Notes for the Shift Worker

Issue 1/2004

Circadian Technologies 2004 Shiftwork Practices Survey

The annual survey of facilities operating shiftwork rosters in the USA and Canada provides business with current trends in shiftwork practices and key performance indicators over the previous year. For serious observers of shiftwork practices and consequences, it can now be obtained via their website www.circadian.com.

This year's report represents input from some 550 facilities employing more than 130,000 fulltime shiftworkers.

Important and useful information on absenteeism, turnover, safety, fatigue and legal issues is included.

One aspect of relevance for the WA Government's Review of Extended Working Hours is that where 12 hour shifts are employed, the usual maximum schedule, day or night, is four consecutive 12 hour shifts.

How Often Do You Drive Drowsy?

The US National Sleep Foundation reports that about one-half of adult drivers say they have driven a vehicle while feeling drowsy in the past year and almost two in ten people (20%) have actually fallen alseep at the wheel.

According to data from Australia, England, Finland and other European nations, all of whom have more consistent crash reporting procedures than the USA, drowsy driving represents from 10-30% of all car crashes.

Linking Sleep to Creativity and Problem Solving

German scientists claim to have demonstrated for the first time that our sleeping brains continue working on problems that baffle us during the day and that the right answers may come more easily after eight hours sleep.

They demonstrated that volunteers taking a simple maths test were three times more likely than sleep deprived participants to figure out a hidden rule for converting numbers into the right answer if they had eight hours sleep.

The study leader said that the results support biochemical studies of the brain that indicate memories are restructured before they are stored. Creativity also appears to be enhanced in the process.

Sleep Deprivation May Lead to Weight Problems

In a Japanese study of 6-7 year olds, children who slept 9-10 hours at night were compared to those who only slept 8-9 hours.

The latter group were almost twice as likely to be overweight.

Children sleeping less than 8 hours a night were almost three times as likely to be overweight.

Mobile Telephones a Threat to Adolescent Sleep

Secondary school students in Flanders were asked how often they are awakened at night by incoming text messages on their mobile phones and how tired they felt.

Almost half of the 16 year olds surveyed said that they have been awakened by text messages and a quarter of the 13 year olds reported sleep disruption due to text messaging.

The research concluded that "the threat to healthy sleeping patterns is potentially more important than the threat posed by entertainment media."

Sleep Loss and its Performance Effects

This study was reported on previously early in 2003. However its relevance to the current Review of Working Hours and the reference to executive performance is worth repeating.

In two studies at the University of Pennsylvania 48 healthy adults were split into several groups that slept for four, six or eight hours a night for two weeks. All the participants performed tasks that tested their motor skills and memory.

By day fourteen the four hour group made an average of 14 times as many errors as they did when they took the tests fully rested.

The eight hour sleepers performed their tasks consistently well and actually got better at them each day.

The six hour sleepers, corresponding to the corporate executive, might as well have been sleep starved. They scored eleven times as many errors as they would normally make - about as bad as a test group that stayed awake for two straight days.

Healthworks Fatigue Survey 2003 Results

Are you sleeping on the job?

Over 425 OHS and HR staff responded to a questionnaire on this very underrated safety topic.

38% of them have actually fallen asleep, or taken a nap, during work hours.

63% had less than the recommended 7 to 8 hours sleep the day before the survey.

78% have been at work and felt too tired to do any of their duties.

Only 7% know they have a documented procedure to identify fatigue at work.

The major factors making us tired are:

24% Anxiety or stress 19% Irregular sleep patterns

20% Staying up late 10% Caring for other family members

19% Working long hours 3% Noisy environment

Other common factors were illness, travel, shiftwork, boring work, stuffy office.

Organisations respond in a variety of ways when someone at work is too tired to perform their duties.

18% provide counselling to determine the reason.

17% would ask the worker to take a break.

16% suggest they go home.

Fortunately only 4% would reprimand the worker. (Mostly manufacturing and government)

However by far the majority (38%) take no action at all.

When another colleague is too tired to work the general response varies.

17% feel indifferent about it – unless it keeps happening, or is self inflicted.

16% feel afraid for the safety of others. (Mostly manufacturing and mining)

13% are frustrated with the tired worker.

10% are annoyed that they have to work harder to compensate.

The majority however, of 40% feel sympathetic towards them.

13% of employers actually provide employees with access to a sleeping area at work.

See www.healthworks.com.au for further information.

Swedish Research - Workplace Fatalities and Sleeping Difficulties

People who report having difficulty sleeping have nearly double the risk of suffering a fatal occupational injury than people who sleep normally, a Swedish study has found.

Other risk factors for occupational accidents included non-daytime work, which carried a 63% greater risk of a fatality than daytime work and stressful work, which carried a 20% greater risk than that for less hectic jobs.

Immune Response

Researchers in Germany found that, after being vaccinated against hepatitis A, those who got a good night's sleep afterward developed a stronger immune response from the vaccine than people deprived of sleep following the vaccination.

The study results indicate a well rested person's immune system may be able to launch a stronger response to an invading virus than that of a sleep deprived individual.

An earlier study showed that people who receive flu shots after having a full nights sleep develop the flu less often than people who go in for their flu shot poorly rested.

US Navy Recognises Circadian Rhythm

The naval base in Illinois, USA which graduates about 1000 students a week from its 60 day training program, called in experts on adolescent sleep patterns. This followed complaints that recruits kept falling asleep in class and that disciplinary problems and sick calls were higher than they should be.

At that time recruits went to bed at 10:00 pm and were awakened at 4:00 am.

The leadership moved bedtime forward to 9:00 pm and found this was ineffective because recruits would be awake after lights-out, unable to fall asleep.

The sleep experts explained that people in their late teens and early twenties have naturally later sleep patterns which put them at their sleepiest between 4:00 - 6:00 am when their body core temperature is at its lowest.

The recruit's sleep schedule was altered to 10:00 pm - 6:00 am. After two years, a retrospective study compared several metrics between the time when recruits slept just 6 hours and the current 8 hours of sleep. The results were dramatic.

Illness among recruits decreased 70%, the drop-out rate fell from around 20% to less than 10% and recruit's test scores improved to an extent that amazed navy leaders.

Shift starts prior to 6:00 am can be difficult for all shiftworkers.

Rising at 4:00-4:30 am to travel to work during the pre-dawn period can be hazardous as it reflects the lowest point of alertness for most people.

Smoking and its Performance Effects

A study of nearly 13,000 people aged 16-24 found that smokers were 50% more likely to report pain that prevented them from performing work and leisure activities.

Further copies of these notes can be obtained from MARCSTA (08) 9355 1400.
Various extracts from Circadian Technologies of the USA 24/7 Workforce Organisation monthly newsletter and quarterly Working Nights are made available with their permission.

MARCSTA
Mining and Resource Contractors Safety Training Association