

# Clinical evaluation of MAgnetic Resonance imaging in Coronary heart disease

<b>Submission date</b> 07/02/2006	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 21/02/2006	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 17/07/2015	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr JP Greenwood

**Contact details**  
Senior Lecturer & Consultant Cardiologist  
Leeds University & Leeds Teaching Hospitals NHS Trust  
Department of Cardiology  
G Floor, Jubilee Wing  
Leeds General Infirmary  
Great George Street  
Leeds  
United Kingdom  
LS1 3EX  
+44 (0)113 392 5404  
[j.greenwood@leeds.ac.uk](mailto:j.greenwood@leeds.ac.uk)

## Additional identifiers

**Protocol serial number**  
N/A

## Study information

**Scientific Title**

Clinical evaluation of MAGnetic Resonance imaging in Coronary heart disease

**Acronym**

Ce-MARC

**Study objectives**

Approximately 2.5 million people in the UK suffer from the symptoms of CHD. Currently patients with CHD undergo a number of tests, including angiography, which carries a small but significant risk. It is anticipated that the new test of Cardiac Magnetic Resonance Imaging (CMRI) will be more reliable in identifying those patients who would benefit from a bypass or angioplasty than current non-invasive tests.

This research programme will include the first large-scale prospective evaluation of a validated comprehensive CMRI imaging protocol compared to the standard non-invasive tests Exercise Treadmill Testing (ETT) and Single Photon Emission Computed Tomography (SPECT) for the diagnosis of suspected Coronary Heart Disease (CHD) with x-ray coronary angiography as the reference standard. Patient follow up will provide much needed prognostic data for CMRI, and a health economic evaluation and assessment of patient preference will be performed for the different investigation strategies.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Ethics approval received from the Leeds West Research Ethics Committee, 24/08/2005, ref: 05/Q1205/126

**Study design**

Randomised cross-over study

**Primary study design**

Interventional

**Study type(s)**

Diagnostic

**Health condition(s) or problem(s) studied**

Coronary heart disease

**Interventions**

Comparing non-invasive techniques for diagnosing coronary artery disease (ETT, SPECT and CMR) against invasive angiography. Patients who agree to take part in the study will initially undergo three investigations: ETT and then in random order, cardiac Magnetic Resonance Imaging (MRI) and SPECT imaging. After all three tests have been completed, all patients will undergo x-ray angiography.

**Intervention Type**

Other

**Phase**

Not Specified

**Primary outcome(s)**

The diagnostic performance of MRI to detect significant CHD on x-ray angiography

**Key secondary outcome(s)**

1. The diagnostic performance of current standard clinical investigations of ETT and SPECT
2. The cost effectiveness of CMRI in a diagnostic strategy for the systematic investigation of patients with suspected CHD
3. Patient's preference of the different strategies for the investigation of suspected CHD

**Completion date**

27/02/2011

## **Eligibility**

**Key inclusion criteria**

1. Ages between 35 and 79 years
2. Weight less than 110 kg
3. Suitable for coronary revascularisation if required
4. Clinically stable
5. In sinus rhythm

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Key exclusion criteria**

1. Previous revascularisation
2. Evidence of crescendo angina or acute coronary syndrome
3. Contraindication to MRI imaging (pacemaker, intraorbital debris, intraauricular implants, intracranial clips)
4. Contraindication to adenosine infusion (regular adenosine antagonist medication, asthma /chronic obstructive pulmonary disease, second or third degree atrioventricular heart block, sino-atrial disease)
5. Aged less than 35 years
6. Weight greater than 100 kg
7. Non-sinus rhythm
8. Resting heart rate greater than 100 /min
9. Frequent ventricular ectopy (greater than 3 Ventricular Premature Beats [VPB] per minute)
10. Pregnancy
11. Known adverse reaction to adenosine or gadolinium contrast agent

- 12. Inability to lie supine for 60 minutes
- 13. Known chronic renal insufficiency

**Date of first enrolment**

27/02/2006

**Date of final enrolment**

27/02/2011

## Locations

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

Leeds University & Leeds Teaching Hospitals NHS Trust

Leeds

United Kingdom

LS1 3EX

## Sponsor information

**Organisation**

British Heart Foundation

**ROR**

<https://ror.org/02wdwnk04>

## Funder(s)

**Funder type**

Charity

**Funder Name**

British Heart Foundation (UK)

**Alternative Name(s)**

the\_bhf, The British Heart Foundation, BHF

**Funding Body Type**

Private sector organisation

### Funding Body Subtype

Trusts, charities, foundations (both public and private)

### Location

United Kingdom

### Funder Name

Leeds General Infirmary (LGI) Challenge Fund (UK)

## Results and Publications

### Individual participant data (IPD) sharing plan

#### IPD sharing plan summary

Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	11/03/2014		Yes	No
<a href="#">Results article</a>	results	15/07/2015		Yes	No
<a href="#">Protocol article</a>	protocol	29/07/2009		Yes	No
<a href="#">Other publications</a>	prospective trial	04/02/2012		Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes