syngo Dual Energy

syngo CT 2008G + *syngo* CT 2009A + *syngo* MMWP 2008B + *syngo* MMWP 2009B

Answers for life.

SIEMENS

syngo Dual Energy
Available on SOMATOM Definition/Definition Flash

(Version *syngo* CT 2008G + *syngo* CT 2009A + *syngo* MMWP 2008B + *syngo* MMWP 2009B)

With the application *syngo*® Dual Energy, it is possible to obtain additional information about the chemical composition of body materials. During a Dual Energy scan, two CT datasets are taken simultaneously with kV* levels of 80 kV/140 kV or 100 kV/140 kV, allowing to visualize differences in the energy dependence of the attenuation coefficients of different materials. These images will be combined and analyzed to visualize information about anatomical and pathological structures.

For Dual Energy scanning the following applications are available:

syngo Dual Energy Direct Angio

Accurately highlights bone structures on CT angiography (CTA) datasets. The highlighted pixels can be removed by a single click, e.g., subtract bone in CTAs. Overcoming limitations of conventional bone removal software, the Dual Energy approach reliably isolates even complex vasculature, for example, at the base of the skull where CTAs are difficult to interpret.

syngo Dual Energy Hardplaque Display

Enables the identification and automatic removal of calcifications from a CTA image. By therefore differentiating between hard plaques and contrast agent this Dual Energy application helps to display of true vessel lumen without interfering hard plaques.

syngo Dual Energy Virtual Unenhanced

Used to visualize the contrast agent concentration in the liver. Basis for this approach is a material decomposition into iodine contrast agent, fat and liver tissue. Additionally, it is possible to create virtual non-contrast information using the Dual Energy information from fat and liver material. The user can switch between two representations of the anatomical information without the need for an additional non-contrast scan.

syngo Dual Energy Lung Vessels

Allows to color-code vessels that are affected, e.g., by pulmonary emboli and therefore show a significantly lower iodine concentration than non-affected vessels. Due to the color-coding the affected vessels are easier to identify.

syngo Dual Energy Lung Perfused Blood Volume (PBV)

Enables a fast evaluation of lung perfusion defects without use of an additional non-contrast scan. It directly visualizes the local iodine concentration in the lung parenchyma, which is a measure of the local blood volume, thus enabling a display of the area of possibly affected tissue.

* Only for SOMATOM Definition Flash.

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syngo Dual Energy Calculi Characterization

This Dual Energy application allows to visualize chemical differences in kidney stones. Basis for this approach is a material decomposition into tissue, uric acid and oxalate stones.

syngo Dual Energy Gout

Can visualize depositions of uric acid crystals (tophi in peripheral extremities by automatically color-coding these uric acid crystals.

syngo Dual Energy Brain Hemorrhage

Used to visualize contrast agent concentration in the brain. In doing so new bleedings with contrast uptake can be clearly differentiated from older bleedings.

syngo Dual Energy Musculoskeletal

Using the Dual Energy information, it is possible to highlight potential cartilage, tendon and ligament structures. Basis for this approach is a material decomposition in which collagen is isolated and differentiated from soft tissue and fat.

syngo Dual Energy Heart Perfused Blood Volume (PBV)

This application uses Dual Energy information to visualize iodine concentration in the myocardium to reveal perfusion defects. In addition, a virtual non-contrast display can be used to identify myocardial edema. Simultaneous acquisition of both datasets diminishes the problem of misregistration due to cardiac motion.

syngo Dual Energy Xenon*/**

This new application uses Dual Energy information to visualize Xenon concentration in the lung without use of an additional non-contrast scan. A first step performs a material decomposition into Xenon and soft tissue; the Xenon concentration in the air inside the lung is calculated. The results are shown in a second step as color overlay to anatomical, grayscale information.

syngo Dual Energy Lung Nodules*

This new application uses Dual Energy information to visualize the contrast agent concentration in lung nodules without use of an additional non-contrast scan. Contrast agent concentration is shown as color overlay to anatomical, grayscale information. A semi-automatic segmentation and evaluation of the lung nodule size and enhancement is possible.

* Only for SOMATOM Definition Flash.
** Please confirm approval status of Xenon as contrast agent for lung ventilation in your country.

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