

Workplace Health Assessments and Long-Term Cardiovascular Risk: A Propensity Score-Matched Emulated Target Trial in 2,091,425 Swedish Workers

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Purpose: To investigate the long-term association between participation in workplace health assessments and the risk of cardiovascular disease (CVD), using data from a nationwide programme offered through occupational health services in Sweden. Although health assessments are commonly included in workplace health promotion initiatives, the long-term effects of workplace health assessments on chronic disease risk remain largely unexplored.

Methods: A total of 418,285 individuals (45% women, mean age 43, standard deviation 11, yrs.) that participated in an occupational health profile assessment (HPA) from 1995 until 2021 were included. A propensity score-matched emulated target trial approach was used with a 1:4 match to controls (n = 1,673,140) from the general working population by sex, age, and calendar year at HPA and educational level. Cut-off of follow-up time at a maximum of five years, end of study, or CVD event or death. CVD incidence (ICD 10-codes I21, I25, I46, I63, I64, I65, I66), co-morbidity, and sociodemographic information were ascertained through national registers.

Results: There were 2,920 (0.7%) CVD events among HPA participants and 14,010 (0.8%) among controls during follow-up. Hazard ratios (HR, 95% confidence interval) for CVD events were significantly lower for HPA participants compared to controls in Model 1 (adjusted for period effect using birth cohorts); 0.83 (0.80–0.86), Model 2 (adjustment for sex, age, comorbidity, and prior CVD event); 0.85 (0.82–0.88), and Model 3 (additional adjustment for income and occupation); 0.90 (0.86–0.93). Women, younger age-groups, and individuals who participated in repeated HPAs during follow-up had a significantly lower CVD risk compared to their counterparts.

Conclusion: Participation in workplace health assessments was associated with a significantly lower long-term risk of CVD, particularly among women, younger individuals, and those undergoing repeated assessments. While causal conclusions cannot be established, these findings suggest that participation in health assessments in occupational settings may predict a lower risk of future CVD. Integrating repeated assessments into workplace health strategies may strengthen preventive efforts and promote sustained employee health and wellbeing.

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