

Strength exercise as vital as aerobic, new research finds

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Push ups and sit ups could add years to your life according to a new study of over 80,000 adults led by the University of Sydney.

The largest study to compare the mortality outcomes of different types of [exercise](#) found people who did strength-based exercise had a 23 percent reduction in risk of premature death by any means, and a 31 percent reduction in cancer-related death.

Lead author Associate Professor Emmanuel Stamatakis from the School of Public Health and the Charles Perkins Centre said while strength training has been given some attention for functional benefits as we age, little research has looked at its impact on mortality.

"The study shows exercise that promotes muscular strength may be just as important for health as aerobic activities like jogging or cycling," said Associate Professor Stamatakis.

"And assuming our findings reflect cause and effect relationships, it may be even more vital when it comes to reducing risk of death from cancer."

The World Health Organization's [Physical Activity Guidelines](#) for adults recommend 150 minutes of [aerobic activity](#), plus two days of muscle strengthening activities each week.

Associate Professor Stamatakis said governments and [public health](#) authorities have neglected to promote strength-based guidelines in the community, and as such misrepresented how active we are as a nation.

He cites the example of The Australian National Nutrition and Physical Activity Survey which, based on aerobic activity alone, reports inactivity at 53 percent. However, when the World Health Organization's (WHO) strength-based guidelines are also taken into account, 85 percent of Australians fail to meet recommendations.

"Unfortunately, less than 19 percent of Australian adults do the recommended amount of strength-based exercise," said Associate

Professor Stamatakis.

"Our message to date has just been to get moving but this study prompts a rethink about, when appropriate, expanding the kinds of exercise we are encouraging for long-term health and wellbeing."

The analysis also showed exercises performed using one's own body weight without specific equipment were just as effective as gym-based training.

"When people think of strength training they instantly think of doing weights in a gym, but that doesn't have to be the case.

"Many people are intimidated by gyms, the costs or the culture they promote, so it's great to know that anyone can do classic exercises like triceps dips, sit-ups, push-ups or lunges in their own home or local park and potentially reap the same health benefits."

The research, published in the [American Journal of Epidemiology](#) today, is based on a pooled population sample of over 80,306 adults with data drawn from the Health Survey for England and Scottish Health Survey, linked with the NHS Central Mortality Register.

The study was observational, however adjustments were made to reduce the influence of other factors such as age, sex, [health](#) status, lifestyle behaviours and education level. All participants with established cardiovascular disease or cancer at baseline and those who passed away in the first two years of follow up were excluded from the study to reduce the possibility of skewing results due to those with pre-existing conditions participating in less exercise.

Summary of key findings:

- participation in any strength-promoting exercise was associated with a 23 percent reduction in all-cause mortality and a 31 percent reduction in cancer mortality
- own bodyweight exercises that can be performed in any setting without equipment yielded comparable results to gym-based activities
- adherence to WHO's strength-promoting exercise guideline alone was associated with reduced risk of cancer-related death, but adherence to the WHO's aerobic [physical activity](#) guideline alone was not
- adherence to WHO's strength-promoting exercise and aerobic guidelines combined was associated with a greater risk reduction in mortality than [aerobic physical activity](#) alone
- there was no evidence of an association between strength-promoting exercise and cardiovascular disease mortality.

More information: Jason A. Bennie et al. The descriptive epidemiology of total physical activity, muscle-strengthening exercises and sedentary behaviour among Australian adults – results from the National Nutrition and Physical Activity Survey, *BMC Public Health* (2016). [DOI: 10.1186/s12889-016-2736-3](https://doi.org/10.1186/s12889-016-2736-3)

Provided by University of Sydney

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