

Vitrea Advanced Visualization applications offer full-powered solutions for 2D, 3D and 4D advanced visualization used to process and analyze clinical data. Cardiology, Neurology and Oncology workflows provide comprehensive toolsets that supply medical specialists with information for planning and treating patients.

### Applications

#### Multi Modality Viewer

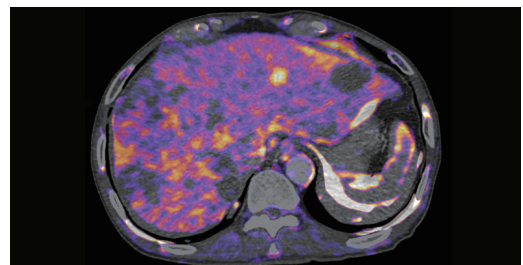
Derived series and specialized tools

- Intuitive presentation, navigation and manipulation of MRI, CT, CR, DX, RG, RF and XA images
- Ability to access advanced applications and workflows along with semi-automated whole body image MRI stitching
- Time Intensity Analysis (TIA) available for temporal MR series
- Supports image processing for subtraction of two MRI series/datasets
- Seamless features to compare multiple studies



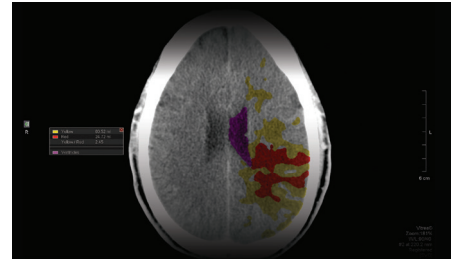
#### CT Body Perfusion 4D

- Whole-organ 3D perfusion
- Single-input organ workflow for display of Arterial Flow (AF) map
- Dual-input lung workflow for display of Pulmonary Flow (PF), Arterial Flow (AF) and Pulmonary Perfusion Index (PI) maps
- Dual-input liver workflow for display of AF, PF and hepatic PIC maps
- Deformable registration and motion correction
- Patlak Plot method for display of Arterial Flow maximum slope, Patlak Equivalent Blood Volume and Patlak Flow



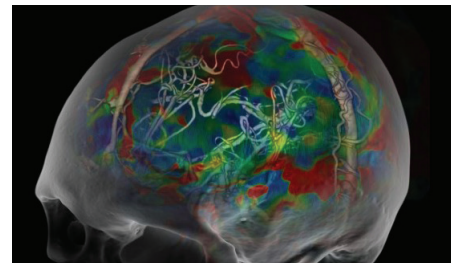
## CT Brain Perfusion 2D

- Automatic calculation of quantitative brain perfusion results: Regional Cerebral Blood Volume (rCBV), Mean Transit Time (MTT), Regional Cerebral Blood Flow (rCBF)
- Summary map with single view for communication of the perfusion results
- Automatic curve-fitting and motion correction



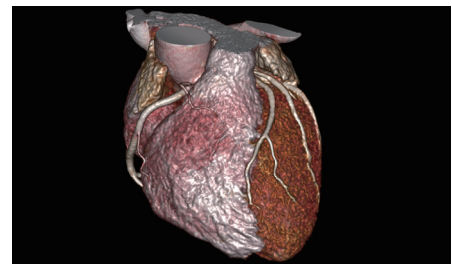
## CT Brain Perfusion 4D

- Automatic calculation of quantitative brain perfusion results: Regional Cerebral Blood Volume (rCBV), Mean Transit Time (MTT), Regional Cerebral Blood Flow (rCBF), Time-to-Peak of tissue response curve (TTP), delay of tissue response curve
- Single-view summary map for communicating the perfusion results
- 4D cine of the DSA view for visualizing the flow of contrast through the vessels
- Automatic arterial and venous phase separation in 3D views of the arteriogram and venogram (generated CTA-V view)
- Fusion of parametric and anatomical CT view



## CT Cardiac Analysis

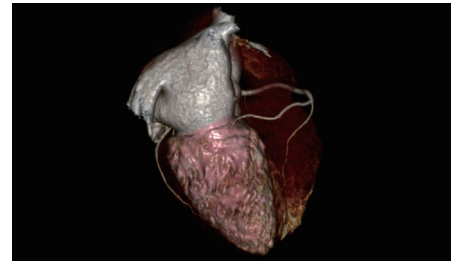
- Streamlined coronary workflow with automatic extraction of the coronary arteries and optimized viewports such as volume rendering, MIP, MPR, curved and straightened MPR views
- Full Vessel Probe capabilities for coronary artery analysis including the Lesion Tool, Vessel Walk, and Cath View
- Ability to display a subtraction and non-subtraction (CTA) series in a comparison side-by-side layout with auto link functionality
- SUREPlaque™\* tool assists clinicians in evaluating the characteristics inside blood vessels:
  - Characterize lesions in the vessel wall as either calcified or non-calcified
  - Quantify plaque burden and coronary remodeling non-invasively



\* SUREPlaque is a separately licensed application.

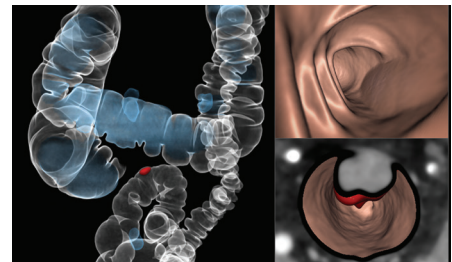
## CT Cardiac Functional Analysis

- Automatic segmentation of the heart, left ventricle and myocardium in multiple phases
- Automatic calculation of global metrics, including: end diastolic volume, end systolic volume, stroke volume, ejection fraction, cardiac output, cardiac index, stroke index and myocardial mass
- Short-axis, long-axis and four chamber views of the heart
- Automatic calculation of regional metrics, including: wall motion; percentage of wall thickening and regional ejection fraction; and polar maps with live 3D beating heart visualization
- Key findings classification for consolidated reporting of all cardiac workflows



## CT Colon Analysis

- Automatic-segmentation of colon with creation of 2D and 3D centerline for simultaneous multiplanar reformatting (MPR) and 3D review
- Single-click polyp segmentation for morphological characterization and quantification of size, density and distance to rectum
- Integrated filet view and endoluminal fly-through
- Automatic fluid/stool tagging and subtraction
- Polyp assessment and reporting using C-RADs guidelines



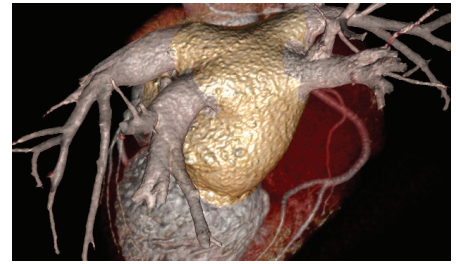
## CT Endovascular Stent Planning

- Automatic bone segmentation and vessel tracking with centerline and contour editing tools
- User-guided workflow with automated identification of anatomical landmarks and stent-specific endovascular measurements
- Auto-populated reporting worksheet with selected stent template measurements
- Multi-study support for longitudinal comparison
- Key measurements supporting fenestrated grafts using the clock angle tool and clock overlay functionality



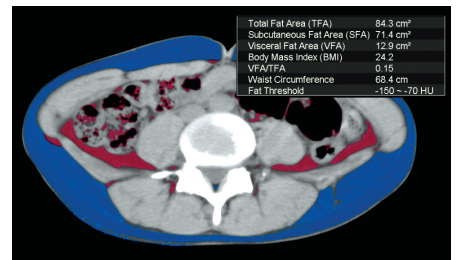
## CT EP Planning

- Automated segmentation of the left atrium and pulmonary veins
- Automatic centerline and lumen boundaries with 3D fly-through for visualization and measurement of the pulmonary vein ostia
- Ability to define esophagus for proximity calculation
- Ability to export results in a STL file
- Export the 3D model to an EP navigation and mapping system (EnSite™)



## CT Fat Measurement\*

- Segment subcutaneous and visceral fat regions
- Evaluate fat segmentation results
- Dedicated application report with results based on the obesity standard associated with the selected report guideline



\* CT Fat Measurement is only available in select countries. It is not available in the US.

## CT Liver Analysis

- Single-click liver and vascular segmentation
- Single-click tumor probe with tumor margin borders viewing in 2D/3D
- Volume fusion support for up to four timed phases.
- Resection planning tool to divide the liver into Remnant and Resected Liver and obtain liver volumes
- User selection for standard, rigid or deformable image registration
- Reporting templates for summarization of lesions:
  - Calculation of RECIST measurements
  - Calculation of WHO measurements



## CT Lung Analysis

- Automated segmentation of lung and airways with expert presets for visualization
- Single-click lung nodule segmentation tools to include solid nodules and ground glass opacity (GGO) nodules
- Quantification of lung nodules with nodule growth and doubling times in comparison studies
- Dictation Table with LUNG-RADS™, Fleischner Criteria and export options to PowerScribe® 360 deployment
- Additional software offerings for Lung Screening Initiatives



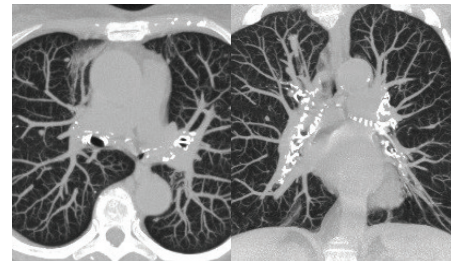
## CT Lung Density Analysis

- Lung density result quantification with HU density range, volume measurements, lung density index and the PD15% measurement
- Improved image quality for noisy images with built-in denoising function
- Semi-automatic right lung, left lung and airway segmentation
- Visualization of lung density with color-defined Hounsfield Unit (HU) ranges
- Density graph/histogram of the classified lung voxels' relative frequencies
- Comparison of upper and lower lung density index ratios



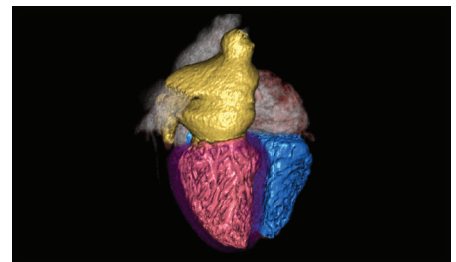
## CT Lung Screening Solution

- Vitrea Advanced Visualization's flagship CT Lung Analysis application with Image Denoising
- Support of Nuance PowerScribe® 360 Reporting
- PenLung™ by PenRad unified software solution
- Integrated with Visia™ CT Lung CAD
- Custom report templates with LUNG-RADS and ACR guidelines



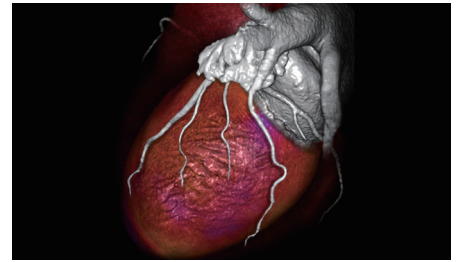
## CT Multi-Chamber CFA

- Semi-automatic segmentation of left atrium (LA), right ventricle (RV), left ventricle (LV) and myocardium, including identification of long axis and mitral valve boundaries across multiple phases
- Automatic calculation of RV/LV End Diastolic Volume (EDV), End Systolic Volume (ESV), Stroke Volume (SV), Cardiac Output (CO), 3-point LA metrics, LV/RV regurgitation fraction, cardiac index and myocardial mass
- Calculation of regional metrics including wall motion, percentage of wall thickening, regional ejection fraction and polar plots
- Key findings classification for consolidated reporting of cardiac workflows



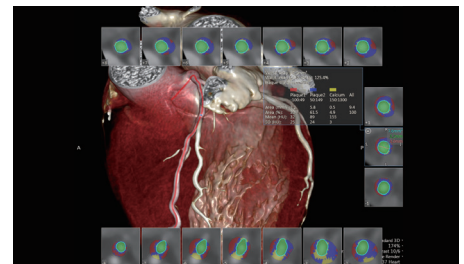
## CT Myocardial Perfusion

- Semi-automatic chamber and myocardium segmentation
- Qualitative measurements, including Myocardial Mass, Myocardial Volume and Hounsfield Unit (HU) attenuation
- Polar map plots (contrast, transmural perfusion ratio, perfusion index) highlighting potential myocardium defects
- Defect scoring tool provides users an alternative way to:
  - Determine size of hypo-dense regions
  - Calculate percent of affected myocardium
- 17-segment or detailed perfusion polar maps
- Ability to view cardiac vessels over colored attenuation data using 3D fusion



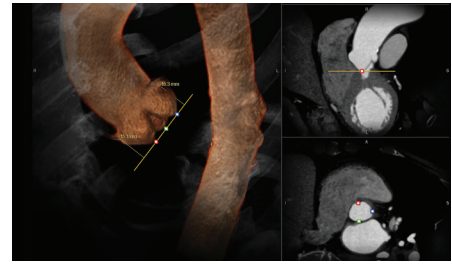
## CT <sup>SURE</sup>Plaque

- Single-click segmentation, with automatic centerline and lumen boundaries
- Quantify plaque burden and coronary remodeling non-invasively
- Visualize coronary vessel anatomy and disease with ease using defined HU ranges
- Characterize a lesion in the vessel wall as either calcified or non-calcified
- Automatic measurement and display of: lumen area and diameter; plaque area; plaque burden; ratio of wall area and lumen area; plaque volume; and plaque index



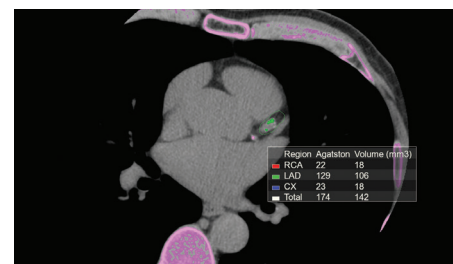
## CT TAVR Planning

- Ability to load multiple volumes or series, allowing users to analyze and perform measurements in different phases of the cardiac cycle with combined reporting
- Automatic segmentation of aortic root, aortoiliac vessels with multiple viewing options including volume rendering, MIP, MPR, curved and straightened vessel MPR views
- Custom reporting templates with user guided automation assists with analysis and necessary measurements including:
  - Annulus with diameters, area and circumference
  - Right and left ostium measurements
  - Sinotubular Junction (STJ) diameter and size
  - Sinus of Valsalva width and height
  - Access route diameters, area and tortuosity
- Flexibility to enable planning for transfemoral, subclavian and transapical delivery approaches with display of C-Arm angles for device placement



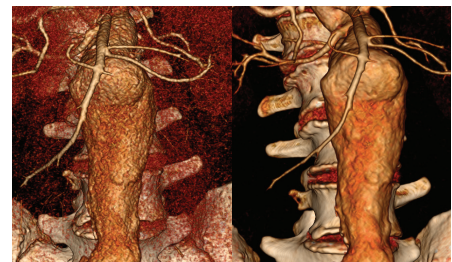
## CT VScore

- 2D and 3D visualization
- Report template autofills user selected scores and includes snapshots and graphs that can be exported
- Calculation of calcium score using Agatston, Volume or Mass
- The calcium percentile is displayed on a graph that compares the patient's calcified plaque burden to that of other asymptomatic men or women of the same age range and/or ethnic group



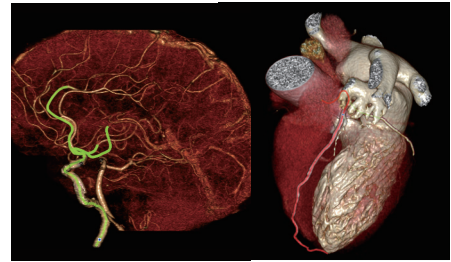
## Vitrea Image Denoising

- SPD denoising algorithm
- Customized filter, with reduced pixel noise and improved signal contrast to noise ratio (SNR)
- Real time toggle between original and denoised volumes
- Predefined image filter presets may be modified and saved for future use
- Interactive denoising preview capability
- Compatible with multi-phase and multi-volume datasets within select corresponding protocols



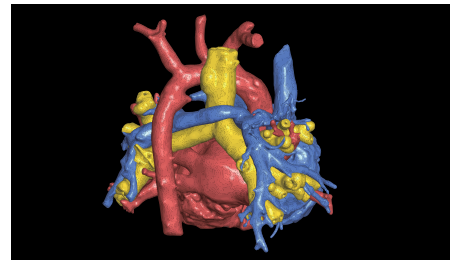
## Vessel Probe

- The Vessel Probe tool creates a centerline through the vessel lumen
- Multiple image viewing formats including orthogonal MPR (multiplanar reformatted), oblique MPR, curved MPR, 3D and curved reformat views of the selected vessel
- Automated Stenosis Measurement tools that include single and dual reference, NASCET and average
- Automated internal and external lumen boundary detection, including maximum and minimum lumen diameters
- Automated stenosis measurement with a single-click and drag movement across the vessel



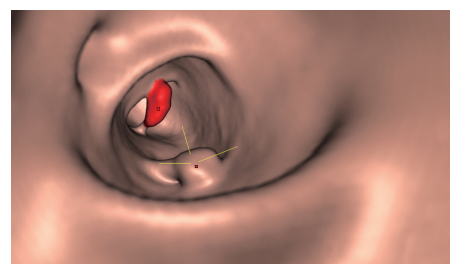
## 3D Printing

- 3D models can be created from CT, MR, or XA images and exported from Vitrea in the form of stereolithography (STL). STL files are used in a wide variety of other applications
- 3D print on-demand
- Best-in-class 3D printing
- Ability to print 3D models in a wide range of materials and colors - from soft and dissectable to rigid and durable



## iCAD VeraLook® CT Colon CAD

- 2D and 3D fly-through visualization
- Segments the colon
- Extracts features from potential polyps based on shape, morphology, texture, contrast, brightness and other attributes
- Uses extracted features to classify detections as potential polyps or stool, normal tissue, fold, etc.
- Automated identification of regions of interest (ROI)
- Bookmark CAD markings
- CAD summary panel





## MeVis Visia CT Lung CAD

Visia enables the detailed segmentation of anatomical pulmonary structures as well as the automatic detection of abnormalities (lung tumors, pulmonary embolism), their evaluation and quantification.

Automatic software calculation of the following measurements for each segmented nodule:

- Volume (mm<sup>3</sup>)
- Mean diameter (mm): average of the maximum diameter and short axis diameter
- Average/minimum/maximum densities (HU)

Automated tracking for lung nodules in longitudinal exams with calculation of the following temporal measurements:

- Elapsed time in days
- Doubling time in day
- Percent (%) growth

MeVis Visia CT Lung CAD is not available for sale in Australia.

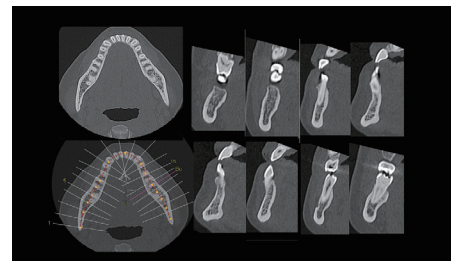


## CT Dental

- 2D Length, Angle and ROI measurements are available
- Panoramic and crosscut images can be saved as individual images or screen save images
- Ability to enter a series comment
- Create and save additional protocols for more detailed processing

Dental Analysis is only available in select countries. Not available for sale in the United States or Australia.

iCAD VeraLook CT Colon CAD is owned and manufactured by iCAD.  
MeVis Visia CT Lung CAD is owned and manufactured by MeVis Medical Solutions.  
Third party marks are property of their respective owner.



## CANON MEDICAL SYSTEMS CORPORATION

<https://global.medical.canon>

©Canon Medical Systems Corporation 2017-2021. All rights reserved.  
Design and specifications are subject to change without notice.  
MCAHI0050EAC 2021-11 CMSC/Produced in Japan

Canon Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485. Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

<sup>SURE</sup>Plaque and Made for Life are trademarks of Canon Medical Systems Corporation.

EnSite is a trademark of St. Jude Medical, Atrial Fibrillation Division, Inc.

PenLung is a trademark of Penrad technologies, Inc.

Visia is a trademark of MeVis Medical Solutions.

LUNG-RADS is a trademark of The American College of Radiology.

PowerScribe is a trademark or registered trademark of Nuance Communications, Inc.

VeraLook is a registered trademark of iCAD, Inc.

This document may include trademarks or registered trademarks of their respective owners.

Disclaimer: Some features presented in this brochure may not be commercially available on all systems shown or may require the purchase of additional options. Please contact your local representative from Canon Medical Systems for details.

*Made For life*