

ShiftworkSolutions



Safety / Health Awareness Research Program

**INFORMATION
AND ADVICE
FOR
SHIFT
WORKERS**

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WHY DO WE WORK SHIFT WORK?

Ever since the invention of the light bulb in 1879 our society has become more and more of a “24-hour society”. Today there are over 25 million shift workers throughout North America. Workers in the following industries routinely work shift work:

- Police
- Fire
- Ambulance
- Health Care
- Military Defence
- Transportation
- Public Utilities (e.g. Gas, Telephone, Electrical)
- Manufacturing
- Retail (e.g. Gas Stations, Convenience Stores)

WHAT ARE THE HAZARDS?

Working at night and overly long shifts can make it difficult to get enough sleep. Being overly tired makes it difficult to concentrate, which increases the possibility of errors or accidents. Some studies also suggest that shift work can aggravate health conditions such as heart disease and digestive disorders.

WHY DO THESE HAZARDS OCCUR?

Humans are biologically programmed to sleep at night and be awake during the day. Other animals, such as owls are biologically programmed to sleep during the day and be awake at night.

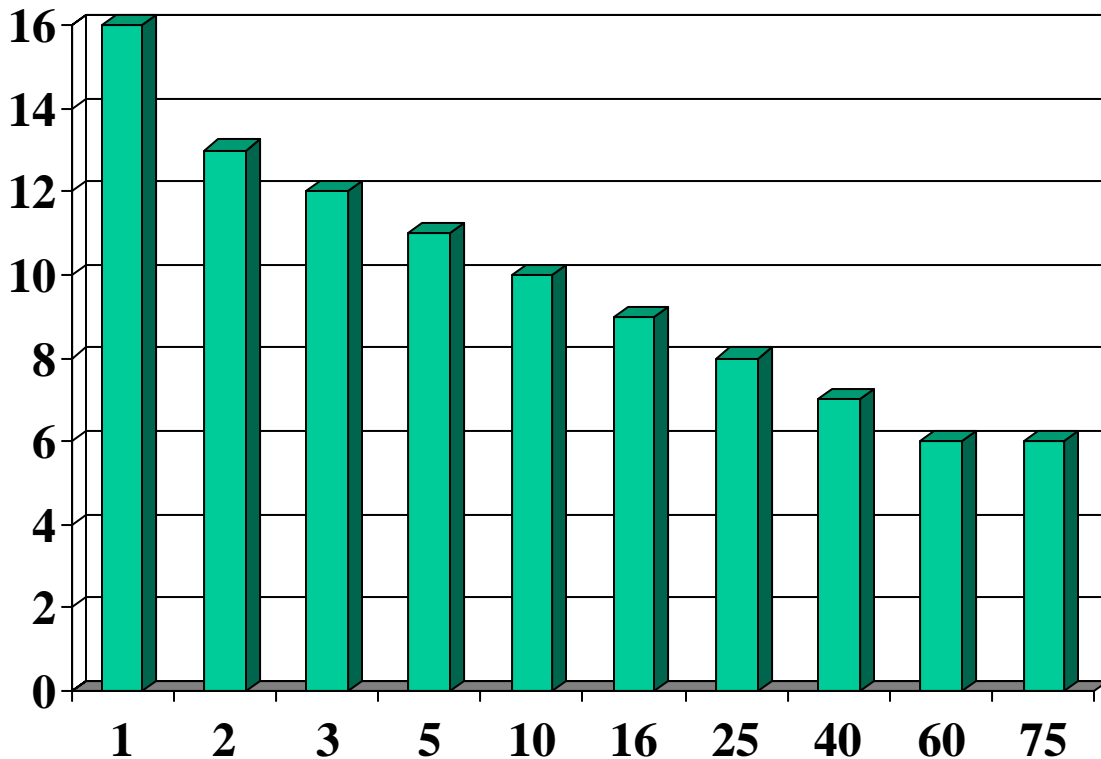
When we stay awake during our normal sleep times this disrupts our “circadian rhythms” or our biological programming. Our bodies think it is nighttime and want us to sleep yet we are awake and working. Our brain and body functions also slow down during the night and early morning. This causes shift workers to become sleepy and vulnerable to errors or accidents.

HOW MUCH SLEEP DO WE NEED?

Most adults need 7-8 hours of sleep each day. However, as we grow older we seem to need less and less sleep. There are also individual differences in the amount of sleep we need. Some people can get by with only 5-6 hours of sleep others need 8 or 9 hours to feel rested. If you feel drowsy during the day or are having trouble concentrating you may not be getting enough sleep.

Getting the right amount of sleep is critical for your body and mind to recover from the day’s events. Sleep lets your body repair itself and prepare you for the next day. The following graph shows average sleep patterns for different age groups:

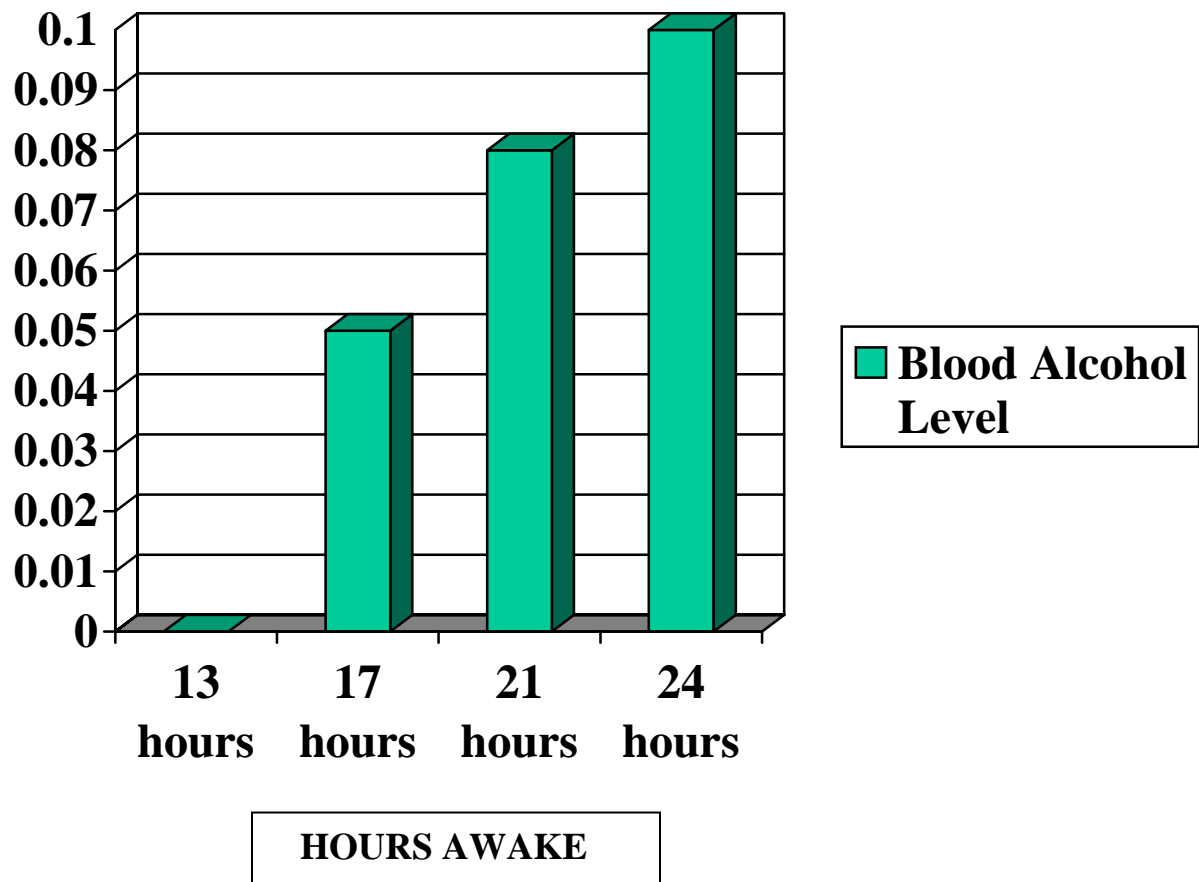
HOURS OF SLEEP BY AGE



WHAT HAPPENS WHEN WE DON'T GET ENOUGH SLEEP?

Research shows us that our reaction times and mental abilities get worse the longer we stay awake. One study compared people who drank alcohol with other people that stayed awake for long hours. The results showed that people that stayed awake for long hours had the same reaction times and mental abilities as those who drank excessive alcohol. The following graph shows what happens when we stay awake too long.

Hours of Sleep



In other words:

- If you are awake for 21 hours you have the same reaction time and mental abilities as someone who has .08% - blood alcohol level (The legal limit in BC)

WHY DON'T SHIFT WORKERS OFTEN GET ENOUGH SLEEP?

Adjusting to shift work can be difficult for some workers. Most people are either “flexible” sleepers or “rigid” sleepers. Flexible sleepers can easily adjust to various wake and sleep times. Rigid sleepers need to wake up at the same time and go to bed at the same time every day. Flexible sleepers are usually more able to adapt to shift work. Rigid sleepers take more time to adjust to shift work.

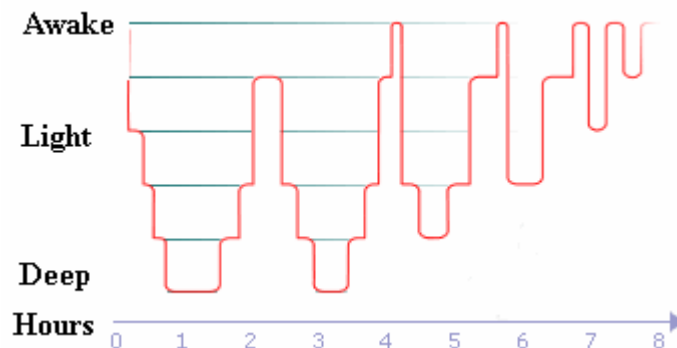
Also some people are “morning” people who like to get up early and go to bed early. Others are “night” people who like to stay up late and get up late. Adjusting to a shift that is out of sync with your normal sleep patterns can often take several months.

If you work a shift that requires you to sleep during the day it can be even more difficult to get enough sleep. Daylight triggers our brains to stop production of a certain chemical (melatonin) that causes us to want to sleep. In other words, when we are trying to sleep during the day our bodies do not produce the chemical that causes us to want to sleep. Studies show most daytime sleepers get 1-2 hours less sleep than nighttime sleepers.

WHAT IS GOOD SLEEP AND BAD SLEEP?

Most people sleep in blocks of about 90 minutes. Good sleep is when we can complete at least 5 blocks of sleep at a time. During each block of sleep we go from light sleep to deep sleep and back up again to light sleep. We need to repeat this cycle at least 5 times to get good sleep.

NORMAL SLEEP PATTERNS



Bad sleep is when we get less than 5 complete blocks of sleep or when our sleep is interrupted. Daytime sleep is often “bad” sleep because of all the daytime noises that could cause us to wake up and disrupt our necessary 5 blocks of sleep. Also, because our bodies don’t produce the chemical during the day that helps us sleep, daytime sleep is less restful.

DOES NAPPING HELP US OVERCOME BEING TIRED?

Napping can be an effective way of catching up on sleep and getting rid of mental fatigue. However it is important to nap for the right length of time. If you look at the graph showing “Normal Sleep Patterns” you will see that if you nap for 10-15 minutes you will wake up from a light sleep. However, if you nap for 30-60 minutes you will wake from a deep sleep. If you wake up from a deep sleep you will be groggy. It could take you at least ½ hour to recover.

So, if you nap you should try to nap for 10-15 minutes or for 90 minutes (a complete block) to make sure you wake up from a light sleep and not from a deep sleep where you will be groggy.

HOW CAN SHIFT WORKERS GET ENOUGH SLEEP?

Getting the right amount of “good” sleep is a combination of proper diet; exercise and a regular sleep routine. You can have your sleep and fatigue levels analyzed on-line at www.sleepperformance.com. Other helpful sleep tips for shift workers include:

- **Block Out Noise** – If it is possible, try unplugging or turning off the phone. For daytime sleep some workers disconnect the doorbell. Talk to your family about your need to get the right amount of sleep and ask for help keeping noises down (e.g. TV, stereo, clothes washer). Some shift workers prefer to wear earplugs.
- **Block Out Light** – Light triggers our brain to think it is daytime making sleep more difficult. Some shift workers find it helpful to use black out curtains
- **Caffeine** – Coffee, tea and some soft drinks contain caffeine and are widely used in our society. Research shows that taken in moderation, during the day, caffeine does help us be alert. However, consuming caffeine before bed makes it more difficult to get to sleep.
- **Alcohol** – Some people think that consuming alcohol before bed helps them get to sleep. However, taking alcohol in the hour or two before you go to sleep actually disrupts your sleep patterns and prevents you from getting the “good” sleep your body requires.
- **Warm Milk** – It’s not a myth!! Drinking warm milk before bedtime can actually help some people sleep. Milk contains an amino acid called L-Tryptophan that acts as a natural sedative.

WHY ARE SOME PEOPLE CHRONICALLY SLEEP DEPRIVED?

Despite following all the recommended routines some people never seem to get enough sleep and always feel tired. Two of the most common causes of chronic sleep deprivation are sleep apnea and insomnia:

- **Sleep Apnea** – It is estimated that as many as 4% of adults suffer from sleep apnea. This is a condition where the airway is partially blocked often by the throat muscles and tongue. While the person continues in his or her efforts to breath air cannot easily flow in and out of the nose or mouth. Unknown to the person, this results in heavy snoring, periods of no breathing and frequent awaking (causing abrupt changes from deep sleep to light sleep). Research shows that untreated sleep apnea patients are 3 times more likely to have automobile accidents.
- **Insomnia** – Insomnia is the lack of good quality sleep. People with insomnia may have trouble falling asleep, staying asleep or waking up too early. There are many causes of short term and long-term (chronic) insomnia.

If you feel that you may have these conditions or you are not getting enough sleep you should discuss this with your family doctor. Many sleep disorders can be diagnosed and successfully treated.

For more information about sleep and shift work see:

www.sleepfoundation.org

www.sleepperformance.com

www.shiftwork.ca