

**SIEMENS**

CT Clinical  
Engines  
2014  
Edition

[www.siemens.com/ct-acute-care](http://www.siemens.com/ct-acute-care)

# Get further. With the CT Acute Care Engine.

Driving progress in fast and reliable trauma analysis

International version. Not for distribution in the U.S.

Answers for life.

## What is a CT Clinical Engine?

- A powerful combination of software applications and scanner features – tailored to meet your clinical challenges
- A solution that helps you get the most from your CT scanner

With a CT Clinical Engine, you can continuously enhance speed, workflow efficiency, and diagnostic information.



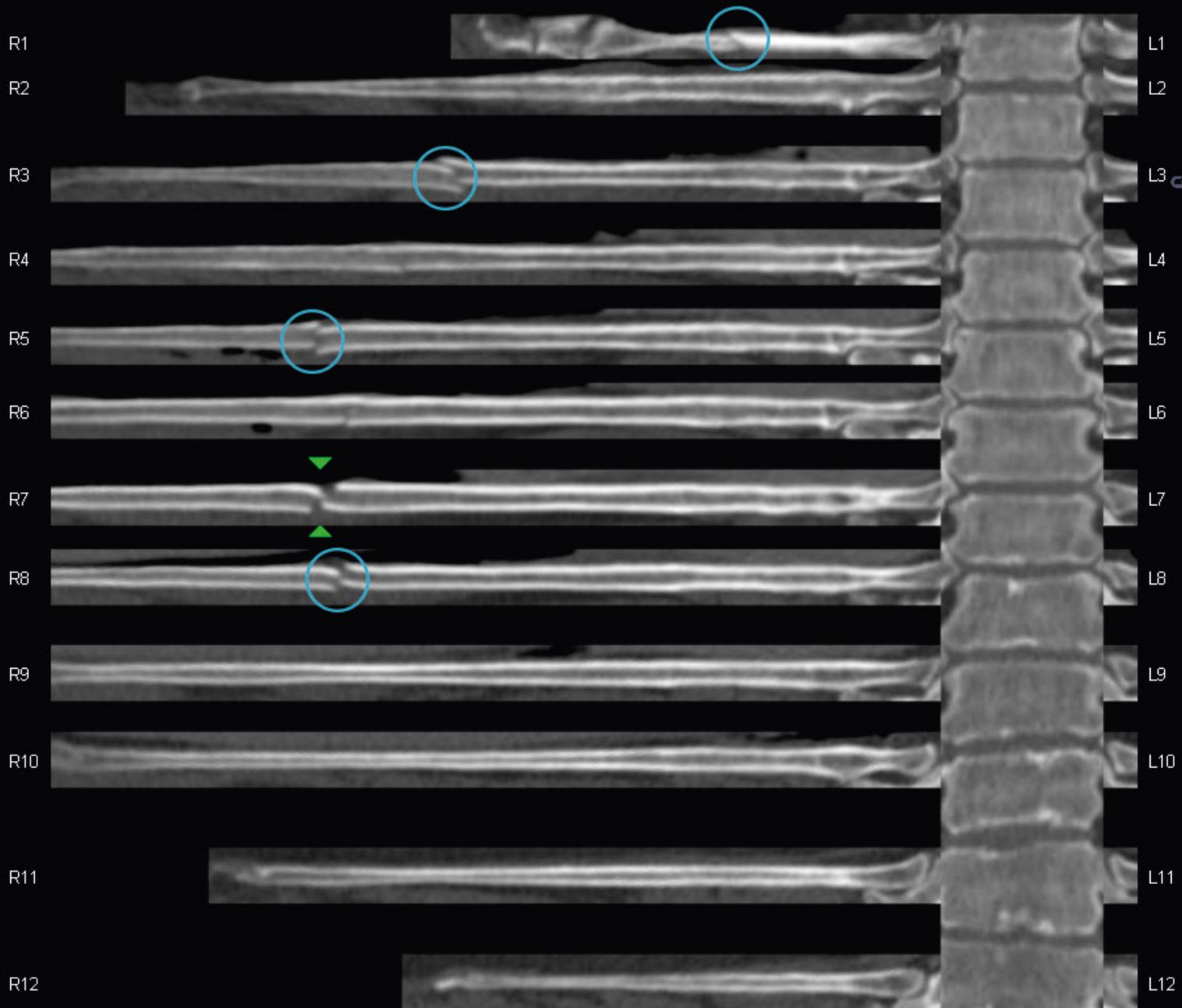


# How far can you get with your CT?

Year after year, the CT Clinical Engines advance your diagnostic possibilities, supporting you in better understanding diseases and in making the right treatment decisions faster. Now experience the next step with the 2014 Edition.

Trauma situations require a quick and comprehensive diagnosis. With the 2014 Edition of the CT Acute Care Engine, you get a helpful instrument that provides several automated applications to facilitate diagnosis and treatment when your time is tight. The latest optional addition – *syngo*.CT Bone Reading – is custom-tailored for the assessment of ribs and spine in trauma cases. Enjoy the benefits of automated rib and spine labeling and speed up your reading efficiency.

**Driving progress for fast and reliable trauma analysis.**



Courtesy of Department of Clinical Radiology,  
University Hospital Münster, Germany

# Fast rib and spine assessment in multiple trauma cases.



Courtesy of Department of Clinical Radiology, University Hospital Münster, Germany

# Comprehensive diagnosis in situations where time is tight

## ***syngo*.CT Bone Reading\***

Multiple trauma cases with suspected injuries to the thorax and spine call for a complete evaluation of the ribs and vertebral bodies to assess possible fractures. Simply scrolling through axial slices and trying to maintain a focus on the areas of interest can be very time-consuming because of the ribs' oblique orientation. Missing possible fractures, especially those affecting the spine, may require an unnecessary redo of an interventional procedure.

*syngo*.CT Bone Reading revolutionizes rib and spine assessment. The application identifies and labels the ribs and displays the entire rib cage rolled on a 2D

planar reformat. In addition, the vertebral bodies are tagged and the spine is presented in a stretched view for a straightforward overview of the anatomy. The Automatic Pre-Processing function performs these steps for you and has the case ready for review when opened.

The planar display of the rib cage and spine facilitates the direct detection of lesions. Fractures can now be spotted and assessed immediately, saving precious minutes in situations where time is tight.

Decide for a new method of reading that's as simple as it's effective. *syngo*.CT Bone Reading – for increased speed in bone assessment.

\* Optional



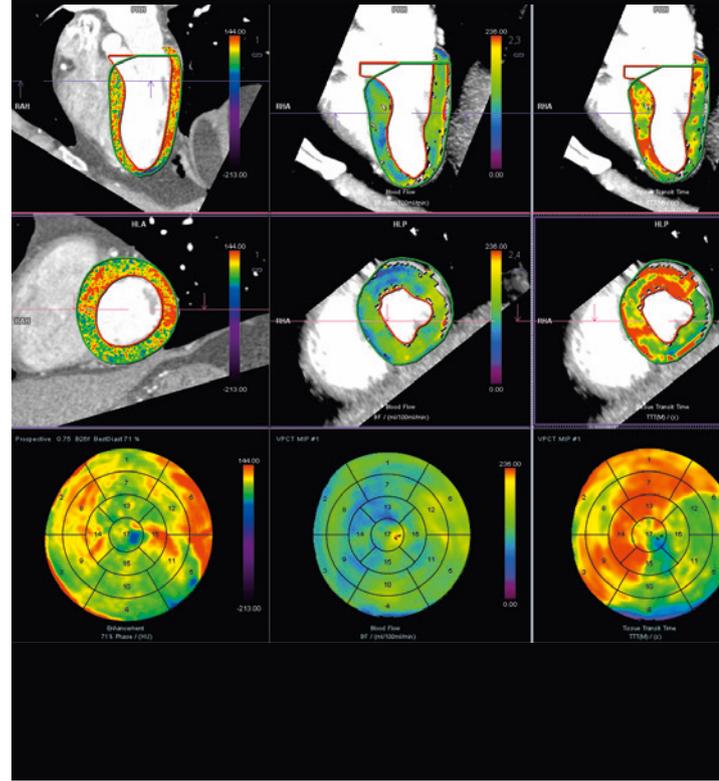
**Unparalleled speed when time is of the essence**  
**The SOMATOM Definition Edge and syngo.CT Bone Reading**

In acute care scenarios, unconscious or severely injured patients must be scanned quickly. Here the “golden hour” to diagnosis mandates precise localization and identification of critical injuries. Therefore, one of the most challenging demands is providing high acquisition speed without compromising spatial resolution.

The SOMATOM Definition Edge with the Stellar Detector is in a class of its own. The new level of image detail – with a routine spatial resolution of up to 0.30 mm provided by the Stellar Detector – allows visualization of very fine

fractures or lesions. In addition, with the STRATON tube and specially designed patient table, this high spatial resolution is achievable even at acquisition speeds of up to 230 mm/s. This takes motion out of the equation, increasing the diagnostic reliability in crucial cases like acute care patients.

By combining the strengths of the SOMATOM Definition Edge and syngo.CT Bone Reading, Siemens offers a fast and reliable basis for tackling the challenges of the acute care setting.



syngo.CT Rapid Stent Planning<sup>1</sup>

syngo.CT Cardiac Function – Enhancement<sup>1</sup>

# Lifesaving decisions, when every second counts

## New: Automatic completion of manufacturer-specific graft order forms syngo.CT Rapid Stent Planning<sup>1</sup>

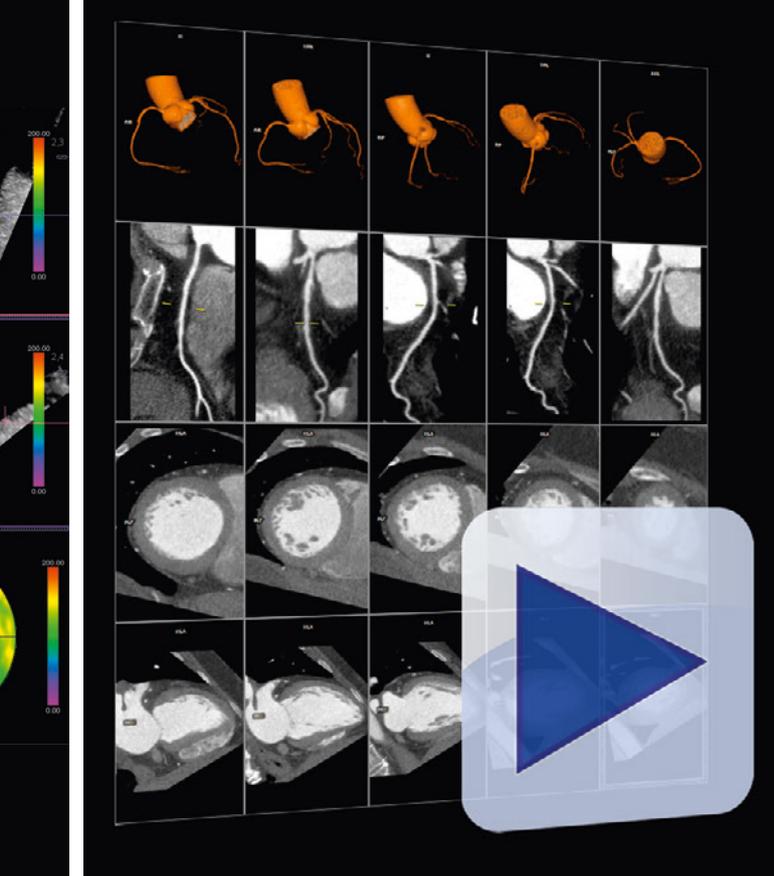
Pre-procedural planning for the treatment of abdominal and thoracic aortic aneurysms requires a precise assessment of several anatomical parameters. Numerous vendors offer various stent grafts, each of which requires its own set of measurements. Manually completing graft order forms can be tedious and time-consuming.

The new *syngo.CT* Rapid Stent Planning introduces the automatic completion of manufacturer-specific stent order forms. This optional extension makes the most effective use of the unique Rapid Results Technology: protocols guide the user through all length and diameter measurements, which are then automatically stored in the corresponding order form. At delivery, *syngo.CT* Rapid Stent Planning provides three order forms: Gore Excluder, Zenith Flex, and Medtronic Endurant in PDF format. In addition, new order form templates can be generated to match the requirements of other vendors.<sup>2</sup>

## New: Evaluate the full spectrum of myocardial perfusion for a thorough assessment of hemodynamic relevance syngo.CT Cardiac Function – Enhancement<sup>1</sup>

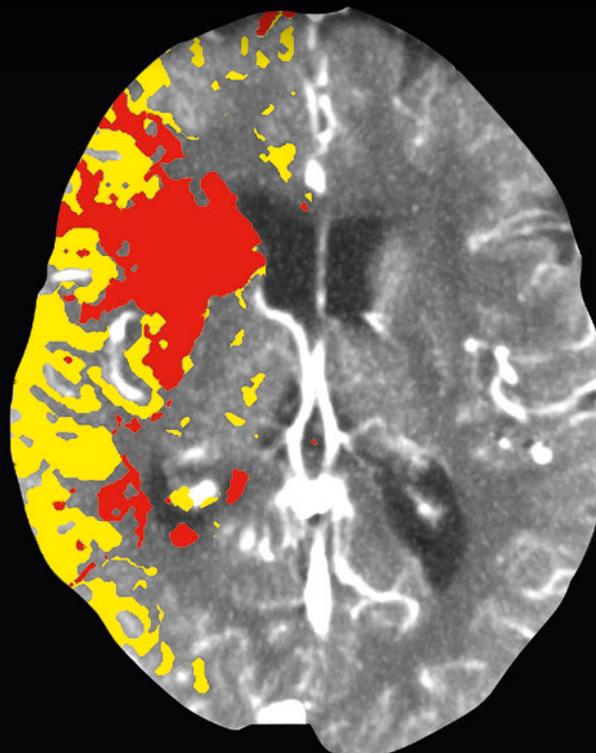
A simple first-pass enhancement scan may not yield the decisive information necessary to determine the hemodynamic relevance of an intermediate stenosis. Sub-optimal scan timing can decrease the attenuation difference between healthy and diseased myocardium, and a quantitative assessment of a potential perfusion defect is not possible.

The new Perfusion Evaluation task enables the simultaneous assessment of Dual Energy and quantitative dynamic myocardial perfusion data.<sup>3</sup> Additional clinical benefits are introduced with the quantification of iodine concentration in the myocardium as well as the inspection of quantitative blood flow and volume data. The visualization in AHA-compliant 17-segment polar maps and a direct overlay in MPR segments help to pinpoint the perfusion defect.



Rapid Results Technology

2014 Edition: What else is pathbreaking?



syngo.CT Neuro Perfusion

**Standardize and automate image creation for reproducible results and efficient reading**  
**Rapid Results Technology**

When assessing coronary artery disease, the manual preparation of reformats and visualizations of the coronary vessels is time-consuming and rarely standardized. With Rapid Results Technology (RRT) you can automatically generate visualizations of the coronary and general vessels in various types and orientations. Design your own protocols that best suit your daily work. Save time for reading other cases by letting RRT create just the right amount of information – standardized and reproducible.

**Quantitative evaluation of dynamic CT data**  
**syngo.CT Neuro Perfusion**

In acute stroke, it can be challenging to differentiate the core infarct from tissue at risk for infarction (penumbra). This is important, however, because the latter is potentially salvageable with further therapy. With a range of unique features, syngo.CT Neuro Perfusion helps you easily assess

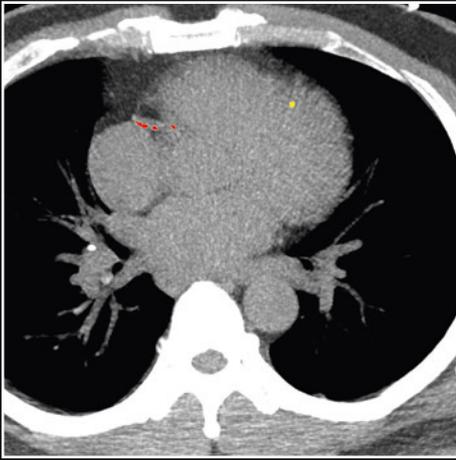
the potential treatment benefits. It visualizes tissue at risk in 3-D color maps based on the mismatch between blood volume and flow. You can also select individual mismatch parameters such as Siemens' Time-To-Drain. Refined algorithms offer automated gray matter segmentation so you can immediately focus on the relevant tissues.

<sup>1</sup> Optional  
<sup>2</sup> Adobe Acrobat Professional required  
<sup>3</sup> syngo.CT DE Heart PBV and/or syngo VPCT Body – Myocardium required

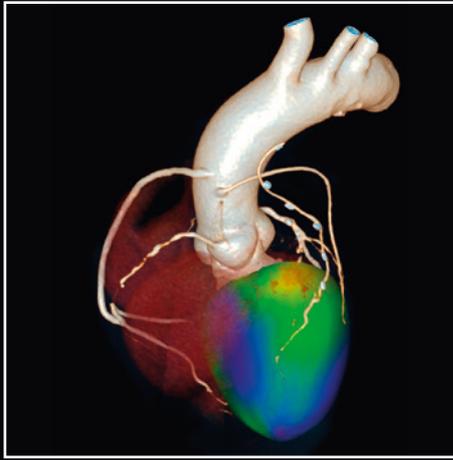
**Your benefits at a glance**

- Faster – automate your CT planning for endovascular aortic repair
- Easier – detect perfusion defects and correlate them with the supplying coronary artery
- More comprehensive – differentiate between the core infarct and penumbra in case of acute stroke

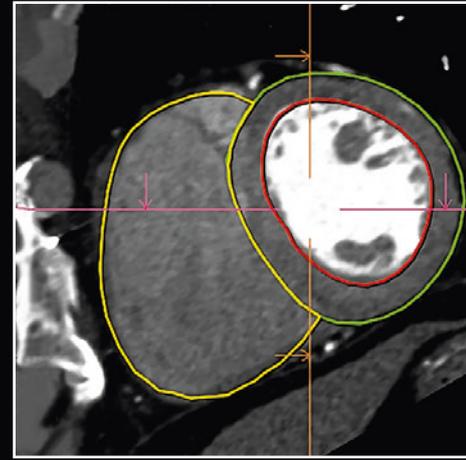
# Get further – with our CT Acute Care Engine



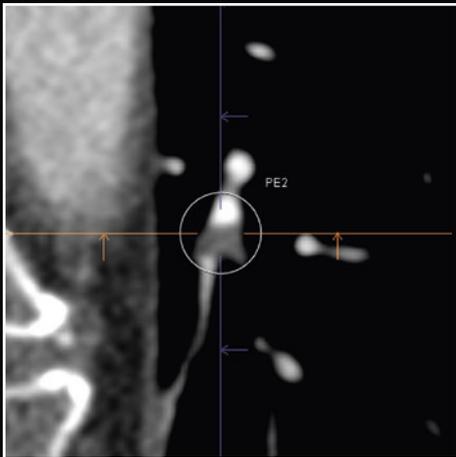
Quick risk assessment and coronary age calculation  
*syngo*.CT CaScoring



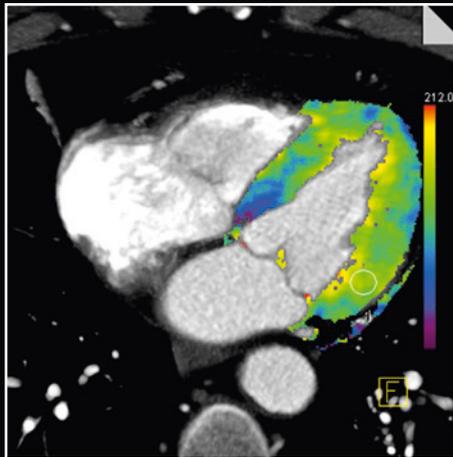
Comprehensive global and local left ventricular analysis  
*syngo*.CT Cardiac Function



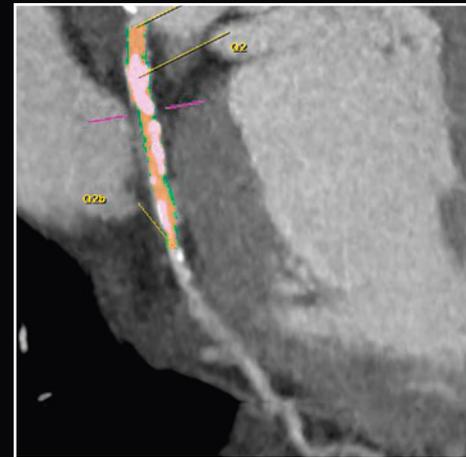
Right ventricular analysis – even with MinDose data  
*syngo*.CT Cardiac Function – Right Ventricular Analysis<sup>1</sup>



Automatic detection of pulmonary filling defects  
*syngo*.CT PE CAD<sup>2</sup>



Dynamic quantitative myocardial perfusion assessment  
*syngo* Volume Perfusion CT Body – Myocardium<sup>1</sup>

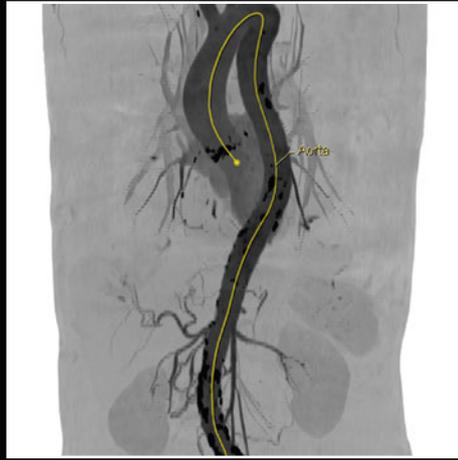


Volumetric quantification and differentiation of lipid, fibrous, and calcified plaques  
*syngo* Circulation Plaque Analysis<sup>1</sup>

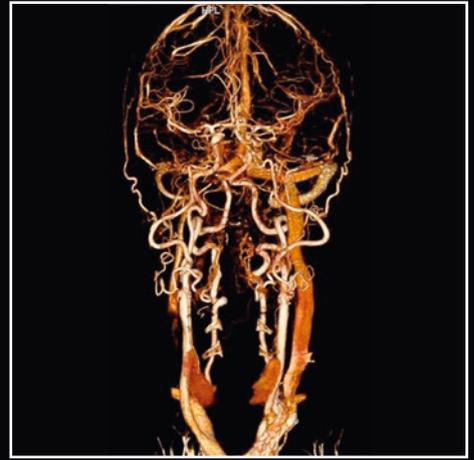
# and optional applications



Dynamic vessel evaluation  
*syngo*.CT Dynamic Angio<sup>1</sup>



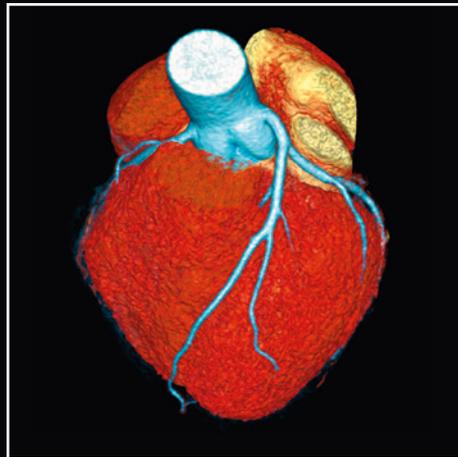
Zero-click tracing of the main general vessels  
*syngo*.CT Vascular Analysis – Autotracer<sup>1</sup>



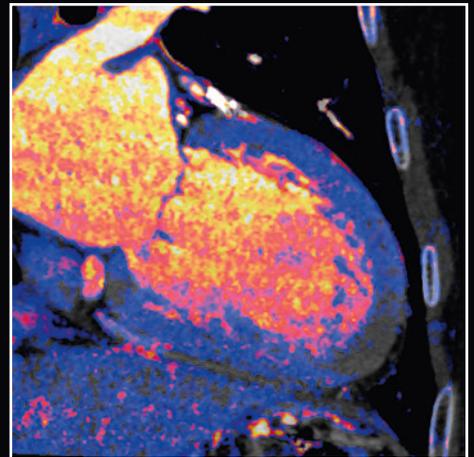
Accurate bone removal with Dual Energy  
*syngo*.CT DE Direct Angio<sup>1</sup>



Detailed visualization of the cerebral vasculature  
*syngo*.CT Neuro DSA



Rule out coronary artery disease in less than one minute  
*syngo*.CT Coronary Analysis



Quantification of myocardial iodine uptake with Dual Energy  
*syngo*.CT DE Heart PBV<sup>1</sup>

<sup>1</sup> Optional

<sup>2</sup> Optional and not commercially available in the U.S.

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Order No. A91CT-00277-01C1-7600 | Printed in Germany  
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