

# Diagnosoft® HARP® Cardiac MRI Analysis for Quantitative Diagnosis

**What if ... you could have an accurate and precise way to assess cardiac regional function?**

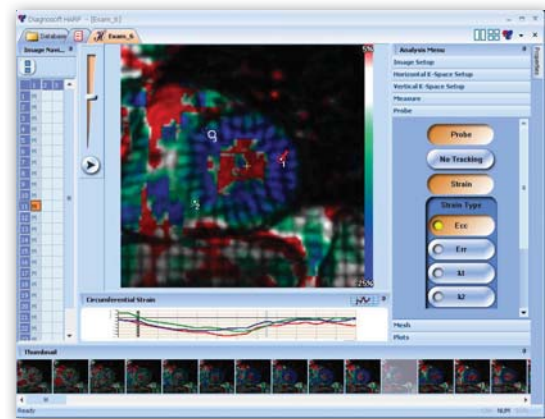
**What if ... you could have a definitive way to measure mechanical dyssynchrony?**

**What if ... both could be done in a fast, automated and user-independent way?**

## Overcoming Pre-Existing Conditions

Since the advent of cardiac MRI, assessing regional function of the heart, or segmental wall motion, has been mostly qualitative. This creates certain challenges:

- Accuracy depends on the skills of the reader as well as 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 differences in timing of local myocardial contraction and relaxation.
- The motion, or lack of motion, of a segment in the myocardium does not correlate well with the degree of the dysfunction.



*Color-coded images for better quantification of regional function*

## The Heart of HARP®

Diagnosoft HARP 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.

Diagnosoft HARP is the first FDA 510k-cleared software designed for the analysis of tagged cardiac MR images. Using HARP methodology, tagged MR images of the heart are analyzed to track the motion of the heart wall for rapid measurement and analysis of myocardium contraction and ventricular torsion.



*17-segment model and strain curves*

## Diagnosoft® HARP® Benefits

**Accuracy:** By “measuring” the motion of the segments of the heart, Diagnosoft HARP eliminates the ambiguity associated with qualitative assessment.

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

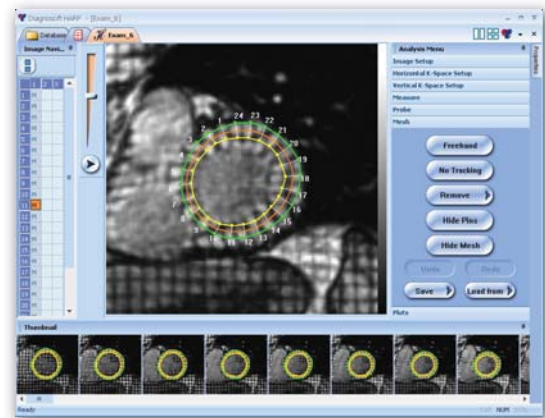
**Definitive dyssynchrony assessment:** Strain measurements for all the segments, during the cardiac cycle, enable the measurement of mechanical dyssynchrony.

**Localization:** Strain is a quantity that reflects the actual regional contraction, or lack of contraction, of the myocardium.

**Sensitivity:** Diagnosoft HARP measurements enable the detection of subtle changes in regional function that are nearly impossible to detect otherwise.

**Speed and automation:** Using HARP, results can be produced rapidly with minimal user interaction.

Diagnosoft HARP employs a graphical user interface for importing and analyzing cardiac MR 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.



*Segmentation of the myocardium*

## 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 physicians in private practice, hospitals, medical research centers, and drug development companies in diagnosis, staging and therapeutic monitoring of cardiovascular disease. The company strives to improve patient outcomes, increase physician productivity and accuracy, and enhance research and drug development advances.

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