SUPPORTING PEOPLE WITH MUSCULOSKELETAL CONDITIONS TO STAY PHYSICALLY ACTIVE

INTRODUCTION

It is currently estimated that there are over 20 million people in the UK living with a musculoskeletal condition, and that these conditions are the leading cause of pain and disability in the country.

While each person living with a musculoskeletal condition is different and has unique needs, we know that for many staying active has a significant beneficial impact on their wellbeing, improving their quality of life and helping them retain their independence. However, currently people with musculoskeletal conditions are less likely to be active than the general population for a range of complex and intersecting reasons.

For those people who do not have an existing musculoskeletal problem, staying active is essential for maintaining good musculoskeletal health, and can prevent avoidable musculoskeletal problems developing in the future. Despite this, protecting healthy bones, joints, and muscles and preventing musculoskeletal pain are not generally included in public health messaging promoting the benefits of exercise to the public.

Investing in programmes that support physical activity across the general population, and increase physical activity levels specifically in people with existing health conditions, are key to improving the nation's health, and in turn reducing the demand on health and care services. When successful, these programmes are cost effective and represent a good long-term investment of public resources.

It is clear that the full benefits of physical activity on musculoskeletal health, both for people with and without existing conditions, have not yet been realised and more work needs to be done to make staying active an integral part of preventing and managing musculoskeletal conditions.

VERSUS ARTHRITIS' VISION FOR PHYSICAL ACTIVITY AND MUSCULOSKELETAL HEALTH

Versus Arthritis wants to build a future where people with musculoskeletal conditions can enjoy better health and wellbeing because they are active, and where the benefits of physical activity in protecting good musculoskeletal health are fully realised.

In our view, this future would be made up of three core components:

1. Governments across the UK that prioritises increasing physical activity levels to improve the population's health, and deliver public health programmes that promote good musculoskeletal health as a key benefit of being active.
2. Healthcare professionals who view physical activity as a highly effective self-management tool for people with musculoskeletal conditions, and local health systems that actively support these people to become and stay active in whatever way works for them
3. People with musculoskeletal conditions who understand that physical activity can help improve their health and reduce the impact of their condition, and have the capability, opportunity and motivation to be active in their daily lives.

SECTION 1: PHYSICAL ACTIVITY AND MUSCULOSKELETAL CONDITIONS

Prevalence and impact of musculoskeletal conditions

- Musculoskeletal conditions affect an estimated 20.3 million people across the UK, which is around 32% of the total population.[1]
- For each nation, the number of people living with some form of musculoskeletal condition is estimated to be around:[1]
  - 17.01 million people in England
  - 1.7 million people in Scotland
  - 975,000 people in Wales
  - 525,000 people in Northern Ireland
- For specific types of musculoskeletal condition, it is estimated that in the UK around:
  - 8.5 million are living with osteoarthritis [1]
  - Over 10 million people have persistent back pain [2]
  - Around 430,000 people have rheumatoid arthritis [2]
- Pain is one of the leading symptoms of musculoskeletal conditions; there are an estimated 28 million people in the UK living with chronic pain, the majority of which is musculoskeletal pain.[3]
- People with musculoskeletal conditions also commonly report experiencing high levels of fatigue and stiffness, along with a loss of mobility and dexterity, all of which can make doing day-to-day tasks, including physical activity, a challenge or an impossibility.[4]
- Musculoskeletal conditions are associated with lower reported quality of life among those affected,[4] and are strongly linked to the development of mental health conditions including depression and anxiety.[5,6]
- Due to the UK's ageing population and the increasing prevalence of key risk factors such as physical inactivity and obesity, the prevalence of musculoskeletal conditions is likely to increase significantly in the coming decades.[7]

Relationship between musculoskeletal conditions and physical activity

- While a person's musculoskeletal health can be affected by their age, sex, or genetic factors that cannot be changed, many musculoskeletal conditions are preventable. A person's risk level for developing a musculoskeletal problem can be significantly improved by making lifestyle changes that address modifiable risk factors including activity levels, which is known as primary prevention.
- Doing an appropriate level of regular physical activity, is one of the most effective ways to maintain good musculoskeletal health and prevent problems from developing. Regular physical activity can:
  - Reduce the chance of developing joint and back pain by 25%.[8]
  - Improve bone density and strength, especially during childhood and adolescence, which in turn can reduce the risk of osteoporosis and fragility fractures.[9, 10]
  - Reduce the likelihood of impairment in walking and daily living activities in older people by around a third.[11]

- Physical activity is also key for many people who already have a musculoskeletal condition, i.e. secondary prevention, which focuses on helping individuals to manage their condition and minimise further disability. Physical activity can help reduce stiffness and pain, as well as improve mobility and dexterity, making it a key treatment for some of the most common musculoskeletal conditions including osteoarthritis and chronic back pain.[12, 13]
- Regular physical activity can also help in the management of other long-term health conditions which are common comorbidities of musculoskeletal problems, including depression and cardiovascular disease.[14, 15]
- There is a complex and reciprocal relationship between musculoskeletal health, obesity, and physical activity levels,[16] which can also be shaped by the presence of shared complex social and environmental risk factors such as living in an area of high deprivation.[4, 17]
- Obesity increases the risk of an individual developing preventable musculoskeletal pain,[18] which in turn often makes staying active much more challenging. Similarly, the development of musculoskeletal problems can make maintaining a healthy weight more difficult, especially if symptoms act as barriers to physical activity.

Common barriers to physical activity for people with musculoskeletal conditions

- Versus Arthritis research has highlighted the wide range of barriers that people with musculoskeletal conditions face when trying to stay physically active. When discussing physical activity with people with musculoskeletal conditions, we found:[19]
    - Only 29% of people surveyed met the Sport England definition of 'active' (defined as undertaking at least 150 minutes of moderate intensity activity, or 75 minutes of vigorous intensity activity, every week).
    - 7 in 10 said that they would like to be more active.
    - Over half said that they would find it difficult to become more active, with their musculoskeletal condition being the key perceived limiting factor for most people.
    - For those who were active, there were significant mental health benefits associated with physical activity; 76% said that physical activity put them in a better mood and 75% said they felt better about themselves after being active.
    - 77% reported wanting practical support such as tips about activity and pain management to help them be more physically active.
    - Only 56% said that their local leisure centre was nearby and accessible while a quarter of respondents say that a 'lack of local facilities' limited their activity levels.
    - A quarter reported that they had been told at least once that physical activity would make their condition worse.
- Versus Arthritis research conducted in 2020 demonstrates how physical activity levels in people with musculoskeletal conditions can vary depending on where a person is on their treatment journey, and how well they are coping with the impact of their condition more broadly:[20]
    - 60% of people with musculoskeletal conditions reported using physical activity as a method of self-management.

    - This figure was lower for individuals who were newly diagnosed or were still waiting for a diagnosis (52% and 51% respectively).
    - People who were considered to be managing and in control of their condition were significantly more likely to use physical activity as a form of self-management (67%), while those whose condition was most severe reported doing the least activity (45%).
- Our research also highlighted that while pain is very common problem for those wanting to be active, it is not the only symptom that acts as a barrier for people with musculoskeletal conditions:[20]
    - 56% of people with musculoskeletal conditions said that pain had a significant negative impact on their ability to do high impact physical activity, but roughly the same proportion of people reported that fatigue (55%) and dexterity issues (54%) acted as barriers as well.
    - Feeling low or feeling anxious were also aspects of living with a musculoskeletal condition which prevented people from taking part in high impact activity (affecting 50% and 52% of people respectively).
    - Regarding low impact activity, struggling with getting out and about and trying to support themselves at home were the elements of living with a musculoskeletal condition that people most frequently reported as being an issue.

SECTION 2: VERSUS ARTHRITIS' GUIDING PRINCIPLES AND CORE OBJECTIVES FOR POLICY AND PROGRAMMES DESIGNED TO SUPPORT PHYSICAL ACTIVITY IN PEOPLE WITH MUSCULOSKELETAL CONDITIONS

The following is a set of principles for supporting physical activity in people with musculoskeletal conditions, and the specific objectives that the system needs to meet in order to achieve the overarching aim of increasing physical activity levels amongst people with musculoskeletal conditions.

Underlying principles for designing support for physical activity amongst people with musculoskeletal conditions.	
1. Community involvement and co-design	Physical activity resources should be tailored to support the specific needs of a community and address any health inequalities which exist in a local area. In practice this means co-designing physical activity interventions, or implementing existing programmes that are co-designed with users, and actively seeking input from groups who are less likely to be physically active. This includes people with underlying health conditions or disabilities, people from minority ethnic groups, and those living in areas of high deprivation. Whenever possible, involving people who find it challenging to stay active, including people with musculoskeletal conditions, in shaping services can help to ensure challenges relating to physical activity are identified and addressed. Physical activity programmes should look to draw on expertise and resources that have already been developed, and incorporate existing insights on what the common barriers to physical activity are for different groups into the decision-making process. The We Are Undefeatable campaign, run by the Richmond Group of Charities and Sport England, has carried out extensive research into what the behaviour, attitudes and needs around physical activity are for people with long-term health conditions.[21] These insights should be utilised by decision makers to design their physical activity programmes in order to make them accessible and appropriate for people with existing long-term health conditions.
2. Place-based approach	Place-based, local-level design is key in delivering physical activity programmes and ensuring their long-term sustainability. This process should start by looking at the pre-existing strengths within a community to identify local resources such as green spaces, swimming pools, leisure centres, sports clubs, and other spaces/resources that can be utilised in new ways. Those leading on the development of physical activity interventions should map the current services available in a local area and the populations they are designed for. That mapping process should be used to identify gaps in the support currently available, and to commission additional services for

	those underserved groups with particular support needs, for example people with reduced mobility.
3. Whole system integration	A whole system approach is needed to reach people with musculoskeletal conditions, with a focus on integrating more physical activity services and tailored support into health service treatment pathways and referral processes for musculoskeletal conditions. A successful integrated approach requires strong cross-sector working and collaboration between local healthcare systems, the leisure sector, local authorities, employers, charity partners and local communities, who all play a role in supporting physical activity amongst people with long-term health conditions.
4. Evidence-based programmes	Whenever possible, physical activity interventions designed for people with musculoskeletal conditions should be based on existing evidence or best practice examples, including findings from previous programmes that have been successful in this area and well-supported models of behaviour change (e.g. the COM-B model).[22] Interventions should be evaluated using a wide range of short and long-term metrics to help develop a robust evidence base on what support is most effective in increasing activity levels for people with musculoskeletal conditions. All available data on the prevalence and impact of different musculoskeletal conditions at a local level should be accessible to, and utilised by, those developing strategies and programmes to boost physical activity at the local level.
5. Long-term, sustainable interventions and goals	New physical activity pilots and interventions should be given enough time and resource to build up and become fully embedded in the system before evaluating their impact. Existing well-established interventions need continued resourcing in order for their long-term impact to measured effectively. Programmes should not just be assessed using immediate indicators of success such as uptake, but also use long-term behaviour change metrics and quality of life measures. The evaluation process should also encompass the indirect benefits of physical activity, like the impact on symptoms, quality of life, mental health, and societal participation. Physical activity strategies need to take a broad public health view to illustrate how investing in physical activity programmes and removing barriers to activity for people with existing health conditions provide good value for money and return on investment, in addition to delivering long-term benefits to society.[23] For example, successful physical activity programmes can help to reduce future demand on both health and social care services as well as empower people to live healthier, more independent lives.

Key objectives for supporting musculoskeletal health through physical activity and improving activity levels amongst individuals with existing musculoskeletal conditions.	
1. Promote strong preventative messaging on physical activity	Organisations across the public health sector, especially those at a national level that are responsible for large scale health promotion campaigns, need to actively promote messages about the benefits of physical activity to maintaining good musculoskeletal health and preventing the development of long-term musculoskeletal problems. Improving musculoskeletal health, and the associated increase in quality of life and prevention of pain, should be championed as a key benefit of increasing physical activity levels in any future health promotion activity. It is also important to highlight that for people with existing musculoskeletal conditions, helping them manage their symptoms while being active can be the key to unlocking physical activity for them, as symptoms are often the main barrier they face. This in turn helps to improve their general health and wellbeing and reduces their risk of developing other health conditions such as diabetes, cancer, and heart disease.[24] All messaging on the role of physical activity in preventing ill health should frame good musculoskeletal health as foundational to people's overall wellbeing.
2. Tackle common barriers to physical activity for people with musculoskeletal conditions	Interventions need to explicitly address the concerns people with musculoskeletal conditions have related to physical activity, specifically fears about worsening pain or damaging their joints, and tackling the misconceptions that exist around pain and physical activity. Practical advice on how to manage pain or fatigue while exercising should be provided to people with musculoskeletal conditions to prevent these issues becoming barriers to staying active. For people with musculoskeletal conditions, healthcare professionals (HCPs) are the most trusted source of information and advice related to their condition. It is therefore vital that HCPs are trained to talk about physical activity with patients, offer them support and advice, and make referrals to activity programmes when appropriate. Early and proactive intervention is also key; information on how to use physical activity as part of self-management should be provided to people with musculoskeletal conditions during the first stages of diagnosis and treatment, so that people do not avoid activity in response to symptoms initially developing or worsening. This needs to then be reinforced by the leisure sector and public health bodies promoting positive messaging about the importance of physical activity for maintaining good musculoskeletal health and preventing further deterioration for those with existing conditions.

3. Provide different routes to increased physical activity that are accessible to people with a wide range of physical capabilities	People's experience of living with a musculoskeletal condition varies significantly depending on the severity of their condition, their physical limitations, and their daily levels of pain and fatigue. People need to be able to access support at the right time for them, with messaging that encourages them to try to be more active at any age, and under any circumstances. A one-size-fits-all approach to activity provision will not meet the diverse needs of people with musculoskeletal conditions. A menu of opportunities, including support and follow up, should be available for people with musculoskeletal conditions and the type of resources provided should be tailored to a person's symptoms, age, functional capacity, and personal preferences. To support decision makers, in 2016 Versus Arthritis in partnerships with NHS England, Public Health England and the Department of Health published a Musculoskeletal Physical Activity Commissioning Model for England, which outlines in more detail the range of physical activity support which should be provided to meet the needs of people at every level of musculoskeletal health. This model should be updated to reflect the new and emerging public health structures in England, and equivalent models should be developed for the other UK nations.
4. Address existing inequalities in both musculoskeletal health and physical activity levels	Musculoskeletal conditions and sedentary behaviour are both more common amongst people living in areas of higher deprivation and in lower socio-economic groups.[4, 25] To prevent widening inequalities in both musculoskeletal health outcomes and physical activity levels, activity programmes for people with musculoskeletal conditions must also address the additional barriers to becoming active that people may experience. This includes, but is not limited to cost, accessibility barriers, cultural differences, varying attitudes towards physical activity, perception issues about who these programmes are for, and a lack of inclusive promotional materials.
5. Improve our understanding and share best practice	High quality data on physical activity participation and related measures in people with musculoskeletal conditions needs to be collected at both a national and local level to capture the scale and scope of the problems. Physical activity programmes should work to better understand what drivers can effectively motivate different communities, including people with long-term health conditions and especially those living with pain, and work to increase people's motivation to be active. Public health bodies, especially those providing national-level leadership on public health initiatives, should actively identify successful activity programmes for people with musculoskeletal conditions and share them as examples of best practice with local authority teams tasked with delivering these programme on the ground.

SECTION 3: TRANSLATING THE PRINCIPLES AND OBJECTIVES OF SUPPORTING GOOD MUSCULOSKELETAL HEALTH THROUGH PHYSICAL ACTIVITY INTO PRACTICE

There are already many existing physical activity programmes designed to support good musculoskeletal health which illustrate how Versus Arthritis' principles and objectives for activity can be built into physical activity support and be used to effectively support individuals with musculoskeletal conditions to stay active.

Case Study 1: Encouraging collaboration and co-design

Good Boost

Good Boost is an online platform designed to help manage musculoskeletal problems through a personalised activity programme delivered through a digital app. The activity plan provided is tailored to an individual's condition and symptoms, and is designed to improve pain, function, and overall wellbeing.

Good Boost was **co-designed** with support from musculoskeletal charities including Versus Arthritis and extensive feedback from people with musculoskeletal conditions. **Community input** shaped how the platform was designed, and different layouts and features were created and tested with users to ensure they were easy to navigate and effective in supporting people to be active.

Each new update to the app is developed based on the feedback from users on what they want to see, including an increased focus on the social element of physical activity and the introduction on more support for being active at home.

Case Study 2: Tackling barriers and providing different routes into exercise

Options, Advice, and Knowledge (OAK) Service

OAK is a service developed by Aneurin Bevan University Health Board for people living with osteoarthritis of the knee and low back pain. The service is designed to provide education to people on their condition and be involved in making decisions about how they manage their condition, including through physical activity.

The programme provides information on support options for increasing physical activity **tailored to an individual's needs,** ranging from general information about building activity into everyday routines, to referral to physiotherapy and specialist programmes.

The service also aims to **address the concerns and questions** people with knee osteoarthritis and low back pain have as a way of **tackling common misconceptions** about being active with a musculoskeletal condition, and improving their confidence and ability to self-manage.

Case Study 3: Acknowledging the importance of place and addressing inequalities

Get Active for Arthritis

Get Active for Arthritis was a physical activity programme funded by the National Lottery Community Fund Wales between 2016 and 2019 to deliver a six-week self-management course for people living with musculoskeletal conditions, providing support through activity classes at 6 locations across Mid and North Wales. One of the goals of the programme was to help **address the inequalities in access to activity support** commonly experienced by those living in rural and isolated communities.

The locations were chosen after **analysing the existing distribution of groups and classes available** across the region and assessing where the project could deliver the most change for people with musculoskeletal conditions. The project sought to **complement existing activity provision** wherever possible, for example through adapting and expanding access to existing programmes which could benefit participants.

Case Study 4: Seeing the value of local leadership in the development of physical activity support

Local authorities' role in in delivering physical activity programmes

Versus Arthritis has been working across a number of sites in the UK to pilot different models of in-person activity support for people with musculoskeletal conditions, **using the principles of behaviour change** to create programmes which **are both scalable and sustainable.**

A key element of this work has **been collaborating with the local authorities** in our pilot sites to integrate the pilot work being done by Versus Arthritis into the local health system and **build connections with other local initiatives**. For example, throughout the development of our Birmingham pilot we've worked closely with Birmingham City Council and are now linked into the region's musculoskeletal care pathway and their work on delivering green spaces in the city.

Working with local councils and their public health teams has allowed us to **tailor our programmes to the needs of the local community using their knowledge and expertise**. Our pilot work in Middlesbrough is being designed using the insights gained from a wider physical activity Sport England pilot run in partnership by Redcar and Cleveland and Middlesbrough local councils called 'You've got this', which is aims to encourage people to live more active lives.

East Riding of Yorkshire Council, which is also a Versus Arthritis activity pilot site, is another example of strong local authority leadership in this area. They deliver a **wide range of activity support** for people with existing health conditions through their leisure centres, including offering the ESCAPE-Pain programme and providing advice on joint pain in community settings. The council's Health and Wellbeing teams have taken a **place-based approach** to providing these services; first **identifying the existing strengths and unmet needs** within the community, and then **working in partnership with local services, organisations, and voluntary groups** to design and deliver further activity support to meet those needs.

Case Study 5: Sharing best practice and promoting strong positive messaging

Movement for Health

Movement for Health is a coalition of leading health charities in Scotland, aiming to increase the physical activity levels of people living with long term conditions, and in turn improve their social, physical, and mental health.

The coalition works to **bring together knowledge** from across the system, including the charity sector, national agencies, and academic institutions, and **share insights on effective behaviour change approaches and general good practice** for increasing physical activity in people living with underlying health conditions.

The Movement for Health also collaborates with public health partners to **increase awareness of the benefits of physical activity for those with long term conditions**, and provides advice and guidance to health care professionals to support them in **promoting physical activity opportunities to people with musculoskeletal conditions** and other long term health conditions.

Case Study 6: Delivering evidence-based programmes using a whole system approach

ESCAPE-Pain

ESCAPE-pain is a rehabilitation programme that can be **integrated into treatment pathways** for people with hip and/or knee osteoarthritis to educate them on how to use physical activity as a safe and effective self-management strategy. Since its development ESCAPE-Pain has undergone **extensive evaluation** and has been shown to provide benefits to people with osteoarthritis, as well as deliver value for the healthcare system.

Analysis carried out by Public Health England showed that for every £1 spent on ESCAPE-Pain, the invention delivered an average of £5.20 in healthcare cost savings.[23] For some areas the potential savings are even more substantial, Winchester City Council projected that they could expect the implementation of ESCAPE-Pain in the region to provide a return on investment of £69.18 per £1 spent.[26]

Versus Arthritis and the Health Innovation Network established a three-year partnership between 2017 and 2020 to scale up the delivery of ESCAPE-Pain across England, working with Academic Health Sciences Networks and Active Partnerships. We've also supported work to embed ESCAPE-pain into health boards across Wales in collaboration with clinicians, system leaders and the leisure sector.

Through further collaboration with the charity sector, Orthopaedic Research UK is now continuing to develop ESCAPE-Pain as a **fully embedded, sustainable support programme**.

The most successful approach for implementing ESCAPE-Pain involved **bringing commissioners and clinicians from across the health sector together** to design the referral pathways collaboratively, and **engaging local leisure providers and community-based organisations** with experience of activity referral schemes to provide examples of processes and systems that already worked.

Case Study 7: Mapping local resources and tackling fears and misconceptions around physical activity

Western Health & Social Care Trust's activity support for people on joint replacement waiting lists

Northern Ireland's Western Health & Social Care Trust (WHSCT) currently has extensive waiting times for people being referred to Orthopaedic services, including joint replacement, during which time an individual's physical capabilities can deteriorate significantly. There is a core physiotherapy offered to people on waiting lists, but people also want a **community-based approach** to managing their condition.

To address this unmet need, healthcare professionals across the Trust worked to **map the existing physical activity support programmes and funded services** available and collaboratively develop a proposed activity treatment pathway for those experiencing long orthopaedic waits. The pathway includes referral options from physiotherapy, GPs, and specialist services, and **provides a range of activity interventions** including professionally led structured courses, community-based groups, and discounted leisure centre memberships

The programme was also designed to **provide informational support** to people with musculoskeletal conditions who have received conflicting advice from healthcare workers about physical activity, or wrongly assume that there is no way for them to be active without causing more damage and pain.

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