Notes for the Shift Worker

Issue 2/2003

Sleep Quiz # 1

Circle the correct answer

①

The primary cause of insomnia is worry.

TRUE FALSE

②

Everyone dreams every night.

TRUE FALSE

③

People need less sleep as they grow older.

TRUE FALSE

④

Opening the car window or turning the radio up will keep a drowsy driver awake.

TRUE FALSE

⑤

Most people don't know when they are sleepy.

TRUE FALSE

⑥

The human body never adjusts to night shift work.

TRUE FALSE

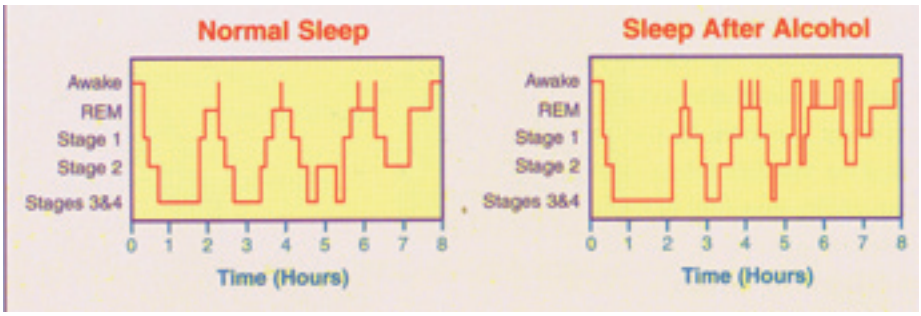
See the answers on the back page

DID YOU KNOW OR DID YOU GUESS?

Why Alcohol Makes a Poor Sleep Aid

It sounds like a great idea. Having a few drinks can make you drowsy - so what better way to nod off than a quick cocktail before bed? In reality, alcohol does you more harm than good in terms of your sleep. This is true for two reasons. Though alcohol may make it easier to drift off, it actually reduces sleep quality. Alcohol also makes it more likely that you'll wake up before you've slept enough and have trouble falling asleep again.

How Alcohol Affects Sleep



A person's progression through the five sleep stages on a normal night (left) and after consuming five alcoholic drinks (right). After alcohol, a person spends less time in deep sleep (stages 3 and 4) and wakes up more often. Source: British Medical Journal, Vol. 306, p.573

Studies have shown that alcohol worsens the quality of your sleep. After consuming alcohol (see below) you spend less time in deep sleep and REM (Rapid Eye Movement) sleep, both of which are important for feeling well-rested upon wakening.

A phenomenon called "acute tolerance" is believed to explain why alcohol makes you more likely to wake up too early and have trouble falling back to sleep. This term referes to the brain's rapid adjustment to the presence of a drug. Within a few hours of having a drink, your brain adapts to the presence of alcohol and needs another dose to achieve the same sleep-inducing effect.

To prevent alcohol from interfering with your sleep, make it a habit to avoid alcohol within two to three hours of when you go to sleep.

Transport Industry - Forthcoming Regulations

Hours of service regulations for the transport industry in the USA are to be changed from June 2004 for the first time in 11 years.

Under the proposals truckers may drive no more than 11 consecutive hours (currently 10) for a maximum on-duty period (including loading and unloading) of 14 consecutive hours.

Mandatory rest periods will increase to 10 hours which is designed to allow truckers to get more sleep and reduce dangerous fatigue behind the wheel.

These regulations go well beyond the mandatory 7 hour continuous rest break in the forthcoming transport regulations for Western Australia.

The Cost of Lack of Sleep

A Japanese medical school psychologist and sleep expert claims that lack of sleep is costing the Japanese economy US B$51 in losses annually. He estimates that about 10-15% of Japanese people work shifts and suffer "shift work sleep disorder" which causes victims to have difficulty adjusting to irregular sleep-wake patterns and experience lowered productivity as a result.

Tasmanian Government Action to Change Rosters and Limit Working Hours

The Director of Industry Safety, Work Place Standards, Tasmania has served a notice on a MARCSTA member, Barminco Pty Ltd, requiring the cessation of patterns of work that "were not reducing the risk of injury and loss of health to the lowest reasonably practicable level".

Importantly, employee satisfaction with the alleged "dangerous shift patterns" was not considered a mitigating factor in imposing the restriction.

The following limitations were specified in the notice:

Maximum number of hours in a scheduled shift	12
Maximum number of hours in a 24 hour period	14
Maximum number of consecutive night shifts	5
Maximum hours in a 7 day period (with 1 x 24 hr period off)	60
Maximum days in a 14 day period (with 3 x 24 hr period off)	11
Maximum days in a 28 day period (with 3 x 24 hr period off)	24
Maximum days in a year	228
Average hours per week over a year	48

Comprehensive education and awareness training to be compulsory for all employees, managers and supervisors.

This regulatory imposition will have ramifications for the mining industry generally and is likely to be appealed against.

Sleep Deprivation and Cognitive Performance

Latest research at the University of Pennsylvania Center for Sleep to determine whether human sleep can be chronically reduced without consequences has come up with some extremely interesting findings.

In a controlled study subjects were divided into three groups and over a period of 14 days received either 4, 6 or 8 hours time in bed per night for 14 days. Neurobehavioural and sleep physiological functions were monitored and compared to another group deprived of sleep for 72 hours.

Subjects who were restricted to six hours or less per night produced cognitive performance deficits equivalent to up to two nights of total sleep deprivation on all tasks. The findings highlight the importance of sleep debt and its accumulation over time.

The results indicate that even relatively moderate sleep restriction can seriously impair performance in normal healthy adults.

Being a Lark or an Owl Depends on the Season

Whether you are a "lark" (morning person) or an "owl" (night person) might depend on what month you were born according to recent research.

Italian scientists found that December/January (winter) born people were more likely to be morning types while those born in June/July (Summer) were more likely to be owls. Though birth month is no guarantee of circadian type - there may be an hereditary component - people born between October and March were significantly more likely to be morning types than those born between April and September.

The connection is thought to be with brain chemicals, production of which fluctuates with the seasons of the year.

Answers to Sleep Quiz 1

1. FALSE
   Insomnia has many different causes, including physical and mental conditions and stress. It affects people of all ages. Get it diagnosed and treated if it persists.
2. TRUE.
   Though many people fail to remember their dreams, dreaming does occur for every person, every night.
3. FALSE
   As we get older we don't need less sleep, but we often get less sleep and our ability to get into the deep restful stages of sleep decreases with age. Older people have more fragile sleep and are more easily disturbed.
4. FALSE
   Opening the car window or turning the radio up may arouse a drowsy driver briefly but this won't keep that person alert behind the wheel.
5. TRUE
   Most people don't kow when they are sleepy. If you are sleepy enough you can fall asleep anywhere but researchers have asked thousands of people if they are sleepy to be told "no" - just before the individual fell asleep.
6. TRUE

All living things (people, animals, even plants) have a circadian or about 24 hour rhythm.

Research Explains Benefits of Power Naps

In an Australian study 24 people took naps lasting either 5, 10, 20 or 30 minutes.

The 10 minute nap produced immediate alertness improvements that lasted up to 155 minutes while a five minute nap had very limited results.

Longer naps of 20-30 minutes also improved alertness and performance and reduced fatigue but their benefits were not seen until up to 35 minutes after the person woke from the nap.

The delay in effect was attributed to "sleep inertia", a period of disorientation, confusion and sleepiness sometimes experienced after waking. Other studies have not identified sleep inertia after 20-30 minute naps.

The important finding is that naps of up to 20 minutes can improve alertness, reduce fatigue and get you through the shift.

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.