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Study Finds No Link Between Working The Night Shift And An Increased Risk Of Cancer

August 22 2007

Working the night shift doesn't appear to increase the risk of developing cancer, suggests the findings of a new study of Swedish workers.

Recent studies – and corresponding news headlines – have found that regularly working the night shift may increase the risk of developing breast, prostate and colon cancers. Some researchers say that the connection could be due to a decrease in the production of the hormone melatonin, as some animal experiments suggest that the hormone may have anti-cancer properties.

Our bodies produce their highest levels of melatonin at night, during sleep, but exposure to light at night suppresses melatonin production, said Judith Schwartzbaum, the study's lead author and an associate professor of epidemiology at Ohio State University.

“However, the effects of melatonin on cancer development in humans are not well understood,” she said.

Schwartzbaum and her colleagues found no link between working the night shift and the risk of developing any kind of cancer. They came to this conclusion after analyzing nearly 20 years' worth of data that compared people who reported jobs that required working during the day to people who said they had jobs that required night shift work.

The findings appear in a forthcoming issue of the Scandinavian Journal of Work, Environment and Health. Schwartzbaum conducted the study with researchers from the Institute for Environmental Medicine, located at the Karolinska Institutet in Stockholm, Sweden.

The study included all Swedish citizens who worked at least 20 hours a week in 1970, and who were included in both the 1960 and 1970 population censuses – a total of about 3.2 million people. The researchers gathered job information from each census.

They categorized the occupations according to the percentage of people who reported shift work: more than 70 percent, more than 40 percent, less than 30 percent, and no employees reporting shift work.

The researchers collected information on the people from 1971 through 1989 or until a worker was diagnosed with cancer or died.

Information about the cause of death came from the Swedish Cause of Death Registry. All cases of cancer that occurred within the study's time frame were identified from the national Swedish Cancer Registry. Schwartzbaum said that all Swedish physicians who care for cancer patients must notify the national cancer registry when a patient is diagnosed with the disease.

To determine the percentage of night-shift workers in each job category included in the census, the researchers used additional occupational information from the Swedish Survey of Living Conditions conducted from 1977 through 1981. During this five-year stretch more than 46,000 workers were personally interviewed about their jobs and work schedules, including what hours during the day they worked. Schwartzbaum and her colleagues applied this information to the overall study group.

About 200,000 men and 100,000 women in the study developed cancer. There were roughly 2.1 million working men included in the census data, and about 1.1 million working women.

In the researchers' main analysis, participants were categorized as either exposed or not exposed to shift work according to their occupation in 1970. The researchers followed both groups for 19 years.

In separate analyses, the researchers took the duration of night-shift exposure into account. They defined “exposure” as working in a job that met the criteria for night-shift work in both the 1960 and 1970 censuses.

“We identified occupations where many employees worked during hours that could affect the production of melatonin,” Schwartzbaum said.

Schwartzbaum and her colleagues defined shift work as work that had a rotating schedule with three or more possible shifts per day, or where the schedule included working between 1 and 4 a.m., which the researchers defined as working at night.

A very small percentage of the working population included in this study reported having jobs that met the definition of shift work (just 4 percent of men and 0.4 percent of women.)

For men, the main night-shift occupations included work in the paper manufacturing industry, working as a furnace operator and working as firefighters, policemen or train operators. The occupations of women who worked at night primarily included work as crane or hoist operators, delivery agents in the paper and publishing industries, or working as midwives.

The final results showed no relationship between shift work and an increased risk of developing prostate, colon or breast cancers or nearly

any other kind of cancer, regardless of how much the occupation depended upon shift work.

Schwartzbaum points out that the current results don't agree with a number of recently published studies, two of which found an increased risk of prostate cancer among rotating shift workers, and another half-dozen studies that suggested an increase in breast cancer risk among female shift workers.

“Many of these studies included very specific worker populations,” she said. “For example, studies of female flight attendants have found an increased risk of breast cancer and also a higher-than-expected risk for developing malignant melanoma.

“But airline workers differ from other shift workers due to their increased exposure to cosmic and solar radiation,” Schwartzbaum continued. “So it's tough to tease out what exactly may contribute to their elevated risk of cancer.”

What's needed, Schwartzbaum said, are large-scale international studies to help tease out the relationship between shift work and the risk of developing cancer.

“It seems like 3 million workers ought to be enough to get a firm idea of the risk, but it isn't, especially considering the relatively low percentage of jobs that require shift work,” Schwartzbaum said. “We need studies that include data from multiple countries.”

Source: Ohio State University