



# The Health Risks Associated with Working Rotating and/or Night Shifts

## Tip Sheet

There is a growing body of research identifying that working rotating shifts and night shifts can cause psychological and physical illnesses in health-care workers. ONA wants to alert members of this risk so they can make informed decisions about their work, considering their personal and health circumstances. ONA also wants to ensure that our members understand how to mitigate these risks.

### Background

Health care in Ontario is a 24/7 service, meaning many health-care workers work various shifts, often by rotation, to care for their patients, residents and/or clients. ONA understands and supports the provision of high-quality, round-the-clock patient/resident/client care. However, working nights and rotating shifts also poses a risk to workers because it can cause occupational illnesses.

These risks must be better understood, and actions taken to mitigate them.

ONA members know the occupational hazards of working rotating and shift work, having experienced the impact of these hazards themselves or witnessed it among their colleagues. In ONA's *Have Your Say* survey, ONA members report that night shifts and short turnarounds between days and evenings lead to exhaustion and burn out. Some members suggest that shift work should decrease as workers age because it becomes increasingly challenging for one's health.

The *Occupational Health and Safety Act (OHSA)* places a duty on employers to warn workers about workplace hazards, to take every precaution reasonable to protect workers, and provide all workers at risk of occupational illness with as much information as is reasonably necessary to protect them from harm. These risks must be controlled to keep workers safe.

Members who suffer from a disability that is adversely affected by rotating shifts and/or permanent nights have an obligation to notify the employer. Employers, in turn, have an obligation to accommodate these members.

## Risk of Working Rotating and/or Night Shifts

There is a growing body of research showing that there are both physical and psychological risks to working rotating and/or night shifts. The Institute for Work and Health (IWH)<sup>1</sup>, the Canadian Centre for Occupational Health and Safety (CCOHS)<sup>2</sup> and the Registered Nurses' Association of Ontario (RNAO)<sup>3</sup> have compiled a list of these potential risks to human health.

The physical risks include, but are not limited to:

- Cardiovascular disease.
- Cancers and immune suppression<sup>4</sup>.
- Type 2 diabetes.
- Gastrointestinal disorders.
- Deterioration of sleep.

The psychological risks include, but are not limited to:

- Mental illness, such as depression and anxiety.
- Reduced mental alertness leading to more errors and workplace injuries.

Nursing and health-care work are female-dominated professions; it is important to acknowledge that the research shows women are disproportionately affected by this hazard. Specifically, women working nights or rotating shifts have higher rates of reproductive illnesses, including reproductive dysfunction<sup>5</sup> and breast cancer<sup>6</sup>.

## Mitigating Measures

There is research suggesting that mitigating measures can be taken to reduce the risk of occupational illness associated with working rotating or night shifts. The International Labour Office (ILO)<sup>7</sup> and the IWH<sup>8</sup> has organized a list of measures to help avoid and minimize the risks, some of which include avoiding short intervals between shifts, avoiding many nights worked in succession and/or permanent night shift, using a

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<sup>1</sup> Institute for Work & Health. (2010, She). *Shift Work and Health*. Retrieved from Issue Briefings: <https://www.iwh.on.ca/summaries/issue-briefing/shift-work-and-health>.

<sup>2</sup> Canadian Centre for Occupational Health and Safety. (2014, 11). Getting a Handle On Shift Work. *Health and Safety Report*, 12(11), pp. 1-4.

<sup>3</sup> RNAO. Registered Nurse Journal. *Shift work and your body: Current understanding*. March/April Issue. Retrieved from <https://rnao.ca/fr/resources/rnj/issues/marchapril-2016/shiftwork>.

<sup>4</sup> Ward, E. M., Germolec, D., Kogevinas, M., McCormick, D., Vermeulen, R., Anisimov, V. N., ... & Schubauer-Berigan, M. K. (2019). Carcinogenicity of night shift work. *The Lancet Oncology*, 20(8), 1058-1059.

<sup>5</sup> Stock, D., Knight, J. A., Raboud, J., Cotterchio, M., Strohmaier, S., Willett, W., ... & Schernhammer, E. (2019). Rotating night shift work and menopausal age. *Human reproduction*, 34(3), 539-548.

<sup>6</sup> Wegrzyn, L. R., Tamimi, R. M., Rosner, B. A., Brown, S. B., Stevens, R. G., Eliassen, A. H. & Schernhammer, E. S. (2017). Rotating nightshift work and the risk of breast cancer in the nurses' health studies. *American Journal of Epidemiology*, 1-9.

<sup>7</sup> International Labour Office Geneva. (2004, May 23). *Fact Sheet: Shift Work*. Retrieved from Conditions of Work and Employment Programme: Social Protection Sector: [https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---travail/documents/publication/wcms\\_170713.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_170713.pdf)

<sup>8</sup> Institute for Work & Health. (2010, April). *Shift Work and Health*. Retrieved from Issue Briefings: <https://www.iwh.on.ca/summaries/issue-briefing/shift-work-and-health>.

forward/clockwise rotation (day, evening, night) instead of counterclockwise rotations, and allowing workers some influence in their scheduling.

Mitigating measures protect workers and patients from harm. Research describing the adverse consequences of shift work on patients is mounting. For example, when workplaces are not adequately staffed with nurses or nurses are required to work longer shifts without sufficient rest, there is evidence that indicates an impact on performance as well as health.<sup>9</sup> The RNAO also cites research in its Best Practice Guideline, “Preventing and Mitigating Nurse Fatigue in Healthcare,” showing the negative impact nurse fatigue has on medication errors, performance of procedures and documentation; it also cites frequent shift rotation as a contributor.<sup>10</sup>

### **The Employer’s Obligation to Mitigate Harm**

Employers have a duty to warn workers of the hazards associated with rotating and/or night shifts and must take every precaution reasonable to protect them from these harms.

ONA believes that employers must:

- Ensure adequate staffing of health-care workers to prevent the need for overtime and insufficient rest periods between shifts, and to ensure forward shift rotation.
- Ensure accommodation of workers whose conditions may be aggravated from the harms arising from rotating and/or night shifts.
- Allow for participatory scheduling, so that workers can provide input into schedules that minimize harm and adjust for social supports (e.g., elder care and/or childcare).

### **The Government’s Obligation to Mitigate Harm**

The Ontario government also has a responsibility to Ontarians to promote a healthy workforce in the health-care sector so Ontarians’ health care needs can be met.

ONA believes that the Ontario government must keep up with the *Prevention Works Ontario’s Occupational Health and Safety System in Action: 5-Year Strategy*<sup>11</sup> and:

- Increase the number of RN positions in the province to ensure there are enough nurses to both meet the health care needs of Ontarians and the health and safety needs of health-care workers.
- Fund and conduct further high-quality research into the specific connections between shift work and health risks for health-care workers.

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<sup>9</sup> Dall’Ora, C., & Dahlgren, A. (2020). Shift work in nursing: closing the knowledge gaps and advancing innovation in practice. *International Journal of Nursing Studies*, 112, 103743.

<sup>10</sup> RNAO, Best Practice Guideline, Preventing and Mitigating Nurse Fatigue in Health Care. August 2011.

<sup>11</sup> Ministry of Labour, Immigration, Training and Skills Development. (2022, January 12). Prevention Works Ontario’s Occupational Health and Safety System in Action: 5-Year Strategy. Retrieved from <https://files.ontario.ca/books/mltsd-prevention-works-occupational-health-and-safety-strategy-en-2022-01-12.pdf.pdf>

- Fund and conduct further high-quality research into the impact of utilizing the mitigating factors to address the vulnerability of health-care workers.
- Increase education of the occupational risk of shift work among health-care workers.
- Fund and develop evidence-based interventions to address the sector, gender and economic-specific occupational risks of shift work.