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Overview

Synapse® 3D provides radiologists a comprehensive collection of application tools for day-to-day advanced image analysis. These tools can be used alone or combined seamlessly with base tools for additional clinical analysis.

Nuclear Medicine Viewer	Dental MPR	Vessel Extraction
RECIST Tracker	PERCIST Tracker	Tx Map
Sector MPR	Slicer	MR Brain Perfusion
CT Brain Perfusion	ADC Map	Lung Analysis Airway
Fat Analysis 3D	Fat Analysis 2D	

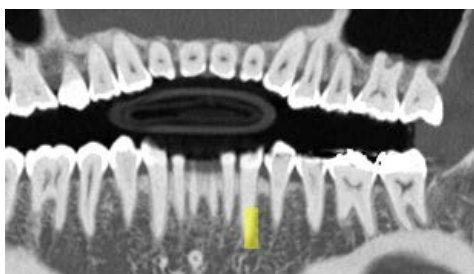
The intended use of Synapse 3D Radiology Focus Tools are to provide trained clinical users comprehensive and powerful tools to aid in reading, reporting, and surgical treatment planning.

Note: This product is not intended for use with or for the primary diagnostic interpretation of Mammography images.

Dental MPR

Dental MPR is a useful tool for radiologists to create and view panoramic images of teeth and alveolar bones, useful for implant planning. Main functions include:

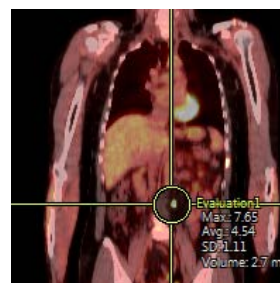
- Display cross sections
- Display panorama images of alveolar bones
- Virtual implant operations
- Output to DICOM or Windows printer



Nuclear Medicine Fusion

Nuclear Medicine Fusion Viewer allows the fusion and display of CT and Nuclear Medicine (SPECT or PET) to visualize anatomical and physiological data together. Main functions include:

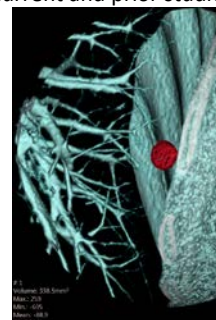
- Fusion of structural images captured by CT and functional images using rigid or non-rigid registration
- Manual or automatic registration
- Fusion display in orthogonal or oblique planes
- Layout options optimal for PET and SPECT-CT viewing
- Measurement of SUV
- Comparison with past analysis results and report output



Lung Analysis Airway

Lung Analysis Airway is a useful tool to analyze lung nodules, bronchi and low attenuation areas of the lungs, useful to assess nodules, airway obstructions and lung data over time. Main functions include:

- Automatic and semi-automatic extraction of the lung field and lung lobes
- Extraction of the contact area between the lung field and diaphragm
- Semi-manual extraction and volume calculation for nodules existing in lung field
- Extraction of bronchus regions and measurement of diameter of bronchi
- Signal values, Goddard Score and low attenuation cluster analysis for lung field region
- Comparison of nodules, attenuation and airway between current and prior studies

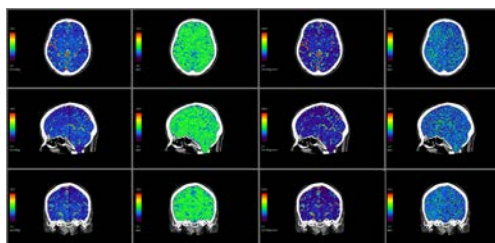


Brain Perfusion CT (3D & 4D)

Brain Perfusion CT is a useful tool for radiologists and neurologists. The software analyzes the changes in cerebral blood flow from the dynamic scan images of CT for the same slice and calculates CBV (Cerebral Blood Volume), CBF (Cerebral Blood Flow), MTT (Mean Transient Time), and TTP (Time to Peak) from the analysis results.

Main functions include:

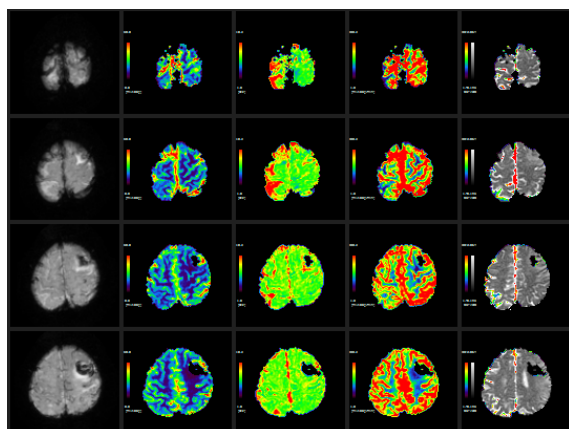
- Analysis of 3D or 4D brain perfusion CT data
- Automatic registration
- Position detection and correction of arteries and veins
- Calculation of CBV, CBF, MTT, and TTP
- Analysis result list display



Brain Perfusion MR

Brain Perfusion MR is a useful tool for radiologists and neurologists. The software analyses the changes in cerebral blood flow from the dynamic scan images of CT for the same slice and calculates CBV (Cerebral Blood Volume), CBF (Cerebral Blood Flow), MTT (Mean Transient Time), and TTP (Time To Peak) from the analysis results. Main Functions include:

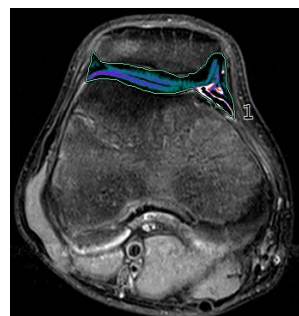
- Automatic registration
- Position detection and correction of arteries and veins
- Calculation of CBV, CBF, MTT, and TTP
- Analysis result list display
- Blend with the ADC Map



Tx Map

Tx Map provides radiologist calculations derived from the MR signal values. Clinical utility of T2 assessment include cartilage and collagen analysis. T2* is useful to determine iron deposits and distribution. Main functions include:

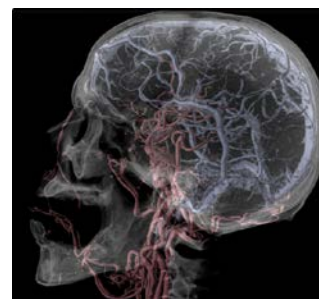
- Display the T2* Map
- Measure T2* values in ROIs
- Monitor the T2* Map time intensity curve
- Pseudo-color display of T2* Map images



Vessel Extraction

Vessel Extraction is a useful tool for radiologists and neurologists. In Vessel Extraction, the blood vessel region is semi-automatically extracted from the post-contrast image by removing the bone region using the pre-contrast image. Main functions include:

- Display three planes (axial, sagittal, and coronal) and respective 3D images
- Display of artery, vein and calcium
- Automatic and manual registration of images
- Displays of the brain vessel extraction result as 3D, MIP or Fusion
- Stereoscopic display using two 3D images with differing angles



PERCIST Tracker

PERCIST is useful to determine temporal changes of solid tumors using PERCIST 1.0 evaluation criteria. Main functions include the following:

- Automatic or manual registration of PET/CT images
- Measurement of background and lesions
- Evaluation by the PERCIST 1.0
- Comparison and synchronization with up to 9 past studies
- Output of status of approval, determination, and overall determination of studies
- Display of evaluation data with exportable trend graphs and data tables
- Management of user authority



RECIST Tracker

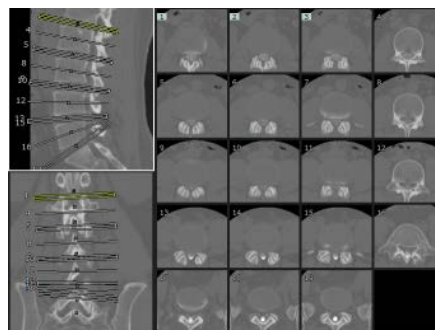
RECIST is useful to determine temporal changes of solid tumors using RECIST, WHO, mRECIST or Choi evaluation criteria. Main functions include the following:

- Allows evaluation of CT or PET-CT data
- Automatic or manual registration of PET/CT images
- Measurement and display of lesions
- Evaluation according to tumor evaluation criteria (WHO, RECIST1.0, RECIST1.1, mRECIST, Choi criteria)
- Comparison with up to 9 prior studies
- Display of evaluation data with exportable trend graphs and data tables
- Management of user authority

Slicer

Slicer is an application tool useful for reconstructing slice data through various translations, especially helpful for complex spinal analysis such as scoliosis treatment planning. Main functions include:

- Display slice images
- Reformat and reconstruction options
- Specialized layouts for slice visualization
- Spine detection with spine labeling
- Output slice images to DICOM or Windows printers



Sector MPR

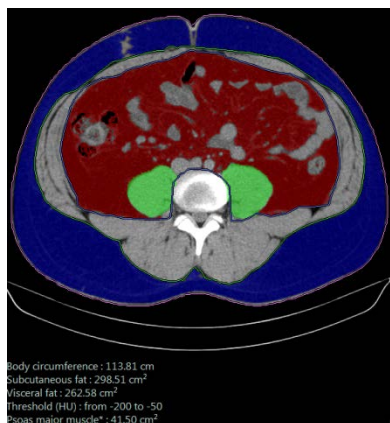
Sector MPR is a tool that is used to help radiologists simulate ultrasound examinations, particularly for aspiration and biopsy planning. The software allows display single or multiphasic studies allowing the radiologist to visualize probe and centesis placement. Main functions include:

- Display of sector MPR images
- Cine playback of multiphasic MPR images
- Display of pseudo light decay shading for realistic visualization
- Measurements on sector MPR images for centesis planning

Fat Analysis

Synapse 3D Fat Analysis is a useful tool for radiologists, oncologists, surgeons and endocrinologists. The key benefit of Synapse 3D Fat Analysis is the calculation of subcutaneous fat, visceral fat and psoas muscle volume, which are useful for monitoring sarcopenia, cachexia and response to chemotherapy.¹ The main functions include:

- Three-dimensional display and analysis of subcutaneous fat and visceral fat
- Automatic detection of subcutaneous fat, visceral fat and psoas muscle.
- Calculation of the area of subcutaneous fat and visceral fat for each slice
- Calculation of the circumference of the body surface
- Calculation of the fat ratio $\{(\text{visceral fat} + \text{subcutaneous fat}) / \text{volume of the measuring range} \}$ within the analysis range
- Output of designated report for fat measurement
- Calculation of the BMI value
- Comparison with past analysis results and report output



ADC Viewer

ADC Viewer is a useful tool for radiologists and neurologists. In ADC Viewer, apparent diffusion coefficients are calculated and visualised from information on signal values of diffusion-weighted images collected with MR. Main functions include:

- Display ADC Map and EADC Map images
- Measure ADC values in ROIs
- Pseudo-color display of ADC Map images
- Blending display of ADC Map images and background images
- Automatic/manual registration of ADC Map images and background images

For more information, or to schedule a demonstration, please contact your Fujifilm Representative by calling 1-866-879-0006.