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## Leisure-Time Physical Activity vs Occupational Physical Activity



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A new study shows that leisure-time physical activity and occupational physical activity have opposite, and independent associations with cardiovascular disease risk and longevity. The study is published in *European Heart Journal*.

The World Health Organization (WHO) recommends physical activity during both recreation and work to improve health. Previous studies suggest that occupational activity is related to an increased risk for heart disease and mortality. However, study size was too small to explain whether this was due to the manual work or because employees had unhealthy lifestyles or low socioeconomic status.

This study included 104,046 women and men aged 20-100 years from the Copenhagen General Population Study. Participants completed questionnaires about activity during leisure and employment and were categorised as low, moderate, high, or very high activity for each.

During a median follow-up of 10 years, there were 9,846 (9.5%) deaths from all causes and 7,913 (7.6%) major adverse cardiovascular events (MACE, defined as fatal and nonfatal myocardial infarction, fatal and non-fatal stroke, and other coronary death).

Compared to low leisure-time physical activity, after adjustment for age, sex, lifestyle, health, and education, moderate, high, and very high activity were associated with 26%, 41%, and 40% reduced risks of death, respectively. In contrast, compared to low work activity, high and very high activity were associated with 13% and 27% increased risks of death, respectively.

Compared to low leisure activity, moderate, high, and very high levels of leisure activity were associated with 14%, 23%, and 15% reduced risks of MACE, respectively. Compared to low work activity, high and very high levels were associated with 15% and 35% increased risks of MACE, respectively.

While the study did not investigate the reasons for the opposite associations for occupational and leisure-time physical activity, study author Professor Andreas Holtermann of the National Research Centre for the Working Environment, Copenhagen, Denmark, said: "A brisk 30-minute walk will benefit your health by raising your heart rate and improving your cardiorespiratory fitness, while work activity often does not sufficiently increase heart rate to improve fitness. In addition, work involving lifting for several hours a day increases blood pressure for many hours, which is linked with heart disease risk, while short bursts of intense physical activity during leisure raises blood pressure only briefly."

Professor Holtermann's vision is to re-organise occupational activity so that it mimics the beneficial aspects of leisure exercise. Several approaches are being piloted, such as rotating between workstations on a production line so that employees do a "healthy mixture" of sitting, standing, and lifting during a shift.

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