EDITORIAL

Physical activity significantly reduces all-cause and cause-specific mortality

AUTHOR
Dr Matthew Lockyer
BSc MB BS DCH DRCOG DFFP MRCGP
GP with an interest in diabetes, Suffolk, UK

FOLLOWING RECOMMENDATIONS FOR BOTH AEROBIC AND MUSCLE STRENGTHENING ACTIVITY can reduce all-cause mortality by up to 40%, a study of nearly half a million adults in the United States has shown.[1] Individuals who met the target for aerobic activity only also had a significant reduction in all-cause mortality risk of 29% and those who participated in just muscle strengthening exercise at recommended levels had a reduction in risk of 11%.

The population-based cohort study used data from the National Health Interview Survey. The programme surveys a nationally representative group of households in the US across a variety of health and lifestyle areas. The study looked at the results from 1997 to 2014 and linked the data to the National Death Index up to the end of 2015.

A total of 529,363 participating adults met the enrolment criteria. Following exclusions for pregnancy, incomplete data on physical activity, and incomplete background information on other lifestyle areas or chronic disease, data on 479,856 adults (215,565 men) were analysed.

'Following recommendations for both aerobic and muscle strengthening activity can reduce all-cause mortality by up to 40%'

Study participants self-reported the frequency and duration of leisure time physical activity in a usual day, week, month and the past year. Frequency was assessed as at least ten minutes of the activity in question.

Aerobic activities were categorised as light to moderate < 6 METs (e.g. gardening, brisk walking or dancing) or vigorous ≥ 6 METs (e.g. running, faster cycling or competitive sports). Muscle strengthening exercises included activities such as callisthenics or lifting weights.

The 2018 US guidelines for physical activity recommend at least 150 minutes of light to moderate aerobic activity or at least 75 minutes of vigorous activity a week (or more than or equal to an equivalent combination), and muscle strengthening exercise on at least two days a week.[2] Similar levels of physical activity are also recommended in the UK.[3]

Based on the 2018 US guideline recommendations, aerobic activity responses were divided into two groups, those who met the recommended levels and those who did not. Similarly, the responses for muscle strengthening were divided into those who performed this at least twice weekly, and those who did not.

The responses were divided into four groups: those who fulfilled both exercise targets (15%), those who only met the aerobic activity target (23.7%), those who only met the muscle strengthening activity target (4.5%), or those who met neither (56.8%).

Compared with the population who did not meet any physical activity targets, all-cause mortality was reduced significantly in the groups who did:

- For individuals achieving both aerobic activity and muscle strengthening targets; hazard ratio (HR) = 0.60 (95% CI: 0.57-0.62)
- For those achieving the aerobic activity target alone; HR 0.71 (95% CI: 0.69-0.72)
- For those achieving the muscle strengthening target alone; HR 0.89 (95% CI: 0.85-0.94)

Similar patterns were seen in the sub-group analysis for cause-specific mortality from cardiovascular disease, cancer, and chronic lower respiratory tract disease.

Cause-specific mortality rates for diabetes; accidents and injuries; Alzheimer's disease; influenza and pneumonia; and nephritis, nephrosis or nephrotic syndrome were also reduced in those who met the aerobic activity target or both targets.

These results accord with previous research, but they are dramatic in terms of the size of the effects on all-cause mortality and also show that the benefits of exercise in reducing mortality rates can be seen in patients with a range of chronic diseases.

These findings will help GPs tailor advice on exercise to their patients. They show that exercise has definite benefits for our patients, including those living with chronic illness. There is a mounting body of evidence that physical activity increases our chances of staying healthy and living longer.

REFERENCES
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2 US Department of Health and Human Services. Physical Activity Guidelines for Americans. 2nd edition. US Department of Health and Human Services. 2018
3 UK Chief Medical Officers' Physical Activity Guidelines. Department of Health and Social Care. 2019

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