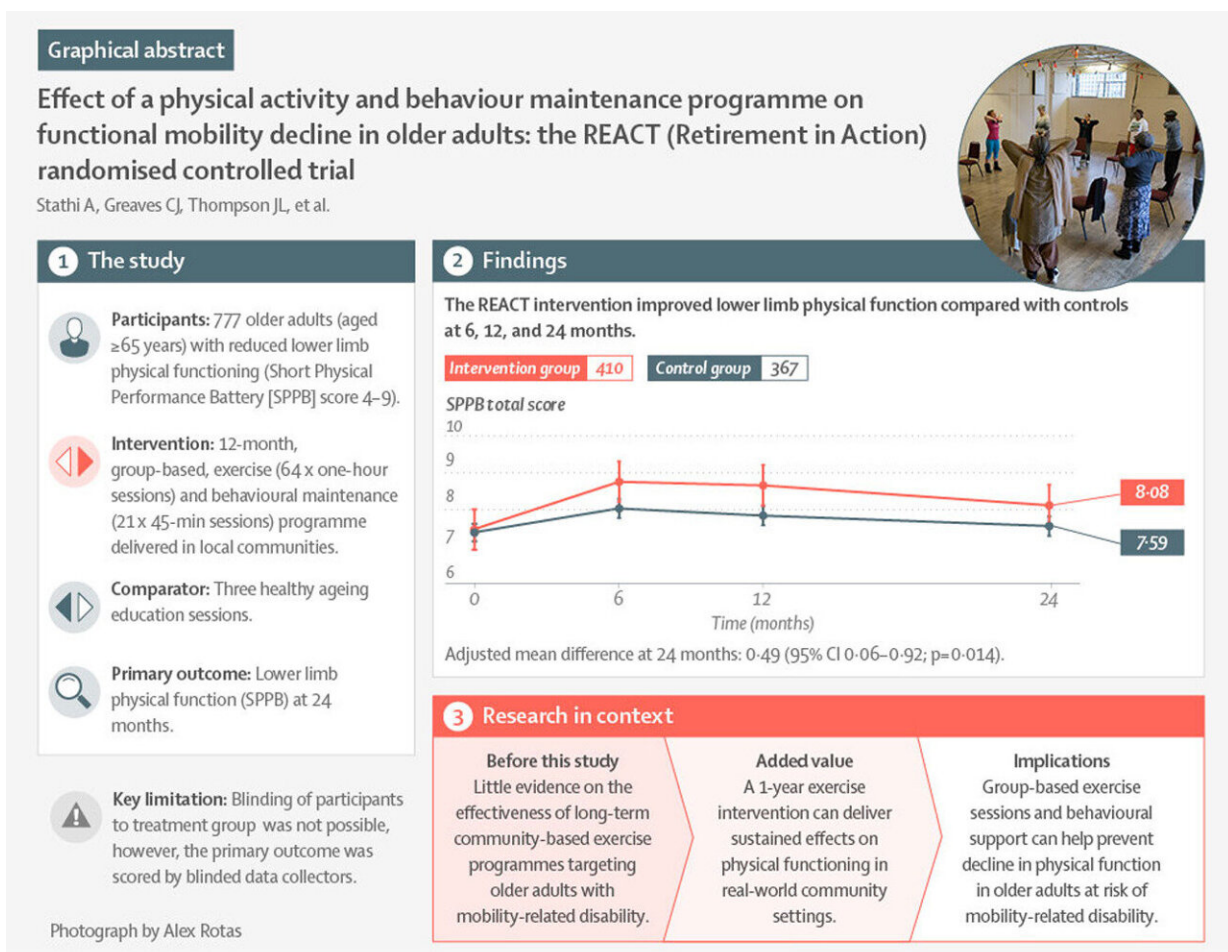


Long-term positive impacts and cost effectiveness of tailored exercise for those over 65 with mobility limitations

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Graphical abstract. Credit: *The Lancet Public Health* (2022). DOI: 10.1016/S2468-2667(22)00004-4

A decline in mobility associated with aging can greatly reduce quality of life, lead to loss of independence, generate substantial health and social care costs, and reduce overall life expectancy. Pressure on healthcare systems is set to be exacerbated by the rapid expansion of the older population. Currently, three in 10 people of state pension age are classified as disabled due to mobility limitations.

REACT—otherwise known as the REtirement in ACTion program—is an innovative, behavior change intervention targeted specifically at [older adults](#) who are beginning to experience mobility limitations (e.g., those who are beginning to find climbing upstairs, walking to the shop, or getting up from a chair more of a challenge). It aims to prevent further decline in mobility through exercises that target lower limb strength, balance, and stamina.

The program focuses on fun, social interaction and building a community through the group-based sessions whilst providing accessible strength, balance, mobility, and cardio-vascular exercises tailored to each participant's needs.

Based on results from a large, randomized control trial, the international research team from the universities of Bath, Birmingham, Exeter, and the University of the West of England (UWE) (UK) and the University of Maryland School of Medicine and Wake Forest (US) say that REACT can help [older people](#) avoid a downward spiral of declining mobility, which can accelerate and lead to social isolation and loss of independence.

REACT ran across three sites (Bath / Bristol, Birmingham, and Devon) over four and a half years. It involved 777 participants aged 65 and over (the oldest participant was 98). Participants were split into either an

intervention or a control group.

Those in the intervention group attended REACT twice a week for three months and then once a week for a further nine months. Those in the [control group](#) attended three separate "healthy aging" classes over the course of the year. By comparing the two groups, researchers were able to test the effectiveness of REACT on lower limb mobility, as well as looking at [health](#) and social care usage.

Their results, which are published today in two papers in the *Lancet Public Health*, show that:

- At 24-months (12 months after the completion of the REACT intervention), the participants who had attended sessions had significantly greater mobility than those who did not, suggesting both a short and long-term positive effect.
- This meant REACT participants found it easier walking, climbing stairs, and had greater independence performing daily activities.
- At least one strength, balance, and mobility exercise session per week (a fairly low level of commitment) was sufficient to provide meaningful benefits on lower limb physical function.
- Per person, the cost of delivering the program was £622, but the health care savings were £725 over two years. Longer-term savings could be far higher.

Professor Afroditi Stathi, REACT Chief Investigator from the University of Birmingham explains: "Physical activity carries a wide range of benefits for older people including a longer and healthier life, prolonged independence and autonomy, better mobility and improved wellbeing. Yet, many older people face a downward spiral of declining mobility, whereby the less active they are, the more limited they become.

"Through REACT we have shown that this steady decline is avoidable. It can be prevented, or in many cases be reversed through an exercise program that is individually tailored and progressive.

"At least one REACT exercise session per week seems sufficient to provide clinically meaningful benefits on lower limb physical function and it is highly cost-effective. This is a strong public health message to give to older adults, both in the UK and around the world."

Bath-based REACT participant, Mr Fayek Osman, aged 74, said: "The program improved my wellbeing as my walking ability and stair climbing are improving. REACT has been of great benefit to me and encouraged me to continue with advanced level of activities. It also strengthens my belief that some exercise is better than nothing at all."

Dr. Tristan Snowsill of the University of Exeter, who examined the [economic data](#) from the study with Professor Antonieta Medina-Lara, said: "We found clear evidence that quality of life was improved in the REACT group. This alone would most likely have been enough to justify the cost of the program using the standard rule for cost-effectiveness. To also find that REACT participants used fewer health and care services makes the REACT program one of the clearest cases of value for money I have come across."

The team now hope REACT can be rolled out nationwide via community activity providers based in local areas.

Dr. Max Western of the University of Bath's Department for Health explained: "The aim of REACT was always to have real impacts on people's lives. Given these significant results we are calling on healthcare professionals and policymakers to draw on our findings and implement similar REACT sessions in other parts of the country. Our studies show just how effective REACT can be; we hope many more people will soon

be able to benefit from it in the way our participants did."

Dr. Janet Withall, of the University of Birmingham, is the REACT Trial Manager. She added: "We would like to thank all 777 REACT participants who contributed their time and enthusiasm, and without whom the study would not have been possible. We also could not have conducted the REACT study without all our delivery partners who supported us with their time, resources and expertise."

More information: Afroditi Stathi et al, Effect of a physical activity and behaviour maintenance programme on functional mobility decline in older adults: the REACT (Retirement in Action) randomised controlled trial, *The Lancet Public Health* (2022). [DOI: 10.1016/S2468-2667\(22\)00004-4](https://doi.org/10.1016/S2468-2667(22)00004-4)

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