

# Remote monitoring in rheumatoid arthritis

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<b>Registration date</b> 05/05/2022	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 27/01/2026	<b>Condition category</b> Musculoskeletal Diseases	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Rheumatoid arthritis is a common disease affecting 1 in 100 UK adults, causing joint pain, stiffness and fatigue. Patients with rheumatoid arthritis need close monitoring of their arthritis activity to work out the most effective dose of their arthritis drugs. At the moment, this monitoring is done at clinic visits, meaning that patients have to regularly attend hospital. If it were possible for patients to be monitored remotely, this would avoid many trips to hospital and free up clinic appointments for those patients most in need. In this small study, we aim to assess the feasibility of remote monitoring in patients with active rheumatoid arthritis who are starting an arthritis drug.

### Who can participate?

Patients with a diagnosis of rheumatoid arthritis, who are starting a new rheumatoid arthritis drug treatment.

### What does the study involve?

We will invite 20 patients to take part and will be followed for three months. Patients will complete self-assessments of their arthritis activity using online questionnaires, and their physical activity and heart rate will be measured using small wearable monitors. Patients will also attend for monthly face-to-face visits with a nurse to assess their arthritis activity using standard measurements used in current clinical practice. We will compare remote measurements of arthritis activity with standard face-to-face assessments to assess their accuracy and reliability. Also, information from activity and heart rate monitors will be analysed to look for patterns that may identify when patients have active arthritis. Finally, patients will provide feedback on their experience of remote monitoring, and any aspects for future improvement.

### What are the possible benefits and risks of participating?

There will be no direct benefit to participants for participating in this study. They will be making a valuable contribution to our understanding about the feasibility of remote monitoring in rheumatoid arthritis. In the future this may lead to new tools to check people's arthritis between hospital visits, improving the quality and safety of care that we can provide to our patients. There are no obvious disadvantages or risks to taking part in the study. The monitors and smartphone that participants will be required to wear and use are non-invasive and have no associated risks. Sometimes blood tests can cause some minor bruising.

Where is the study run from?

Freeman Hospital, The Newcastle upon Tyne Hospitals NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?

December 2021 to September 2023

Who is funding the study?

The National Institute for Health and Care Research Newcastle Biomedical Research Centre (UK)

Who is the main contact?

Dr Kenneth Baker, [kenneth.baker@ncl.ac.uk](mailto:kenneth.baker@ncl.ac.uk)

## Contact information

### Type(s)

Principal investigator

### Contact name

Dr Kenneth Baker

### ORCID ID

<https://orcid.org/0000-0002-6735-2911>

### Contact details

Translational and Clinical Research Institute,  
3rd Floor, William Leech Building,  
Medical School, Newcastle University  
Newcastle upon Tyne  
United Kingdom  
NE2 4HH  
+44 1912085337  
[kenneth.baker@ncl.ac.uk](mailto:kenneth.baker@ncl.ac.uk)

### Type(s)

Public

### Contact name

Dr Kenneth Baker

### Contact details

Translational and Clinical Research Institute,  
3rd Floor, William Leech Building,  
Medical School, Newcastle University  
Newcastle upon Tyne  
United Kingdom  
NE2 4HH  
+44 1912085337  
[kenneth.baker@ncl.ac.uk](mailto:kenneth.baker@ncl.ac.uk)

### Type(s)

Scientific

**Contact name**

Dr Kenneth Baker

**Contact details**

Translational and Clinical Research Institute,  
3rd Floor, William Leech Building,  
Medical School, Newcastle University  
Newcastle upon Tyne  
United Kingdom  
NE2 4HH  
+44 1912085337  
kenneth.baker@ncl.ac.uk

**Additional identifiers**

**Clinical Trials Information System (CTIS)**

Nil known

**Integrated Research Application System (IRAS)**

313072

**ClinicalTrials.gov (NCT)**

Nil known

**Protocol serial number**

IRAS 313072

**Study information**

**Scientific Title**

Remote monitoring of disease and physical activity in rheumatoid arthritis: a pilot study

**Study objectives**

To demonstrate the feasibility of remote disease activity monitoring in participants with rheumatoid arthritis, to support a future clinical efficacy trial.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Approved 23/05/2022, North of Scotland Research Ethics Committee (Summerfield House, 2 Eday Road, Aberdeen, AB15 6RE, UK; +44 (0)1224558458; gram.nosres@nhs.scot), ref: 22/NS/0072

**Study design**

Single centre observational longitudinal cohort study

**Primary study design**

Observational

## Study type(s)

Other

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

Rheumatoid arthritis

## Interventions

In this pilot study, we propose to recruit 20 participants with rheumatoid arthritis (RA) with active disease who are newly starting a disease modifying antirheumatic drug (DMARD). Participants will be followed for 3 months, with monthly face-to-face visits to measure the disease activity in 28 joints (DAS28) score. Throughout the study, participants will complete weekly patient-reported outcome measures (PROMs) in the form of the simple 5-question RA Disease Activity Index 5 (RADAI-5), captured electronically using the British Society for Rheumatology ePROMs online portal, with weekly email reminders to support participant uptake. In addition, at each monthly visit participants will be provided with activity trackers (lower back and wrist – Axivity AX6) and a combined activity and cardiorespiratory monitor (VitalPatch) to be worn for 7 days. Additional PROMs including FACIT-F and MFS (fatigue), HAQ-DI (physical function), PHQ-2 (anxiety/depression) and EQ-5D-5L (general health) will be captured at the monthly visits, in order to collect information necessary for interpretation of the activity monitor data.

## Intervention Type

Not Specified

## Primary outcome(s)

1. Arthritis activity measured using the disease activity score in 28 joints (DAS28) score at baseline, week 4, week 8 and week 12.
2. Arthritis activity measured using the rheumatoid arthritis disease activity index 5 (RADAI-5) at baseline, week 4, week 8 and week 12

## Key secondary outcome(s))

1. Physical activity measured by Axivity AX6 devices at baseline, week 4, week 8 and week 12
2. Cardiorespiratory activity measured by VitalPatch devices at baseline, week 4, week 8 and week 12
3. Fatigue measured by the FACIT-F questionnaire at baseline, week 4, week 8 and week 12
4. Fatigue measured by the MFS questionnaire at baseline, week 4, week 8 and week 12
5. Physical function measured by the HAQ-DI questionnaire at baseline, week 4, week 8 and week 12
6. Anxiety and depression measured by the PHQ-2 questionnaire at baseline, week 4, week 8 and week 12
7. General health measured by the EQ-5D-5L questionnaire at baseline, week 4, week 8 and week 12

## Completion date

30/09/2023

## Eligibility

### Key inclusion criteria

1. Diagnosis of rheumatoid arthritis according to the 1987 American College of Rheumatology (ACR) or 2010 ACR/European Alliance of Associations for Rheumatology (EULAR) classification criteria applied at any time since diagnosis.
2. Participant about to commence (i.e. planned within next 4 weeks), or recently commenced (i.e. within past 8 weeks), a new disease-modifying anti-rheumatic drug (i.e. conventional synthetic DMARD, Janus-kinase inhibitor or biologic therapy)
3. Able to walk at least four metres independently without walking aids
4. Participant willing to commit to complete remote monitoring measurements and wear monitoring devices

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

18 years

**Upper age limit**

99 years

**Sex**

All

**Total final enrolment**

13

**Key exclusion criteria**

1. Unable to read or communicate in English
2. Current participation within an interventional clinical trial (participation in another observational trial is permitted)
3. Inability to provide informed consent
4. Age less than 18 years
5. Current diagnosis of a movement disorder
6. Current pregnancy

**Date of first enrolment**

01/06/2022

**Date of final enrolment**

30/06/2023

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre**

**Freeman Hospital**

The Newcastle upon Tyne Hospitals NHS Foundation Trust  
Freeman Road  
High Heaton  
Newcastle upon Tyne  
England  
NE7 7DN

## Sponsor information

**Organisation**

Newcastle upon Tyne Hospitals NHS Foundation Trust

**ROR**

<https://ror.org/05p40t847>

## Funder(s)

**Funder type**

Government

**Funder Name**

NIHR Newcastle Biomedical Research Centre

**Alternative Name(s)**

Newcastle Biomedical Research Centre, Newcastle NIHR Biomedical Research Centre

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Research institutes and centers

**Location**

United Kingdom

## Results and Publications

# Individual participant data (IPD) sharing plan

## IPD sharing plan summary

Data sharing statement to be made available at a later date

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Basic results</a>	version 6	11/01/2023	27/01/2026	No	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Protocol file</a>			27/01/2026	No	No