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CT Trauma Benefits – SOMATOM Definition Flash

www.siemens.com/somatom-definition-flash

Multiply Your Potential in CT Trauma
Generation Flash

Unique Innovations

- Heart-rate independent temporal resolution of 75 ms
- Tube power: 30 MHU, 7.3 MHU/min
- Focal spot size: Small: 0.7 x 0.7 mm / Large: 0.9 x 1.1 mm
- Generator power: 200 kW
- kV settings: 70/80/100/120/140 kV
- 3D voxel size: 0.24 mm / 0.33 mm
- Coverage perfusion: 14 cm @ 50 cm FOV
- Coverage 4D CTA: 48 cm @ 50 cm FOV
- Bore size: 78 cm
- Scan range: 200 cm
- Max. table load: Up to 307 kg / 676 lbs
- Reconstruction performance:
Up to 50 ips (1 oncology staging exam with 1000 images in up to 20 sec.)
- SAFIRE*
- Adaptive Dose Shield for any spiral CT examination
- X-CARE
- Pediatric CT protocols
- Adaptive ECG-Pulsing including MinDose
- 4D Noise Reduction
- Selective Photon Shield
- Flash Spiral with 458 mm/s scan speed
- 1 kW Scan room heat dissipation
- Tube Guard
- Siemens Remote Services
- FAST Planning
- FAST Spine
- FAST Cardio Wizard
- FAST Scan Assistant
- FAST Adjust
- CARE kV
- CARE Child
- CARE Configurator
- CARE Contrast III
- CARE Profile
- CARE Dashboard

*The information about this product is being provided for planning purposes. The product is pending 510(k) review, and is not yet commercially available in the U.S.



The SOMATOM Definition Flash, Siemens' latest high-end scanner, was especially designed to make CT exams much healthier for your patients.

Its core innovation – the revolutionary Flash Spiral – can be summarized in four words: Flash speed. Lowest dose.

Answers for life.

Flash Speed



Courtesy of General Hospital Vancouver / Vancouver, Canada

The SOMATOM® Definition Flash is the solution for scanning your most difficult patients in time-critical situations. Emergency department trauma scans of an entire body in less than 4 seconds with dose usually below 5 mSv are possible because of the Flash's speed of 458 mm/s. With the industry's leading speed, scan time is no longer an issue. In very critical cases, this can lower patient risk, and perhaps save lives.

"The non-ECG-triggered version of the high-pitch spiral mode offers the potential to scan even large scan volumes in a very short time frame, for example, a thorax scan can be completed in less than 1s."

Flohr TG et al. Dual-source spiral CT with pitch up to 3.2 and 75 ms temporal resolution: image reconstruction and assessment of image quality. Med Phys. 2009 Dec;36(12):5641-53.

collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 5 s
scan length: 986 mm
rotation time: 0.28 s
140 kV, 200 mAs

No Motion Artifacts



Courtesy of Department of Radiology National Cardiovascular Center, Osaka/Japan

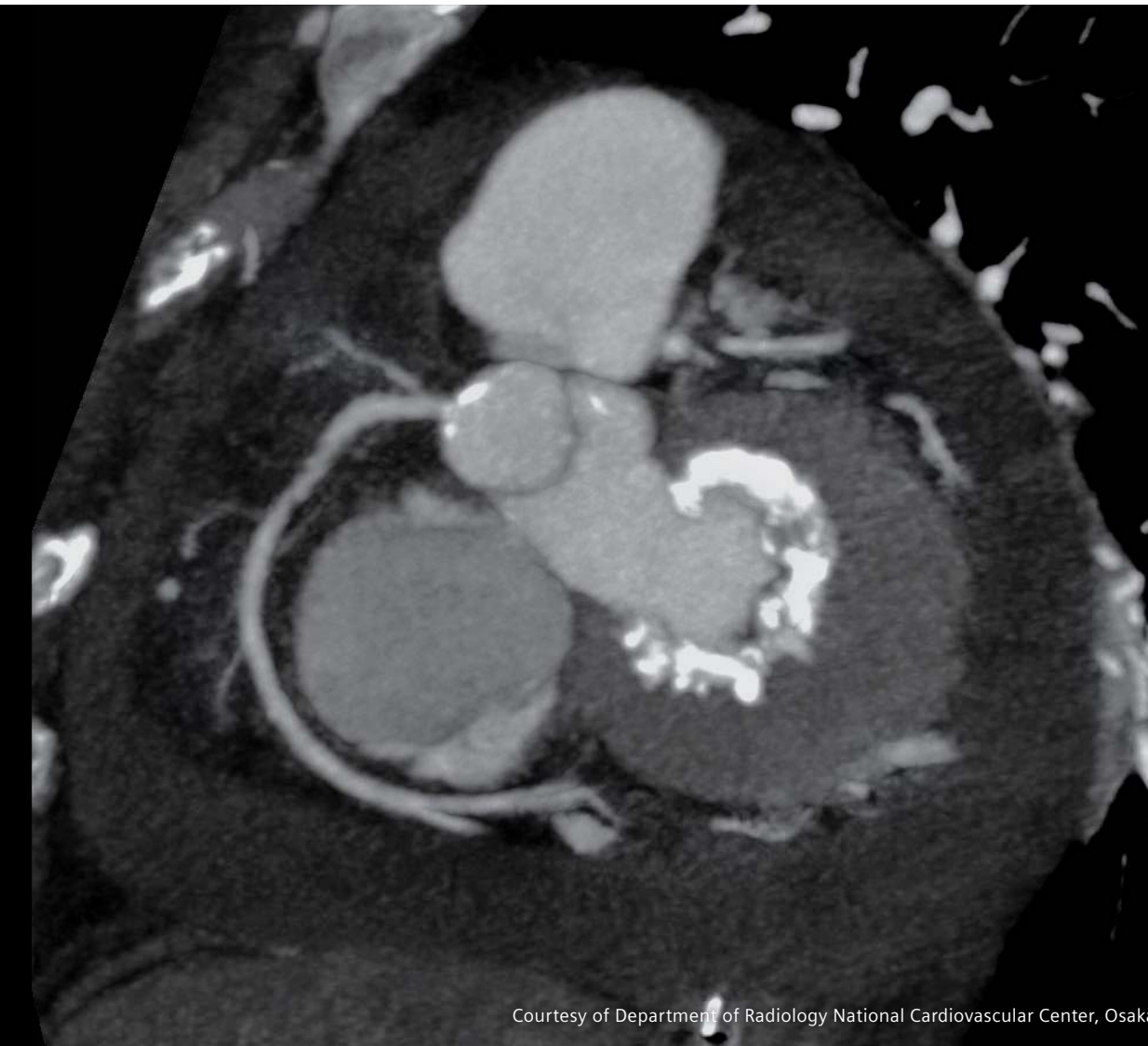
In many cases, trauma patients move during the scan or cannot hold their breath, which often leads to artifacts in the image. With Flash Spiral scanning, breath-holding and motion lose their significance. The Flash provides the highest temporal resolution (75 ms) and the fastest scanning speed (Flash Spiral), making the SOMATOM Definition Flash the optimal CT for trauma imaging.

"Our study demonstrates that chest CT in the HPM [high-pitch mode] allows for the diagnostic visualization of lung parenchyma even without suspended respiration."

Baumüller S et al. Computed tomography of the lung in the high-pitch mode: is breath holding still required? Invest Radiol. 2011 Apr;46(4):240-5.

collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 2.07 s
scan length: 571 mm
rotation time: 0.28 s
120/120 kV, 182 effective mAs
eff. dose: 8 mSv

Highest Resolution

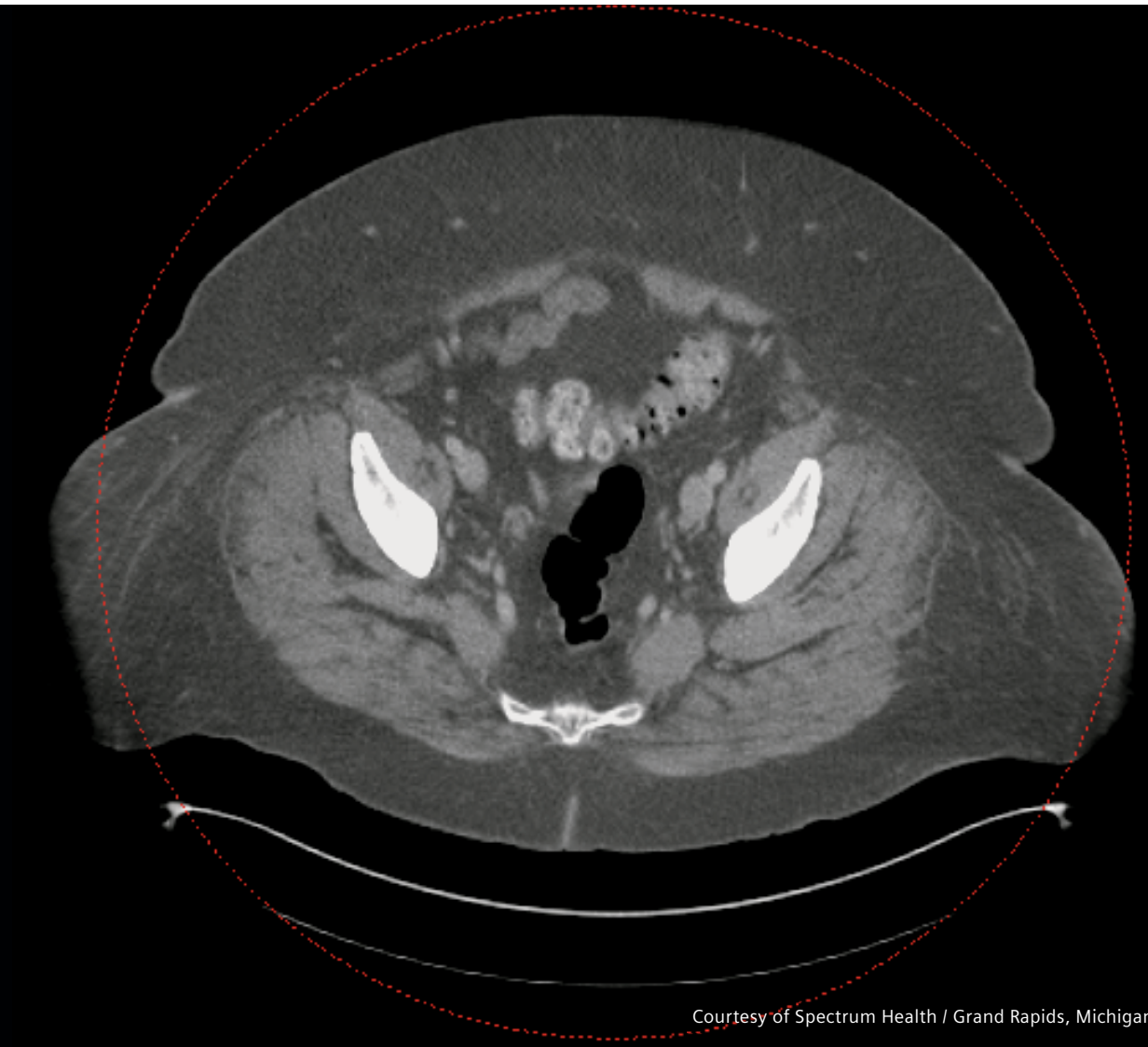


Courtesy of Department of Radiology National Cardiovascular Center, Osaka/Japan

Obtaining a perfect image in the shortest time using a conventional CT scanner is challenging in a trauma setting. Especially when obese patients are scanned, the results are often a trade-off between speed and image quality. The SOMATOM Definition Flash overcomes this limitation: in combination with the Flash Spiral, it offers 0.33 mm isotropic resolution and enough power due to its unique Dual Source technology.

collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 2.07 s
scan length: 571 mm
rotation time: 0.28 s
120/120 kV, 182 effective mAs
eff. dose: 8 mSv

No Patient Exclusion



Courtesy of Spectrum Health / Grand Rapids, Michigan, USA

Unlike any other scanner, the Flash can scan virtually any patient: obese (78 cm gantry bore, 300 kg capacity, the power of 2x200 kW), tall (2 m scan range), unstable heart condition (75 ms temp resolution for all heart rates), moving children that cannot hold their breath (Flash Spiral).

"High-pitch chest CT is a robust method to provide highest image quality, making sedation or controlled ventilation for the examination of infants, small or uncooperative children unnecessary, whereas maintaining low radiation dose values."

Lell MM et al. High-pitch spiral computed tomography: effect on image quality and radiation dose in pediatric chest computed tomography. Invest Radiol. 2011 Feb;46(2):116-23.

collimation: 32 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 31 s
scan length: 480 mm
rotation time: 0.5 s
120 kV, 741 effective mAs
FoV: 780 mm
CTDIvol: 60.11 mGy
DLP: 2959 mGycm
patient weight: 400 lbs