

Shift work linked to increased risk of heart attack and stroke

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Shift work is associated with an increased risk of major vascular problems, such as heart attacks and strokes, concludes a study published on bmj.com today.

This is the largest analysis of shift work and vascular risk to date and has implications for public policy and [occupational medicine](#), say the authors.

Shift work has long been known to disrupt the [body clock](#) (circadian rhythm) and is associated with an increased risk of high blood pressure, [high cholesterol](#) and diabetes, but its association with vascular disease is controversial.

So a team of international researchers analysed the results of 34 studies involving over two million individuals to investigate the association between shift work and major vascular events. Shift work was defined as evening shifts, irregular or unspecified shifts, mixed schedules, night shifts and rotating shifts. Control groups were non-shift (day) workers or the general population.

Differences in study design and quality were taken into account to minimise bias.

Among the 2,011,935 people in the studies more than 17,359 had some kind of coronary event, 6,598 had myocardial infarctions (heart attacks), and 1,854 had ischaemic strokes caused by lack of blood to the brain.

These events were more common among shift workers than other people: shift work was associated with an increased risk of heart attack (23%), [coronary events](#) (24%) and stroke (5%). These risks remained consistent even after adjusting for factors such as study quality, socioeconomic status and unhealthy behaviours in shift workers.

[Night shifts](#) were associated with the steepest increase in risk for coronary events (41%). However, shift work was not associated with increased death rates from any cause.

Although the relative risks were modest, the authors point out that the frequency of shift work in the general population mean that the overall risks are high. For Canada - where some of the study's authors are based and where 32.8% of workers were on shifts during 2008-9 - 7.0% of myocardial infarctions, 7.3% of all coronary events, and 1.6% of ischaemic strokes could be attributed to [shift work](#).

The authors say their findings have several implications. For example, they suggest screening programmes could help identify and treat risk factors, such as high blood pressure and cholesterol levels. Shift workers could also be educated about symptoms that could indicate early heart problems.

Finally, they say more work is needed to identify the most vulnerable groups of shift workers and the effects of modifying shift patterns on overall vascular health.

Provided by British Medical Journal

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