

SOMATOM Force

Get two steps ahead with Dual Source CT

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SIEMENS
Healthineers

Expanding precision medicine

Healthcare institutions need to keep pace with global trends and their impact on care delivery. Societies are aging fast and demanding care that's geared to older and older patients. Obesity is creating new challenges for diagnostics and therapy. At the same time, the growing prevalence and cost of chronic diseases calls for innovative answers.

Radiology can play a key role in managing these issues. SOMATOM® Force, Siemens Healthineers' leading Dual Source CT system, keeps you at the forefront when it comes to acquiring more precise data and a deeper understanding of human health.

SOMATOM Force – Get two steps ahead with Dual Source CT



Get two steps ahead in clinical excellence

- Bring image quality to the next level – with free-breathing and powerful imaging
- Improve patient care – with kidney-friendly and ultra-low-dose scanning
- Make sound decisions – with 4D imaging at half the dose and dose-neutral Dual Energy



Get two steps ahead in workflow performance

- Position patients precisely – with FAST Integrated Workflow
- Accommodate the smallest to the tallest – with personalized scanning
- Zero-click postprocessing – with Rapid Results Technology



Get two steps ahead in expert leadership

- Advance your research – with professional tools
- Connect with peers and lead a global community
- Expand your capabilities and rethink your way of working

Get two steps ahead in clinical excellence

SOMATOM Force supports high-precision diagnosis, reliable therapy response evaluation, and improved care for every individual.



Bring image quality to the next level

Free-breathing imaging:

Motion blur and unwanted artifacts can obscure diagnostic image quality. Scanning with a native temporal resolution high enough for patients to breathe freely provides significant clinical benefits. Thanks to SOMATOM Force's extended coverage, you can scan an entire heart in approximately 150 ms. Combining an acquisition speed of up to 737 mm/s and a generator power of up to 2x120 kW, SOMATOM Force facilitates freezing motion at outstanding image quality.

Powerful imaging:

When the smallest details count – such as in the inner ear and bone imaging, or stent visualization – the quality of the entire imaging chain is essential. With its powerful Vectron™ X-ray tubes and the highly sensitive Stellar^{Infinity} detectors, SOMATOM Force is the ideal scanner for high-speed, large-volume coverage at outstanding image quality.



Lower kV, more protection

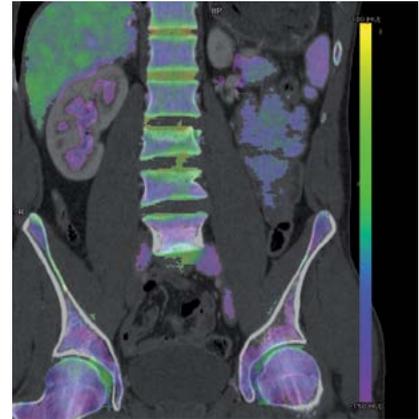
Reduce contrast with

low kV scanning:

SOMATOM Force allows you to routinely perform exams at 70–90 kV, even with adults. This may reduce the quantity of contrast media required. As a result, residual renal function can be maintained and the kidneys are better protected against nephrotoxic effects.

Ultra-low-dose scanning:

SOMATOM Force comes with the unique Tin Filter technology, which shields your patients from clinically irrelevant low-energy radiation. The result: You can deliver excellent results at dose levels comparable to conventional X-ray.



Make sound decisions

Precise and dose-neutral

Dual Energy (DE):

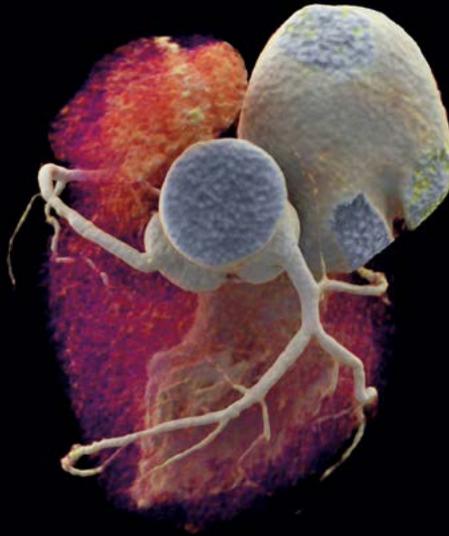
The reliable evaluation of patient-specific therapies can potentially improve patient outcomes and prevent costly, ineffective treatment. Dual Energy CT can add tissue and material information to morphology. Improved DE acquisition speeds of up to 258 mm/s and a much broader range of applications, for example, for obese patients, permit a more precise differentiation of tissue types in oncology, cardiovascular, and acute care cases.

4D imaging:

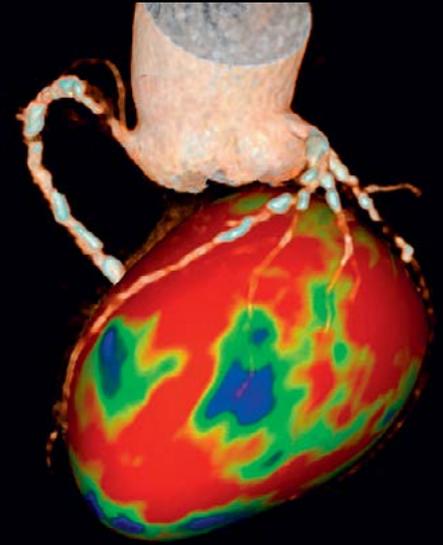
With diagnoses often stuck in a compromise between dose and data, the option to deliver high-quality yet dose-efficient 4D imaging can help make decisions more quickly and sustainably. 4D imaging adds functional information to morphology. With its Stellar^{Infinity} detectors, SOMATOM Force enables body perfusion suitable for use in clinical practice. The increased coverage allows for a perfusion range of up to 22 cm, which easily covers entire organs.



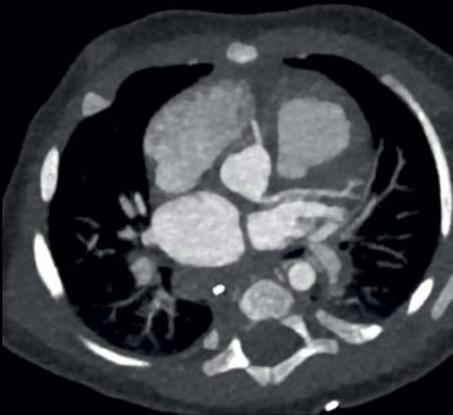
Precise and dose-neutral Dual Energy imaging significantly increases precision^{1,2}



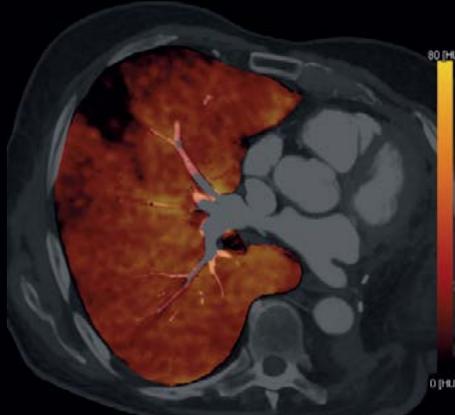
Sub-millisievert Turbo Flash cardiac imaging at 75-130 bpm – RCA irregularities without significant stenosis^{2,3}



Dynamic myocardial stress perfusion – combining diagnostic and functional imaging at low dose (43.08 mGy; 70 kV) allows the most efficient possible use of radiation dose⁴



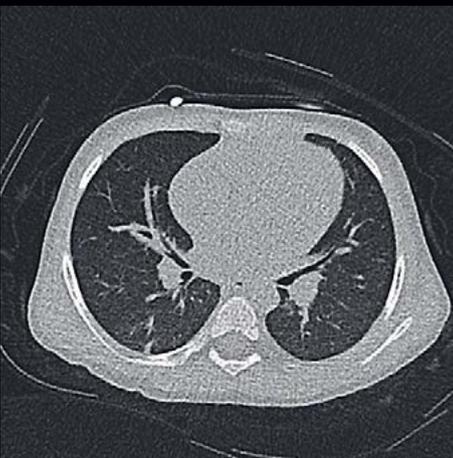
Visualization of coronaries in a 2-month-old free-breathing baby (1.16 mGy, 70 kV) at HR of 130 bpm⁵



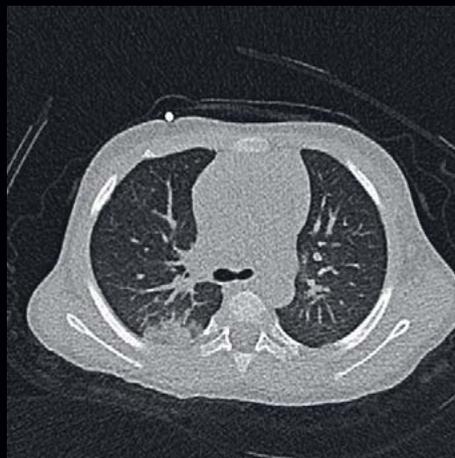
Precise Dual Energy tissue differentiation – lung perfusion⁶



4D imaging at half the dose (Eff. dose: 1.39 mSv)^{2,7}



Free-breathing and ultra-low-dose imaging (Eff. dose: 0.08 mSv)¹



Turbo Flash Mode covers 50 cm within 0.6 s even showing coronary arteries in the finest detail (HR: 38-214 bpm; CM: 40 mL)^{2,3}

Get two steps ahead in workflow performance



Position patients precisely – with FAST Integrated Workflow

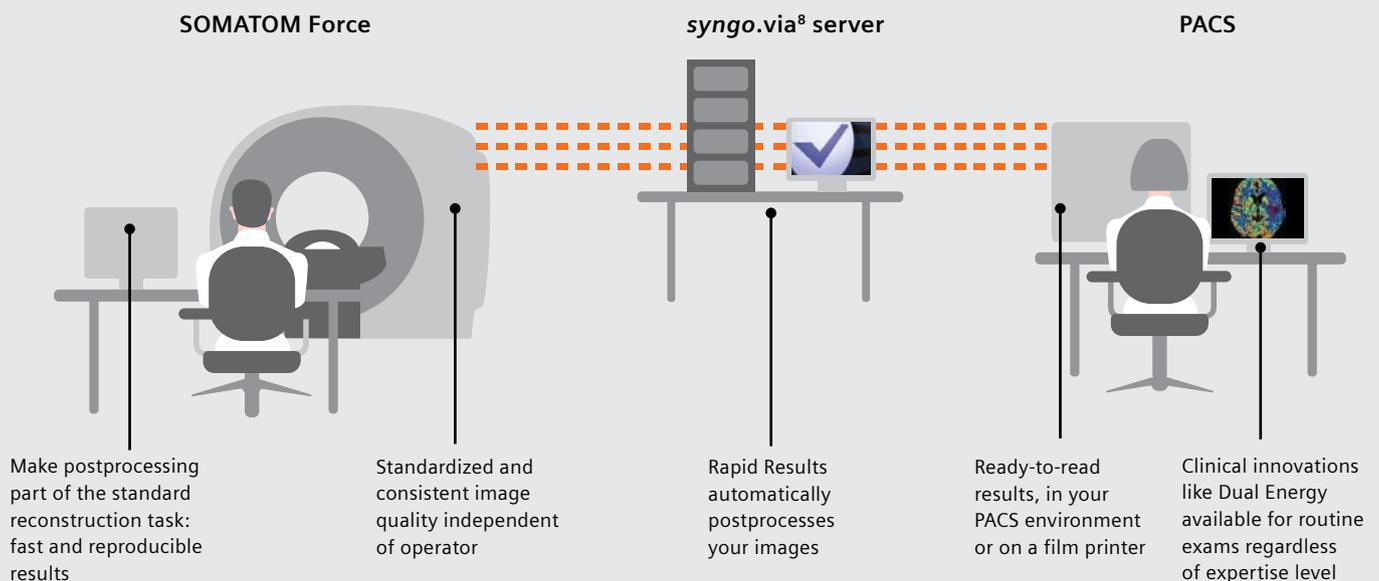
Accurate patient positioning is essential for safe, error-free CT imaging with no rescans and time loss. However, users are as individual as patients, and so the quality of results can differ enormously. With its game-changing FAST Integrated Workflow, SOMATOM Force helps technologists acquire the right body region at the right dose – in a reproducible way.



Accommodate the smallest to the tallest – with personalized scanning

No two patients are the same, and some aren't easy to scan – but referring physicians and ordering clinicians always expect precise results. With its outstanding speed, power reserves, and sensitivity, SOMATOM Force adapts to every need. At the same time, intelligent automation adjusts scan parameters to each patient size and shape.

Rapid Results Technology available with SOMATOM Force and *syngo.via*



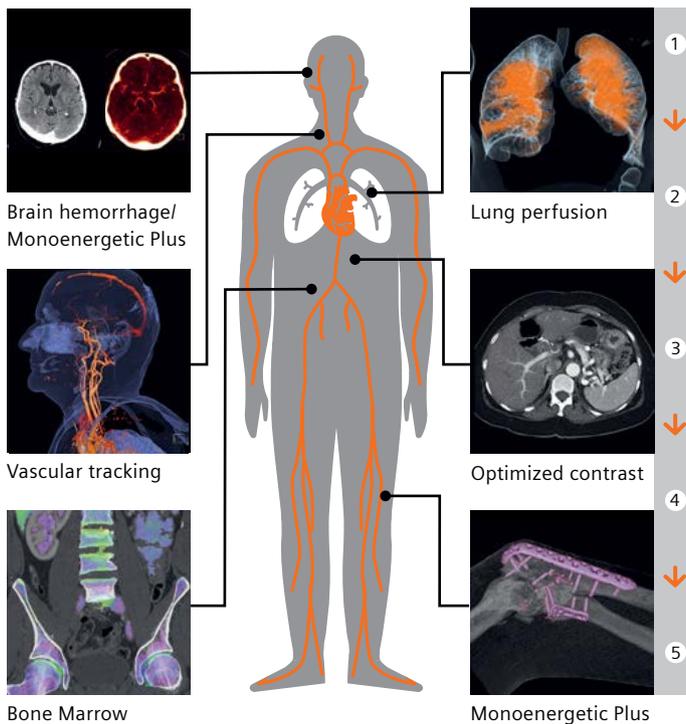
Get two steps ahead in expert leadership

Expand your capabilities and rethink your way of working

With Dual Source imaging, CT started to transform care delivery. One of the most prominent examples of change is trauma imaging. SOMATOM Force combines a unique range of Dual Energy technologies like fast Dual Energy acquisition, Virtual Monoenergetic, virtual non-contrast (VNC), Iodine Maps, and Bone Marrow images that enable fast, high-quality decision-making for diverse patients and exams.



Exploration of the role of quantitative imaging in trauma



- 1 Full-body scan, task-specific reconstruction
- 2 Organ- and function-specific images/analysis
- 3 Comparison to reference "normal" and clinical data
- 4 "Abnormal," injury, and disease detection
- 5 Decision support and result reporting

Technical specifications

Detectors:	2 × Stellar ^{Infinity} detectors with anti-scatter 3D collimator grid
X-ray tubes:	2 × Vectron™ X-ray tubes
Number of acquired slices:	384 (2 × 192) slices
Rotation time:	up to 0.25 s ⁸
Temporal resolution:	up to 66 ms ⁸
Generator power:	240 kW (2 × 120 kW)
kV settings:	70 – 150 kV @ 10 kV Steps
Spatial resolution:	0.24 mm ⁸
Max. scan speed:	737 mm/s ⁸ with Turbo Flash
Table load:	up to 307 kg/676 lbs ⁸
Gantry opening:	78 cm

Technology overview



Dual Source CT imaging with the revolutionary Vectron™ X-ray tube

- 1,300 mA @ 70, 80, 90 kV
- 0.4 × 0.5 (IEC) focal spot
- 70–150 kV in steps of 10 kV



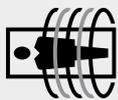
Dual Source CT imaging with the exceptional Stellar^{Infinity} detector

- With anti-scatter 3D collimator grid
- TrueSignal technology with full electronic integration
- Edge technology enabling the generation of 0.5 mm slices



66 ms “native” temporal resolution

- Independent of the heart rate
- An entire heart can be covered, in the end-systolic phase, in approximately 150 ms



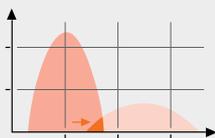
737 mm/s acquisition speed

- Reduce the need for sedation
- Fastest scan mode in the industry
- Freeze motion artifacts



Tin Filters

- Low-dose early detection
- Tin-Filtered topogram



50% less dose in dynamic imaging and 30% more energy separation in DE

- Effective separation of energy spectra
- Enables advanced Dual Energy applications such as Bone Marrow



FAST 3D Camera – part of FAST Integrated Workflow

- Precise isocentering
- Correct patient positioning
- Exact topogram



Adaptive 4D Spiral

- Advanced CT perfusion up to 22 cm
- Extended dynamic angiography up to 80 cm
- Adaptive Dose Shield



Precision Matrix with Auto Mode

- Multiple matrix sizes 512x512, 768x768 and 1024x1024
- Auto Mode intelligently selects the optimum matrix size based on the selected imaging parameters (FoV, recon kernel, etc...)

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey toward expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally benefit every day from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics, and molecular medicine, as well as digital health and enterprise services.

We're a leading medical technology company with over 120 years of experience and 18,500 patents globally. With about 50,000 dedicated colleagues in over 70 countries, we'll continue to innovate and shape the future of healthcare.

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³Courtesy of Baotou City No. 8 Hospital, Baotou, P.R. China.

⁴Courtesy of Peking University Medical College, Beijing, PR China.

⁵Courtesy of University of Karolinska, Solna, Sweden.

⁶Courtesy of University Hospital Calmette, Lille, France.

⁷Courtesy of University Medical Center Mannheim, Mannheim, Germany.

⁸syngo.via can be used as a stand-alone device or together with a variety of syngo.via-based software options, which are medical devices in their own right. syngo.via and the syngo.via-based software options are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

⁹Option.

Heart image on page 3:
Courtesy of University Hospital Calmette, Lille, France.

Vascular image on page 3:
Courtesy of University Medical Center Mannheim, Mannheim, Germany.

Bone marrow image on page 3:
Courtesy of University of Tuebingen, Tuebingen, Germany.

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