

Working at night is associated with a greater risk of breast cancer in women

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Women who work at night, especially during pre-menopause, may be at greater risk of developing breast cancer.

This is the finding of a new analysis of surveys of 13,000 women from five countries conducted by a team of researchers that includes Anne Grundy, a research associate at Université de Montréal's Department of Social and Preventive Medicine, part of the School of Public Health.

The surveys in Australia, Canada, France, Germany and Spain looked at nearly 6,100 women who had been diagnosed with [breast cancer](#) and approximately 7,000 who had no diagnosis. Participants answered self-administered questionnaires or telephone interviews about their occupation and about risk factors for [breast](#) cancer.

The average age of the women varied between 55 and 59, depending on the country, and the proportion working nights also varied widely, from 6 per cent in Germany to 17 per cent in Australia. In Canada, the proportion was 16.7 per cent.

12- to 80-per-cent higher risk

Published in the April issue of the *European Journal of Epidemiology*, the study found that the risk of developing ER-positive breast cancer (that is, of tumours associated with estrogen receptors) and/or HER2 breast cancer increases with the number of hours worked per [night](#), as well as the number of years spent on the night shift.

However, the risk seems to diminish two years after going off the night shift.

"Women who work at least three hours between midnight and 5 a.m. run a 12 per cent greater risk of developing breast cancer than women who have never worked at night," said Grundy. "Among pre-menopausal women, the risk associated with working at night increases to 26 per cent."

Night workers who work shifts longer than 10 hours have a 36-per-cent increased risk of breast cancer, again compared to women who have never worked nights.

The risk is as high as 80 per cent among women who work night shifts in excess of 10 hours for more than three nights per week.

"Women who were still working nights at the time of the study had a breast cancer risk that was 26-per-cent higher than those who had stopped working at night at least two years previously," said Grundy.

Risk associated with a melatonin deficiency?

The analysis of the five surveys did not specifically consider respondents' job type (night or otherwise), although the Canadian survey, done in 2013, did compare women working in healthcare and other sectors.

"The risk associated with breast cancer and night work varied little among respondents, regardless of job type," said Grundy. "Although we are not fully certain, we believe that this risk could be related to the hypothesis that night work disrupts circadian rhythm and inhibits the secretion of [melatonin](#), which may protect against cancer."

Grundy now hopes to explore the effect of shift work on women's risk of breast [cancer](#). "We need to go further in our research so that labour policies ultimately take into account this [risk](#) for [women](#), and so that companies take preventive action and adjust work schedules."

More information: Emilie Cordina-Duverger et al. Night shift work and breast cancer: a pooled analysis of population-based case–control studies with complete work history, *European Journal of Epidemiology* (2018). [DOI: 10.1007/s10654-018-0368-x](https://doi.org/10.1007/s10654-018-0368-x)

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