

# The RASCAL study (refractory angina spinal cord stimulation and usual care)

<b>Submission date</b> 28/02/2011	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 12/04/2011	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 05/12/2017	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Coronary heart disease (CHD), also known as ischemic heart disease, is one of the leading causes of death worldwide. CHD develops because of the build-up of fatty deposits (plaque) on the walls of the coronary arteries (the arteries that supply the heart with oxygen-rich blood). When arteries are blocked or narrowed, the heart does not receive enough blood to function properly, which can cause pain and tightness in the chest (angina). Refractory angina (RA) is a form of angina where usual treatments such as coronary artery bypass grafts (an operation in which a blood vessel from another part of the body is attached to the coronary artery above and below the blocked or narrowed area so that blood is diverted around the blockage) are ineffective. As RA is so difficult to treat, it can be extremely disabling for patients, involving frequent hospital visits and a reduced quality of life. Spinal cord stimulation (SCS), sometimes called neuromodulation, is a treatment used for people with long-term (chronic) debilitating pain conditions. It involves implanting a 'pacemaker-like' box under the skin and connecting it using leads and electrodes to the nerves of the spine (spinal cord) at chest level. Although a small number of UK centres currently provide this treatment, it has not yet become accepted practice in the treatment of RA. The aim of this study is to look at the effectiveness of SCS in the treatment of patients with RA.

### Who can participate?

Adults suffering from CHD with RA.

### What does the study involve?

Participants are randomly allocated to one of two groups. Participants in the first group (intervention group) undergo an operation so that the spinal cord stimulator (SCS) device can be implanted and connected to the spinal cord. The participants in this group also continue to receive usual medical care, including pain relief medications and educational sessions with a pain consultant. Participants in the second group receive normal care alone, which consists of pain relief medications, educational sessions with a pain consultant and the option to use a TENS machine (a device designed to provide pain relief using electrical stimulation to the skin). At the start of the study and then again after six months, participants in both groups complete a number of questionnaires in order to assess their pain levels and quality of life.

What are the possible benefits and risks of participating?  
Not provided at time of registration

Where is the study run from?  
South Tees Hospitals NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?  
May 2011 to July 2013

Who is funding the study?  
National Institute for Health Research (UK)

Who is the main contact?  
Dr Sam Eldabe  
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## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**Protocol serial number**  
Version 2.0/ 20Jan11

## Study information

**Scientific Title**  
A multicentre randomised controlled trial of Spinal Cord Stimulation plus usual care vs. usual care alone in the management of Refractory Angina: a feasibility & pilot study

**Acronym**  
RASCAL

**Study objectives**

Our overarching hypothesis is that spinal cord stimulation (SCS) plus usual care will have superior clinical and cost-effectiveness compared to usual care alone in Refractory Angina (RA) patients. A pilot study is first proposed to assess the feasibility of a definitive trial to address this hypothesis. The pilot study will randomise RA patients to SCS ('SCS group') plus usual care or usual care ('UC group') alone.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Newcastle and North Tyneside REC 1 - approval pending as of 02/03/2011

**Study design**

Pragmatic multi-centre pilot randomised controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

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

Refractory angina

**Interventions**

Participants will be randomised to receive either a spinal cord stimulator (SCS) with usual care or to receive usual care alone.

One group will therefore have a SCS implanted following a successful trial. Other interventions include exercise tolerance testing, questionnaire completion, physical examination, vital signs recording, females of childbearing potential will undergo pregnancy testing, medical history recording and concomitant and cardiology medication assessment.

Participants allocated usual care, may receive educational sessions with a pain consultant, transcutaneous electrical nerve stimulation (TENS) machines, serial thoracic sympathectomy and oral/systemic analgesics and adjuvant analgesia.

**Intervention Type**

Other

**Phase**

Not Applicable

**Primary outcome(s)**

HRQoL as measured using the disease-specific measure the Seattle angina questionnaire (SAQ) UK version. We expect the SAQ to be the primary outcome in the definitive trial.

**Key secondary outcome(s)**

1. Intake of angina medications and angina attacks
2. Exercise capacity (at baseline and 6-months only)

3. Complications and adverse events
4. Healthcare utilisation (e.g. cardiac specific hospitalisations and primary care visits, management of complications/adverse events)
5. Generic measures HRQoL will be assessed using the EuroQol (EQ-5D) and Short Form -36 (SF-36) questionnaires

**Completion date**

01/07/2013

## Eligibility

**Key inclusion criteria**

1. Limiting angina despite optimal anti-angina therapy
2. Canadian Cardiovascular Society Functional Classification of Angina (CCS) Class III and IV
3. Angiographically documented coronary artery disease (CAD)
4. CAD not suitable for revascularisation in the opinion of the referring cardiologist /cardiothoracic surgeon
5. Satisfactory multidisciplinary assessment in accordance with British Pain Society (BPS) guidelines for SCS
6. Demonstrable ischaemia on functional testing

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Key exclusion criteria**

1. Presence of pacemaker or implanted defibrillator that is incompatible with SCS
2. Patient refusal to participate in the study
3. Presence of co morbidity considered by the assessing clinician to overshadow the effect of the angina or render them an unsuitable candidate for neuromodulation (e.g. advanced spinal disease or deformity)
4. Poor cognitive ability
5. Ongoing anticoagulation therapy, where anticoagulants cannot be safely discontinued without jeopardising patient safety

**Date of first enrolment**

01/05/2011

**Date of final enrolment**

01/07/2013

## Locations

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

South Tees Hospitals NHS Foundation Trust

Middlesbrough

United Kingdom

TS4 3BW

**Sponsor information****Organisation**

South Tees Hospitals NHS Foundation Trust (UK)

**ROR**

<https://ror.org/02js17r36>

**Funder(s)****Funder type**

Government

**Funder Name**

National Institute for Health Research

**Alternative Name(s)**

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

United Kingdom

# 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	01/01/2016		Yes	No
<a href="#">Protocol article</a>	protocol	22/02/2013		Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes