



SOMATOM Force

Get two steps ahead with Dual Source CT

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SIEMENS
Healthineers

Improving accuracy, advancing therapy results – and where CT can make a difference

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 is a Dual Source Computed Tomography (CT) system that keeps you at the forefront when it comes to acquiring more precise data and a deeper understanding of human health.

Introduction



SOMATOM Force – Get two steps ahead with Dual Source CT

Get two steps ahead in clinical excellence, workflow performance, and expert leadership. Our Dual Source CT (DSCT) scanner SOMATOM Force enables new levels of image quality, clinical outcomes, and ultimately precision medicine. Intelligent automation supports safe, standardized, and highly performant workflows – allowing reproducible precision. And thinking beyond today, you're connected to the future with an ever-growing expert community and exclusive access to our advanced research environment.

Get two steps ahead ...

... in clinical excellence



Based on its industry-leading imaging chain, SOMATOM Force supports high-precision diagnoses, reliable therapy response evaluation, and improved patient care for every individual.

... in workflow performance



The automated FAST Integrated Workflow supports reproducible image quality. High power, speed, and automated dose management help precisely adapt scanning parameters to any patient.

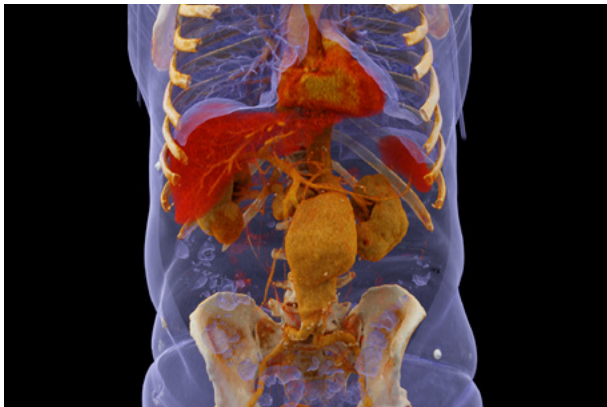
... in expert leadership



As a member of the global SOMATOM Force community, you have access to the *syngo.via* Frontier research environment and can share advanced clinical knowledge in a network of peer experts.

Three of the many things you can only do with SOMATOM Force

There's a broad range of clinical capabilities you can achieve exclusively with SOMATOM Force. Here are just three examples – enabling you to get two steps ahead.



Uncompromised Dual Energy imaging

SOMATOM Force takes spectral separation in Dual Energy scanning to a new level: In the case of an occult ruptured aneurysm, for example, Dual Energy can improve detection of bleeding and extent of rupture. This is based on the better contrast-to-noise ratio of a low-keV contrast-media-enhanced scan.



4D CTA up to 80 cm for therapy planning

In dynamic angio, SOMATOM Force can display challenging vascular situations like the one depicted – a case of peripheral vascular disease. Cinematic VRT from one phase is shown.



Free-breathing and ultra-low-dose imaging

Children are especially vulnerable to radiation and seldom hold still. With the unique Tin Filter and the industry's fastest scan speed, SOMATOM Force achieves high-quality ultra-low-dose imaging of the lung – in virtually motion-free images.

How can you increase certainty and reduce risks?

New risks due to aging, multimorbidities, or kidney problems are typical in societies with demographic shifts. This might pose new challenges to CT scanning in terms of image quality, patient care, and decision-making.



20% of patients have renal insufficiencies.¹ For them, contrast media exams can lead to complications. But how can you reduce the amount of contrast media without compromising image quality?

As a noninvasive method, FFR_{CT} can reduce risks in cardiology – but it requires exquisite image quality. How can you maximize this quality?



¹ Chronic Kidney Disease: CT or MRI? Morcos SK. *Appl Radiol* 2008; 37(5): 19–24. McDonald RJ, et al. Intravenous contrast material-induced nephropathy. *Radiology* 2013.



Get two steps ahead in clinical excellence

Achieve exceptional clinical and patient outcomes. Based on its industry-leading imaging chain, SOMATOM Force supports high-precision diagnose, reliable therapy response evaluation, and improved patient care for every individual.

Bring image quality to the next level – with free-breathing and powerful imaging

More patients, less motion



Minimize motion artifacts in challenging cases like elderly or trauma patients: SOMATOM Force provides the industry's highest native temporal resolution and fastest speed – resulting in free-breathing images with outstanding quality.

Unique power, unique performance

With our unique Vectron™ X-ray tube we can help you improve diagnostic accuracy and get excellent image quality for all.

The powerful Vectron™ X-ray tube and the highly sensitive Stellar^{Infinity} detector deliver excellent image quality, helping you improve diagnostic accuracy. Watch the movie for more details.



Listen to Rozemarijn Vliegthart, MD, PhD, from the University Medical Center Groningen, the Netherlands, speak about **State-of-the-art CT for calcium scoring and coronary CT angiography**.



Utilize the high-resolution information provided by the advanced measurement system of SOMATOM Force and avoid complex workflows in high-resolution imaging.

Improve patient care – with gentle and ultra-low-dose scanning

Lower kV, more protection



Chronic kidney diseases are on the rise. Reduce the quantity of contrast media required especially for patients with renal insufficiency: SOMATOM Force allows you to routinely perform exams at 70–90 kV even with adults – resulting in less harm for kidneys.

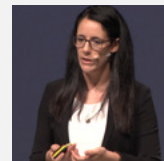
Lower dose, earlier diagnoses



With conventional CT, doses can be too high and results too uncertain for successful early detection – for example, of occult lesions in the lung. Deliver excellent results at previously unknown low dose levels: With the unique Tin Filter technology, SOMATOM Force shields patients from clinically irrelevant low-energy radiation.



Prof. Gabriele Krombach, M(H)BA,
Head of Diagnostic and Interventional Radiology,
University Giessen-Marburg,
Germany



Listen to Stefanie Mangold, MD, from the University Hospital Tuebingen, Germany, speak about **Overview low dose acquisition techniques in 3rd generation DSCT.**

Make sound decisions – with 4D imaging at half the dose and dose-neutral Dual Energy

Proper diagnoses, precise decisions

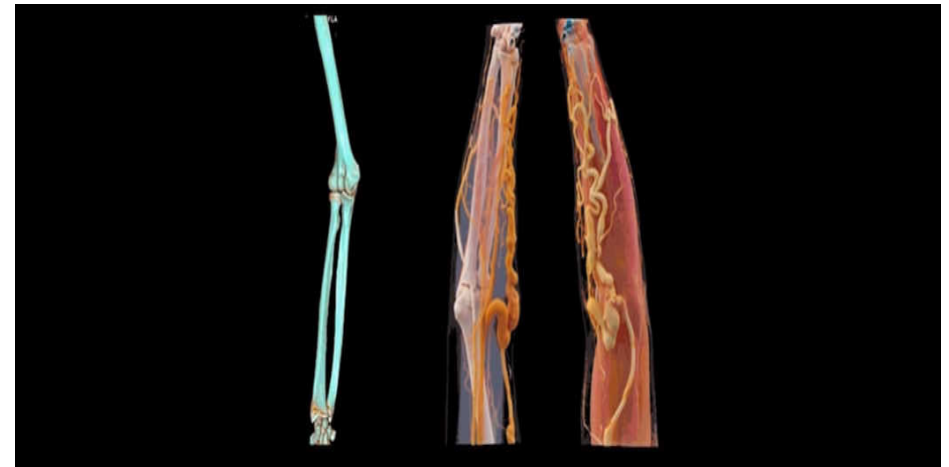


Diagnoses are often stuck in a compromise between dose and data. Bring body perfusion into everyday clinical use: Together, the Stellar^{Infinity} detectors and the Adaptive Dose Shield enable up to 50% dose reduction in 4D imaging compared with other state-of-the-art CTs.

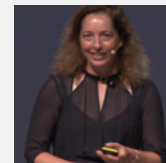


Listen to what Alec Megibow, MD, from the NYU Langone Medical Center, USA, has to say about **Dual Energy in clinical routine**.

More information, better outcomes

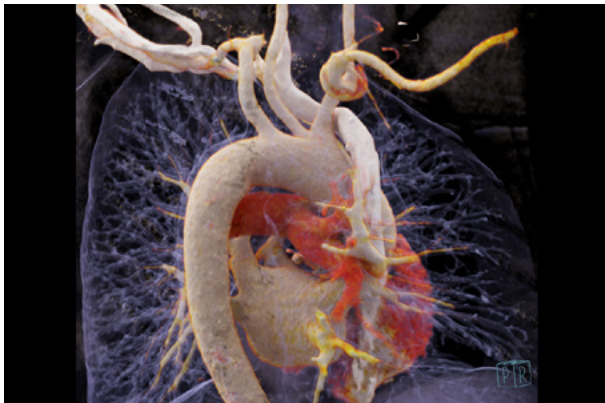


The reliable evaluation of patient-specific therapies can significantly improve patient outcomes and prevent costly, ineffective treatment. Add tissue and material information to morphology: SOMATOM Force pushes Dual Source Dual Energy to a new level – offering precise, dose-neutral quantification for high-quality diagnostic results.

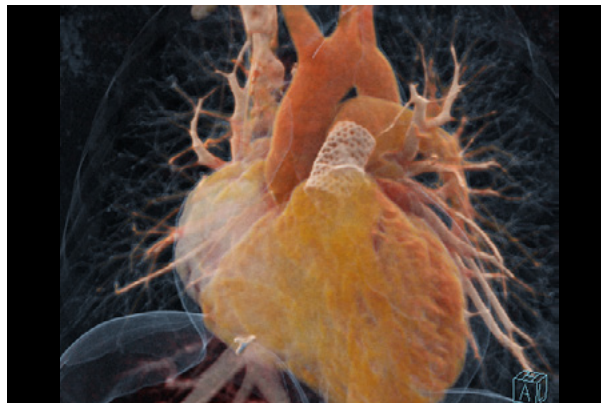


Listen to Katrina Nesta Glazebrook, MBChB from the Mayo Clinic, USA, speaking about the **Role of Dual Energy CT in MSK**.

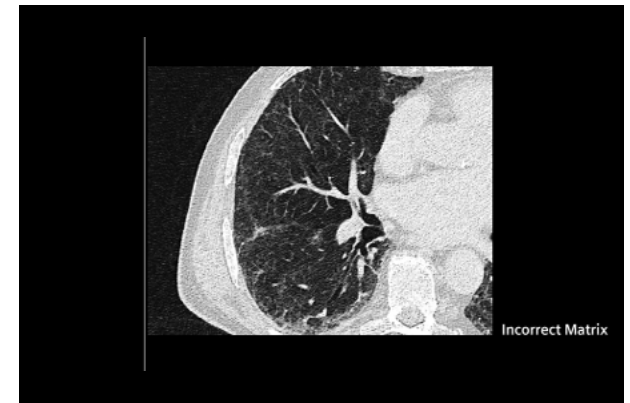
Discover what's possible with SOMATOM Force



Right subclavian artery



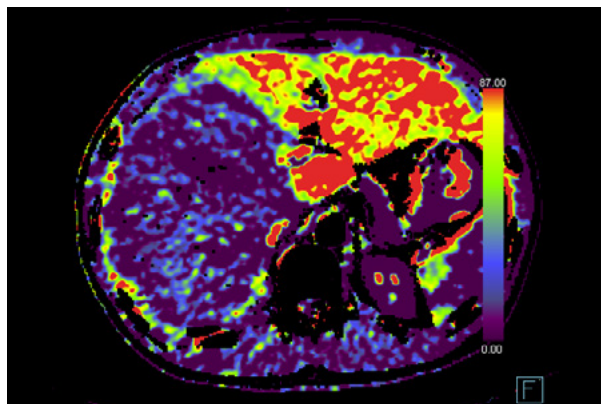
Cardiac imaging



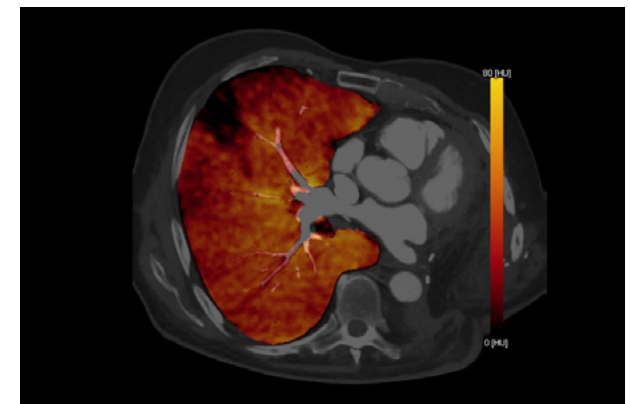
Low-dose lung CT with Precision Matrix



Coronary, carotid, and cerebral arteries



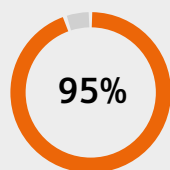
Volume perfusion



Lung perfusion

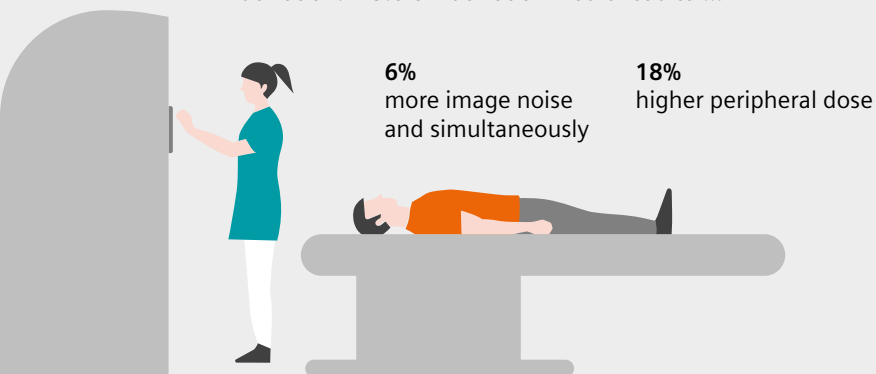
How can you reduce unwarranted variations?

In daily practice, radiology workflows are often challenged by staff changes, unequal degrees of experience, and insufficient tools. This can affect consistency, efficiency, and staff satisfaction.



95% of patients aren't positioned correctly in the CT isocenter.¹

The same study revealed a 2.6 cm mean deviation. A 3.0 cm deviation would lead to ...



¹ Li J, Udayasankar UK, Toth TL, et al. Automatic patient centering for MDCT: effect on radiation dose. *AJR* 2007; 188:547–552 and Kaasalainen T, Palmu K, Lampinen A, et al. Effect of vertical positioning on organ dose, image noise and contrast in pediatric chest CT – phantom study. *Pediatr Radiol* 2013; 43: 673–684.



Get two steps ahead in workflow performance

Get exceptional, consistent images faster. The automated FAST² Integrated Workflow supports reproducible image quality. High power, speed, and automated dose management help precisely adapt scanning parameters to any patient.

² FAST = Fully Assisting Scanner Technologies

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.

Improve accuracy and expand precision medicine: With its game-changing FAST Integrated Workflow, SOMATOM Force helps technologists acquire the right body region at the right dose – in a reproducible way.

“Special attention must be paid to correct patient centering in order to optimize organ doses and image quality of the respective CT examination.”

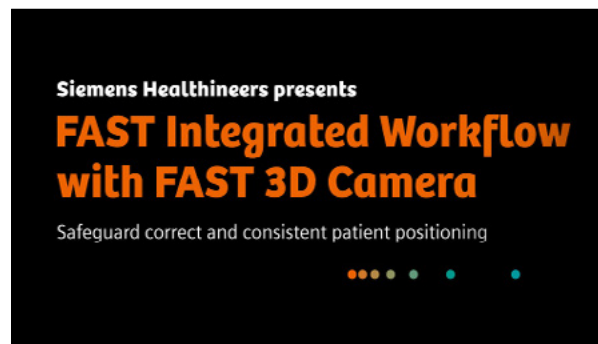
Saltybaeva N, Alkadhi H;
Vertical Off-Centering Affects Organ Dose in Chest CT



Make precise positioning your standard

With SOMATOM Force and its FAST Integrated Workflow, you can push workflow automation and standardization to a new level – and, with no contradiction, care for patients more individually.

Experience our FAST Integrated Workflow



Starting with 3D measurement

FAST 3D Camera –

connected with scanner

Calculating with accuracy

Advanced Applications

Automating precision

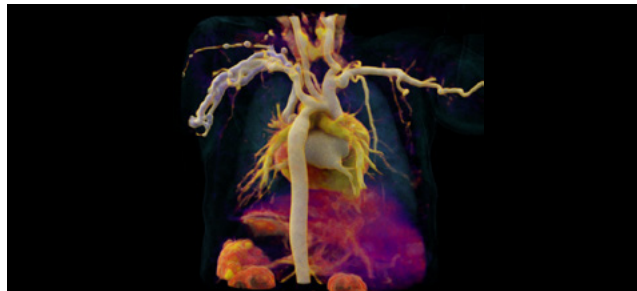


Staying in control and close to your patients

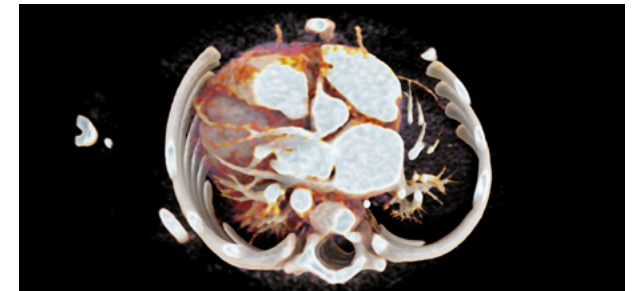
From the smallest to the tallest – with personalized scanning

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's size and shape.

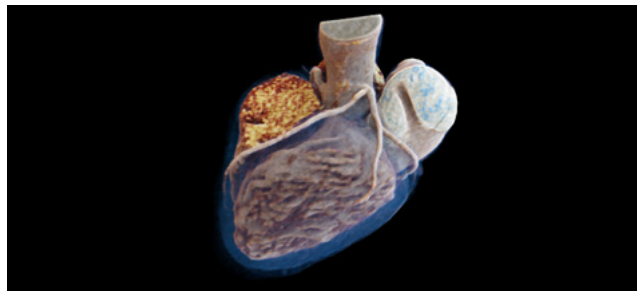
Discover clinical cases where personalization made the difference



Free-breathing thoracic CT with aortic coarctation



Pediatric cardiac CT



Obese patient



Thorax, abdomen, and spine trauma



Listen to Lena Gordon Murkes, MD, from the Karolinska University Hospital in Solna, Sweden, sharing her experiences with **Dual Source CT in pediatrics – How we do it.**



Catherine M. Owens, MD,
Consultant Radiologist,
Great Ormond Street Hospital (GOSH)
London, United Kingdom

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

Rapid Results enables direct communication between *syngo.via* and SOMATOM Force, enabling zero-click postprocessing within the selected scan protocol. This is how *syngo.via* automatically creates and sends ready-to-read results from wherever you are to your PACS or a film printer.

What's more, you can get your Dual Energy scans PACS-ready with all your preferred reconstructions with no need for further interaction in *syngo.via*. Define your workflow once, and let Rapid Results produce the basis for your decisions.

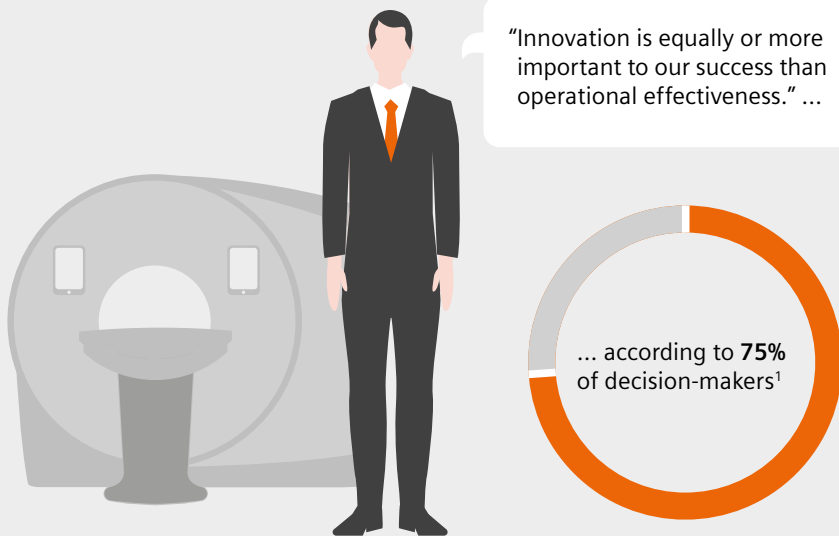
Watch the movie and learn more about Rapid Results.



CT postprocessing with
Rapid Results

How can you shape the future of imaging?

Keeping your institution at the forefront of innovation usually involves more than just the ivory tower. How can you gain statistically reliable data, even from patient cohorts that are difficult to scan? How can you share knowledge in a professional research environment and build technological partnerships?



¹ pwc. Unleashing the power of innovation. How the role of innovation within business and the way companies innovate are being transformed. Available from: https://www.pwc.com/im/en/assets/document/unleashing_the_power_of_innovation.pdf [Accessed March 2019].

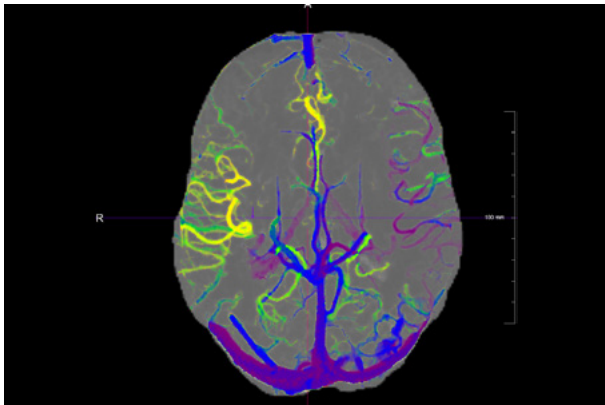


Get two steps ahead in expert leadership

Increase your reputation by spearheading medical innovation. As a member of the global SOMATOM Force community, you have access to the syngo.via Frontier research environment and can share advanced clinical knowledge in a network of peer experts.

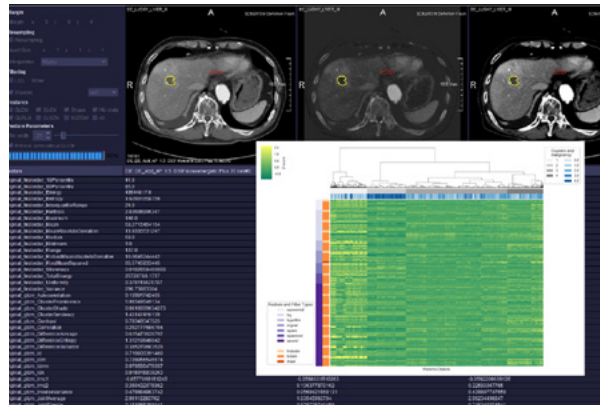
Advance your research – with professional tools

As a SOMATOM Force user, you have access to the *syngo.via* Frontier¹ research environment. You can develop your own algorithms and share them in an international network of experts, test prototypes in routine reading, and explore new trends.



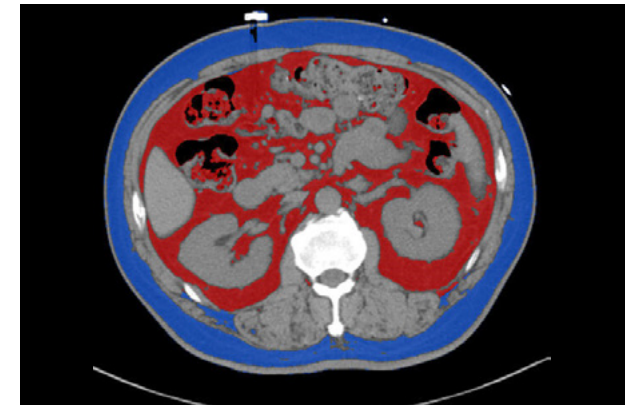
CT Flow Visualization

Whereas perfusion techniques evaluate the patient's brain parenchyma, the main goal of this prototype is to provide insight into the dynamics of the vascular structures.



Multimodality Radiomics

Simplifies radiomics studies through analysis of quantitative image features from VOIs/masks (example of multimodality prototype).



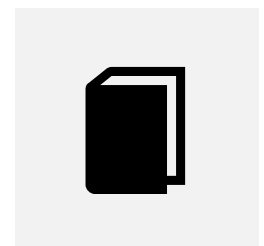
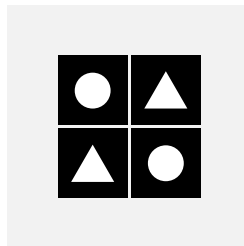
CT Cardiac Risk Assessment

This prototype uses noncontrast CT data to provide an analysis of visceral fat.

¹ For research use only. Not for clinical use.

Connect with peers and lead a global community

SOMATOM Force grants you access to a community of clinical experts who regularly share knowledge and the latest medical developments – with an impressive outcome: SOMATOM Force has been the subject of more than 300 scientific studies and publications.



"4D-CTA at 70 kVp is a fast imaging modality that provides comprehensive diagnostic information of venous malformations in pediatric patients and is very valuable for therapy planning."
Henzler T, et al.



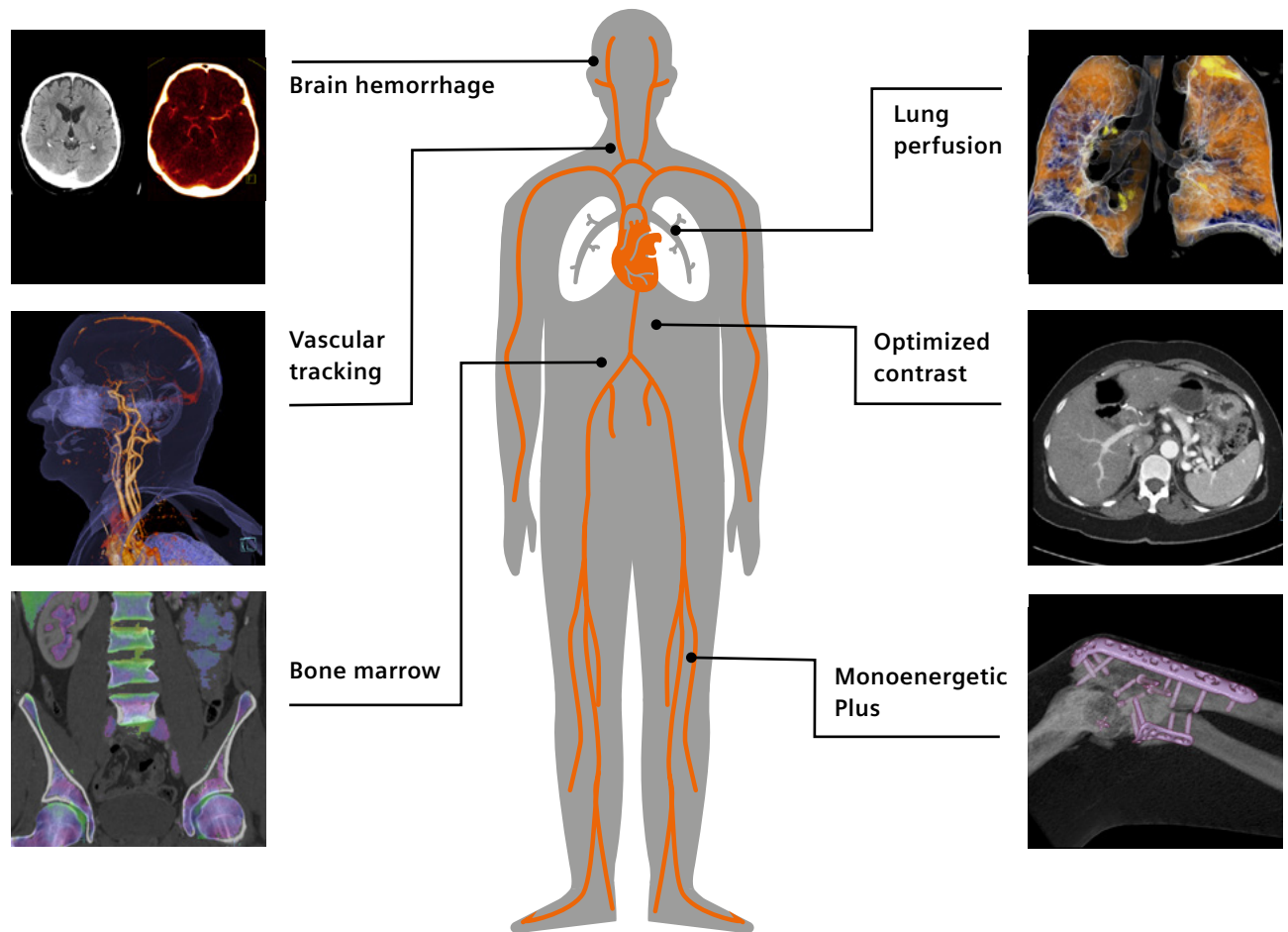
"3.2 high-pitch chest CT performed with 70 kVp significantly reduces radiation dose when compared to 80 kVp while at the same time provides good image quality without any motion artifacts even without sedation."
Hagelstein C, et al.

Expand your capabilities and rethink your way of working

With Dual Source imaging, CT has become mature enough to take on a new role and redefine traditional ways of treating patients. One of the most prominent examples is trauma imaging.



Learn more about **Dual Energy CT in emergency radiology** and listen to Julian Wichmann, MD, from the University Hospital Frankfurt, Germany.



SOMATOM Force at a glance



Dual Source CT – technology ready beyond tomorrow

Dual Source CT offers five key imaging modes. They help you perform imaging procedures beyond the capabilities of single-source scanners. Watch our movies and find out how these modes work and what they do.

Fast temporal resolution

powered by Dual Source CT

Fast temporal resolution

DSCT can achieve temporal resolutions even below 75 milliseconds. Hence, you get artifact-free images beyond the physical limitations of single-source scanners.

[Learn more.](#)

Turbo Flash

powered by Dual Source CT

Turbo Flash

DSCT is capable of high-pitch spiral scans, resulting in unparalleled routine acquisition speeds that help you keep patient motion in check. See how it works.

Dual Energy

powered by Dual Source CT

Dual Energy (DE)

DSDE allows you to cover large anatomical volumes at high speeds and low doses. You can quantify even the subtlest changes. [Learn more about independent kV and mAs options and enhanced spectral separation.](#)

Dual Power

powered by Dual Source CT

Dual Power

DSCT offers unrivaled imaging power. With the combined output of two extraordinary tubes along with lower-kV imaging capabilities, you can keep radiation dose and contrast media levels down. [Take a look.](#)

Adaptive 4D Spiral

powered by Dual Source CT

Adaptive 4D Spiral

DSCT is ideally suited for dynamic imaging. Thanks to precise table movements and two powerful tubes, it lets you achieve wide coverage at the right moment while keeping the dose in check all along. [Learn more.](#)

Additional products and services

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Why Siemens Healthineers?

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 made possible 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 are a leading medical technology company with over 120 years of experience and 18,000 patents globally. Through the dedication of more than 50,000 colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.



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