



## Pushing frontiers in health research II

### Call for Applications

#### Summary

Arthritis Research UK exists to prevent the onset of arthritis, work towards curing arthritis and transform the lives of those with arthritis, with a five-year strategic focus to 2020 to transform the quality of life for people with arthritis. The charity has funded over £250 million of musculoskeletal research over the last decade, supporting excellent teams and leaders across the UK. Our new phase of investment represents a commitment to push new boundaries of discovery, translational and health research. We are challenging the research community to help us achieve this and invite applications for research proposals that will be directly relevant to people with arthritis and whose outputs aim to lead to a positive change to relevant health services.

Through this call, we seek to fund ambitious and innovative research that will make significant strides towards better management of musculoskeletal diseases, building on and expanding previous work in the field, as well as inspiring new original research. Funded research resulting from the call will be expected to take a multidisciplinary approach to deliver these studies.

This call applies a broad and flexible approach seeking applications to the Health subcommittee. We anticipate that awards made under this call will be for up to £400,000 and up to 48 months in duration. Applications for larger awards should be led by established groups with substantial research track records and need prior discussion with the Arthritis Research UK office.

#### Focus of the challenge

We use the term 'arthritis' in its broadest possible sense, to include all associated musculoskeletal conditions affecting joints, bones and muscles (including back pain), as well as autoimmune diseases such as lupus.

Applicants are advised to consider the important broad areas of health research needs discussed in this document. Within these we have three priority areas this call seeks to address. Applicants should specify under which priority their application falls. Applications outside these areas will not be considered.

## Priority areas:

1. Built and work environment and impact on musculoskeletal health.
2. Barriers and challenges to implementation of effective interventions for musculoskeletal conditions.
3. Supported self-management and life style changes for people with musculoskeletal conditions.

## Background

At Arthritis Research UK, we invest in breakthrough treatments, the best information and vital support for everyone affected by arthritis. We believe that by harnessing the power of exceptional science we can overcome the pain, isolation and fatigue arthritis causes, making everyday life better for the 10 million people with arthritis in the UK. As the number of people with arthritis grows, the socio-economic impact of the conditions is only increasing. One way to address this, is to support research whose outcomes are directly relevant to people with arthritis and whose outputs aim to lead to a positive change to relevant health services.

### **The public health impact of musculoskeletal conditions**

Arthritis and musculoskeletal conditions are disorders of the joints, bones and muscles – including back pain – along with rarer systemic autoimmune diseases such as lupus. Together, these conditions affect over 10 million people across the UK and account for the fourth largest NHS programme budget spend in England<sup>1</sup>. Musculoskeletal conditions accounted for the third largest area of NHS programme spending in 2013/14<sup>2</sup>.

The impact of musculoskeletal conditions on the health of the public is significant. The UK Global Burden of Disease study identified musculoskeletal conditions as the largest single cause of years lived with disability, and the third largest cause of disability adjusted life years<sup>3</sup>.

Arthritis Research UK is calling for those responsible for health nationally and locally to transform the information, resources, facilities and support people need so they can take steps to improve their musculoskeletal health and have presented ways of thinking about musculoskeletal conditions<sup>4,5</sup>.

### **Impact of musculoskeletal conditions on health and social care services**

The majority of GP consultations about a musculoskeletal problem are due to back pain and osteoarthritis with the NHS in England spending over £5 billion per year on treating musculoskeletal conditions<sup>6</sup>. This includes the cost of performing around 150,000 joint replacements annually for people with severe osteoarthritis of the hip and knee. The cost of treating hip fractures is calculated separately and costs the UK around £2 billion annually in clinical and social care costs

Additionally, people with arthritis are part of the wider spectrum of people with long term conditions that can benefit from care planning and supported self-management. Care planning is used to manage health and wellbeing and centres on a collaborative conversation between the person with the long-term condition and a healthcare professional<sup>7</sup>.

### **Wider economic impact of musculoskeletal conditions**

Poor musculoskeletal health is a major barrier to workplace participation<sup>8</sup>. People with musculoskeletal conditions are less likely to be employed than people in good health, and more likely to retire early<sup>9</sup>. If employed, people with musculoskeletal conditions are more likely to need time-off and have reduced household income compared to those who do not<sup>10</sup>. This lost productivity has an impact on the national economy, as well as affecting the state through

lost revenue from taxation and increased need for state disability and low-income benefits. Each year in the UK, around 30.6 million working days are lost because of musculoskeletal conditions<sup>11</sup>. The costs of this, along with other indirect costs, are estimated at £14.8 billion for osteoarthritis and rheumatoid arthritis<sup>12</sup>, with up to a further £10 billion of indirect costs attributable to back pain in the UK<sup>13</sup>.

### Health data

For musculoskeletal health, it is difficult to obtain data on population need, health service activity and health outcomes, risking a loss of public health focus on this topic<sup>14</sup>. This is partly due to historic attention to mortality<sup>15</sup> as the priority of health improvement and health service activity. This is reflected in health policies, which have tended to address the major causes of mortality such as cardiovascular disease and cancer. There has been less attention to conditions which mainly reduce quality of life, such as most musculoskeletal conditions.

High quality data and their presentation in an easy to understand format are needed to help allocate appropriate resources towards tackling poor musculoskeletal health and addressing inequalities. Intelligence about patterns of ill health can guide design and location of services. Information about musculoskeletal health trends in the population and changes in response to interventions can guide quality improvement in specific services and enable identification of successful programmes, supporting their spread and wider implementation.

The British Society for Rheumatology biologics register (BSRBR)<sup>16</sup> for rheumatoid arthritis is run by an expert team based in the Arthritis Research UK Epidemiology Unit at the University of Manchester. They track the progress of patients with severe rheumatoid arthritis who are receiving various biologic agents in order to monitor the safety and effectiveness of treatment over the long term. Information on any adverse events is also captured.

There are three live registers available: [Rheumatoid Arthritis](#), [Ankylosing Spondylitis](#) and [Juvenile idiopathic Arthritis](#)

Researchers are encouraged to consider the use of these and other existing data before commencing new data collection.

### Multimorbidities

Musculoskeletal conditions are an important component of multimorbidity<sup>17</sup>, and are a major contributor to frailty<sup>18</sup>. For people with multiple long-term conditions, having a chronic painful musculoskeletal condition independently increases the risk of hospital admission<sup>19</sup>. Pain and disability is a substantial barrier to independent living and the need for long-term social and residential care is often due to worsening musculoskeletal health.

People living with multimorbidity often have a musculoskeletal condition as one of their health Problems and because health, care and public health systems often do not identify or prioritise these painful conditions, substantial opportunities to improve people's health are missed<sup>20</sup>. Without good musculoskeletal health, everyday life becomes harder and people are left living in pain.

## Application and assessment process

### Who can apply and what can you apply for?

Through a flexible approach, we intend to fund a range of awards in the region of £50,000 to £400,000, for up to 48 months. It is anticipated that we will primarily fund a number of awards of this size and duration. Applications for larger awards will be considered and should be led by established groups with substantial research track records. These will need prior discussion with the Arthritis Research UK office.

We wish to encourage applications from both new and established researchers. At least one of the applicants must have a tenured position within a UK university, hospital or recognised academic research institute. We welcome applications from early career investigators however we do not accept fellowship applications as part of this call.

Collaborations with international and industrial partners are encouraged for all applications and additional information about industrial collaborations can be found on our [website](#).

Small pilot level awards and medium project level awards should seek to answer a single question, or a small group of related questions. This may also include requests for short small-scale exploratory projects which seek to bring together researchers from relevant multidisciplinary groups to develop and refine research plans and generate proof of concept/preliminary data for future programmes of work.

The MRC, The Health Foundation and NIHR CLAHRCs recently produced summaries by experts of methods for the [evaluation of services](#). Applicants may find it helpful to look at the report and also to consider advice from or partnership with [CLAHRCs](#)

In some circumstances, depending on the complexity of the investigation, the appropriate methodology may be a clinical trial. Acknowledging the complexity of running a clinical trial/study and the input required from a multidisciplinary team with relevant expertise, it is expected that where appropriate, whilst remaining under the scientific control of the Chief Investigator (CI), the research will be managed by a Clinical Trial Unit (CTU) or affiliated personnel or be engaged in a mentorship arrangement.

Further information and general guidance for applicants can be found on the Arthritis Research UK webpage.

Please read the associated guidance documentation.

### Application stages

There is a **two stage** application process for all applications, regardless of funding level. At the first stage applicants are invited to submit an outline application which provides an overview of the project and funding requested. This should be submitted through [Grant Tracker](#) where the outline form is available. The deadline for the receipt of outline applications is **16:00 on Wednesday 8 August 2018**. Submissions after 16:00 will not be accepted.

Applicants successful at the outline stage will be invited to submit a full application through [Grant Tracker](#) which will request more detailed information on the proposal. Where possible feedback will be provided, allowing an opportunity for applicants to reshape their submissions for the full application stage in line with panel comments.

Only applicants approved through the outline stage will be eligible to apply for a full application. The deadline for the receipt of full applications is **16:00 on Wednesday 9 January 2019**. Submissions after 16:00 will not be accepted.

### Use of language

Assessment by people with arthritis, who may or may not have background in science or research, forms a key part of the review process and is integrated into all assessment stages. As such, applicants should carefully consider the information provided in the application form and the use of technical language throughout the application form. Applicants are also expected to demonstrate how they have involved people with arthritis in the development of the outlined work as well as how they plan to collaborate with them in the proposed research. Guidance for this can be sought from our Research Involvement team at the charity ([Patientinsight@arthritisresearchuk.org](mailto:Patientinsight@arthritisresearchuk.org)).

### **How will outline applications be assessed?**

All outline applications will be assessed by the Health subcommittee, supplemented with additional international and national experts where required.

Outline applications will be assessed on the following criteria:

- Relevance to the scope of the call.
- Importance, meets an unmet clinical need and is likely to lead to significant novel understanding of the problem.
- Significance of the research outputs on the route to patient benefit and impact.\*
- Appropriate involvement of patients.
- Quality and appropriateness of the research design and methodology.
- Value for money.

*\* Immediate or near-term benefit is not necessary for all types of research, however applicants are strongly encouraged to take into account and articulate long-term benefits that are likely to be achieved by their proposed studies.*

### **How will full applications be assessed?**

All full applications will undergo external review from experts in the field and people with arthritis. Following peer review, applications may undergo a triage stage based on reviewer feedback prior to the final committee meeting.

Those applicants who are successful at this triage stage will be given a chance to respond to reviewer's comments before final assessment by the Health subcommittee.

The criteria used to assess full applications is as follows:

- Relevance to the call.
- Potential for long term impact on quality of life for people with arthritis.
- Involvement of people with arthritis in the proposed research.
- Quality of the research design and methodology.
- Strength and make-up of the research team, including multidisciplinary collaboration and proposed management arrangements.
- Applicants' track record (or applicants' potential for smaller project awards) and ability to deliver the proposed research.
- Applicants' ability to deliver, appropriate experience and facilities to conduct the proposed research.
- Feasibility, the potential to deliver the stated outcomes within the timescales and budget.
- Value for money.

Applications will be assessed relative to the value of the award being requested and potential future impact. We will fund a range of award sizes and durations from the available budget for this initiative.

### **Award management**

All successful applicants will be asked to report their research outcomes annually via Researchfish (researchfish.net). Award holders for clinical and applied research projects may also report the progress of their studies every six months.

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

## Timelines

Deadline for outline applications	Wednesday 8 August 2018
Notification and feedback	Late October 2018
Full application deadline	Wednesday 9 January 2019
Notification and feedback	June 2019

## Contact details

For enquiries, please contact [research@arthritisresearchuk.org](mailto:research@arthritisresearchuk.org)

## References

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- <sup>1</sup> RCGP Birmingham Research Unit of the Royal College of General Practitioners. Weekly Returns Service Annual Prevalence Report 2007. [https://www.rcgp.org.uk/clinical-and-research/~media/Files/CIRC/CIRC-76-80/BRU\\_Annual\\_prevalence\\_report\\_2007.ashx](https://www.rcgp.org.uk/clinical-and-research/~media/Files/CIRC/CIRC-76-80/BRU_Annual_prevalence_report_2007.ashx)
- <sup>2</sup> NHS England 2013/14 CCG programme budgeting benchmarking tool. (Link at bottom: <https://www.england.nhs.uk/resources/resources-for-ccgs/prog-budgeting/>)
- <sup>3</sup> Global, regional and national incidence, prevalence and years lived with disability for 310 diseases and injuries; 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. (2016)0
- <sup>4</sup> [Arthritis Research UK Policy Report Musculoskeletal health – a public health approach](#)
- <sup>5</sup> [Arthritis Research UK Policy Report Providing physical activity interventions for people with musculoskeletal conditions](#)
- <sup>6</sup> National Institute for Health and Clinical Excellence (2011). CG 124 Hip fracture: the management of hip fracture in adults
- <sup>7</sup> [Arthritis Research UK Policy Report Care planning and musculoskeletal health](#)
- <sup>8</sup> [Arthritis Research UK Policy Report Working with arthritis](#)
- <sup>9</sup> Schofield D et al. (2013). The personal and national costs of lost labour force participation due to arthritis: an economic study. BMC Public Health 13(1):188
- <sup>10</sup> Dall TM et al. (2013). Modeling the indirect economic implications of musculoskeletal disorders and treatment. Cost Eff Resour Alloc 11(1):5
- <sup>11</sup> Office of National Statistics (2014). Full Report: Sickness Absence in the Labour Market, February 2014
- <sup>12</sup> Oxford Economics (2010). The economic costs of arthritis for the UK economy.
- <sup>13</sup> Maniadakis N et al. (2000). The economic burden of back pain in the UK. Pain 84(1):95-103
- <sup>14</sup> [Arthritis Research UK \(2014\). Musculoskeletal Health: A Public Health Approach](#)
- <sup>15</sup> Department of Health (2012). Annual report by the Chief Medical Officer (CMO), Professor Dame Sally
- <sup>16</sup> Davies, on the state of the public's health in England. <http://www.bsrbr.org/research/>
- <sup>17</sup> Fortin M et al. (2007). Multimorbidity and quality of life: a closer look. Health Qual Life Outcomes 5:52
- <sup>18</sup> Gielen E et al. (2012). Musculoskeletal frailty: a geriatric syndrome at the core of fracture occurrence in older age. Calcif Tissue Int 91(3):161-177
- <sup>19</sup> Freund T et al. (2012). Patterns of multimorbidity in primary care patients at high risk of future hospitalization. Popul Health Manag 15(2):119-124.
- <sup>20</sup> [Arthritis Research UK Policy Report Musculoskeletal conditions and multimorbidity](#)