

An increase in physical activity may reduce mortality risk in inactive people

08 April 2015

Researchers from the EPIC study (European Prospective Investigation into Cancer and Nutrition) found that an increase in physical activity (PA) reduced the risk of mortality, particularly when comparing inactive people with those that were moderately inactive. The researchers concluded that these findings provide evidence that even a small increase in the amount of PA by the most inactive members of society should be encouraged. It has the potential to greatly improve public health-related outcomes.

Previous research shows that the high risk of death associated with obesity may be affected with increased PA. However only a few studies to date have examined PA, combined with body mass index (BMI) and waist circumference (WC), in relation to reduced mortality. This has led to uncertainty over the direct benefits of PA, alone.

The current study, by researchers from a number of European countries, was designed as a observational (cohort) study involving 334,161 Europeans from 23 centres, in 10 different countries. Among them, 116,980 were men (mean age 52.6 years) and 217,181 women (mean age 51.2 years). Both groups were followed-up 12.4 years after the initial assessment, on average. Participants' BMI and WC were measured in a clinical setting and PA was assessed through a validated self-report system. PA included occupational, recreational and household PA; it was divided into four levels of intensity: active, moderately active, moderately inactive and inactive. The associations between PA, BMI and WC with mortality were adjusted for sex, education, smoking and alcohol intake.

The results of the study showed that PA reduced the risk of mortality in all individuals, regardless of their BMI. Significant interactions were found between PA and BMI and between PA and WC, which means that both BMI and WC have an effect on the relationship between PA and mortality risk. Moreover, the risk for mortality by any cause (all-cause mortality) was reduced at all levels of BMI and WC, with the greatest risk reduction (20-30%) between the 'inactive' and 'moderately inactive' people.

Increasing activity levels further to the 'moderately active' and 'active' groups showed more reductions in risk for all-cause mortality for individuals who were lean or had excess weight but, not for individuals with obesity. In individuals who had obesity, no additional improvement was evident beyond being 'moderately inactive'. In participants that were associated with inactivity, BMI levels were greater than 30* and WC greater or equal to 102 cm** for men and 88 cm for women.

For a person to move from one PA category to the next (e.g. from the 'inactive' group to the 'moderately inactive' group) requires an increase of around 90-110 kilocalories (kcal) of Physical Activity Energy Expenditure (PAEE). This is the equivalent of approximately 20 minutes of brisk walking a day, meaning that health benefits can be achieved with fairly small increases in activity. This amount of activity aligns closely with current WHO guidelines for physical activity, which recommend about 150 minutes per week (which

amounts to about 22 minutes per day). These findings reiterate the importance of PA in our lives. PA has been shown to confer a wide range of health benefits including improved cardiovascular health, improved psychological well-being, reduced risk of type-2 diabetes and more.

*A BMI of under 18.5 is considered underweight; between 18.5-24.9 is considered as normal weight; between 25-29.9 is considered overweight; and a BMI of over 30 is considered obesity.

** According to the WHO a WC of over 94 cm for men and over 80 cm for women increases the risk of metabolic complications; a WC of over 102 cm for men and over 88 cm for women substantially increases the risk of metabolic conditions (e.g. cardiovascular disease).

For further information please see:

[Ekeland U, Ward HA, Norat T, et al. \(2015\). Physical activity and all-cause mortality across levels of overall and abdominal adiposity in European men and women: the European Prospective Investigation into Cancer and Nutrition Study \(EPIC\). American Journal of Clinical Nutrition. Published online ahead of print 14 January 2015. Doi: 10.3945/ajcn.114.100065.](#)