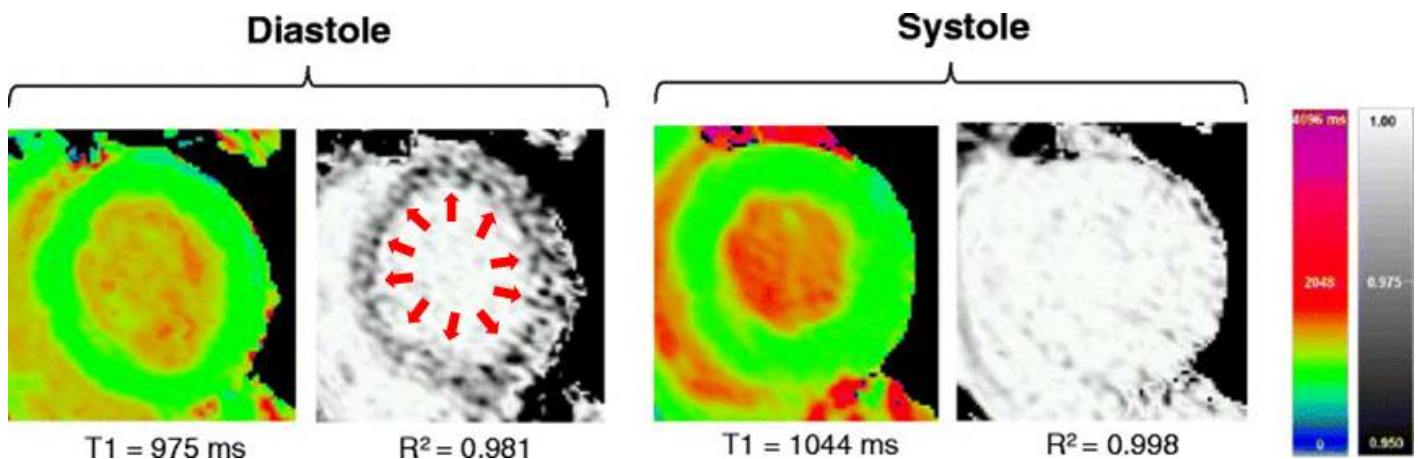


New MRI method for patients with fast and irregular heartbeats

Magnetic resonance imaging (MRI) takes very detailed pictures of the heart. MRI is very safe because it does not give patients harmful x-rays and is one of the best hospital tests used by doctors to check how well the heart works, and to diagnose heart diseases like heart attacks.

One very new and useful MRI method is called “T1-mapping”. T1-mapping generates colourful images of the heart, and uses numbers and different colours to diagnose heart disease. However, T1-mapping cannot be reliably used in patients with fast and irregular heartbeats, like atrial fibrillation, which is common especially in older people, who may need heart scans.



Examples of the T1 maps (in colour) and “quality maps” (in black and white) taken in a patient with a fast heart rate. The left pair was taken using the usual version, and areas of poor quality are dark on the quality map (red arrows); the right pair was taken with the newly developed version. (Adapted from Figure 6 in the original publication)

To combat this problem, we developed a new version of the T1-mapping method, designed to work well even when the heartbeat is fast and irregular. We found that the new version worked very well with fast and/or irregular heartbeats, and improved image quality and (see Figure).

This work is important as it means we can now apply T1-mapping reliably in patients with fast and irregular heartbeats. This new method may become a new standard for improving the diagnosis of heart disease.

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Publication

[Systolic ShMOLLI myocardial T1-mapping for improved robustness to partial-volume effects and applications in tachyarrhythmias.](#)

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