

How Little is Enough?

Study shows the amount of vigorous activity needed for reductions in mortality

Current physical activity guidelines recommend a minimum of 150 minutes of moderate-intensity physical activity (walking) weekly or 75 minutes of vigorous physical activity weekly (jogging). But I think most of us are interested in the minimum effective dose of exercise that will get us the most benefits in the shortest time. If you are interested in finding out the shortest amount of vigorous exercise needed for a reduction in mortality as well as the optimum dose of vigorous activity for the maximal reduction in mortality, check out this study.



Abstract

Aims: Vigorous physical activity (VPA) is a time-efficient way to achieve recommended physical activity levels. There is a very limited understanding of the minimal and optimal amounts of vigorous physical activity in relation to mortality and disease incidence.

Methods and results: A prospective study in 71 893 adults [median age (IQR): 62.5 years (55.3, 67.7); 55.9% female] from the UK Biobank cohort with wrist-worn accelerometry. VPA volume (min/week) and frequency of short VPA bouts (≤ 2 min) were measured. The dose-response associations of VPA volume and frequency with mortality [all-cause, cardiovascular disease (CVD) and cancer], and CVD and cancer incidence were examined after excluding events occurring in the first year. During a mean post-landmark point follow-up of 5.9 years (SD \pm 0.8), the adjusted 5-year absolute mortality risk was 4.17% (95% confidence interval: 3.19%, 5.13%) for no VPA, 2.12% (1.81%, 2.44%) for >0 to <10 min, 1.78% (1.53%, 2.03%) for 10 to <30 min, 1.47% (1.21%, 1.73%) for 30 to <60 min, and 1.10% (0.84%, 1.36%) for ≥ 60 min. The 'optimal dose' (nadir of the curve) was 53.6 (50.5, 56.7) min/week [hazard ratio (HR): 0.64 (0.54, 0.77)] relative to the 5th percentile reference (2.2 min/week). There was an inverse linear dose-response association of VPA with CVD mortality. The 'minimal' volume dose (50% of the optimal dose) was ~ 15 (14.3, 16.3) min/week for all-cause [HR: 0.82 (0.75, 0.89)] and cancer [HR: 0.84 (0.74, 0.95)] mortality, and 19.2 (16.5, 21.9) min/week [HR: 0.60 (0.50, 0.72)] for CVD mortality. These associations were consistent for CVD and cancer incidence. There was an inverse linear association between VPA frequency and CVD mortality. 27 (24, 30) bouts/week was associated with the lowest all-cause mortality [HR: 0.73 (0.62, 0.87)].

Conclusion: VPA of 15–20 min/week were associated with a 16–40% lower mortality HR, with further decreases up to 50–57 min/week. These findings suggest reduced health risks may be attainable through relatively modest amounts of VPA accrued in short bouts across the week.

I've done some articles over the past few months looking at ways to try to maximize results with minimal effort. We found that 1-2 weekly sessions of strength training (30-60 minutes total) provided mortality benefits. This study takes the idea further by looking at vigorous physical activity (PA) to explore how much we need to do to get maximal benefits. This study was quite well done and used accelerometers to measure physical activity and the intensity of the activity in almost 72,000 subjects. Starting with no measured vigorous PA, the 5-year absolute total mortality decreased from 4.17% to 2.12% to 1.78% to 1.47% to 1.10% as vigorous PA increased from 0 to <10 , 10 to 30, 30 to 60, and >60 min/wk. Yes, you read correctly. Minutes per week! I have to admit that I was surprised by the results. Going from zero vigorous PA to less than 10 minutes weekly dropped absolute mortality nearly in half! Looking at the most bang for your time, the lowest mortality rate was seen at just 53 minutes/week (73% reduction. Looking to reduce mortality by almost 75%? You can do it averaging just 8 minutes daily. I think we can all find 8 minutes!

Vigorous physical activity, incident heart disease, and cancer: how little is enough? Eur Heart J 2022 Oct 27;[Epub Ahead of Print], MN Ahmadi, PJ Clare, PT Katzmarzyk, B Del Pozo Cruz, IM Lee, E Stamatakis