

Diagnosoft® PLUS

Single Solution Analysis of Multiple Cardiac MR Images

What if ... you could accurately assess cardiac regional function, viability, perfusion, and other properties?

What if ... you could present the results in a single view as well as an integrated report?

What if ... you could detect and localize regions of impairment?

Current Challenges

When a physician visually assesses the health of the heart by inspecting cardiac magnetic resonance images, subjectivity is a clear limitation. Decision-making becomes inherently qualitative, rather than quantitative, and a host of variables impact outcomes:

- Accuracy depends on the skills of the reader and MR image quality.
- Localization of the dysfunctional region is challenging, and detecting dysfunction caused by sub-endocardial infarcts, may even be more difficult.
- Visual assessment cannot determine the exact degree of mechanical dyssynchrony, or different timing of local myocardial contraction and relaxation.
- Determining the extent of scarred tissue by marking the hyperenhanced region and its heterogeneity is still difficult.
- MRI provides many types of cardiac images, but it is difficult to integrate the information from the images and provide a single report covering all quantitative assessments.

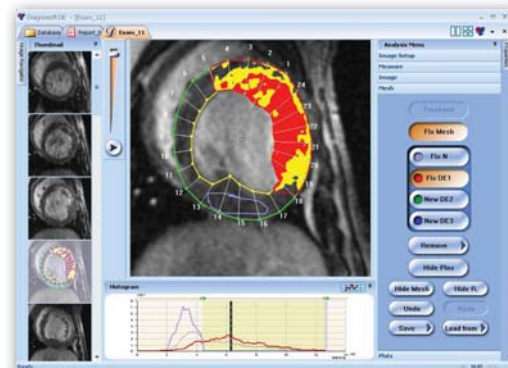
One for All, All for One

Diagnosoft PLUS helps physicians and researchers overcome the drawbacks inherent in visual cardiac MRI assessment, facilitating greater consistency of diagnosis, helping in proactive intervention, and providing quantitative feedback about the effectiveness of cardiovascular therapy.

Cardiac MR enables cardiologists to have more than one test in a *single* scan session. Diagnosoft PLUS follows suit, providing a *single* tool and a *unified platform* to analyze *all* the images obtained. It immediately improves the ability to make a quantitative diagnosis using the following analysis tools and modules:

HARP® MR image analysis, which tracks the regional cardiac motion from tagged images, and measures regional function: circumferential shortening, radial strain, wall thickening and other related measures, as well as measuring ventricular torsion in short-axis views of the heart;

First-pass MR image analysis, which determines time intensity curves, and measures peak intensity, up-slope, and other measures related to blood flow in the heart muscle;



Automatic segmentation of hyper-enhanced region

Cine MR image analysis, which provides easy segmentation and identification of endocardium and epicardium, and measures ventricular volume, mass, ejection fraction (EF), wall thickening, wall thickness and other relevant global measures;

Viability MR image analysis, which determines the volume, mass, transmural and regional distribution of delayed enhancement regions of the heart; and

T2* Analysis, which provides an easy and automated way to measure T2* from images acquired at different echo time (TE) by MRI. The module provides a map of T2* with pixel resolution, as well as an easy way to divide the heart into different segments based on the 17-segment model of the heart.

Diagnosoft® PLUS Benefits

Accuracy: By “measuring” the motion of the segments of the heart, including regional strain and twisting of the left ventricle, Diagnosoft PLUS eliminates the ambiguity associated with qualitative assessment.

Precision: Strain maps produced by Diagnosoft PLUS show the degree and exact location of regional dysfunction, and help visualize and localize sub-endocardial infarcts.

Definitive dyssynchrony assessment: Strain measurements for all the segments, during the cardiac cycle, enable the measuring of mechanical dyssynchrony.

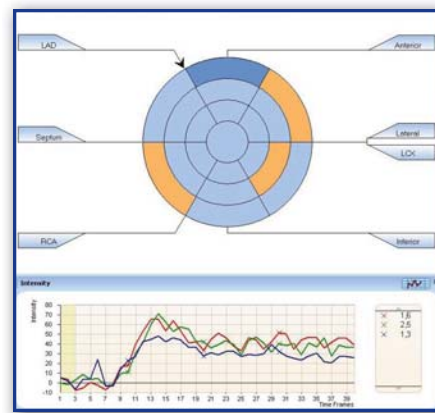
Localization: Strain is a quantity that reflects the actual regional contraction, or lack of contraction, of the myocardium. The same localization is the main feature of the other tissue parameters; such as tissue hyper-enhancement and T2* measurements.

Sensitivity: Diagnosoft PLUS measurements enable the detection of subtle changes in regional tissue parameters that are extremely hard to detect visually.

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Speed and automation: Using Diagnosoft PLUS, results can be produced in a very short time as maps of strain distribution from HARP, hyper-enhanced regions, blood perfusion dynamic parameters, and T2*.

Diagnosoft PLUS employs a graphical user interface for importing and analyzing images, supports exporting of the results as movies, images, tables, and reports, and can export measurements to Excel files, bull's-eye and time-resolved graphs, and other representations of the heart.



17-segment model presenting first-pass contrast dynamics

About Diagnosoft®

Diagnosoft, Inc., based in North Carolina, is a privately held company specializing in cardiac MR image analysis. Diagnosoft develops and markets a suite of software solutions that assists hospitals, medical research centers, and healthcare institutions in diagnosis, staging and therapeutic monitoring of cardiovascular disease. The company's overriding objectives are to improve patient outcomes, increase physician productivity and accuracy, and enhance research and drug development advances.

Diagnosoft, Inc.

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