

Toolbox Talks

Make Shift Work Safe Work Part 1



Most people in this country think of "work hours" as the daylight hours from 8 or so in the morning until 5 or so in the afternoon...but more than 20 million Americans work a different schedule. For many reasons, their work day either starts in the afternoon & ends late at night, or begins around midnight & ends in the early morning. **If this applies to you, be aware that your safety is just as critical as the day crew, but that conditions & hazards may be different.**

If you work a nonstandard shift, it may be because you need to care for family members during the day; you may have more than one job; it may be the best work you can get at the time; or you may simply prefer to work at night. Whatever the reason, you should realize that the potential for accidents & injuries tends to be significantly higher on night shifts than during the day.

Special Challenges Associated With Shift Work:

- The type of work may be different. Some companies schedule inherently heavy or more hazardous work at night when fewer people are around. This reduces risk for the many, but not necessarily for those on a graveyard or swing shift.
- It's more difficult to see in the dark. Artificial light can't illuminate every surface, which can result in more trips & falls. This also makes night driving more hazardous.
- Shift work may result in psychological problems for shift workers who fail to eat, rest, & sleep adequately. Research indicates that shift workers may suffer depression, increased alcohol use, & even symptoms of physical illness.
- The potential for criminal behavior may increase the need for security by both the company & employees, since the cover of darkness is often used to help people commit crimes.
- Night workers who lack seniority for day shift assignments may be less experienced & less aware of safe work practices. This can make them more hazardous to themselves & others.

Fatigue: The Number One Shift Work Safety Problem

Your normal "body clock" wants you to be awake, alert, & productive during daytime. It can be hard to adjust to a different schedule than what your body naturally wants. People "off schedule," can feel tired & less alert. They are less likely to notice a potentially dangerous condition, or to respond quickly in an emergency. For example, more than 50,000 motor vehicle accidents per year are believed to be caused by sleepy drivers. Perhaps it's no coincidence that disasters like the Three Mile Island nuclear malfunction & the Exxon Valdez oil spill happened at night.

Tips For Dealing With Fatigue:

Engineering controls can help--such as improved lighting, ventilation, proper temperatures, & noise control...but the key to dealing with fatigue lies with individual employees, who should:

- Keep a regular bedtime schedule; your body can't adjust if you don't give it a chance.
- Keep your bedroom dark & quiet: have family or roommates cooperate with noise control.
- Avoid excessive use of alcohol, tobacco, & caffeine, especially during the pre-sleep hours.
- If possible, try not to rotate shifts, which makes it more difficult for your body to adjust.
- Eat regular meals, but don't consume a heavy meal right before retiring, eat a light snack.
- Maintain a regular exercise routine, which improves sleep & helps reduce overall stress.
- Most important of all, get enough sleep for your own, personal body needs.



Shift Work Statistics

Chernobyl, Three Mile Island, Bhopal, Exxon Valdez... Significant industrial disasters caused, at least in part, by human error, costing millions in damages & the lives of hundreds of people, happened in the second & third shifts. The **Three Mile Island leak** happened at 4:00 a.m., the **Bhopal gas explosion** at 12:45 a.m., the **Chernobyl explosion** at 1:00 a.m., & the **Exxon Valdez oil spill** at 12:08 a.m. Coincidentally, this is the lowest point of alertness during the day. If you work between the hours of 8 p.m. & 8 a.m., studies show that your alertness decreases &, as a result, you make more errors. With this comes an increased likelihood of accidents & injuries. Two thirds of all transportation accidents involving hazardous materials occur between 6 p.m. & 9 a.m. on a straight road & under good driving conditions. In Japan, a study of locomotive operators found that 82% of near accidents occurred between midnight & 8 a.m.

Humans are predominantly day animals. We are controlled by an internal "body clock" that controls hormone release, blood pressure, & body temperatures. These, in turn, tell us when it is time to sleep. If you work a swing shift, for at least part of your shift, you are probably fighting off your body's natural instinct to fall asleep. If you work a graveyard shift, you are most certainly fighting your body to stay awake. It is hard to permanently adjust to these unusual hours. **Once they no longer need to be worked, your body will revert to its more natural sleep/awake cycle.**

It's tough, but you can adjust by following these guidelines:

- Establish a bedtime routine. You will need your family's help in keeping the noise down & the darkness needed to fall asleep. Ear plugs or droning fans will help block the noise. Good heavy curtains, shades, or eye patches can help provide the darkness. On days off, get 3 to 4 hours of sleep that overlaps the time you sleep during the work days. Do not rely on afternoon naps. You need a good seven hours of uninterrupted sleep. Do not rely on pills. They can cause dependence.
- Avoid caffeine within five hours of bedtime. Also, avoid alcohol. Alcohol can make you sleep lighter & less restful. Shift workers tend to sleep 2 to 3 hours less than others as it is. A word of caution: Minimal amounts of alcohol & minimal amounts of sleep add up to a major deterioration in performance. Someone sleeping 5 hours a night & drinking only one can of beer is as impaired as someone who drinks 6 cans after a full night's sleep.
- Eat nutritious foods. Avoid fried food & those that are hard to digest. Take a regular lunch period & avoid sugary snacks. One study has found that shift workers have higher blood cholesterol levels even if they eat the same as day workers. If this is the case, you may have to work harder to maintain health & fitness.

As you can see, working at night can have consequences that could lead to lower productivity & can cause accidents as it increases the risk of making poor decisions or even mistakes. It is therefore important to learn how to prepare for night shifts & manage your daytime sleep to minimize the risk of personal injury & property damage.



Toolbox Talks

Make Shift Work Safe Work Part 2

Looking Into the Facts

Sleep & Night Work

Our human bodies are designed to sleep at night. Although many people are already accustomed to working at night, & are able to adjust to this work schedule, working at night inevitably causes sleep deprivation & fatigue.

Our bodies are controlled by our internal biological clock. Our biological clock generates circadian rhythms that run over a period of approximately 24 hours & are strongly influenced by the natural cycles of light & dark. At night, many of the processes in our bodies that are active during the day start to slow down as our bodies prepare to sleep. Working at night involves fighting against these rhythms in order to stay awake & functional. What is worse is that when your night shift is finished & you go home to try & get some much needed sleep, your internal body clock, daylight, & your environment in general, will tell you that it is the time to be awake & active.

Ironies of the Night Shift

Despite the unnatural mental & physical state of workers during night shifts, it is ironic that there are no managers to oversee the operation & maintain a safe work environment. Some companies understaff their graveyard shifts to cut costs, which is ultimately the opposite of what they're actually doing. Maintenance is manned only by skeleton staff as if machines are less likely to break down at night. In some companies, production is only manned by the night shift operations & production personnel while maintenance & other support staff are merely on-call. Oftentimes there are no medical personnel & company clinics are closed as if accidents sleep at night. & still, some companies schedule critical emergency repairs & maintenance during the night shift when there is less traffic in the area, power demands are at a minimum, & production demands are low to maintain higher efficiency & lower costs.

A Good Sleeping Habit

An important first step to minimize the negative effects of the night shift is to have good sleeping habits. Make sure that your bedroom is a suitable place in which to sleep. Try to associate your bedroom with sleeping. Avoid watching television, using the computer, & playing videogames in the bedroom. If you cannot sleep after being in bed for more than 30 minutes, try some relaxation exercises, listen to some soothing music, or take a bath. It is important to condition yourself & try to build a positive association between bed & sleeping. If you can do this, your ability to fall asleep once you get in bed will improve. (See reverse side for more tips on sleeping during the day).

Before the Night Shift

Although individuals vary, for most adults, seven to eight hours of sleep a night is recommended. If you manage to sleep less than this, you incur "sleep debt". Sleep debt is cumulative & must be repaid soon after it is incurred. The only way to repay sleep debt is by catching up on the amount of sleep lost.

Always try to get plenty of sleep & make sure you are well rested before you start a night shift. Two to three hours of extra sleep before the first night shift will reduce the build-up of fatigue & make it much easier to remain awake & functional through the night. Preparing yourself sufficiently in advance, mentally & physically, can reduce the negative impact of night shifts on your well-being

During the Night Shift

Taking a 15 to 30 minute nap is a powerful means of staying awake as well as refreshed during the night shift, which can take place during your "lunch break". However, your nap should not last longer than 45 minutes in order to avoid the groggy after-effects or "sleep inertia" that you may suffer if you rest longer. Set an alarm before you nap to make sure you don't fall into prolonged deep sleep. Naps are more effective if taken early, before you feel really tired.

Make sure your work area is adequately lighted. Exposure to bright light during the night has an alerting effect on the brain & prevents drowsiness. Intermittent light exposure is also as effective as continuous exposure.

Eat a full meal before you come on duty & pack something to eat halfway through your shift. It's important to eat & drink properly to prevent hunger & dehydration during your shift. If you decide to drink caffeinated beverages to aid your alertness, it's a good idea to consume them in small doses if you expect to sleep once your shift is over. The effects of a cup of coffee can be felt within 20 minutes & may last up to three or four hours.

After the Night Shift

When the night shift is over, you should aim to repay any sleep debt you have built up before getting back to your normal daytime life. If you have to work more nights, wear dark sunglasses on your way home. Exposure to bright sunlight is one of the key triggers for resetting your internal body clock back to its normal daytime routine. When you get home, try to sleep immediately. Studies show that shift workers who go to bed at 10 a.m. tend to sleep for four hours, while those who retire at midday get an hour less of sleep. If you are hungry, eat easily digestible food before going to bed. If you are thirsty, have something to drink but avoid caffeinated & alcoholic beverages. Although alcohol will help you relax & fall asleep initially, it disturbs the stages of