



# syngo Neuro Perfused Blood Volume CT

syngo® Neuro PBV\* is a dedicated postprocessing application for 3D evaluation of perfused blood volume in the whole brain. It calculates the amount of blood volume in the parenchyma, as an indicator for stroke.

Neuro PBV is calculated using a non-enhanced CT dataset (NECT)\*\* and a CT-Angiography (CTA) which are both acquired during modern stroke protocol.

syngo Neuro PBV helps diagnosing stroke while enlarging the cerebral blood volume (CBV) of perfusion CT (PCT) to a whole brain examination. Thus it facilitates the treatment decision and is an addition to perfusion CT.

\* Only available with syngo 2007C

\*\* Only available for SOMATOM® Definition, SOMATOM Sensation 40/64/Open. For other scanners calculation of Parenchymal Map (PM) is available without subtraction of non-enhanced CT scan

## syngo Neuro Perfused Blood Volume CT

3D evaluation of whole brain perfused blood volume

Answers for life.

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## General

*syngo* Neuro PBV CT available on MMWP and CT Workplace, is a normalized subtraction of plain CT data from CTA source images, providing local contrast media enhancement. This data allows for a quantitative measurement of perfused blood volume, visualizing infarcted areas in three dimensions (Hunter et al., 2003 and Kloska et al., 2007).

This application is available for SOMATOM Definition and SOMATOM Sensation on MMWP and CT only. Additionally, the *syngo* Neuro Perfusion Weighted Map (PWM) PWM license is always integrated into the *syngo* Neuro PBV CT option free of charge.

## Evaluation

- Automatic registration of CT datasets
- Automatic segmentation of brain parenchyma, bones and cerebral spinal fluids
- Automatic reference vessel identification to normalize the subtraction results
- Optimized color display of result images
- ROI measurement with calculation tools of mean value and standard deviation for detailed analysis of specific ischemic areas
- Mirroring of the ROIs about the midline incl. output of the ratio of mean values (left/right comparison)

## Documentation

- Storage of all result images in the database
- Direct copy to filming or viewing platform
- Reporting of result images using snapshots
- *syngo* Neuro PWM, is a powerful tool to visualize color coded CTA source images by suppressing vessels and bones. Stroke infarcted areas can be correlated via CTA source images as has been suggested by Lev et al., 2001 and Schramm P. et al., 2002.

Hunter, GJ et al.: Whole-Brain CT Perfusion Measurement of Perfused Cerebral Blood Volume Acute Ischemic Stroke: Probability Curve for Regional Infarction. *Radiology* 2003; 227:725–730

Kloska, S. et al.: Color-coded perfused blood volume imaging using multidetector CT: initial results of wholebrain perfusion analysis in acute cerebral ischemia *Eur Radiol.* 2007 Sep;17(9):2352-8.

Schramm, P., et al.: Comparison of CT and CT Angiography Source Images With Diffusion-Weighted Imaging in Patients With Acute Stroke Within 6 Hours After Onset. *Stroke.* 2002;33:2426-2432

Lev, MH, et al.: Utility of Perfusion-Weighted CT Imaging in Acute Middle Cerebral Artery Stroke Treated With Intra-Arterial Thrombolysis. *Stroke*, 2001;32:2021-2028

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