

# Shift work and Fatigue

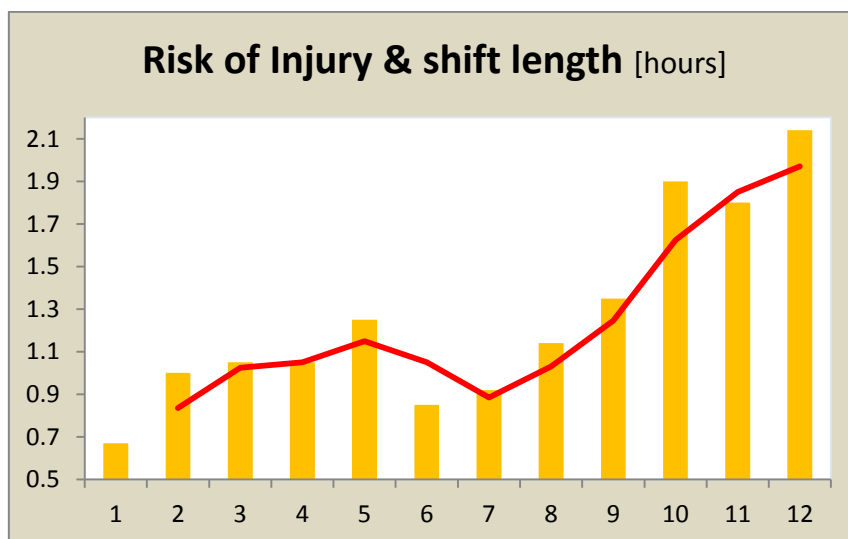
The need for sleep is the body's second most powerful urge – luckily breathing is the most powerful. As sleep is essential to the proper functioning of our bodies, the timing of our waking hours is important. Night shift, afternoon shift and rotating shifts all interfere with the body's urge to sleep.

The body has an “internal alarm clock” – called the circadian rhythm – which tells the body when to sleep, when to wake up and when to eat.

Although sleep is “essential” to health, there are no health and safety laws or regulations that cover the length or timing of shifts or work hours. But every employer/PCBU must ensure, so far as reasonably practicable, the health and safety of all workers while at work. Because the length of hours at work and certain shift patterns increase the risk of accidents, employers/PCBUs have a clear obligation to consider and control the risks of fatigue and shift work.

**Length of time at work:** Studies have shown that

- after 17 hours of continuous wakefulness, alertness is similar to 0.05% blood alcohol reading and for 24 hours of wakefulness, alertness is similar to 0.1% blood alcohol. This means hours of work and shifts schedules are as important for safety as not being under the influence of alcohol at work
- overtime schedules have the greatest risk of injury or illness, followed by extended (more than 12) hours per day and extended (more than 60) hours per week.
- the risk of injury increases with the length of the work schedule<sup>1</sup>



<sup>1</sup> Shiftwork and Health, Institute for Work & Health, April 2010

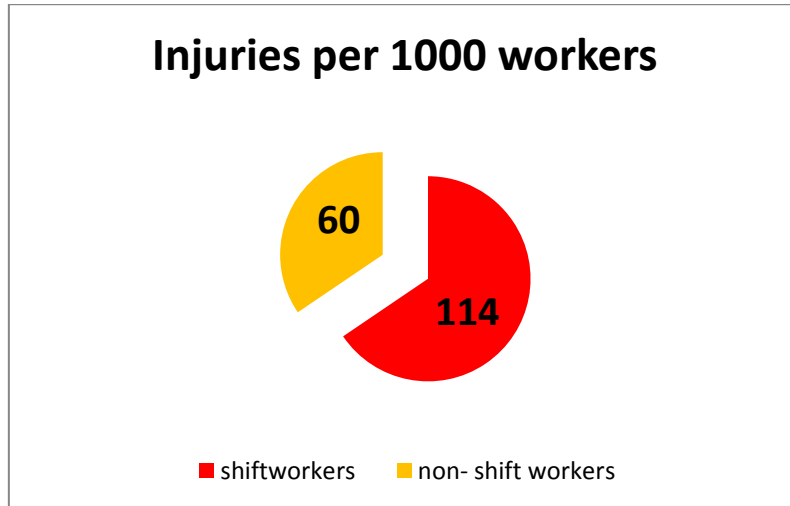
Dembe AE et al, *Nonstandard Shift Schedules and the risk of job-related injuries*. Scand J Work Environ & Health, 2006;32(3):232-240

Folkard S & Ticker, P. *Shiftwork, safety and productivity*. Occup Med, 2003;53:95-101

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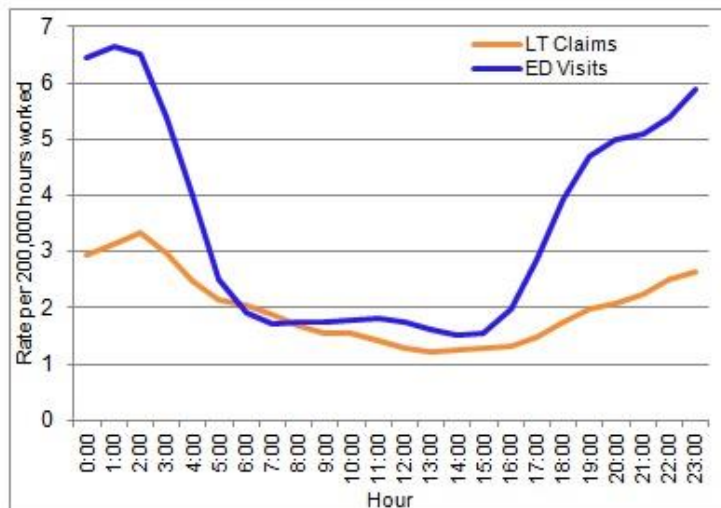
## Time of day worked

Shift work disrupts sleep and increases the likelihood of fatigue. Australian surveys show that shift workers have more injuries than non-shift-workers.<sup>2</sup> Other research has shown that the higher injury rate for shift workers happens to across all occupational groups– manual/mixed and non manual.



And Canadian data shows the increased risk of injury, as measured by visits to a hospital and workers compensation claims. The increased risk of injury was for all types of work – manual, mixed and non-manual occupations.<sup>3</sup>

## The distribution of work injuries in Ontario across the 24-hour clock



The line graph above shows the rate of work injuries per 200,000 hours worked, against the time of injury. Data used came from emergency department visits in Ontario (the National Ambulatory Care Reporting System) and Ontario Workplace Safety & Insurance Board's records of lost-time claims, over a five-year period from January 2004 to December 2008.

<sup>2</sup> Safe Work Australia: *The Impact of shiftwork on work-related injuries in Australia*, August 2009

<sup>3</sup> Mustard C et al. *Work injury risk by time of day in two population-based data sources*. *Occup Environ Med* 2012, published online September 26 2012.

# Shift work and Fatigue

**If shift work is unavoidable then care needs to be taken in the design the roster to ensure that:**

- the number of consecutive evening or night shifts is limited to 3
- avoid permanent night work as our internal body clock never totally adjusts
- have at least 2 consecutive days off, twice a month
- limit weekend work
- limit the number of hours worked per shift – overtime on 12 hour shifts is dangerous
- rotate in a forward direction: morning, afternoon, night
- avoid starts before 6am
- ensure that adequate breaks are taken during the shift eg 2 half hour breaks during 12 hour shifts
- minimize the impact of extended shifts (e.g. liberal rest breaks, job rotation) to avoid boredom
- generally allow shorter, more frequent breaks within shifts, rather than fewer long ones
- take account of changes in risk outside the workplace e.g. fatigue while commuting after a long shift.

**Remember- as shift work affects the health and safety of workers, employers/PCBUs have an obligation under health and safety laws to consult with Health & Safety Representatives and workers about the shift design – this includes any change e.g. in length of shift or addition of overtime requirements.**

For more information see –

Stay Healthy When Working Shiftwork - [http://www.amwu.org.au/info\\_and\\_fact\\_sheets](http://www.amwu.org.au/info_and_fact_sheets)

Spring 2010 edition of *Its No Accident – Fatigue*. [http://www.amwu.org.au/its\\_no\\_accident](http://www.amwu.org.au/its_no_accident)

Shiftwork and Fatigue Survey: [http://www.amwu.org.au/info\\_and\\_fact\\_sheets](http://www.amwu.org.au/info_and_fact_sheets)