



ARC BITE

Brokering Innovation Through Evidence

Physical activity, multimorbidity, and life expectancy



Results

A moderate exercise is associated with a longer life expectancy, even in individuals with multimorbidity.

Who needs to know?

Public health professionals
Patients with multimorbidity and carers
The scientific community



What did we do?

In this study, we used half a million participants from the UK Biobank database, which is one of the world's largest Biobank cohorts designed to improve the prevention and treatment of long-term diseases. To make sure our results were reliable and valid, we used three different measures of physical activity (using two self-reported questionnaires and wrist-worn accelerometer), and three different definitions of multimorbidity (including how severe the disease was for participants). The latest survival modelling techniques was used to estimate life expectancy.

What we found and what does this mean?

Physical activity has shown to have many benefits, but the exact extent of its benefits in people with multiple long-term conditions, known as multimorbidity is not well understood. This is the largest study to date to look at the relationship between physical activity and life expectancy by multimorbidity status. We found that using self-reported levels of physical activity based on the global physical activity guidelines, or as little as 10 minutes of

brisk walking a day based on objective measurement, was associated with longer life expectancy even in people with multimorbidity. We also found that there was little additional benefit observed above these levels, suggesting that it is not necessary to engage in high-volume or high-intensity physical activity to achieve the potential health benefits. The overall message from our research was therefore to be physically active throughout life in achievable ways.

How did we involve people?

We used the UK Biobank database.

What next?

The most prevalent conditions captured by this study were high blood pressure, asthma, cancer, depression and diabetes. However, this study did not look at specific clusters of diseases that are commonly found together. Therefore, in our upcoming research we have identified and analysed the effects of physical activity and life expectancy in one of the most common clusters which involves both physical and a mental health condition: cardiometabolic multimorbidity and depression.

What is NIHR ARC EM?

NIHR Applied Research Collaborations (ARCs) support applied health and care research that responds to, and meets, the needs of local populations and local health and care systems. We do this by working collaboratively with our partners and patient groups to bring the best applied health and care evidence into practice.

Evidence

Chudasama YV, Khunti K, Zaccardi F, Rowlands AV, Yates T, Gillies CL, et al. Physical activity, multimorbidity, and life expectancy: A UK Biobank longitudinal study. *BMC Medicine*. 2019;17(1). <http://dx.doi.org/10.1186/s12916-019-1339-0>