

MR T1 Perfusion



Purpose

This postprocessing package is meant to evaluate T1 perfusion studies and generate numerical and graphical results and maps.

T1 perfusion studies are based on the fact that contrast agent shortens the T1 relaxation times of tissues.



Before you begin

Valid imaging series

A valid imaging series for the MR T1 Perfusion package is a T1w dynamic perfusion imaging series where a stack of slices is repeatedly acquired over time. It is a series that holds slices and dynamics. The MR T1 Perfusion package requires at least 4 dynamics.

This type of series allows to observe the changes of the T1 relaxation time and in such a way the contrast-uptake.

Workflow

Select a suitable dynamic series and click **MR T1 Perfusion** to start the analysis.



Scroll through the images



Through dynamics

In the image viewport, drag to the left or right.



Through slices

In the image viewport, drag up- or downwards.



Through maps

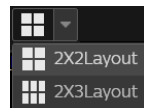
In the map viewport, drag to the left or right.

Options



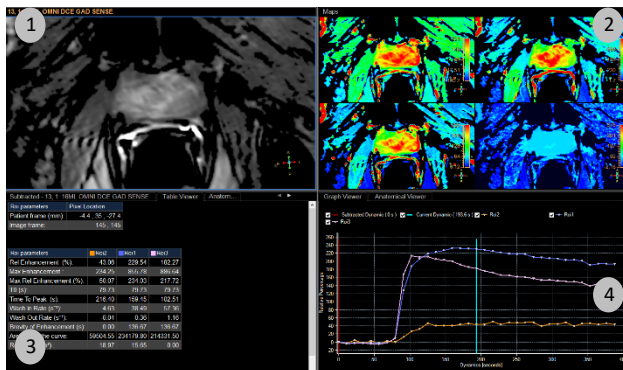
Click any menu item to enable/disable this option.

The menu offers functionalities such for Follow Mouse, Save Layout Presets, and Delete Layout Presets.



To select another screen layout, click the drop-down arrow and select 2x2 or 2x3 Layout

Layout



1. Reference Series
2. Parametric Real Time Maps
3. Table Viewer
4. Graph Viewer

Verify & adjust data quality (optional)

Apply Spatial Smoothing

For spatial smoothing of the resulting maps

Possible settings are: None (no smoothing), Weak, Medium, or Strong. Spatial smoothing smooths the maps and the original images. In such a way, spatial smoothing has an effect on the numerical results.

Define mask (optional)

This optional workflow step serves to adjust the mask and to enable the display of the mask while adjusting. Setting a threshold mask will exclude background pixels from the functional map calculations. All pixels with values below the mask value will be displayed blue and will be excluded from the calculation. Only pixels with intensity above the mask value are used for the calculations.

- Right-click and drag in the source image to adjust the mask.

Select Maps

You can select the maps in the task guidance panel for real-time calculation and display, and for the generation of new imaging series.

Click the checkbox of a map to select/deselect this map.

The display of the real-time calculated maps will be updated accordingly.

Measure ROIs

Draw one or more ROIs to focus on a specific Region of Interest either on the dynamic series in the upper left viewport, the subtracted series in the lower left viewport, or any of the maps in the upper right viewport. The result table and graph update accordingly.

Select Underlay

You can select an MR series as underlay of the parametric maps allowing for better visualization. To optimize the display, you can also adjust the opacity of the overlaying parametric maps.

Generate Series

To export maps as a new image series, click **Generate Series**. All selected parametric maps will be saved as new series and can be found in the Patient Directory.

To save the results, choose either the saving options on the right side of the toolbar or create a key image display.



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