliver personalized patient information and videos via gantry displays.

Provide access and comfort to more patients with a wide 80 cm bore.

Minimize patient anxiety with powerfully quiet, split-second scanning enabled by the Whisper Drive gantry.

Lower radiation and contrast dose without compromising your image quality<sup>3</sup>.

Create a better patient environment with design features such as soft ambient lighting and a patient-centric bore pattern.





# A BETTER USER EXPERIENCE.

Welcome to the new Clarity Operator Environment. We took cues from the consumer devices you enjoy using every day and integrated them into a totally new, yet familiar user interface experience. With the latest in Smart Technologies, the new Clarity Operator Environment will provide you with more intuitive, guided acquisition workflow to simplify scan setup and enable more consistency across scans.

Find relevant protocols quickly with simple keyword search.

Adapt to the needs of your patient by adding or deleting an exam series with protocol cart.

Tabbed workflow allows quick access to exams from multiple patients and alerts the user when all tasks are complete.

Personalizes scan parameters based off patient scout.

Plan-ahead task lists streamlines tasks such as reconstructions, image transfers and post-processing.



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<sup>1</sup>In clinical practice, the use of ASiR-V 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.

<sup>2</sup>Based upon internal test data comparing Revolution CT cardiac half-scan spatial resolution to data from Advanced CT Scanners for Coronary Angiography, ImpaCT Report CEP10043, March 2010, available at <http://www.impactscan.org>.

<sup>3</sup>When used in conjunction with fast table speed and kV Assist technology.

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From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

Imagination at work

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