TOSHIBA

MR Neuro Expert

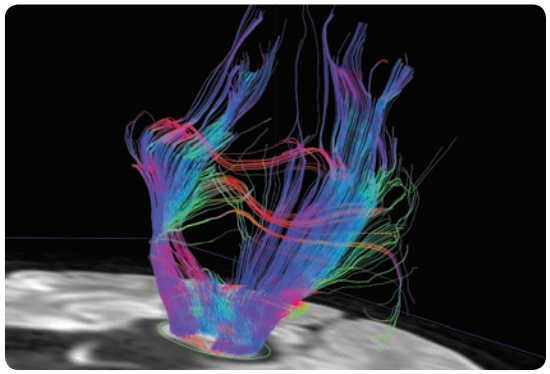
Vitrea™ software is a multi-modality advanced visualization system providing comprehensive applications in a variety of IT environments.

The MR Neuro Expert package, powered by Olea Medical, includes DTI/ Fiber Tracking, Permeability, ASL and expanded application workflows for the brain. It provides users with the latest tools and applications for neuro imaging.

Applications

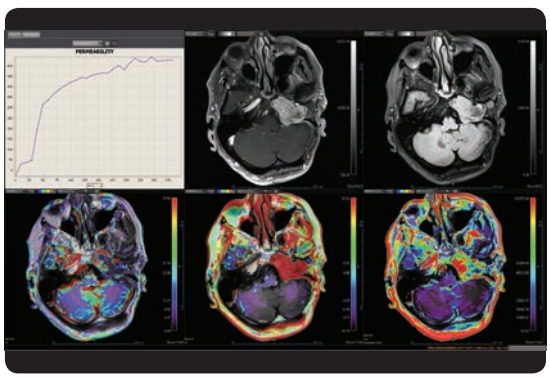
DTI*

The DTI application computes parametric maps from raw diffusion tensor series (Mean Diffusivity map, Trace-Weighted map, Fractional Anisotropy (FA) map, Relative Anisotropy (RA) map, Volume Ratio (VR) map, Color-coded fiber tracts direction map, Radial Diffusivity map and Axial Diffusivity map). It allows users to reconstruct axonal tracts. The Fiber Tracking is based on a seed approach or an exhaustive search.



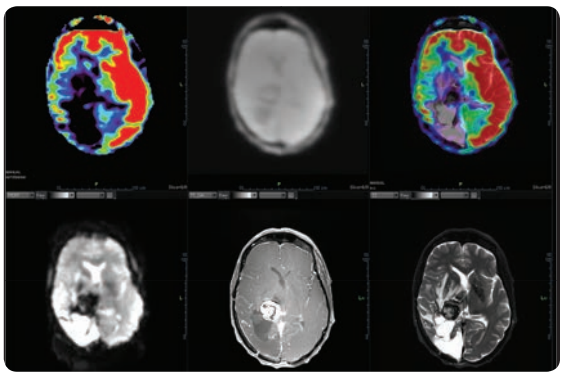
DCE Permeability*

The DCE Permeability application computes the main permeability maps from raw dynamic contrast-enhanced images, supports irregular time sampling and different mathematical models with computation on every time point and provides optimized qualitative maps (TME, AUC, WASHIN, WASHOUT, PEAK) and semi-quantitative maps (Ve, Vp, Kep and Ktrans). It is embedded with the following: automatic or manual arterial input function, automatic or manual background segmentation and motion correction algorithm.



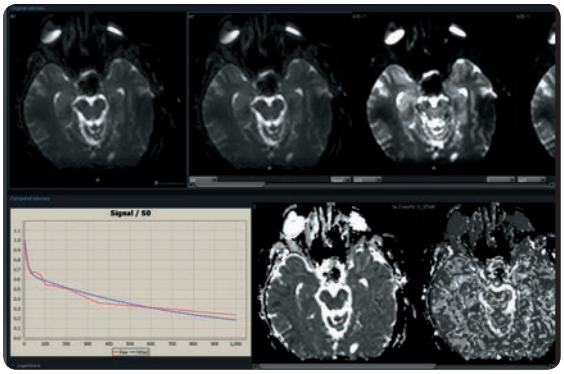
Arterial Spin Labeling (ASL)*

The Arterial Spin Labeling (ASL) application is a non-invasive imaging technique capable of measuring perfusion. ASL allows loading label/control images. It performs 2D motion correction for realignment as well as spatial smoothing and denoising of images to increase signal-to-noise ratio. ASL also computes the perfusion weighted map and provides quantitative blood flow computation.



IVIM*

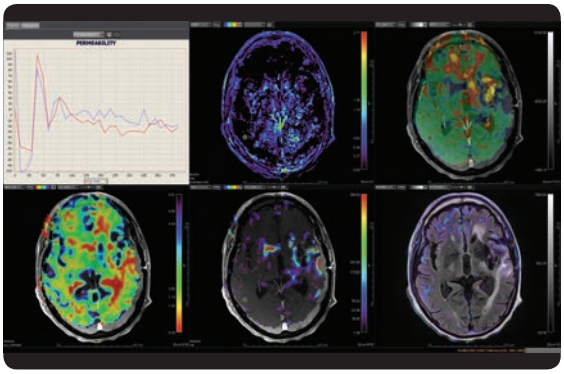
IVIM imaging is a concept and a method to quantitatively assess all the microscopic translational motions that could contribute to the signal acquired with diffusion MRI. These motions are both molecular water diffusion (due to thermal Brownian motion) and microcirculation of blood (also called pseudo-diffusion). IVIM computes the main IVIM maps (D, D*, f). It is the only one featuring the Bayesian post-processing method, a rigorous probabilistic estimation of diffusion parameters. IVIM, offering optimized computational time, is embedded with motion correction algorithms and includes NEX variable or accumulation variables.



Application Workflows

Brain Tumor*

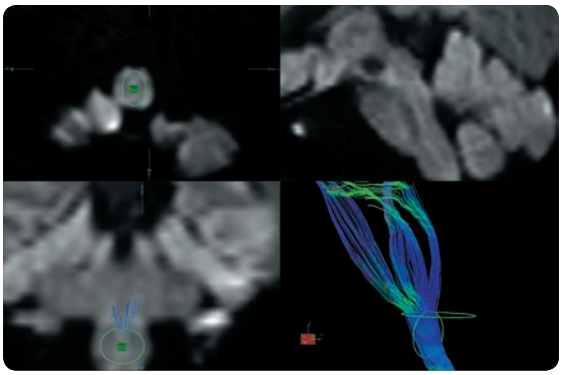
The Brain Tumor application workflows offer fully automated step by step processing, including quantitative and qualitative multi-parametric analysis based on algorithms that have been tested and documented. This application workflow also includes an optimized leakage correction algorithm to improve the accuracy of dynamic susceptibility-weighted contrast-enhanced perfusion MR imaging.



- Brain Tumor DSC DCE Expanded
- Brain Tumor DCE
- Brain Tumor Expanded

DTI Spine*

The DTI Spine application workflow analyzes the severity of spinal cord injury, identifies intact nerve fiber tracts and provides a quantitative assessment of neural damage in various spinal cord pathologies. This application workflow is composed of two main steps: DTI Computation and multiparametric analysis with the possibility to export the results.

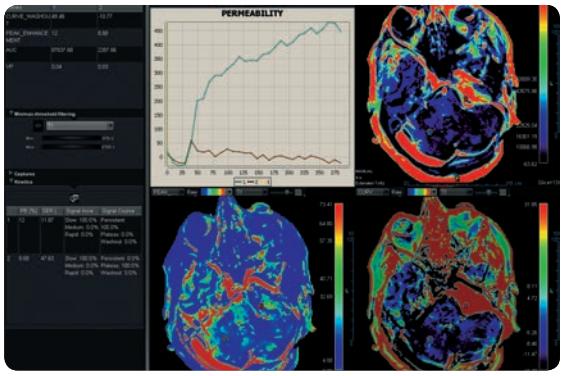


Stroke Expanded*

The Stroke Expanded application workflow includes automatic mismatch computation, providing computation of maps and volumetric estimation of infarct and penumbra. This application workflow allows users to go further into each step of post-processing for higher clinical confidence.

Head and Neck Expanded*

The Head and Neck Expanded application workflow provides automatic diffusion, permeability maps computation, including kinetic curves analysis (graphically presented) for qualitative estimation of the lesion heterogeneity and quantitative data to efficiently assess the patient's response to treatment.



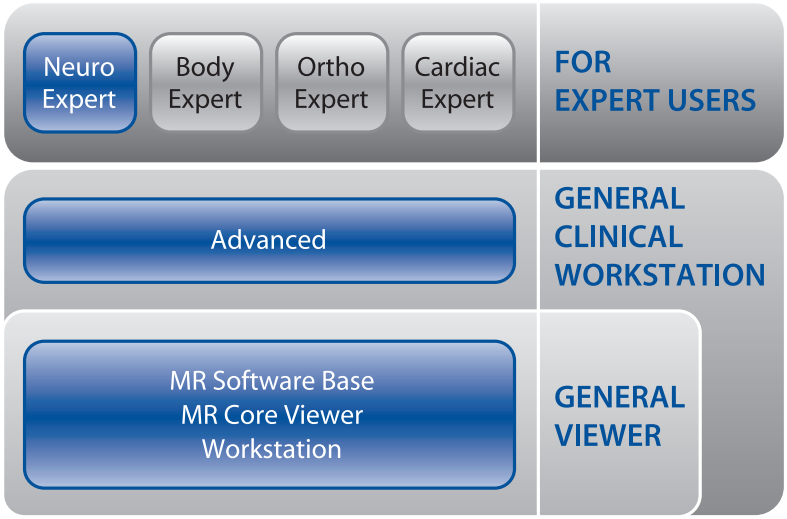
MS*

The MS application workflows offer an efficient way to monitor a patient's response to treatment. The MS One Study application allows the physician to assess the size, number and metabolic activity of measurable lesions and automates the recording and reporting process. MS tracking offers a temporal comparison, helping the physician to estimate the overall increase or decrease in size and number of lesions observed.

- MS One Study
- MS Tracking

* Designed and manufactured by Olea Medical.

Clinical Application Packages



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TOSHIBA MEDICAL SYSTEMS CORPORATION

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