

SafeSupervisor

YOUR FRONT-LINE MANAGER SAFETY RESOURCE SINCE 1929

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Ask The Expert: Heat Stress Fact or Fiction

The following examples are a few of the myths and common misunderstandings about heat stress and heat illnesses from the CDC (Centers for Disease Control and Prevention).

MYTH 1: The difference between heat exhaustion and heat stroke is there is no sweating with heat stroke.

Exertional heat stroke victims may continue to produce sweat. If a worker is experiencing symptoms of heat stroke (confusion, loss of consciousness, seizures, high body temperature), whether they are sweating or not, it is a life-threatening emergency! Call 911 and try to cool the worker down.

MYTH 2: Taking a break in the air conditioning will ruin your acclimatization.

Acclimatization can usually be maintained for a few days of non-heat exposure, so taking a break in the air conditioning will not reduce a worker's level of acclimatization. And it is a very effective way for workers to cool down in a fairly short period of time.

MYTH 3: Acclimatization will protect you during a heat wave.

Acclimatization occurs when a person is exposed to extreme environmental conditions over a 7-10-day period. However, during heat waves air temperatures rise above normal quickly, and workers will not be able to immediately acclimatize to the new, hotter temperatures. During heat waves, workers will need more breaks and rescheduling some of the harder and hotter job tasks may be warranted.

MYTH 4: Salt tablets are a great way to restore electrolytes lost during sweating.

Salt tablets should never be used unless a worker is instructed to do so by their doctor. Most people can restore electrolytes through normal meals and snacks. Workers should drink plenty of water with their meals and snacks, not only to stay hydrated but also to aid digestion. Moreover, ingestion of too much salt may cause nausea and vomiting which can worsen the level dehydration already present.

MYTH 5: Medications/health conditions will not affect a worker's ability to work safely in the heat.

A worker's health and medication usage may affect how their body handles high temperatures and heavy physical exertion.

Some health problems that may put a worker at a greater heat illness risk include: obesity, diabetes, cardiovascular disease, and even common colds and the flu—especially if the illness is accompanied by a fever and vomiting.

Certain medications may affect the body's ability to cool down or may cause the body to heat up more quickly.

Examples of medications that increase risk are diuretics, antihypertensives, and anticholinergics.

Workers with health conditions or who are taking medications should discuss with their physicians about how they may be at additional risk if working in a hot environment.

Source: <https://blogs.cdc.gov/niosh-science-blog/2011/08/12/heat-2/>

FATALITY FILES *TOO HOT*

Cold drinks are essential to ward off heat. But drinking alcoholic or caffeinated beverages, such as coffee, teas, and colas, are not recommended for optimal hydration. These fluids tend to pull water from the body and promote dehydration.

The Moral: Make sure your workers keep themselves properly hydrated when they work in hot conditions.

WHAT'S AT STAKE

Meet the Late Anthony Dalton

... continued on pg 2

May 20, 1992

Boilermakers Anthony Dalton and Ronald Morrissey report for their first day of work repairing pipes in a New Brunswick paper mill.

New Brunswick is in Canada. So the last thing Dalton and Morrissey are expecting is 94° F and 35% humidity. It's even hotter inside the mill where chemicals are heated in enclosed spaces—especially on the scaffolds where the men are working.

Dalton and Morrissey work all day in the heat. Dalton starts experiencing fatigue. It's the first warning of danger. But since neither man has received any training about the dangers of heat stress, it goes unrecognized. Opportunity lost.

May 21, 1992

99° F, 33% humidity. Dalton and Morrissey work the entire day. Dalton is getting worse. When the two get back to their motel after work, Dalton has muscle cramps. He's exhausted. He passes out on the bathroom floor of the motel room. He drinks a beer, not realizing that the last thing somebody in his condition should do is drink alcohol.

May 22, 1992

101° F. Dalton manages to drag himself to work. He spends the morning inside one of the tanks helping to build a scaffold. He's in big trouble. After his afternoon break, he tells the supervisor that he's just too exhausted to go back to work. He sits on the floor with his back against the base of a column. When the shift ends, he can barely stand up. He's incoherent. He stumbles about 100 yards and finally collapses. Even now, nobody knows what's wrong. The ambulance takes Dalton to the hospital. But it's too late. Dalton dies of heat stroke the next day.

The Moral

Perhaps the saddest part of the death of Anthony Dalton is that it could have been prevented. There was ample warning: Dalton's fatigue, the cramps, his passing out on the bathroom floor, etc. Anybody attuned to the signs of heat stress would have recognized what was going on and acted while there was still time. Tragically, because none of the workers or supervisors with whom Dalton worked had received any education on heat stress, every opportunity to save him was missed.

Work/Rest Times and Fluid Replacement Guide

Heat Category	WBGT Index (°F)	Easy Work Walking on hard surface, 2.5 mph, <30 lb. load; weapon maintenance, marksmanship training.		Moderate Work Patrolling, walking in sand, 2.5 mph, no load; calisthenics.		Hard Work Walking in sand, 2.5 mph, with load; field assaults.	
		Work/Rest (minutes)	Fluid Intake (quarts/hour)	Work/Rest (minutes)	Fluid Intake (quarts/hour)	Work/Rest (minutes)	Fluid Intake (quarts/hour)
1	78° - 81.9°	NL	½	NL	¾	40/20 (70)*	¾ (1)*
2 (GREEN)	82° - 84.9°	NL	½	50/10 (150)*	¾ (1)*	30/30 (65)*	1 (1¼)*
3 (YELLOW)	85° - 87.9°	NL	¾	40/20 (100)*	¾ (1)*	30/30 (55)*	1 (1¼)*
4 (RED)	88° - 89.9°	NL	¾	30/30 (80)*	¾ (1¼)*	20/40 (50)*	1 (1¼)*
5 (BLACK)	> 90°	50/10 (180)*	1	20/40 (70)*	1 (1¼)*	10/50 (45)*	1 (1¼)*
NL = No limit to work time per hour.				*Use the amounts in parentheses for continuous work when rest breaks are not possible. Leaders should ensure several hours of rest and rehydration time after continuous work.			

This guidance will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/hr) and exposure to full sun or full shade (± ¼ qt/hr). Rest means minimal physical activity (sitting or standing) in the shade if possible. Body Armor - Add 5°F to WBGT index in humid climates. NBC (MOPP 4) - Add 10°F (Easy Work) or 20°F (Moderate or Hard Work) to WBGT Index.

CAUTION: Hourly fluid intake should not exceed 1½ qts. Daily fluid intake should not exceed 12 qts.

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PARK. LOOK. LOCK.

Never leave a child alone in a car.
Remember to A-C-T.



A Avoid Heatstroke

Avoid heatstroke-related injury and death by never leaving a child alone in a car, not even for a minute. And make sure to keep your car locked when you're not inside so kids don't get in on their own.



C Create Reminders

Keep a stuffed animal or other memento in your child's car seat when it's empty, and move it to the front seat as a visual reminder when your child is in the back seat. Or place and secure your phone, briefcase or purse in the backseat when traveling with your child.



T Take Action

If you see a child alone in a car, call 911. Emergency personnel want you to call. They are trained to respond to these situations.

Picture This: You Make The Call

Pretend you're the supervisor who instructed this chap to do this work. First, discuss what could have been done in advance to make this scene safer. Second, discuss what your reaction would be if you pulled up to this scene and saw how the work was being performed.

What could have been done in advance?

Conduct a hazard assessment to determine hazards – present and anticipated – and control measures that must be in place before work begins.

- PPE needed – safety glasses, hearing protection, possibly a faces shield. What else?
- Traffic control.
- Possible solution to ergonomic issues related to awkward/bent posture. Though the hazard assessment might determine the risk for an ergonomic injury is low and no control is needed.

What would you do if you arrived upon this scene?

Ask the worker if he was instructed to wear PPE – and if so, find out why he wasn't wearing it.

- Was it not provided?

- Did he forget it?
- Was the fit or something else wrong with it?

Discuss traffic hazards and if anything needs to be done to address these hazards.

Check with worker regarding his awkward bent posture. If the work can't be performed in a different position, talk to the worker about taking regular rest breaks.

What other hazards and subsequent control measures can you come up with?



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Some Medications Are the Wrong Prescription for Safety

What's At Stake

We all know that illegal drugs such as marijuana or cocaine are hazardous to use. We also know that alcohol is prohibited at work because it is, obviously, intoxicating. But did you know that many other drugs that we take for granted can also affect your ability to do your job safely?

What's the Danger?

Back pain, allergies and other medical conditions, including colds and the flu, are often treated with prescription and over-the-counter medications. These medications, even those sold without a prescription, can make it unsafe for you to operate a motor vehicle or workplace machinery. And the effects may be more severe if you are tired or ill.

Example

A ferry pilot was convicted of manslaughter in connection with a fatal ferry crash in New York Harbor and sentenced to 18 months jail.

Assistant Capt. Richard Smith, who was fatigued and taking painkillers, blacked out at the controls of the Staten Island ferry on October 15, 2003. The ferry, carrying 1,500 passengers, slammed into a concrete pier at full speed, killing 11 passengers and injuring dozens of others.

The painkillers he was taking, Tramadol and Tylenol PM, list drowsiness among their possible side effects.

Smith pleaded guilty to a charge of negligent manslaughter and apologized in court to families of those killed and injured, adding 'I will regret for the rest of my life that I did not just call in sick.'

How to Protect Yourself

As a responsible person you might stop taking the drug or choose not to drive when you become aware of the effect. But this awareness can come too late, with a traffic crash or workplace injury before you realize you cannot think or react as fast as usual.

Here are some guidelines for safer use of prescription and over-the-counter medications:

1. Talk to your doctor or pharmacist about the effects of prescription and nonprescription drugs you will be taking that may affect your ability to perform safely.
2. Let your supervisor know of any such restrictions.
3. Make arrangements to avoid driving and operating machinery until you are sure you will not be affected.
4. Read the labels and printed material which accompany the medicine, and strictly follow the instructions.
5. Carry a list of all your prescription and over-the-counter medicines with you, including any vitamins, minerals and other products.
6. Be ready for effects to be more pronounced when you first

begin taking the drug. For instance, anti-depressants can cause sleepiness for a new user who later adjusts to the chemical change. Try your first doses in a safe environment.

7. Do not skip taking your prescription medicines.
8. Do not take more than the suggested dose of prescription and non-prescription drugs.
9. Do not share prescription medicines.
10. Talk to your doctor or pharmacist about how long you should use the remedies and when you should start to feel better.

Final Word

It's important to be aware of the possible dangers of using prescription drugs and over-the-counter remedies prior to or during work shifts. Be sure to follow all directions and precautions carefully. Talk to your supervisor if you have doubts about your ability to work safely when you are taking a medication.

Quiz

1. Only prescription drugs have side effects that may interfere with your ability to safely do your job.
 True
 False
2. If your job doesn't involve driving, you don't need to worry about side effects of prescription or over-the-counter medication.
 True
 False
3. How do you find out if your medication may affect your ability to perform safely?

4. When taking any form of medication, what should you carry with you at all times?

What Would You Do?

You're working a table saw and a co-worker comes up to ask you a question. It's an easy question with a quick answer, but it means taking your eyes off your work. What would you do?

SAFETY TALK *STRUCK-BY/CAUGHT-BETWEEN*

Stay Alert to Stay Alive

What's At Stake

Struck-by and caught-between hazards account for over 1,500 workplace deaths a year and are present in almost every industry sector.

While they can happen anywhere, the hazards are most common in:

- Work zones;
- Working with or around heavy equipment;
- During overhead and scaffold work; and
- Construction work, including excavation work and the construction of concrete walls.

What's the Danger?

When an injury is caused from the impact of being hit by something it is considered a struck-by incident. When an injury happens from being pulled into or crushed between two or more objects it is considered a caught-between incident.

How to Protect Yourself

To protect yourself from struck-by hazards:

- Ensure all hand tools are maintained in good condition.
- Only use powder-actuated tools if you are trained and authorized to do so.
- Never use compressed air for cleaning your clothes, equipment, or anything else.
- Don't forget to secure all materials and tools if you're working at heights and check that toe boards are installed along the edge of overhead walking and working surfaces and scaffolds.
- Use tag-lines to keep suspended loads controlled.
- Never walk under suspended loads. You could be struck or crushed by the load.
- Secure stacked materials to prevent sliding, falling or collapsing. Stacked materials are also struck-by and caught-between hazards.
- Finally, wear head, eye and face protection in areas where falling or flying objects are likely.

To protect yourself from caught in or between hazards:

- Use machinery that is properly guarded.
- Use methods such as blocking and cribbing, to ensure that machinery is supported, secured or otherwise made safe from unexpected moving, rolling, or shifting.
- Don't wear loose clothing or jewelry around moving parts, tools and equipment.
- Never get into a trench or excavation that isn't properly shored

or protected.

- Follow lockout/tagout procedures so equipment cannot be started accidentally when you are doing adjustments or maintenance.
- Always make eye contact with equipment operators before walking in front of, behind or around equipment and pay attention to back-up alarms on equipment and vehicles.

Final Word

Stay alert to struck-by and caught-between hazards to stay alive.

Quiz

1. Stacked materials and suspended loads are both struck-by and caught-between hazards.
 True
 False
2. Lockout/tagout does not play a role in protecting you against caught-between hazards.
 True
 False
3. Using compressed air to clean off equipment could result in debris being thrown around, causing a struck-by injury.
 True
 False
4. Toe boards can prevent tools from falling off a scaffold and striking a worker below.
 True
 False

What Would You Do?

You're operating a crane at a busy construction project. You've already had one close call this morning when a load you were lifting caught a gust of wind and started swinging wildly and almost hit a group of workers. What would you do to prevent this from happening again—with a possibly tragic outcome?

SAFETY TALK *EXCAVATION SAFETY*

Dig Deep for Trenching and Excavation Safety

What's At Stake

The fatality rate for excavation work is more than 100 percent higher than the rate for general construction work. On average, two workers are killed every month in trench collapses.

What's the Danger?

An excavation is any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways. A trench is defined as a narrow underground excavation that is deeper than it is wide. Trench and excavation workers face numerous hazards, including:

- Falls and falling loads.
- Being struck by or caught between moving equipment and fixed objects.
- Hazardous atmospheres, including oxygen-deficient and explosive atmospheres.
- Drowning.
- Electrocutation from contact with underground utilities.

Cave-ins are the most common and most feared trenching hazard, with good reason. Just one cubic yard or one cubic metre of soil can weigh as much as a car. If you were buried under that type of weight during a trench collapse, the crushing force of the dirt would suffocate you in as little as three minutes, even if you were only buried chest deep.

When a trench or excavation is cut into the earth it is never a matter of *if* it will collapse but *when* it will collapse. Unless it's solid rock, an unsupported trench or excavation will always pose a cave-in risk.

How to Protect Yourself

- Locate underground utilities prior to digging.
- Never go into an open dig that does not have a safe way in and out.
 - Ladders, steps or ramps should be provided for all trenches.
 - If you don't see a safe way in and out, don't go in.
 - Check with federal, state and provincial laws for exact requirements for safe means of access and egress.
- Never go into an open trench or excavation that does not have a protective system such as sloping, shoring or a prefabricated support system (a trench box or shield).
- Stay alert to these hazards:
 - Moving equipment and vehicle traffic
 - Trip hazards, such as rocks, tools and cords
 - Standing or rushing water

- Underground and overhead utilities
- Confirm that a competent person has inspected the trench or excavation daily and whenever conditions change—for example, after it rains or when the dig area is exposed to vibration from heavy equipment.
- Equipment and piles of dirt and rock should be kept at least three feet, or one metre, away from the edge of the excavation or trench.
- Always wear all required personal protective equipment (PPE).

Final Word

Don't get buried under your work. Dig deep and work safely in trenches and excavations.

Quiz

1. The only hazard you have to worry about in a trench is a cave-in.
 True
 False
2. Soil piles and equipment should be kept at least three feet or one metre back from the edge of an excavation.
 True
 False
3. An unsupported excavation or trench will likely not cave in.
 True
 False
4. A competent person must inspect the trench how often?
 - a. Daily
 - b. Weekly
 - c. When conditions change
 - d. Both A and C

What Would You Do?

A water pipe burst and has left half your town's residents without drinkable water. Your crew is responsible for the dig and repair work. You know there's pressure to get the pipe fixed quickly and stop the leak but you don't see a ladder or any other way to get in or out of the trench safely. What should you do?

Workplace Stress is the Fifth Leading Cause of Death

Did You Know?

The workplace was the fifth leading cause of death in the US & Canada, responsible for some 120,000 deaths and approximately \$190 billion in additional costs each year (Centers for Disease Control and Prevention). Work is one of the leading causes of stress, and the physiological effects of stress on blood chemistry, including cholesterol levels, the immune system, and metabolic functioning have been well-established.

Here are 15 statistics unearthed by a survey conducted by Harris Poll in August of 2017. Not surprising work and money are the main sources for stress.

- 8 in 10 North Americans are afflicted with stress.
- 79% of North Americans feel stress sometimes or frequently in their daily lives
- 17% say they rarely feel stressed and 4% say they never feel stress
- 4 in 10 U.S. & Canadian Adults (41%) say they lack sufficient time to do all they want
- 80% of working people feel stress on the job and half of them need help in managing stress
- 65% of working people said that workplace stress had caused difficulties and more than 10% described these as having major effects
- 10% said they work in a violent atmosphere due to workplace stress
- 42% of working people reported that yelling and verbal abuse is common
- 29% had yelled at co-workers due to workplace stress
- 14% said they work in those environments where machinery or equipment has been damaged
- 1 in 5 respondents had quit their earlier jobs and 1 in 4 had been driven to tears due to workplace stress
- 62% working people end their day with work-related neck pain, 44% with stressed out eyes, 38% complained of hurting hands and 34% with difficulty in sleeping due to stressed-out condition
- \$300 billion in lost productivity annually to employers due to workplace stress
- Well-being Index among U.S. adults have dropped from 62.1 to 61.5 from the year 2016 to 2017
- North American's stress level, on a 10-point scale has increased from 4.8 to 5.1 between August 2016 and January 2017

Keep in Mind

Work-related stress has been around for a long time. But recognition of stress as an occupational hazard is a product of modern times.

Unfortunately, not all companies have gotten the message. That leaves it to safety directors and supervisors to persuade management that stress really is a problem to take seriously. The best way to do that is to relate the problem to dollars.

Workplace stress hurts profits because it increases absences and cuts productivity. According to a press release from the World Congress on Health and Safety at Work, of the 40.2 million working days annually lost by businesses worldwide, 13.4 million are from stress, anxiety, and depression.

How Does Workplace Stress Hurt Business?

This is tricky because stress isn't a line item cost listed on the typical profit and loss statement. It's a bundle of hidden costs. There are five elements in this bundle that you should point to:

1. Higher Injury & Illness Rates

The more stress workers experience at work, the more likely they are to engage in unsafe behavior. The result is more incidents involving personal injury and/or damage to equipment and machinery. The link between stress and incidents isn't just a matter of common sense; it's well documented.

2. Increased Absenteeism

Studies confirm that workers under stress are more apt to call in absent—either because they're genuinely ill or they're feigning illness to avoid having to go to work.

3. Higher Turnover

Stress at work also causes people to leave the company. In addition to losing good people, companies incur high administrative costs in seeking replacements. And, replacement costs tend to rise to the extent that the company gains a reputation for being a stressful place to work.

4. Premature Retirement

Stress causes older and more senior workers to retire before they're ready. Result: High replacement costs and in many cases lump sum and pension payments.

5. Reduced Productivity

Workplace stress harms workers' productivity and performance. The effect of stress on productivity is hard to measure; but it is real.

Conclusion

There's nothing mystical about workplace stress. It can be managed. The only way to secure the necessary resources is to persuade your CEO that workplace stress poses a serious threat to your workers and your company's bottom line.

TRAIN THE TRAINER

Understanding Shiftworks Impact

Many employers, such as manufacturing plants, utilities and healthcare facilities, operate 24 hours a day, seven days a week. So their workers must work shifts, some of which are overnight. Workers may also be scheduled to work a night shift one week and then a day shift the next. Shiftwork takes its toll. It throws off workers' "circadian rhythm" or natural body clock, making it hard for them to sleep when they're off duty. Shiftworkers are also prone to develop certain kinds of illnesses and because they're often fatigued, they're more vulnerable to safety incidents.

The Impact of Shiftwork on Safety & Company Performance

Shiftworkers face considerable challenges. Their morale is often low. Their family and social lives may suffer because of their irregular hours, which contributes to their stress. The quantity and quality of shift workers' sleep is also typically low. So it's no surprise that sleep disorders, such as obstructive sleep apnea, are commonplace among shiftworkers. Shiftwork has also been associated with an increased risk of:

- Cardiovascular disease;
- Gastrointestinal disorders;
- Obesity; and
- Diabetes.

And the increased prevalence of such health problems often results in shiftworkers' increased use of medication, which can adversely affect their job performance.

How exactly do these problems impact employers? The medical ailments that shiftwork causes or contributes to all have an erosive impact on workers' productivity. And workers with such ailments utilize health services and drugs at a high rate and so drive up the company's health insurance costs.

How bad is the problem? Shiftwork costs U.S. companies approximately \$206 billion a year, or about \$8,600 per shiftworker per year (based on 24 million shiftworkers). Shiftwork drives up employers' costs by increasing:

- Absenteeism;
- Turnover;
- Medical care;
- Safety incidents; and
- Production errors.

Training Shiftworkers

The good news is that workers can be trained to cope better with the rigors of shiftwork. A study by Circadian Technologies, an international consulting firm that specializes in shiftwork issues, shows that giving workers shiftwork lifestyle training can reduce safety incidents, absenteeism and turnover—all of which cost the

company money. In addition to saving money, shiftwork lifestyle training can also enhance revenues in the form of improved morale and productivity.

The study focused on a group of heavy equipment operators that worked shifts for a major surface mining company in the U.S. To establish a pre-training baseline, the shiftworkers filled out sleep/wake logs for a 28-day shift cycle. They also completed diagnostic surveys about their:

- Sleep habits;
- Lifestyle;
- Family/home life;
- Fatigue and alertness; and
- Health and safety.

The shiftworkers and their spouses or partners then attended the "Managing a Shiftwork Lifestyle" training workshop. (Because shiftwork impacts workers' families, involving family members in the training maximizes its benefits.) The workshop consisted of small groups of shiftworkers. Expert trainers delivered the training in a single four-hour session. During the session, they gave shiftworkers and their family members practical information on the special issues associated with shiftwork, including such topics as:

- Eating more nutritiously;
- Managing fatigue and alertness levels;
- Getting more and better quality sleep;
- Using naps effectively; and
- Balancing work and home life.

The sessions were interactive so shiftworkers could raise particular problem areas and share tips with each other. About six weeks after attending the workshop, 74% of the original shiftworkers filled out an additional month of sleep/wake logs and 68% of the original group completed a post-training survey.

The Study's Results

The researchers compared the operators' pre- and post-training information in the following areas:

Overall health. Before attending the workshop, 77% of the shiftworkers felt that their overall health would improve with a different schedule, as compared to 59% after the workshop. This finding could be the result of the shiftworkers' better understanding of how their own personal circadian rhythms are affected by their current schedules. It could also reflect the fact that a high percentage of shiftworkers was more aware of good nutrition and was incorporating healthy eating habits into their lifestyles.

The surveys included a series of scientifically validated instruments to evaluate health status, including a gastrointestinal index. The post-training improvement in this index was quite dramatic—dropping from

a score of 17.9 to 13.6. Because heartburn, indigestion and other types of gastrointestinal problems were frequent complaints for the shiftworkers, this result was very favorable. And the reduction in gastrointestinal score could represent a significant reduction in medical costs for the company. (The study didn't analyze the company's costs pre- and post-training.)

Use of caffeine. The study looked at the shiftworkers' caffeine use as high caffeine use is related to an increased frequency of both gastrointestinal disorders and sleep disorders. Excessive caffeine use— defined as drinking more than four 12 oz. servings of a caffeinated beverage in a 24-hour period— decreased from 24% of the shiftworkers to 16% during off-duty hours. The decrease in excessive caffeine use during night shifts was even more impressive: such use decreased from 32% of the shiftworkers to only 8%. And this reduction could result in significant improvements in the shiftworkers' health.

Sleep habits. Overall, the shiftworkers' sleep habits improved significantly. More than 54% of the shiftworkers indicated that they'd made some changes to their sleeping environment to enhance their ability to fall asleep and stay asleep, especially during the day. Those changes seem to have paid off.

The average amount of sleep shiftworkers got during the day (when working night shifts) increased a full hour from 4.8 hours to 5.8 hours (a 21% increase). In addition, 67% of the shiftworkers reported getting more than five hours of daytime sleep while working nights, compared to 45% before the workshop. Also, after the training, only 67% reported staying awake for more than 18 hours in the prior week, compared to 82% before the training. And improved sleep and reduced fatigue directly correlate with improved alertness, safety and performance.

Management of work/family balance. After attending the workshop, shiftworkers were better able to balance work and their family lives. For example, before the training, 41% found it "very" or "often" difficult to fulfill their domestic responsibilities; after the training, only 23% felt that way. Also, 46% reported difficulty finding adequate time for entertainment and recreational activities, compared to only 23% after the workshop. These results can be attributed to the shiftworkers' having a better overall management of work and family issues.

Overall, the workshop was well received by both the shiftworkers and management. The shiftworkers felt better and were more alert after attending the workshop. And management described the program as "a very positive breakthrough."

Meaning of the Results

What do these results mean for your company? The study's results demonstrate that shiftwork lifestyle training can improve shiftworkers' ability to handle and manage the problems that shiftwork can create and thus improve their overall health, sleep habits and job performance. Improving these aspects of workers'



lives isn't just a "nice thing to do." It enables a company to realize real savings.

Data on the mining company's costs pre- and post-training wasn't available. But Circadian surveyed 550 managers from companies that used shiftworkers. It found that companies that provided training for shiftworkers:

- Had better worker morale;
- Had fewer severe or moderate fatigue issues;
- Had lower levels of turnover and absenteeism, especially if workers' families were included in the training; and
- Most notably, had significantly lower turnover costs, such as the cost of recruiting, hiring and training new workers, and costs related to absenteeism, such as the additional pay for a replacement worker while a shiftworker is absent.

Costs saved included:

- Cost of shiftwork lifestyle training: between \$50 and \$150 per worker (depending on the number of workers in each training session);
- Reduced turnover costs: annual savings of \$952 per worker; and
- Reduced absenteeism costs: annual savings of \$940 per worker.

So given the savings in absenteeism, turnover and other performance areas, it's clear that shiftwork lifestyle training is extremely cost effective.

Conclusion

The study shows that if a company can improve the quality of life of its shiftworkers and help them better manage the challenges posed by shiftwork, it can reduce absenteeism, turnover, safety incidents and workers' compensation claims. You should be able to use this study to convince management that investing in a lifestyle training program for shiftworkers will pay off.

CHECKLIST

Near Miss

A near miss is a chain of events that very nearly results in property damage, serious injury, or death, but not quite. The official definition of a near miss is: "an unplanned event that had the potential to result in an injury or physical damage (but did not)."

A near miss is not a lucky break. A near miss is an indication of a problem, either systematic or mechanical, that has very real potential for hazard. It's a red flag calling for change to ensure that a similar situation in future doesn't result in worker injuries or deaths.

A near miss can occur in virtually every industry. Many incidents of property damage, injury or death can be predicted by near misses. Engaging a near miss as a preemptive problem-solving opportunity is crucial.

If an unsafe act or condition causes a near miss and it isn't corrected, the likelihood of a serious injury or incident occurring goes up. The danger is not from the near miss itself, but from:

- Not acting in the incident by not recognizing it as a near miss.
- Not following the correct reporting procedure.
- The relevant people not taking appropriate and timely action to remove the risk.

Definition: A near miss is defined as an incident in which no property was damaged and no personal injury was sustained, but where, given a slight shift in time or position, damage or injury easily could have occurred. Near misses also may be referred to as close calls, near accidents, accident precursors, injury-free events and, in the case of moving objects, near collisions.

PREVENTION

Near Miss Program Environmental, health and safety departments at five Fortune 500 companies, created the following steps for setting up a successful Near-Miss Program:

- Create a clear definition of a near miss.
- Make a written disclosure and report the identified near miss.
- Prioritize reports and classify information for future actions.
- Distribute information to the people involved in the near miss.
- Analyze the causes of the problem.
- Identify solutions to the problem.
- Disseminate the solutions to the people impacted.
- Resolve all actions and check any changes.

Other Steps:

- A bulletin board reporting form is one way to increase awareness of near misses. Workers fill out a simple form which gets posted on the bulletin board for all to see.
- Bring close call reports to your regular safety meetings. Have workers talk about how to prevent future incidents.

- Explain to your workers that the terms "close call" and "near miss" are used interchangeably. Ask them for their definitions of these terms and make sure everyone understands what they mean. Likewise, explain what is meant by "safety incident" which covers injuries and close calls.

A system of reporting of the near-miss/adverse incidents should be established to achieve a culture-based safety system:

- Define expectations that all employees report unsafe conditions or perceived risks & provide employees with safety training.
- Provide measurement for how near-miss reporting has improved safety performance & recognize and reward employees and crews for pro-active safety actions.
- Close call incidents trigger the fact that something is seriously wrong. They allow us the opportunity to investigate and correct the situation before the same thing happens again and causes an injury or death.
- Experience has proven that if the causes of accidents are not removed, the potential for an accident will occur again and again. Unfortunately, a typical story told after many accidents is; "Yeah, that happened to Jim as well - just last week!"

Why are close call incidents not reported? Typical reasons are: fear of reprimand or repercussions, red tape, not being aware of their importance in controlling future accidents, embarrassment, the spoiling of a safety or production record or lack of feedback when similar issues have previously been raised. If you keep silent about a close call - you may avoid having to deal with it. But try to explain that to a co-worker who ends up in a wheelchair because of a hazard that you knew existed but were too proud to talk about.

Controlling close call incidents is really the secret to reducing the overall frequency of accidents. But the vital part is to apply corrective action immediately.

If you nearly run into material, such as carelessly stored products protruding into an aisle, deal with the hazard or notify your supervisor before the next worker or customer to come along gets hurt.

Make sure you understand each near-miss scenario you encounter, including what went wrong, each possible outcome of the incident and how to address the hazards. Be wary of how your co-workers conduct themselves and work together to prevent injury and safeguard one another from incidents. Compare your routines and habits with theirs and share tips.

Take responsibility for the equipment or machinery you use frequently. If this equipment or machinery causes you problems or appears to be broken, report it to your supervisor.

Ensure you understand and follow all safety procedures. If you want to review or brush up on your safety training, or if you are confused about a particular procedure, talk to your supervisor without delay.