

# Priorities 2023: Accelerating diagnosis and treatment - Call for applications

## Summary

We want to change people and healthcare professionals' ability to spot arthritis early and stop it in its tracks, removing treatment uncertainty and minimising the risk of side-effects from long-term treatment. We want to change the understanding of arthritis risk factors and how to intervene.

Accurate diagnosis of arthritis often takes far too long, allowing irreversible damage to people's joints and permanently reducing their quality of life. Getting to the right treatment first is a challenge, finding effective and tolerated treatments can be a trial-and-error process.

We are seeking to invest in ambitious patient-specific approaches (accounting for individual variation in genes, environment and lifestyle) to remove the variability in diagnosis and treatment. We are seeking to support research into early detection and prevention of arthritis, development of reliable and effective personalised diagnosis, treatment and interventions to halt or reverse disease progression.

We will invest in biological, psychological and social research across the areas of prevention, diagnosis or treatment, with funding awards available for a range of different size projects.

Proposed studies must advance the translational pathway towards new or improved approaches to prevention, diagnosis or treatment; it should be clear from the application what the next step will be beyond the proposed study. Applications should involve people with arthritis in the development of the outlined work and as well as collaborating with them in the delivery of the proposed research.

Applications that have agreement for part-funding from a third party will be accepted but applicants should contact us to discuss their application as early as possible.

Applicants must carefully read the call, application form and [guidance](#) documentation before starting an application. Please ensure that the most appropriate language is being used in each section of the form and that the correct sections are completed.

Applicants are invited to submit applications to this one-stage process through [Grant Tracker](#). The deadline for the receipt of applications is **16:00 on Wednesday 9<sup>th</sup> November 2022**.

**If you have any questions about this call document, eligibility or would like to discuss your research proposal with the office please email [awards@versusarthritis.org](mailto:awards@versusarthritis.org)**

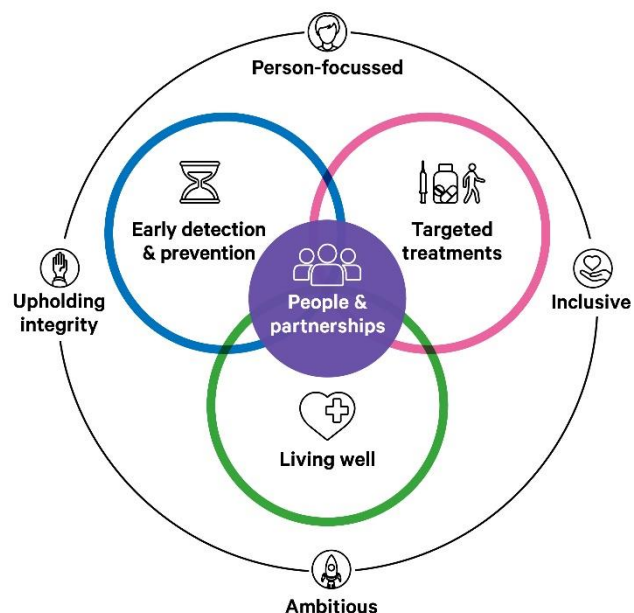
## Focus

We want to bring about more accurate and faster diagnosis and more timely, effective and targeted treatments, tailored to individuals, taking into consideration not just their genes but also the environment they live in.

Our Better Lives Today, Better Lives Tomorrow Research Strategy 2022-2026 focusses our investment and influence on four priority areas over the next four years. It is striving to bring ground-breaking scientific discoveries to people with arthritis at pace and with precision.

This call for applications for research funding focusses on two priority areas:

- **Early detection and prevention:** spotting the biological signatures of arthritis early to maximise the opportunities for timely intervention and preventing it from getting worse.
- **Targeted treatments:** taking the guesswork out of treatment by increasing effective, reliable and timely drug and non-drug solutions to reduce, manage or cure disease.



## Context and Changes we want to see

Living with the pain, fatigue and limited mobility caused by arthritis erodes good physical and mental health, and quality of life. People with arthritis often experience other long-term conditions too but these are treated separately, not collectively.

Patterns of early symptoms (pain, stiffness, swelling, fatigue) can be similar across diseases. **Accurate diagnosis** takes far too long, allowing irreversible damage to people's joints and permanently reducing their quality of life. Healthcare professionals and systems struggle to ensure that people with arthritis are getting the diagnosis they need.

There are many types of arthritis, they develop differently and vary from person to person. Finding **effective and tolerated treatments** can be a trial-and-error process, with people being left not knowing if a treatment will work or for how long and when or why their symptoms might worsen. Getting to the right treatment first is a challenge.

We want to see people and healthcare professionals able to spot arthritis sooner and stop it in its tracks, removing treatment uncertainty and minimising the risk of side-effects from long-term treatment. We want there to be better understanding of arthritis and its risk factors, whether genetic, biological or lifestyle, and how to intervene.

The impacts sought from this investment are progress toward:

- better understanding and tools to identify markers of risk to enable proactive screening and early detection (secondary prevention) approaches
- better tools and biomarkers to diagnose arthritis accurately and as rapidly as possible after symptoms begin

- clinical and care pathways applying a precision medicine and holistic approach – accounting for individual variability in genes, environment and lifestyle and the management of pain, mental health and fatigue
- more effective, safer treatments and ultimately cures, that work for more people
- better tools to help decide the most appropriate treatments
- better understanding of how different diseases can be most effectively tackled together

## Aims and Scope

We are seeking to invest in novel research that removes the variability in diagnosis and treatment, accounting for individual genes, environment and lifestyle.

We are seeking to invest in ambitious patient-specific approaches to early detection and prevention of arthritis, development of reliable diagnostic tools and effective interventions to screen for, halt or reverse disease progression.

This call seeks to address unmet needs around secondary prevention - detecting predisposition and early stages of disease, targeting pre-clinical / pre-symptomatic disease intervention - more so than primary prevention and public health agendas such as around physical activity.

As appropriate, we encourage paying attention to a person as whole - individuals with multiple conditions, symptoms (pain, fatigue, mental health) and experiences. Rather than focussing on discrete conditions and symptoms we encourage applying in combination, multi-factor approaches, such as treatment of arthritis *and* mental health.

This call scope includes the many types of arthritis and their differential development at any stage of life.

Funding awards are available for a range of different size projects across the biological, psychological and social research spectrum. This is inclusive of research across:

- scientific areas of expertise (such as immunology, imaging, genetics, bioengineering, chemical and molecular sciences, mathematical and computational modelling)
- health profession expertise (nursing, medicine, clinical psychology, optometry, pharmacy and allied health professionals)
- diagnostic / intervention expertise (drugs, surgery (techniques, tools), regenerative medicine, biologics (antibodies, proteins), advanced therapeutics (genes, cells), pharmacogenomics, medical technology including digital technology, devices, psychological, physical, behavioural)
- medical technology expertise (including digital tools - application development, wearables, artificial intelligence)
- data expertise (across information tracked and gathered systematically in healthcare settings and real-world digital technologies)

We expect applications to take a collaborative and multidisciplinary approach to answering research questions as appropriate.

In some areas - such as multiple long-term conditions, rare diseases and collective immune-mediated inflammatory conditions - we expect the solutions to the targeted challenges will require partnership support, which we welcome.

We will invest in research proposals in the following areas:

- i. *pre-disease pathophysiology* - understanding mechanisms underlying symptom development and risk to enable prevention and early diagnosis to reduce the impact of disease
- ii. *diagnostic markers and indicators* - developing reliable pre-symptomatic markers and diagnostic disease indicators and biomarkers (including digital biomarkers) to predict and detect arthritis at the earliest possible stage. This can encompass assay development and validation where there is a clear development pathway to clinical implementation, as well as use of exploratory endpoints to provide clinical validity in the development of new measures
- iii. *genetic risk scores* - exploring use as part of routine clinical management for arthritis conditions known to be genetically linked
- iv. *social and psychological influences* - understanding the social and psychological factors and health inequalities that influence and/or predict disease development, not extending into factors influencing disease progression and outcome
- v. *precision medicine and profiling/stratification approaches* - working across multi-omics platforms, informatics, digital data sources and medical technologies developing and improving targeted treatments and personalised interventions to halt or reverse disease progression. This includes identifying people with distinct mechanisms of disease, lived experience or particular response to treatments to understand when and in whom a treatment may or may not be effective.
- vi. *alternatives to drugs or surgery* - developing reliable, cost-effective psychotherapeutic and social interventions
- vii. *disease linkage* - understanding of how diseases are linked, and where what is learned about one disease can be used to tackle other diseases
- viii. *disease agnostic pathways* - understanding of common mechanisms of disease, particularly chronic inflammation, autoimmunity and immune-mediated inflammation

We will not invest in population health research, late-phase clinical trials, policy research and health service research proposals via this funding call.

**If required, please contact the research team for guidance ([awards@versusarthritis.org](mailto:awards@versusarthritis.org)) on the scope of the call and the relevance of your application.**

## Requirements

### Pace and Precision - a translational approach

We want emerging research evidence and research-driven solutions to rapidly enhance health and social care practice and policy guidance for prevention, early detection and treatment of arthritis.

Proposed studies must advance the translational pathway towards new or improved approaches to prevention, diagnosis or treatment. Applicants should take care to ensure future benefit for people with arthritis is clearly and reasonably discussed within the application.

It should be clear from the application what the next step will be beyond the proposed study. Studies clearly emphasising the route to translation from laboratories to people with arthritis will be prioritised.

### Research Involvement

Applications should involve people with arthritis in the development of the outlined work and as well as collaborating with them in the interpretation and dissemination of the proposed research, this includes discovery research. [Involving people with arthritis \(versusarthritis.org\)](https://www.versusarthritis.org)

## Diversity and Inclusion

Proposals must demonstrate careful consideration of appropriate representation and diversity (ethnicity, socioeconomic, gender, age etc.) as relevant to the aims of the proposal.

We will not fund research that does not conform to the principles of the national centre for the replacement, refinement and reduction of animals in research (NC3Rs), or that do not account for genetic, sexual, immune and microbiome diversity in animal models.

## Collaboration and partnership

Collaborations and partnership with industry and international stakeholders are welcome.

In some areas - such as multiple long-term conditions, rare diseases and collective immune-mediated inflammatory conditions – we particularly welcome partnership approaches.

Applications that have agreement for part-funding from a third party will be accepted but applicants should **contact us to discuss** their application as early as possible and will be subject to appropriate multi-party contracting arrangements around award.

## Clinical Research

Applicants should engage the Research Design Service (open to research charity funder applicants in England [Research Design Service | NIHR](https://www.researchdesignservice.nihr.ac.uk)) or partner with a UKCRC-registered Clinical Trial Unit ([Find a CTU – UKCRC \(ukcrc-ctu.org.uk\)](https://www.ukcrc-ctu.org.uk)) in designing and delivering clinical research studies or provide robust reasoning (beyond financial) for employing alternative expertise.

Pilot/feasibility studies to inform the development of a clinical trial to test an intervention, will be accepted.

Beyond preliminary studies, clinical studies must show feasibility evidence relating to outcome measure selection, study design and statistical methods, subject recruitment and retention and delivery of the intervention.

Clinical studies can include a mechanistic evaluation, either as a sub study within a clinical trial or as part of an observational study.

## Clinical Research Delivery

With the current clinical research challenges in the NHS, investigators and sponsors are required to make transparent and realistic assessments of capacity and capability to deliver.

The NIHR CRN portfolio adoption criteria will include a new criterion on 'deliverability'. Co-applicants and collaborators at NHS sites are asked to support proposals only if there is surety that they can meet recruitment targets and timelines indicated. It will be taken that host institution signatories are wholly satisfied and supportive of the assurances provided upon submission of the application.

## Data and sample resources

We require researchers to make use of established, pre-existent cohorts, collections, bioresources and registries; notably the BSR registries, NIHR Bioresource, the IMID Bioresource, IMID Bio UK. [TDCC - UKCRC Tissue Directory and Coordination Centre \(biobankinguk.org\)](https://www.biobankinguk.org)

We require researchers proposing to make use of human tissue to consider whether existing resources would meet their needs and to justify why any new collection is necessary.

We require those receiving funding to create a tissue collection, provide access to this and register the collection in a publicly accessible directory.

## Who can apply

The lead applicant must be based at an eligible UK institution, for further information see the associated [guidance](#) document.

At least one applicant must have a tenured position within the lead institute.

People with lived experience may be included as co-applicants.

We expect applications to take a collaborative and multidisciplinary approach to answering research questions. We welcome applications affiliated to the [Musculoskeletal TRC](#).

Applicants with proposals that include part-funding from a third party (including industry) are allowable, but **applicants should contact us to discuss** their application as early as possible and will be subject to appropriate multi-party contracting arrangements around award.

## What you can apply for

Costs for salaries, expenses and small items of essential equipment can be requested.

Awards of up to 60 months duration, between £50,000-£800,000 in value are available.

We plan to invest around £4 million in different sized projects.

For further details on what you can apply for, please see the associated [guidance](#) document.

## How to apply

Applicants are invited to submit applications through [Grant Tracker](#), where the form is available.

There is a single stage application process for all applications.

Applicants must carefully read the call document, application form and [guidance](#) documentation before starting an application.

Please ensure that the most appropriate language is being used in each section of the form and that the correct sections are completed.

Please **allow time for management of appropriate reviewers and signatories to access the GrantTracker system and provide their approvals.**

## How will applications be assessed

We will assess applications and make funding recommendations via a single-stage process; assessment panel members will review applications and provide comment and questions for written

rebuttal by applicants before a formal funding panel meeting. Once applications have been received funding panel membership will be constituted from our college of experts (with additional (possibly international) representation as deemed necessary).

Assessment by people with arthritis forms a key part of the review process. Further information and guidance can be found on our [website](#) and in the call [guidance](#) document.

Applications will be reviewed and assessed on the following criteria:

- Relevance - to the scope of the call
- Importance - the research need is established
- Involvement - effective approach to the involvement of people with arthritis in the proposal development and delivery
- Research design and methodology - realistic aims, justified population, methods, analysis and data management
- Ability to deliver - appropriate team, management and facilities in place, host organisation commitment
- Feasibility - underpinning work undertaken, potential to meet the objectives, realistic timescale and budget risk and mitigation approaches included
- Impact - potential to deliver stated outcomes and drive translation and route to benefit and impact for people with arthritis
- Value for money - appropriate and justified costs, third party funding and 'gift in kind' support clearly identified
- Strengths and weaknesses - overall strengths and weaknesses of the work have been identified

## Award management

It is expected that all awards will report annually via Researchfish, clinical projects that require recruitment will report every six months to the Progress Review Committee.

During the award applicants may be invited to meetings with Versus Arthritis to discuss their research findings and/or asked to contribute written summaries.

## Timelines

Call Open	August 2022
Deadline for applications	16:00hrs Wednesday 9 November 2022
Peer Review Rebuttal Deadline	16:00hrs Monday 6 February 2023
Notification of award	March/April 2023
Project start	From May 2023

## Contact details

For all enquiries, please contact [awards@versusarthritis.org](mailto:awards@versusarthritis.org)