

# Pump You Up!

## How strength training can help you live longer

We all know that exercise is beneficial. Most studies have focused on aerobic type exercise when looking at mortality benefits. More recently, people have become more focused on strength as a predictor of future health. People with higher levels of upper and lower body strength have been shown to have a lower risk of mortality. But does strength training lower our mortality? Can we pump iron to live longer? How much strength training should we do and how often? This study provides some answers.



### Abstract

- Objective: To quantify the associations between muscle-strengthening activities and the risk of non-communicable diseases and mortality in adults independent of aerobic activities.
- Design: Systematic review and meta-analysis of prospective cohort studies.
- Data sources: MEDLINE and Embase were searched from inception to June 2021 and the reference lists of all related articles were reviewed.
- Eligibility criteria for selecting studies: Prospective cohort studies that examined the association between muscle-strengthening activities and health outcomes in adults aged  $\geq 18$  years without severe health conditions.
- Results: Sixteen studies met the eligibility criteria. Muscle-strengthening activities were associated with a 10–17% lower risk of all-cause mortality, cardiovascular disease (CVD), total cancer, diabetes and lung cancer. No association was found between muscle-strengthening activities and the risk of some site-specific cancers (colon, kidney, bladder and pancreatic cancers). J-shaped associations with the maximum risk reduction (approximately 10–20%) at approximately 30–60 min/week of muscle-strengthening activities were found for all-cause mortality, CVD and total cancer, whereas an L-shaped association showing a large risk reduction at up to 60 min/week of muscle-strengthening activities was observed for diabetes. Combined muscle-strengthening and aerobic activities (versus none) were associated with a lower risk of all-cause, CVD and total cancer mortality.
- Conclusion: Muscle-strengthening activities were inversely associated with the risk of all-cause mortality and major non-communicable diseases including CVD, total cancer, diabetes and lung cancer; however, the influence of a higher volume of muscle-strengthening activities on all-cause mortality, CVD and total cancer is unclear when considering the observed J-shaped associations.

We know that if everything else is equal, stronger men and women have a lower risk of dying than people with less strength. This study examines if strength training can lower our mortality. It shows that strength training reduced mortality, regardless of the results of the training. So even if people don't see a change in their body composition or huge strength gains, the benefits are still there. "Muscle-strengthening activities" were linked to a 15% overall lower risk of death, a 17% lower risk of cardiovascular disease, a 17% lower risk of diabetes, and a 12% lower risk of cancer.

As we age, we tend to lose muscle mass, muscle function, and bone density. Resistance training can help to reverse all three of these factors. What is the best way to get our "muscle-strengthening activity"? Since this study looked at several different studies, it appears that there are different ways to get our activity fix. Anything that provides resistance is beneficial. This can include weights, dumbbells, bands, or our body weight. What about the dose of strength training? In this study, the maximum risk reduction was seen with around 60 minutes of strength training weekly. Another study found that the optimum exercise mortality benefits were seen with 1-2 sessions/week of strength training and 3 hours/week of aerobic training. Based on these two studies, I would suggest 1-2 sessions of strength training weekly for 30-60 minutes total with 3-5 sessions of 30–60-minutes of aerobic exercise for most people. Of course, if you love to lift weights or want to exercise more often, it is fine to do more. There are ways to combine some of the benefits of strength training and aerobic conditioning through HIIT (High-Intensity Interval Training) for time-pressed people.

Momma H, Kawakami R, Honda T, Sawada SS. Muscle-strengthening activities are associated with lower risk and mortality in major non-communicable diseases: a systematic review and meta-analysis of cohort studies. Br J Sports Med. 2022 Jul;56(13):755-763. doi: 10.1136/bjsports-2021-105061.