

The Columbus Community Health Regional Sleep Disorders Center

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For more information, visit The Sleep Site (www.thesleepsite.com)

INFORMATION ON SHIFTWORK AND JET LAG PROBLEMS.

HOW COMMON IS SHIFTWORK? Very common. It affects roughly one of every four workers in the U.S.

WHY SHOULD SHIFTWORKERS LEARN ABOUT HOW SHIFTWORK AFFECTS THEIR SLEEP? Unless certain precautions are taken, shiftwork can worsen your sleep, make you sleepy without your even realizing it, and affect your health.

WHY DOES SHIFTWORK HAVE A MAJOR IMPACT ON SLEEP AND ALERTNESS?

Both people and animals have pre-set "biological clocks" in their brains that control the timing of their sleep and alertness.

Many animals like cats and mice are nocturnal. They do most of their sleeping during the day and stay awake most of the night.

Humans are just the opposite. Their biological clocks are set such that they are driven to fall asleep at night and find it easiest to remain alert during the day: a pattern that is true to a great degree even in people who consider themselves "night owls".

This biological clock operates in conjunction with our body temperature, which cycles up and down during the day and night in a specific pattern. When our body temperature drops, we become drowsy and want to sleep. When our body temperature is rising, we feel more awake and have more difficulty falling asleep. Our lowest body temperature normally occurs around 5 a.m., which falls within a typical third shift. In the morning, our body temperature rises, which is when the night shift worker may be trying to fall asleep.

Exposure to sunlight and other sources of bright light are factors in setting our biological clock. Light exposure affects release of melatonin, a hormone produced by a gland in the brain, which in turn can affect sleep--but taking over-the-counter melatonin is neither a necessarily safe nor effective solution.

This biological clock is powerful. It cannot be completely overridden by "force of will" or "practice" . In fact studies show that the biological clocks of people who have worked third shift for many years will not stay reset to a night schedule--partly because their biological clocks shift rapidly back to a more normal daytime setting during days off work.

WHAT ARE THE SPECIFIC EFFECTS OF SHIFTWORK ON SLEEP AND ALERTNESS?

- On the average, shiftworkers get considerably less sleep than others, and their sleep is of poorer quality. They are much more likely to be chronically sleep-deprived.
- Shiftworkers are much more prone to inappropriate (and sometimes overwhelming) sleepiness, both on the job and at other times-- particularly during the commute home from work.

WHAT ARE THE POTENTIAL CONSEQUENCES OF SHIFTWORK, IN THE ABSENCE OF EFFECTIVE STRATEGIES TO COUNTERACT ITS EFFECTS ON SLEEP AND ALERTNESS?

- Workplace errors, injuries and accidents. Sleepy workers were implicated as helping to cause such disasters as Three Mile Island, Bhopal, the Challenger shuttle crash and the Exxon Valdez oil spill.
- Motor vehicle accidents: which usually occur at full speed since people typically don't realize that they are about to doze off--so they make no attempt to brake. Shiftworkers have been found to have nearly three times as many accidents as day workers during the commute home.
- Risks to health: particularly intestinal and stomach ailments, heart disease and mood swings.
- Family and social problems: including higher divorce rates.
- Lost productivity. Annual economic losses from sleep deprivation and sleep disorders were recently estimated at \$18 billion dollars in the U.S. alone. For the individual worker, lost productivity may result in reduced opportunities for wage increases and promotions, plus the attendant risk of poor reviews and reprimands.

ARE THERE CERTAIN PEOPLE WHO ARE LESS ABLE--OR UNABLE--TO TOLERATE SHIFTWORK? Yes. There are conditions and characteristics that have been felt to increase the likelihood of problems or greater health risks related to shiftwork. They include the following:

- Late middle age, or elderly workers.
- Workers with heavy family responsibilities, long commuting distances or who are working more than one job.

- People with sleep disorders such as sleep apnea, who have high sleep requirements (who do not feel rested unless they get over 8-9 hours of sleep a day), or who tend to be poor sleepers.
- Workers with such medical conditions as diabetes, epilepsy, asthma and severe gastrointestinal disorders, or who must take a number of different medications.

WHAT CAN A WORKER DO TO COPE BETTER WITH SHIFTWORK?

1. First and foremost: protect and safeguard your sleep as a top priority--and enlist your family's help and support!

Many night shift workers feel guilty if they do not use daytime hours to run errands, do home repairs or engage in other activities or tasks. Such guilt is not appropriate. After all, every human has an innate physical need for adequate sleep, in order to maintain health and permit normal functioning.

For example, assume that you work dayshift, and someone demands to come over to your house to talk with you at 3 a.m., when you normally would be asleep in bed. Your response probably would be, "No way!". Your response during the daytime should be just the same, if you have had to work all night and must get your sleep during daylight hours.

Workers must admit their need for sleep, and their families must help ensure that they will obtain adequate rest. To place demands for errands or chores on the shiftworker during that time that they can and should sleep would be unrealistic and unfair.

2. Ensure that your bedroom is quiet, dark and conducive to sleep.

- Unplug any bedroom telephones, and use an answering machine in another room.

- If noises from either the outside or other rooms of the home cannot be eliminated, consider sleeping with earplugs. Some (sold in pharmacies) are made from a soft wax material that can be molded to fit the ear canal, and these can be quite effective.

- Since outside light can increase alertness and either impair or prevent sleep, darkness is extremely important. Special curtains may be needed to create an effective barrier to sunlight. One brand (Roc-Ion(r), manufactured by Rockland Industries--1-800-876-2566) is sold by J.C. Penney.

3. Avoid activities that will delay or prevent good sleep.

- Ideally, night shift workers should go to bed as promptly as possible after returning home from work, without first engaging in exercise or stimulating activities, and without ingesting caffeine.

- If problems still are encountered in falling asleep, due to inability to quell one's thoughts, good relaxation training may be a more effective and safer solution than resorting to alcohol, sleeping pills or over-the counter remedies. Please inform us if a referral would be needed, and also request our Self-Help guide for insomnia.

4. Insofar as possible, take steps to enhance your alertness on the job.

- Avoid factors that can increase sleepiness in many individuals (request our Self-Help guide on excessive sleepiness).

- If permitted, a brief nap during break times may be beneficial--even if you are not entirely certain afterward whether you actually slept.

- Try to achieve as much exposure as possible in your workplace to bright light--particularly around times of peak sleepiness. Special light boxes, commonly sold for treatment of winter depression (seasonal affective disorder) can be placed on desks or workbenches, if possible in your situation and permitted by your employer. Simply facing them is adequate: there is no need to look directly at them. In some cases, these light boxes also can be used to help shift sleep cycles and "re-set the biological clock"--although specific guidelines must be utilized in each individual case if they are used for that purpose. If this may be an option for you, please ask us for information on how light boxes can be obtained.

5. Ensure you are safe at the wheel, particularly during the commute home.

Please recognize that you may be sleepier than you can tell when driving. After all, if all people truly could tell accurately when they were about to doze off, there would not be so many sleep-related auto accidents and related deaths every year.

There is no fool-proof laboratory test can determine the adequacy of any given person's alertness behind the wheel. Thus, it may be prudent to take several test drives, particularly at times you would be most likely to feel drowsy. The observer, a licensed driver, should be instructed to sit beside you without talking, ready to alert you or take over driving if warranted, and they should be asked to observe you for any indications of sleepiness that could render you unsafe at the wheel. Please request our test drive sheets for this purpose.

6. Do not resort to unproved or potentially unsafe over-the-counter remedies or alcohol.

- Alcohol may help you fall asleep faster, but with direct worsening of your sleep quality for a "net loss".

- Sleeping pills do not create normal sleep, and they may cause "hangover" effects that will actually worsen your performance. Also, some are habit forming and if taken regularly, can cause or aggravate insomnia.

- "Health food remedies" such as melatonin are not necessarily "natural", because many of them produce extremely high brain and blood levels of substances you probably did not even lack in the first place. In most cases, their long-term effects are unknown. Also, since they are not regulated nor inspected for purity, there is no guarantee that they will not contain toxic contaminants. Tryptophan, a sedating amino acid (building block of proteins) formerly was widely sold as an over-the-counter sleep aid: until a contaminated batch from Japan killed and crippled a number of people across the United States.

WHAT IF THESE MEASURES DON'T WORK? Notify us (614 443-7800) or call your family physician. Sometimes, other strategies may help. In other cases, individuals may be physically incapable of adapting to night or rotating shiftwork.

Consultation with employers may lead to reasonable accommodations that can restore, productivity, adequate sleep and good health.

WHAT ABOUT JET LAG? Jet lag is extremely common and affects most people that travel across more than one or two time zones. Typically, people feel as though their personal biological clock does not quite re-set itself to the actual clock time of their destination for perhaps five days. They may find it difficult to fall asleep if arriving at a clock time that should be bedtime, or instead, they may find it hard to stay awake upon arrival--if it is bedtime at home but not at their destination. There is no easy solution nor way to entirely prevent this problem, but some simple steps may prove helpful.

- If feasible, some travelers find that during the week prior to their departure, gradually shifting their bedtime at home toward the time that it would be at their destination can make for an easier transition.

- Avoiding alcohol during the flight (and caffeine, if you would be arriving at what would be considered bedtime at your destination) may also help.

- It is important to expose yourself to as much bright light--ideally, sunlight--as possible during the daytime after you arrive: to allow the powerful clock-resetting properties of light to push your sleep-wake cycles in the desired direction.

**FOR MORE INFORMATION OR FOR HELP WITH SHIFT WORK PROBLEMS,
CONTACT US AT (614) 443-7800.**

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