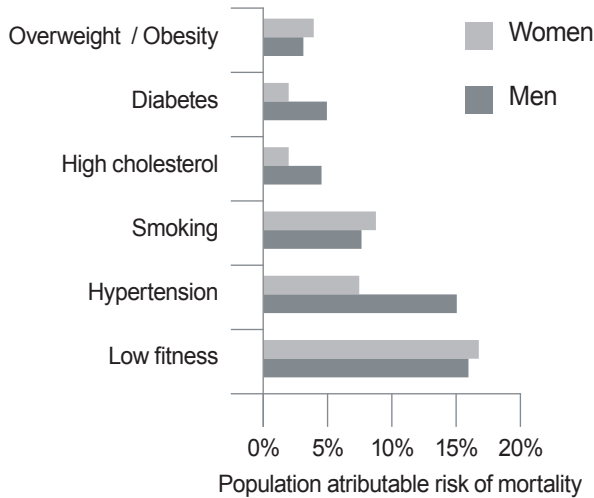


## 02: PHYSICAL ACTIVITY AND ALL - CAUSE MORTALITY (LONGEVITY)

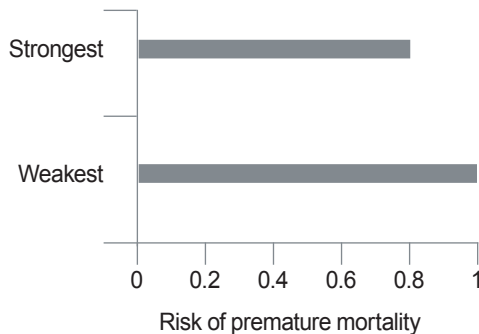
Insufficient physical activity and poor physical fitness are significant risk factors for premature mortality; achieving the recommended minimum level of physical activity is likely to reduce the risk of an early death by 30%.<sup>1</sup> Physical inactivity and low physical fitness are independent of other risk factors and becomes even more significant when you consider the high proportion of the population who are inactive and lack fitness (Figure 1).



**Figure 1**

Attributable fractions (%) for all-cause deaths in 40,842 (3333 deaths) men and 12,943 (491 deaths) women in the Aerobics Center Longitudinal Study. The attributable fractions are adjusted for age and each other item in the figure. The attributable fraction is an estimate of the number of deaths in a population that would have been avoided if a specific risk factor had been absent.<sup>2</sup>

There is an inverse relationship between the amount of physical activity and premature all-cause mortality: the more active you are the less likely you are to die prematurely.<sup>3</sup> Poor muscle strength is also associated with premature mortality, probably due to an increased risk of falling (Figure 2).



**Figure 2**

All-cause mortality risk factor analysis adjusted for other risk factors. Aerobic Longitudinal study. (8762 men aged 20-80. Average follow-up 19 years, 503 deaths in total).<sup>4</sup>

Spending long periods of the day sitting down (more than 6 hours) is also associated with an increase in the risk of premature mortality, even if you are active.<sup>5</sup> Many patients find it difficult to understand the meaning of risk reduction and so research has also been used to show the effect of physical activity on longevity. Even low amounts of physical activity reduce the risk of dying prematurely. As little as 15 minutes of exercise per day can add approximately 3 years of life compared with inactive individuals.<sup>6</sup> The same study suggested 30 minutes of regular physical activity (the UK Physical Activity Guideline level) could potentially extend life by 4.2 years in males and 3.7 years in females.

**Key messages:**

1. Being physically active has been shown to be associated with living longer.
2. Low fitness has been associated with a higher risk of premature mortality than smoking and diabetes combined in inactive populations.

Extracted from the Wales HEIW CPD module on physical activity [Motivate2Move](#).  
Now part of the RCGP Clinical Priority on physical activity and lifestyle.



**02: PHYSICAL ACTIVITY AND ALL - CAUSE MORTALITY (LONGEVITY)**

## REFERENCES

- 1 Department of Health. *Start Active, Stay Active*. A report on physical activity for health from the four home countries' Chief Medical Officers. 2011. (cited 2019 Jul 03) Available from: <https://www.gov.uk/government/publications/start-active-stay-active-a-report-on-physical-activity-from-the-four-home-countries-chief-medical-officers>
- 2 Blair SN. Physical inactivity: the biggest public health problem of the 21st century. *British Journal of Sports Medicine*. 2009 Jan 1;43(1):1-2.
- 3 Warburton DE, Charlesworth S, Ivey A, Nettlefold L, Bredin SS. A systematic review of the evidence for Canada's Physical Activity Guidelines for Adults. *International Journal of Behavioral Nutrition and Physical Activity*. 2010 May 11;7(1):39.
- 4 Ruiz JR, Sui X, Lobelo F, Morrow JR, Jackson AW, Sjöström M, Blair SN. Association between muscular strength and mortality in men: prospective cohort study. *BMJ*. 2008 Jan 1;337:a439.
- 5 Patel AV, Bernstein L, Deka A, Feigelson HS, Campbell PT, Gapstur SM, Colditz GA, Thun MJ. Leisure time spent sitting in relation to total mortality in a prospective cohort of US adults. *American Journal of Epidemiology*. 2010 Jul 22;172(4):419-29.
- 6 Wen CP, Wai JP, Tsai MK, Yang YC, Cheng TY, Lee MC, Chan HT, Tsao CK, Tsai SP, Wu X. Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study. *The Lancet*. 2011 Oct 7;378(9798):1244-53.