# Night shifts may be linked to increased ovarian cancer risk

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Working night shifts might increase the risk of developing ovarian cancer, indicates research published in *Occupational and Environmental Medicine*.

The risk may be lower for night types ("owls") than for morning types ("larks"), the findings suggest (see accompanying commentary).

The authors base their findings on 1101 women with the most common type (epithelial) of advanced ovarian cancer; 389 with borderline disease; and a comparison group of 1832 women without ovarian cancer.

The women, who were all aged between 35 and 74, were asked about the hours they worked, including whether they had ever worked night shifts.

The International Agency for Research on Cancer (IARC) has classified shift work that disrupts the body's normal time clock (circadian rhythm) as a cancer causing agent. And other research has suggested that shift work may be associated with an increased risk of breast cancer.

Among the women with invasive cancer, around 1 in 4 (26.6%; 293) had ever worked nights, compared with 1 in 3 (32.4%; 126) of those with borderline disease and around 1 in 5 (22.5%; 412) of the comparison group.

Use of the Pill was lower among women with ovarian cancer, who also tended to have had fewer children than those without the disease. Being

on the Pill and motherhood are known to lower the risk of ovarian cancer.

The stint of night shifts averaged between 2.7 and 3.5 years across all three groups of women, with jobs in healthcare, food preparation and service, and office and admin support the most common types of employment.

Working night shifts was associated with a 24% increased risk of advanced cancer and a 49% increased risk of early stage disease compared with those who worked normal office hours.

A greater proportion (27%) of women who described themselves as "owls" had worked night shifts than women (20%) who were "larks".

The risks of either advanced ovarian cancer were slightly higher (29%) among "larks" than among "owls" (14%), although difference this was not statistically significant. Findings were similar for borderline tumours - 57% and 43% for "larks" and "owls," respectively.

Only women aged 50 and above were significantly more likely to have ovarian cancer if they had worked nights.

The authors say their findings are consistent with, and of a similar magnitude, as those found for breast cancer, but point out that they did not find any cumulative risk for ovarian cancer the longer a woman had worked a night shift pattern.

One possible explanation could be linked to melatonin, a powerful hormone that is normally produced at night, but suppressed by ambient light, and which regulates reproductive hormones, particularly oestrogen.

Melatonin also scavenges harmful free radicals and boosts production of

other antioxidants in the body.

**More information:** Nightshift work and risk of ovarian cancer, doi: 10.1136/oemed-2012-101146

Editorial: Shift work and cancer research: can chronotype predict susceptibility in night-shift and rotating-shift workers? Doi: 10.1136/oemed-2012-100984

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