

Regularly exercising with weights linked to lower risk of death

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Regularly exercising with weights is linked to a lower risk of death from any cause, with the exception of cancer, finds research carried out in older adults and published online in the *British Journal of Sports*

Medicine.

Ensuring that a weekly exercise routine includes both weights and aerobic activities seems to have an additive effect, the findings suggest.

Current guidelines on physical activity for all adults recommend at least 150 weekly minutes of moderate intensity [aerobic activity](#), or a minimum of 75 minutes of vigorous intensity aerobic activity, or an equal combination of the two—usually referred to as MVPA (moderate to vigorous physical activity).

All adults are also recommended to incorporate activities that work all the major muscle groups. Yet while [aerobic exercise](#) is consistently associated with a lower risk of death, it's not clear if working out with weights might have similar effects.

In a bid to plug this knowledge gap, the researchers set out to evaluate separately and jointly the potential impact of exercising with weights and aerobic activities on the risk of death among [older adults](#).

They drew on participants from the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial. This began in 1993 and includes 154,897 men and women aged 55-74 from 10 different cancer centers in the United States.

In 2006, 104,002 of the participants were additionally asked if they had exercised with weights over the past year, and if so, how often they had done so—anything from less than once a month to several times a week. They were also asked about the frequency and duration of both moderate and vigorous intensity physical activity over the past year.

Moderate intensity was described as "activity where you worked up a light sweat or increased your breathing and heart rate to moderately high

levels" and vigorous activity as "activity strenuous enough to work up a sweat or increase your breathing and [heart rate](#) to very high levels."

Four activity groups were generated based on total weekly minutes of MVPA: (1) inactive, 0 minutes; (2) insufficient aerobic MVPA, 1-149 minutes; (3) sufficient, 150+ minutes of moderate or an equivalent amount of vigorous activity; and (4) highly active, 301 or more minutes of moderate or an equivalent amount of vigorous activity.

In all, the responses of 99,713 people were included in the final analysis, 28,477 of whom died over an average of 9½ years of monitoring. Their average age at the start of the monitoring period was 71, and the average weight (BMI) was 27.8 kg/m² which is defined as overweight.

Nearly 1 in 4 (23%) respondents reported some weightlifting activity; 16% said they exercised with weights regularly between one to six times a week. Nearly a third (32%) were sufficiently aerobically active, either meeting (24%) or exceeding (8%) the guidelines on MVPA.

Exercising with weights and aerobic MVPA were both independently associated with a lower risk of death from any cause, as well as from cardiovascular disease, but not from cancer.

Overall, working out with weights in the absence of MVPA was associated with a 9-22% lower risk of death, depending on the amount. For example, using weights once or twice a week was associated with a 14% lower risk.

Similarly, among those who didn't exercise with weights, aerobic MVPA was associated with a 24-34% lower risk of death from any cause, compared with those who reported neither MVPA nor exercising with weights.

But the lowest risk of death was seen among those who said they did both types of physical activity. For example, the risk of death was 41-47% lower among those who said they met most recommended weekly levels of MVPA and who exercised with weights once or twice a week than it was among those who were physically inactive.

Educational attainment, smoking, BMI, race and ethnicity didn't significantly change the associations observed, but sex did: The associations were stronger in women.

This is an observational study, and as such, can't establish cause, as well as the fact that it relied on personal recall and included data from a single point in time. Specific details on training intensity, training load, volume (sets and repetitions), and for how long participants had been exercising with weights weren't available, all of which might have influenced the findings.

The study focused only on weights, but there are other types of muscle strengthening exercise, say the researchers, citing calisthenics, which include push-ups and squats; Pilates; and plyometric exercises, which include tuck jumps and burpees.

Using [weights](#) can make a body leaner: Total lean mass is independently associated with a lower risk of death, say the researchers by way of an explanation for their findings. If the exercise is done in a gym, it could also be very sociable—another factor associated with a longer, healthier life.

"Our finding that mortality risk appeared to be lowest for those who participated in both types of exercise provides strong support for current recommendations to engage in both aerobic and muscle-strengthening activities," the researchers write. "Older adults would probably benefit from adding weightlifting exercises to their [physical activity](#) routines."

More information: Independent and joint associations of weightlifting and aerobic activity with all-cause, cardiovascular disease and cancer mortality in the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial, *British Journal of Sports Medicine* (2022). [DOI: 10.1136/bjsports-2021-105315](https://doi.org/10.1136/bjsports-2021-105315)

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