

# Can we predict which patients with psoriatic arthritis will respond to treatment using precision medicine?

|  |   |  |
|--|---|--|
| <b>Submission date</b><br>03/03/2021   | <b>Recruitment status</b><br>No longer recruiting     | <input checked="" type="checkbox"/> Prospectively registered<br><input checked="" type="checkbox"/> Protocol |
| <b>Registration date</b><br>23/03/2021 | <b>Overall study status</b><br>Ongoing                | <input type="checkbox"/> Statistical analysis plan<br><input type="checkbox"/> Results                       |
| <b>Last Edited</b><br>06/12/2024       | <b>Condition category</b><br>Musculoskeletal Diseases | <input type="checkbox"/> Individual participant data<br><input type="checkbox"/> Record updated in last year |

## Plain English summary of protocol

### Background and study aims

Psoriatic arthritis (PsA) is a type of arthritis that affects some people with the skin condition psoriasis. It typically causes affected joints to become swollen, stiff and painful.

PsA is an inflammatory arthritis that develops in around 15% of people with psoriasis, causing swollen and painful joints. For patients who do not respond to standard arthritis drugs, two classes of biologic drugs are available (TNF or IL-17 blockers). A similar proportion of patients respond to both with around 50% achieving a good response. However, we do not know how to predict which patient will respond best to each drug.

Our aim is to test whether we can predict if people with psoriatic arthritis (PsA) will respond to certain biologic drugs using blood tests. We will test if high levels of a type of T cells (activated Th17 cells) or other laboratory tests predict response. We will use statistical tests to estimate how effective these approaches would be for each individual. If successful, this approach could ensure that patients receive their best option first, ensuring their disease is controlled and quality of life improved, while avoiding unnecessary drug use. This is likely to save money for the NHS.

### Who can participate?

Patients aged 18 years or older, with PsA about to start their first biologic treatment will be invited to join the study.

### What does the study involve?

Participants will have a blood sample taken to measure their activated Th17 cells. The patients will be allocated to receive either TNF or IL-17 blocking biologics. We will measure how well they respond after 6 months of treatment and test whether the initial blood test result could have predicted their response.

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

Participants are not expected to benefit directly from participating in the study however they should see an improvement in their PsA symptoms from the treatment they receive. Study visits have been aligned with routine NHS visits to minimise burden and inconvenience but will take

longer and participants will be asked to complete extra questionnaires. Participants will need to have additional blood samples taken which may result in bruising but research samples will be taken at the same time as routine NHS blood tests wherever possible. Participants at 3 sites (Oxford, Glasgow, & St Guys & St Thomas's) will be asked to attend a short additional visit to enable the collection of an additional blood sample. Travel costs will be reimbursed for this additional visit to minimise any financial burden. There are no additional risks from the treatment as the study uses the same treatments that would be prescribed routinely for these patients.

Where is the study run from?  
University of Oxford (UK)

When is the study starting and how long is it expected to run for?  
February 2021 to September 2026

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

Who is the main contact?  
Dr Laura Coates, [laura.coates@ndorms.ox.ac.uk](mailto:laura.coates@ndorms.ox.ac.uk)

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Laura Coates

**Contact details**  
Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford  
Botnar Research Centre  
Windmill Road  
Oxford  
United Kingdom  
OX3 7LD  
+44 (0)1865 737838  
[laura.coates@ndorms.ox.ac.uk](mailto:laura.coates@ndorms.ox.ac.uk)

## Additional identifiers

**Clinical Trials Information System (CTIS)**  
Nil known

**Integrated Research Application System (IRAS)**  
287528

**ClinicalTrials.gov (NCT)**  
Nil known

**Protocol serial number**

CPMS 48066, IRAS 287528

## Study information

**Scientific Title**

Optimising Psoriatic Arthritis Therapy with Immunological Methods to Increase Standard Evaluation

**Acronym**

OPTIMISE

**Study objectives**

A precision choice of bDMARDs in PsA based on lymphocyte cell surface markers guiding selection of either TNF inhibitor or IL17A inhibitor will give superior results to patients having a choice of bDMARD based on clinical characteristics alone.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Approved 24/02/2021, North West - Preston REC (Barlow House, 3rd Floor, 4 Minshull Street, Manchester, M1 3DZ, UK; +44 (0)207 104 8206; Preston.rec@hra.nhs.uk), ref: 21/NW/0016

**Study design**

Interventional randomized controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

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

Arthritis that affects some people with the skin condition psoriasis

**Interventions**

All patients will be treated with a biologic drug (TNF inhibitors (adalimumab) or IL-17A inhibitors (secukinumab) in keeping with routine clinical practice. At present both TNF inhibitors and IL-17 inhibitors are licensed and NICE approved as first line biologics in PsA. Patients will be randomised in a 1:1 ratio to receive either TNF or IL-17A inhibitors, stratified by baseline immunophenotype, for 24 weeks.

The TNF inhibitor to be used is adalimumab (any brand) and it is to be given at the usual licensed dose, as per the SmPC:

-The licenced dose of adalimumab for psoriatic arthritis is always 40 mg by subcutaneous injection every 2 weeks, with no loading doses.

The IL-17A inhibitor to be used is secukinumab, brand name Cosentyx, and is to be given at the usual licensed dose as per the SmPC:

-The licensed dose of secukinumab for psoriatic arthritis varies based on the level of baseline skin psoriasis. For patients with concomitant moderate to severe plaque psoriasis, the recommended dose is 300mg by subcutaneous injection with initial dosing at weeks 0, 1, 2, 3 and 4 followed by a monthly maintenance dose. For other patients the recommended dose is 150mg by subcutaneous injection at the same timepoints. This study will follow routine practice and the current label by using the appropriate dose of secukinumab based on the baseline psoriasis disease activity with the cut off for moderate to severe psoriasis as 10% body surface area. Dose escalation as per the licence is permitted.

### **Intervention Type**

Drug

### **Phase**

Not Applicable

### **Drug/device/biological/vaccine name(s)**

Adalimumab, secukinumab

### **Primary outcome(s)**

Clinical response as measured by the minimal disease activity (MDA) criteria at baseline and week 24

### **Key secondary outcome(s)**

1. Clinical disease pattern at baseline measured by the minimal disease activity (MDA) criteria
2. Immunophenotype data at baseline measuring activated Th17 and intracellular levels of IL-17
3. Activated Th17 proportion and intracellular levels of IL-17 at baseline and week 24
4. Clinical response as measured by the minimal disease activity (MDA) criteria at week 12/16 and week 24
5. Cell-specific transcriptomic data and whole blood transcriptomes from samples collected at baseline and week 24

### **Completion date**

30/09/2026

## **Eligibility**

### **Key inclusion criteria**

Current inclusion criteria as of 15/08/2022:

1. Participant is willing and able to give informed consent for participation in the study
2. Male or female, age 18 years or over
3. Diagnosis of PsA confirmed by the CASPAR criteria
4. Is planned to have biologic therapy for psoriatic arthritis using NICE/SMC criteria (failure of  $\geq 2$  csDMARDs and  $\geq 3$  tender and  $\geq 3$  swollen joints)

---

Previous inclusion criteria:

1. Participant is willing and able to give informed consent for participation in the study
2. Male or female, age 18 years or over

3. Diagnosis of PsA confirmed by the CASPAR criteria
4. Is planned to have biologic therapy for psoriatic arthritis using NICE/SMC criteria (failure of  $\geq 2$  csDMARDs and  $\geq 3$  tender/swollen joints)

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Contraindications to either TNF inhibitor or secukinumab:
  - 1.1. History of previous demyelinating disease including multiple sclerosis
  - 1.2. Heart failure (NYHA class 3 or 4)
  - 1.3. Serious infections: active tuberculosis (TB), chronic viral infections (including hepatitis B, C and HIV), recent serious bacterial infections
  - 1.4. Latent TB unless they have received appropriate anti-tuberculous treatment as per local guidelines
  - 1.5. Active symptomatic inflammatory bowel disease
  - 1.6. History of cancer in the last 5 years, other than non-melanoma skin cell cancers cured by local resection or carcinoma in situ
  - 1.7. Hypersensitivity to active ingredient or excipients
2. Current or previous treatment with biologic DMARDs or targeted synthetic DMARDs
3. Use of investigational therapies within 1 month or 5 half-lives (whichever is longer) of baseline
4. Women who are pregnant, lactating or planning pregnancy during the following 12 months

**Date of first enrolment**

01/01/2022

**Date of final enrolment**

31/12/2024

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

United Kingdom

England

Scotland

Wales

**Study participating centre**

**John Radcliffe Hospital**

Oxford University Hospitals NHS Foundation Trust  
Headley Way  
Oxford  
United Kingdom  
OX3 9DU

**Study participating centre**

**St Thomas's Hospital**

249 Westminster Bridge Road  
London  
United Kingdom  
SE1 7EH

**Study participating centre**

**Gartnavel Royal Hospital**

NHS Greater Glasgow and Clyde  
1055 Great Western Road  
Glasgow  
United Kingdom  
G12 0XH

**Study participating centre**

**St Georges Hospital**

Midlands Partnership NHS Foundation Trust  
Corporation Street  
Stafford  
United Kingdom  
ST16 3SR

**Study participating centre**

**Walsgrave General Hospital**

Clifford Bridge Road  
Coventry  
United Kingdom  
CV2 2DX

**Study participating centre**  
**Cardiff and Vale University Health Board**  
UHB Headquarters  
Woodlands House  
2nd Floor  
Maes y Coed Rd  
Heath Park  
Cardiff  
United Kingdom  
CF14 4HH

**Study participating centre**  
**Royal Berkshire Hospital**  
Royal Berkshire NHS Foundation Trust  
London Road  
Reading  
United Kingdom  
RG1 5AN

**Study participating centre**  
**Royal United Hospital**  
Combe Park  
Bath  
United Kingdom  
BA1 3NG

**Study participating centre**  
**King's College Hospital**  
Denmark Hill  
London  
United Kingdom  
SE5 9RS

**Study participating centre**  
**St George's Hospital**  
Blackshaw Road  
London  
United Kingdom  
SW17 0QT

**Sponsor information**

**Organisation**

University of Oxford

**ROR**

<https://ror.org/052gg0110>

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

Government

**Funder Name**

NIHR Evaluation, Trials and Studies Co-ordinating Centre (NETSCC); Grant Codes: NIHR129023

**Funder Name**

National Institute for Health Research (NIHR) (UK)

**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**

The participant-level data set and statistical code will be available upon reasonable request from Laura Coates ([laura.coates@ndorms.ox.ac.uk](mailto:laura.coates@ndorms.ox.ac.uk)) and the Oxford Clinical Trials Research Unit (OCTRU; [ocptrialshub@ndorms.ox.ac.uk](mailto:ocptrialshub@ndorms.ox.ac.uk)) once the study findings have been published in full and for as long as this data is useful. Consent has been provided consent to share with the funder and other researchers based at hospitals, universities, non-profit institutions or commercial laboratories worldwide; however, some specific data items may not be shared in order to maintain participant anonymity.



## IPD sharing plan summary

Available on request

### Study outputs

| Output type                                   | Details                       | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|-------------------------------|--------------|------------|----------------|-----------------|
| <a href="#">Protocol article</a>              | Participant information sheet | 28/03/2023   | 29/09/2023 | Yes            | No              |
| <a href="#">HRA research summary</a>          |                               |              | 28/06/2023 | No             | No              |
| <a href="#">Participant information sheet</a> |                               | 11/11/2025   | 11/11/2025 | No             | Yes             |
| <a href="#">Protocol file</a>                 | version 8.0                   | 07/11/2023   | 08/11/2023 | No             | No              |