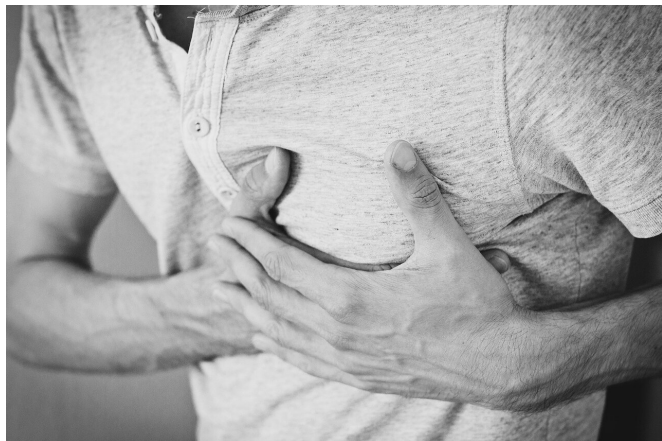


# Working long hours may increase odds of second heart attack

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Among patients who return to work after a heart attack, those who work more than 55 hours per week, compared to those working an average full-time job of 35-40 hours a week, increase their odds of having a second heart attack by about twofold, according to a prospective cohort study published today in the *Journal of the American College of Cardiology*.

Data from the International Labour Office estimates 1 in 5 workers worldwide work over 48 hours per week. Previous studies have found an association between working long hours and increased risk of coronary heart disease and stroke. This is the first study of its kind to examine the effect of long working hours and the risk of a second cardiovascular event among patients who return to work after a first heart attack.

"Looking at long working hours and job stressors was helpful in determining how hostile a [working environment](#) was and how much potential stress a participant could be under," said Xavier Trudel, Ph.D., a researcher at The CHU de Québec-Université Laval Research Center in Québec, and

the lead author on the study. "Once both factors are introduced, there's a noticeable increase in the risk of recurrent coronary heart disease events."

The study recruited 967 patients from 30 hospitals across Quebec, Canada, between 1995 and 1997. Patients had a history of heart attack, were younger than 60 years of age, held a paying job within the year prior to their heart attack and planned to return to work. Follow-up interviews and questionnaires were conducted across the next six years to assess hospital readmission rates, coronary heart disease events and lifestyle risk factors, physical or chemical exposures at work (smoking, chemicals, pollution, noise, excessive heat or cold, and [physical exertion](#)), [work environment](#) and total weekly working hours.

Based on their total weekly working hours, individual participants were placed into four categories: 1) [part-time](#) (21-34 hours/week), 2) full-time (35-40 hours/week), 3) low overtime (41-54 hours/week) and 4) medium/high overtime (>55 hours/week).

Using an assessment questionnaire, the researchers measured levels of stressful work through job strain. If a participant had high psychological demands at work (quantity of work, time constraints and level of intellectual effort required) and low decision control (opportunities for learning, autonomy and participation in the decision-making process), they were classified as having job strain. In addition, social support in and out of work were measured.

During the study period, 21.5% of participants had a second heart attack. Working long hours was associated with an about twofold increase in the risk of a second heart attack. Men were more likely to be working medium/high overtime hours (10.7% of men vs. 1.9% of women), as well as younger workers. In addition, those with worse lifestyle risk factors (smoking, alcohol intake, physical inactivity),

and who worked a more stressful job were also more likely to be in the medium/high overtime category.

"To reduce the risk of coronary heart disease recurrence, secondary prevention interventions aimed at reducing the number of working hours should be evaluated in future studies," Trudel said. "Long working hours should be assessed as part of early and subsequent routine clinical follow-up to improve the prognosis of post-heart attack patients."

In an accompanying editorial comment, Jian Li, MD, Ph.D., a professor in the Fielding School of Public Health and School of Nursing at University of California, Los Angeles, said the study results have important implications for [clinical practice](#), such as more comprehensive measures for secondary prevention for [heart attack](#) patients.

"The study provides a new piece of research evidence that work-related factors play an important role in coronary [heart](#) disease prognosis," Li said. "Occupational health services are urgently needed to be incorporated into secondary prevention of cardiovascular disease."

This study has several limitations, including a small sample size of women participants and an assessment of long working hours at baseline only. Future studies, with larger sample size, should look at the effect of cumulative exposure.

**More information:** *Journal of the American College of Cardiology* (2021). [DOI: 10.1016/j.jacc.2021.02.012](#) , [www.jacc.org/doi/10.1016/j.jacc.2021.02.012](http://www.jacc.org/doi/10.1016/j.jacc.2021.02.012)

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