



# Night Shift Work

## Burden of Occupational Cancer Fact Sheet



**WHAT IS NIGHT SHIFT WORK?**

Night shift work refers to **work schedules that are consistently outside of standard daytime work hours**. Workers are considered exposed to night shift work if they work regular night shifts or rotate through day and/or evening and night shifts, as these schedules have the strongest evidence for increased cancer risk.

Shiftwork at night (generally between the hours of 12am and 5am) **disrupts circadian rhythms**, or the internal biological 'clock' that generates the sleep-wake cycle in humans. Circadian disruption suppresses melatonin production, disrupts sleep patterns and food digestion, and de-regulates genes involved in cancer pathways.

The International Agency for Research on Cancer classifies night shift work as a **probable carcinogen** (IARC 2A).

**WHAT ARE ITS HEALTH EFFECTS?**

- Breast cancer (suspected)
- Colorectal cancer (suspected)
- Prostate cancer (suspected)
- Fatigue, stress, anxiety, depression
- Heartburn, nausea, loss of appetite
- Cardiovascular disease (suspected)

**THE BURDEN OF BREAST CANCER FROM WORKPLACE EXPOSURE TO NIGHT SHIFT WORK IN CANADA**

The term 'burden' refers to the human impact (deaths, illness, years of life lost) and the economic costs (health care, productivity) associated with a cause or group of causes of disease.

**470-1,200**  
suspected female breast cancers due to shiftwork

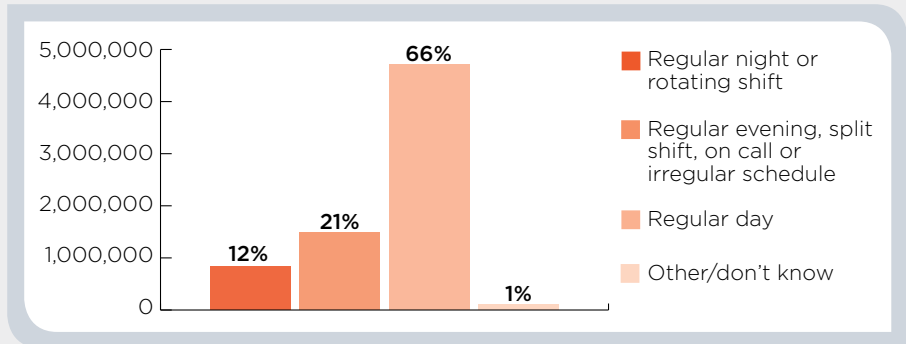
Approximately **470 to 1,200 suspected breast cancers in women** are possibly due to night shift work each year, based on past exposures (1961-2001). This amounts to **2 to 5% of all female breast cancers** diagnosed annually. These results are shown as a range because research studies are not in agreement on the impact of night shift work on breast cancer risk.

**WHAT WORKERS ARE MOST AFFECTED?**

Most occupational breast cancers in women associated with night shift work occur among workers in the **health care industry** (see pie chart on right). These cancers also occur among workers in the accommodation and food services, trade, and manufacturing sectors. Some of the other sectors affected include public administration, and finance, insurance, real estate and leasing.

Sector	Percentage
HEALTH CARE & SOCIAL ASSISTANCE	43%
ACCOMMODATION & FOOD SERVICES	18%
TRADE	11%
MANUFACTURING	11%
OTHER	17%

Approximately 844,000 Canadian women perform regular night or rotating shiftwork, based on 2006 labour data. This amounts to approximately 12% of working female Canadians (see bar chart on right).



Industries with the largest number of female night shift workers in Canada include:


- **Health care and social assistance** (236,000 people exposed)
- **Trade** (224,000 exposed)
- **Accommodation and food services** (137,000 exposed)

HOW CAN EXPOSURE BE REDUCED?

Completing work during standard, daylight hours is the best way to limit circadian disruption. However, night work is necessary to maintain essential services, as well as continuous processes and services in various industries, and eliminating it is often not practical. Interventions that may help reduce the negative impacts of circadian disruption include optimizing the design of the shift schedule or using flexible work schedules that allow workers to have some input on their schedules. For more details, visit the [OCRC exposure controls webpage](#).

ABOUT THE BURDEN OF OCCUPATIONAL CANCER STUDY

The Burden of Occupational Cancer Study quantified the number of cancers that are caused by exposure to carcinogens in the workplace in order to identify priority areas for prevention. It was a collaboration between researchers at OCRC, CAREX Canada, the Institute for Work & Health (who led the economic analyses), University of British Columbia, Université de Montréal, Institut de recherche Robert-Sauvé en santé et en sécurité du travail, and Imperial College London.

 For more information, please visit OCRC at [www.occupationalcancer.ca](http://www.occupationalcancer.ca) or CAREX Canada at [www.carexcanada.ca](http://www.carexcanada.ca).

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