

# Promoting physical activity and physical function in people with long-term conditions in primary care: the Function First realist synthesis with co-design

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## Scientific summary

The Function First realist synthesis with co-design

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# Scientific summary

## Background

Long-term conditions, such as hypertension, coronary heart disease, asthma, chronic obstructive pulmonary disease, diabetes, depression, chronic kidney disease and osteoarthritis, affect around 30% of the population. Approximately 25% of people with one long-term condition report 'problems performing usual activities'; this figure rises to > 60% among those with three or more long-term conditions. As older people accumulate more long-term conditions, they become increasingly frail, which is one of the biggest challenges facing the health and social care systems. There are known benefits of physical activity in the management of long-term conditions, including improving physical (and psychosocial) functioning. However, the proportion of the adult population in England and Wales who are at least moderately active is low, and this is even lower among people with long-term conditions, with an inverse association between physical activity and multimorbidity. As 90% of patient interaction with the UK NHS occurs in primary care, particularly for the management of long-term conditions, primary care services are well placed to empower individuals and communities to reduce this decline. The primary care management of long-term conditions typically focuses on the diagnosis and categorisation of disease, and interventions to increase physical activity are used in only a limited way in the NHS. A better way for primary care to promote physical activity and reduce functional decline is needed, and this is likely to involve a complex intervention. To understand the active ingredients of such an intervention, a method that focuses on complexity is required. A realist approach explores evidence that is rich in theory about what it is about interventions that work, for whom and in what circumstances, to provide an explanatory contextualised account.

## Objectives

The overall aim was to conduct a realist evidence synthesis to inform the development of a primary care intervention to promote physical activity and physical function among people with long-term conditions. The specific objectives were to:

1. identify and produce a taxonomy of physical activity interventions that aim to reduce functional decline in people with long-term conditions managed in primary care
2. work with patients, health professionals and researchers to uncover the complexity associated with the range of physical activity interventions in primary care, and how they directly or indirectly affect the physical functioning of people with long-term conditions
3. identify the mechanisms through which interventions bring about functional improvements in people with long-term conditions and the circumstances associated with how the interventions are organised and operate within different primary care contexts
4. understand the potential impacts of these interventions across primary care and other settings, such as secondary health care and social care, paying attention to the conditions that influence how they operate
5. co-produce an evidence-based, theory-driven explanatory account in the form of a refined programme theory to underpin and develop a new intervention through a co-design process with patients, health professionals and researchers (Law RJ, Williams L, Langley J, Burton C, Hall B, Hiscock J, *et al.* 'Function First—Be Active, Stay Independent'—promoting physical activity and physical function in people with long-term conditions by primary care: a protocol for a realist synthesis with embedded co-production and co-design. *BMJ Open* 2020;**10**:e035686).

## Methods

We performed a realist synthesis of the literature, with input from key stakeholders, public contributors, and study management and advisory groups. Co-production was embedded throughout and included in a co-design process, through which ideas for an intervention were developed. The process was iterative, with data sources informing each other as the synthesis progressed.

### *Development of initial programme theory*

Initial ideas for programme theories were developed through two theory-building stakeholder workshops and an early scoping search of published and grey literature. We used LEGO® Serious Play® (LEGO, Billund, Denmark) as a participatory method for these workshops, enabling expression and creativity through building models and sharing. The workshops included 13 health and social care professionals, 10 people with long-term conditions and the two lead researchers. Each individual created and described models in response to the following questions: 'What does physical function mean to you?' and 'What are your experiences of maintaining physical function?' This helped to develop a shared understanding of the key topic areas and stimulate initial ideas and potential areas for theory development. Following these workshops, a preliminary list of 'if . . . then' statements was created, which informed the first co-design workshop, the literature search strategy and the inclusion/exclusion criteria.

### *Literature searching and data extraction*

We started the review by examining relevant systematic reviews and developing eight 'theory areas'. These were:

1. promoting physical literacy across the practice team
2. framing physical activity promotion around the link between physical activity and physical function
3. routinely assessing and promoting physical function and activity
4. reducing time pressure by offering consultation with a credible professional
5. linking people into existing local initiatives
6. using behaviour change techniques
7. tailoring advice and goals
8. having social support from others.

Our literature search identified 20,436 articles. Following title and abstract screening, 2069 articles were selected for inclusion according to relevance and theoretical richness. From that library, a purposive sample of 170 papers was selected for data extraction; these papers were chosen because they were the most relevant to the developing theory areas and gave the clearest and richest examples of evidence describing interventions aimed at functional improvements in people with long-term conditions, and how these interventions operated and were organised in different primary care contexts. We supplemented the systematic search with forwards and backwards citation tracking of key articles and further purposive searches of guidelines, grey literature, social prescribing and physical literacy. Bespoke data extraction forms were designed to ensure that we captured data that informed the developing programme theories.

### *Testing and refining programme theories*

The theory areas were explored in 10 individual 'theory-refining' telephone interviews with stakeholders, whereby the researcher presented the developing theories to the stakeholder and then asked which areas needed to be adjusted to create an improved, refined version. The theory areas were also introduced to participants in the second co-design workshop. We extracted data from papers identified as rich and relevant to these theory areas using the bespoke data extraction forms. Through this process and iterative discussion, we developed three initial 'candidate' context, mechanism and outcome statements. These were further refined and tested through the organisation of extracted information into evidence tables representing the different bodies of evidence, followed by the exploration of confirming or refuting evidence.

The context, mechanism and outcome statements formed part of the co-design and the knowledge mobilisation workshops and the final five statements were then defined alongside the co-designed 'Function First' product.

### *Co-design workshops*

Three consecutive co-design workshops included a range of participants ( $n = 23$ ), including people living with long-term conditions, primary care professionals, a primary care cluster lead with a third-sector perspective, a life coach, exercise referral scheme co-ordinator, academic researchers and members of the research team. The workshops were facilitated by a team of design experts. In addition to the development and refinement of the programme theories, ideas were developed for an intervention to promote physical activity for people with long-term conditions managed in primary care. The implications for service innovation, and plans for making the intervention useable, were designed collaboratively and expanded during each workshop. There were key 'deliverables' from each workshop, and between workshops the designers worked to develop ideas and provocations, termed 'design activities', for the next workshop.

The first workshop immersed participants in the theories developed in the earlier stages of the review, in the form of 'if... then' statements. All participants made models or images that expressed and portrayed their own personal knowledge and experience, and how this knowledge and experience related to the emerging theories, so that they could be shared and understood by the other participants. Following this workshop, the designers explored a breadth of existing interventions and analogous practices to be brought to workshop 2 as provocations for new ideas.

In the second workshop, participants used the collection of models and images developed in workshop 1, together with provocations supplied by the designers, to develop a package of assets that could be used to promote physical activity. Participants discussed how these could be used in different locations, as well as barriers to their use.

In the third workshop, prototypes were refined and selected. This involved all participants testing and refining the ideas and models and selecting their top four concepts. These were presented to an external panel (a 'dragon's den') that provided critical feedback.

### *Knowledge mobilisation workshop*

This workshop involved people with long-term conditions, primary care professionals and researchers ( $n = 14$ ) and explored how best to implement the prototype intervention in different contexts and ensure that it was desirable (useable, acceptable, accessible), feasible (technologically and in operational terms) and viable (economically). The design researchers presented a physical example and embodiment of the top four concepts generated in the co-design phase. These ideas were refined through input from a further external panel including representatives from the professional bodies for general practice, nursing and physiotherapy, and public health. Although detailed content was missing, a demonstration of the intervention ideas was able to provide an illustration of how each physical element related to the refined context, mechanism and outcome statements, creating an evidence-informed design solution.

## **Results**

Five context, mechanism and outcome statements were developed to explain how physical activity could be promoted to enhance physical function (and also psychosocial function) in people with long-term conditions who are managed in primary care:

1. Primary care settings are characterised by competing demands, and improving physical activity and physical function are not prioritised in a busy practice (context). If the practice team culture is aligned to promote and support the elements of physical literacy (mechanism), then physical activity promotion will become routine and embedded in usual care (outcome).

2. Physical activity promotion in primary care is inconsistent and unco-ordinated (context). If specific resources are allocated to physical activity promotion (in combination with an aligned practice culture) (mechanism), then this will improve opportunities to change behaviour (outcome).
3. People with long-term conditions have varying levels of physical function and physical activity, varying attitudes to physical activity and differing access to local resources that enable physical activity (context). If physical activity promotion is adapted to individual needs, priorities and preferences, and considers local resource availability (mechanism), then this will facilitate a sustained improvement in physical activity (outcome).
4. Many primary care practice staff have a lack of knowledge about and confidence in promoting physical activity (context). If staff develop an improved sense of capability through education and training (mechanism), then they will increase their engagement in physical activity promotion (outcome).
5. If a programme is credible to patients and professionals (context), then trust and confidence in the programme will develop (mechanism) and more patients and professionals will engage with the programme (outcome).

A prototype multicomponent intervention was co-designed, embodying the emerging programme theories and developing resources to promote physical activity and physical function among people with long-term conditions.

The intervention components consisted of:

- resources that encourage a culture of physical literacy among staff and within the practice
- suggestions for changing the layout of the practice and other promotional materials to create an environment that encourages physical activity
- materials to help develop the role of a credible professional who will facilitate behaviour change during consultations with people who have long-term conditions
- identification of community resources that can address barriers to the uptake of physical activity, such as community transport schemes
- plans to develop, or adapt, an electronic directory of local physical activity opportunities, clubs and groups.

## Conclusions

A programme theory was developed to explain how physical activity could be promoted in primary care to enhance physical and psychosocial functioning in people with long-term conditions, and how this could be adapted in the context of a busy NHS primary care, with time constraints and competing priorities. Realist methods were useful for examining the interplay between different contexts and mechanisms that underpin interventions in primary care to improve physical activity and physical function for people with long-term conditions, and how these different contexts and mechanisms lead to different outcomes. This is the first realist synthesis of physical activity promotion for people with long-term conditions in primary care. The realist synthesis overlapped with the co-design workshops, which allowed them to inform each other and to produce closely aligned context, mechanism and outcome statements and prototype resources. Realist and co-design methods are participatory in nature and we embedded the principles of co-production through our Study Management Group and Project Advisory Group, and included a broad range of stakeholders. As well as being participatory, both methods are constructivist, iterative and sensitive to context and worked to complement each other.

If general medical practice in the UK is to address the low levels of physical activity and poor physical functioning of people with long-term conditions, our work suggests that all five programme theories would need to be incorporated into routine practice, with current practice culture embracing physical activity promotion. A new role of a credible professional would facilitate this, with appropriate

resources and protected time, increased engagement with local providers of physical activity opportunities and full utilisation of electronic directories that are being developed for social prescribing to facilitate physical activity. Our work suggests that these resources and this new role would need to be flexible enough to apply to the varying contexts of different general medical practices. The development of primary care networks, or clusters of practices, provides the opportunity for a common, shared approach. This multicomponent intervention would have cost implications, but may also have direct benefits to the NHS in terms of fewer consultations and demand for services. A future research programme could further develop this multicomponent intervention and assess its acceptability and effectiveness in the context of the Medical Research Council framework for evaluating complex interventions. This refined multicomponent intervention would need to fit in with existing schemes and complement public health campaigns. The research programme could include the following steps:

1. Refine and adapt materials to promote physical literacy in the practice and facilitate behaviour change consultations, including consideration of existing materials.
2. Achieve consensus about the final specification for the job description of the credible exercise professional and the range of professions that could meet this job description.
3. Develop or adapt an existing online directory of local physical activity opportunities that could be used throughout the UK.
4. Pilot this refined multicomponent intervention in a small number of general medical practices to assess its feasibility and acceptability.
5. Carry out a pilot randomised controlled trial to assess the feasibility of the trial methods before a definitive randomised controlled trial is undertaken.
6. Carry out a large multicentre definitive pragmatic randomised controlled trial assessing the effectiveness and cost-effectiveness of the 'Function First' multicomponent intervention.

## Study registration

This study is registered as PROSPERO CRD42018103027.

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