Overwork/Fatigue: Fatality Report

INCIDENT

After one 14-hour shift, being “worked to death” took on a whole different meaning for Robert Dietz and his family. Dietz worked for the Lower Bucks County Joint Municipal Authority in Pennsylvania. He put in over 20 years of service as a maintenance worker. Even with his higher status, Dietz found himself regularly working long hours doing manual labor: jack-hammering, repairing water main breaks, cutting tree roots.

Nearing the end of an especially grueling day, Dietz collapsed. First responders could not resuscitate him. Shortly after, he was pronounced dead.

Some doctors explained that Dietz’s preexisting conditions put him at high risk for a heart attack, while others stated his conditions paired with extraneous physical labor caused his death.

The workers comp judge agreed with the latter.

Despite the outcome of the workers’ comp claim filed by Dietz’s widow, it’s important to see how fatigue and individual worker health plays a huge role in worker safety. Dietz’s fatal heart attack may have been prevented had Dietz’s employer been more invested in work/life balance and wellness.

NEED TO KNOW

Workers suffering from fatigue—physical and mental—are not only less productive and more prone to illness but also more distracted and thus more likely to be involved in a safety incident.

Fatigue can be broadly defined as a feeling of weariness, tiredness or lack of energy. Fatigue is a common complaint but, medically speaking, it’s recognized more as a symptom or cause of other conditions than as a condition itself. The best way to understand fatigue is along a continuum. On one end of the spectrum is the fatigue that most of us occasionally experience in the course of our lives when we get physically or mentally overburdened. This kind of fatigue isn’t serious and can usually be resolved simply and quickly, such as by getting extra rest. On the other end is a less common but more serious form of fatigue that’s symptomatic of a more chronic and disabling condition, such as major depressive disorder or chronic fatigue syndrome. This form of fatigue is an acute and/or ongoing state of tiredness that leads to mental or physical exhaustion and prevents people from functioning as usual.

Fatigue clearly impairs work ability. Studies have shown that workers with fatigue are significantly more likely to miss work and experience long-term work absences

than workers without fatigue

You’re an accident waiting to happen if you are not alert at work. This applies to most high-risk jobs, trucking and transport jobs, repetitive jobs, such as sorting logs in a lumber mill, and a host of other jobs – regardless of the inherent risk level.

What’s the Danger?

The risk of making mistakes at work increases dramatically if workers sleep for less than seven to eight hours or are awake for more than 17 consecutive hours.

- Fatigue reduces your ability to make decisions and to do complex planning.
- Communication skills and your ability to respond to and remember directions and recall details also suffer.
- Fatigue slows your reaction time, and your ability to respond to changes in surroundings or information provided.
- It also shortens your attention span, especially during boring or mundane tasks.
- Fatigue lowers your productivity and performance and your ability to handle stress.
- It makes it hard to stay awake, increases forgetfulness and increases errors in judgment.

Experiencing one or more of these factors can make you dangerous to work with, because it increases the chances for incidents and injuries.

Electricity, toxic chemicals, bone-crushing machines, fall hazards and fire are just some of the dangers the 20th century workplace health and safety programs were designed to root out.

The safety program of the new millennium must deal not just with these old enemies but new threats that are still not fully recognized or understood—**ERGONOMICS, WORKPLACE VIOLENCE, MENTAL STRESS AND WHAT MAY BE THE NEWEST OF THE NEWFANGLED HAZARDS**—Fatigue.

BUSINESS/REGULATION

Fatigue increases the risk of injuries or other accidents. As an employer, ensure your workers are not experiencing signs or effects of fatigue on the job. You can help make your workers and your business safer by including information on fatigue and sleep in your safety guidelines and orientations. You can also develop a fatigue management plan.

Fatigue is a state of feeling very tired, exhausted, weary, or sleepy. Fatigue results from a lack of sleep and can be heightened from prolonged mental activity or long periods of stress or anxiety. Boring or repetitive tasks can also intensify feelings of fatigue.

Fatigue can be acute or chronic.

Acute fatigue results from a sudden onset of short-term sleep loss, such as getting less sleep than normal before a work shift. Adequate sleep is necessary to reverse the effects of acute fatigue. Chronic fatigue is a long-term state that results from an extended loss of necessary sleep. A sleep debt can build over weeks or months from a reduction or disruption of a normal sleep routine.

How to help your workers stay safe

Create shift schedules that give workers enough time

If the job requires long hours or overtime, consider that your workers will need enough time for other daily activities, such as commuting, preparing and eating

meals, socializing, and relaxing.

Provide a work environment that has good lighting, comfortable temperatures, and reasonable noise levels.

Ensure that jobs provide some variety, with work tasks that change throughout the shift. Be flexible when assigning tasks – assign workers who may be fatigued to tasks that aren't safety sensitive.

If your workplace has long shifts or frequent overtime, consider providing amenities, such as the following:

- Prepared meals
- On-site accommodations
- Facilities where workers can nap either during the shift or before driving home

What Can Employers Do?

Employers can reduce the risk of worker fatigue in the workplace by:

- Examining staffing issues such as workload, work hours, understaffing and worker absences, scheduled and unscheduled, which can contribute to worker fatigue.
- Arranging schedules to allow frequent opportunities for rest breaks and nighttime sleep.
- Making adjustments to the work environment such as lighting, temperature and physical surroundings to increase alertness.
- Providing worker education and training addressing the hazards of worker fatigue, the symptoms of worker fatigue, the impact of fatigue on health and relationships, adequate quality and quantity of sleep and the importance of diet, exercise and stress management strategies to minimize the adverse effects of fatigue.
- Consider implementing a Fatigue Risk Management Plan under which, like other risk factors, fatigue can be managed.

What is a Fatigue Risk Management Program?

Several federal agencies and national organizations have developed fatigue risk management program information. Some federal agencies and states have laws restricting the number of hours a worker can be on the job. These resources can assist your company in developing guidelines for work hours and for a Fatigue Risk Management Program.

The Federal Aviation Administration Fatigue Management Toolbox provides fatigue awareness tools, training and education programs, assessment tools and tips for implementing a fatigue management system in the workplace. The toolbox contains colorful downloadable posters to display in the workplace.

The United States Coast Guard Crew Endurance Management Practices Guide outlines a program for controlling risk factors that affect crew member performance and shipboard safety in the commercial maritime industry.

The United States National Response Team Technical Assistance Document designed for disaster workers, includes practical information about incident-specific fatigue management plans to assist organizations to address fatigue issues among disaster workers.

The American Petroleum Institute issued "Fatigue Prevention Guidelines for Personnel in the Refining and Petroleum Industries (Standard RP 755)" in response to the 2005 Texas City BP refinery explosion.

IPIECA (formerly the International Petroleum Industry Environmental Conservation Association) issued "Managing Fatigue in the Workplace" to assist oil and gas

industry supervisors and occupational health practitioners understand, recognize and manage fatigue in the workplace.

The American College of Occupational and Environmental Medicine (ACOEM) published "Fatigue Risk Management in the Workplace: 2012 Guidance Statement" to provide background, key concepts and references needed to promote a Fatigue Risk Management System.

OSHA FATIGUE POLICY

While there is no specific OSHA policy on extended or unusual shifts, the **Fair Labor Standards Act (FLSA)** states that, "**Any work over 40 hours in a 168-hour period is counted as overtime**." The FLSA applies to employees who work in interstate commerce, hospitals, schools, day workers, chauffeurs, cooks, housekeepers, and full-time babysitters.

Workplace fatigue has been studied in other fields, such as aviation, the military, law enforcement, firefighting, healthcare, transportation, and emergency rescue.

According to experts, employers act to mitigate the risk of fatigue in the working environment. Not surprisingly, the federal agencies mentioned above also describe actions that individuals also can take to make sure they do not fall victim to fatigue and inflict injury on themselves, the public or their co-workers.

WHERE TO GET TRAINING

OSHA has produced a **10-HOUR SAFETY TRAINING COURSE** that teaches managers and their employees how to maintain a safe working environment. Aimed at electricians, mechanics, environmental health and safety personnel, maintenance technicians, owners & managers, and a host of others, the course explains which **OSHA Rules** are most frequently violated and how companies can reduce instance costs by avoiding citations.

Signs and symptoms of fatigue

Train supervisors and workers to recognize the immediate signs and symptoms of fatigue, which include the following:

- Tiredness or sleepiness
- Memory lapses
- Difficulty concentrating
- Slower reaction times

STATISTICS

workplace safety and a worker's ability to perform efficiently. Here are seven statistics relating to fatigue in the workplace

1. There are three causes of fatigue: sleep loss, disruption of a person's body clock, and prolonged mental or physical activity.
2. Fatigue can reduce a worker's alertness, leading to errors and an increased possibility of injury under these two conditions: either when operating equipment or vehicles, or when performing important tasks requiring considerable concentration.
3. Seven long-term health effects of fatigue include increased risk for heart disease, high blood pressure, gastrointestinal disorders, diabetes, anxiety, depression, and reduced fertility. (Safe Work Australia)
4. A University of Pittsburgh School of Medicine study found that fatigued workers had nearly twice the risk for injury compared to non-fatigued workers.
5. Five symptoms indicating that a worker is experiencing fatigue include excessive yawning or falling asleep at work; impaired decision-making ability; short-term

memory impairment and reduced concentration; slowed reflexes and reduced hand-eye coordination; and a noticeable decrease in one's ability to communicate clearly.
6. One major cause of fatigue is a work schedule that limits the amount of rest time a worker has before starting the next shift, because of issues such as overtime on the previous shift.
7. Three things supervisors can do to reduce fatigue among their workers are: allowing workers to vary their work tasks to avoid monotony; allowing workers to take short power-nap breaks, especially on the night shift; and encouraging workers to manage their fatigue risk factors. Risk factors include cutting sleep time short to complete tasks or to read, use a computer or watch TV, and consuming excessive nicotine, alcohol or caffeine, especially in the hours close to bedtime.

Bottom Line Analysis

- It is estimated that workers with fatigue cost U.S. employers $136.4 billion a year in health-related lost productivity time $100 million more than workers without fatigue.
- Individually, fatigue reduces productivity to the time of 1,961 per worker each year.

Workplace Fatigue Statistics and its Staggering Costs (2019)

Occupational fatigue is a frightening yet mostly overlooked health condition that affects a majority of the labor force in North America. Because of the lack of awareness, people tend to misunderstand it as a normal part of working and underestimate it. But, there's more to workplace fatigue than just being tired.

To have a better understanding of what occupational fatigue is and its effects, here are some statistics to be aware of.

1. More than 69% of workers feel fatigued at work

According to a 2018 survey report by the National Safety Council (NSC), two-thirds of the US labor force experiences workplace fatigue. This means that almost 107 million out of the 160 million US workers are affected by occupational fatigue.

Fatigue, **which can be either acute or chronic**, is defined by the NSC as "feelings of tiredness, sleepiness, reduced energy, and increased effort needed to perform tasks at a desired level."

2. Losing even two hours of sleep is similar to the effect of having three beers

The Canadian Centre for Occupational Health and Safety expands on those numbers with the following:

- Staying awake for 17 hours is equivalent to having a blood-alcohol content (BAC) of 0.05
- Staying awake for 21 hours is equivalent to having a BAC of 0.08
- Staying awake for 24 hours is equivalent to having a BAC of 0.10

3. Fatigued people are 3 times more likely to be in a car crash

In 2005, the American Sleep Foundation statistics reported that:

- 60% of adult drivers, or 168 million people, reported driving while feeling drowsy.
- 37%, or 103 million people, have fallen asleep while driving.
- 13% of adult drivers confessed to driving while drowsy at least once a month.
- 4%, or 11 million people, had or almost had an accident due to fatigued driving.

4. 59% of night shift workers sleep less than 7 hours a day

Night shift workers are at a higher risk of developing occupational fatigue because they tend to sleep less than day workers.

5. The risk of injury on night shifts is 30% higher than day shifts

Fatigue-related safety risks peak during night shifts, **particularly between 2 am and 6 am**.

Sleep debt is the cumulative effect of regular lack of sleep. **For example, after losing two hours of sleep every day for ten days, your performance on the eleventh day will be as if you didn't have any sleep at all.**

6. 97% of fatigued workers have reduced cognitive performance

Cognitively demanding tasks include:

- **Monotonous tasks-**These are unstimulating and monotonous tasks like driving on the highway.
- **High alert tasks –**These are tasks like assembly line work wherein vigilance is a must.
- **Repetitive tasks –**Tasks that only use a limited number of muscles groups like data entry are repetitive tasks.

7. Workers with sleep problems are 1.62 times more likely to get injured than workers with no sleep issues

According to statistics released by the National Institute of Neurological Disorders and Stroke, about 40 million Americans suffer from chronic long-term sleep disorders An additional 20 million people experience occasional sleep problems.

Since sleep disorders can lead to lack of sleep or poor quality sleep, it can also contribute to occupational fatigue and, ultimately, a higher risk of injuries. **To resolve this, employers should screen their employees for sleep disorders and establish programs for their treatment.**

8. 13% of all workplace injuries are caused by fatigue.

9. Up to 93% of all employers feel that fatigue is a safety issue, though only 72% of employees agree

Because of the effects of occupational fatigue on the body, it is truly a safety issue. At 93%, most employers agree with this statement. However, only 72% of employees recognize fatigue as a safety issue.

10. Only 20% of employees understand what occupational fatigue is

According to the NHS, 80% of employees are not aware of the causes and risks of occupational fatigue.

- Only 41% of workers believe that there should be a rest break when driving for more than 1.5 to 2 hours.
- 73% of workers failed to identify all the signs of drowsy driving.
- 89% of people failed to identify the high-risks of shift work.

Because of this lack of awareness on the employees' part, it is the employers' duty to educate their **workers about occupational fatigue.**

11. Fatigued workers lose 5.6 hours of productive time per week

Healthy workers only have a productivity loss of 26%. On the other hand, fatigued

workers have a 66% rate of lost productivity due to cognitive decline and inability to focus.

12. Fatigue costs employers about $136 billion a year in health-related lost productivity

Interestingly, out of the $136 billion spent on lost productivity, 84% is due to presenteeism rather than absenteeism, according the statistics.

13. The cost of fatigue is approximately $80 million per year for an average-sized company with 52,000 employees

14. Up to 2.5 million Americans are estimated to have chronic fatigue syndrome

15. Chronic fatigue syndrome is most common in the 40 to 60 age group, which is over 33% of the working population

16. The top 2 causes of occupational fatigue are sleep deprivation and work environmental factors

Other Noteworthy Workplace Fatigue Statistics

To give you an even clearer idea about the effects of occupational fatigue, here are some other important statistics about workplace fatigue, particularly from the perspective of employers:

- 47% of employers have experienced productivity loss in their company due to fatigue.
- 50% of employers have had an employee fall asleep on the job.
- 57% of employers report absenteeism due to fatigue.
- 32% of employers report injuries and near misses due to fatigue.

RECOMMENDATIONS

Experts say effectively combating workplace fatigue requires changes in both the personal lives of employees, plus good workplace policies. **Some recommendations:**

- Practice good sleep hygiene. Avoid using your computer or cell phones 1-2 hours prior to sleeping. Avoid stimulants like caffeine, and go to bed at a consistent and regular time.
- Stay Hydrated. Drinking adequate amount of water daily has been shown to have a major effect on brain function and energy levels.
- Move often (for office workers). Frequent movements encourage blood circulation and helps ward off fatigue. Incorporate ergonomic exercises every few hours that can be performed right at your desk.
- Eat Smarter. Food is the fuel to our bodies, and what you put in directly affects your output. Avoid overeating and foods high in artificial sugars. Pick fruits and high energy snacks instead.
- Alternate between sitting and standing. Prolonged sitting slows down our metabolism and makes us feel more sluggish. The golden ratio between sitting and standing for maximum health benefits according to research lies between 1:1 to 1:3, such as sit for 15 minutes and stand for 45 minutes (maximum). Use a tall chair optimized for standing desks to allow you to switch between the two positions easily.
- Introduce a Fatigue Risk Management System (FRMS). For employers, a proven method for helping fight workplace fatigue is to have a well thought out Fatigue Management System in place. This creates a process for monitoring, reporting, and dealing with workplace fatigue that everyone in the company can get on board with.

PREVENTION

Fatigue – A Safety Hazard

Fatigue is more than simply sleepiness. It's the body's response to sleep loss and/or prolonged physical or mental exertion, e.g., as a result of working nights or rotating shifts. Over time, this can result in physical and mental damage.

But it's the immediate effects of fatigue that make it such a significant safety risk. Fatigue does things to workers' minds and bodies that make them more likely to get hurt on the job, such as:

- Slowing their reaction time;
- Reducing their level of vigilance;
- Impairing their judgment and ability to make decisions;
- Making them more distractible; and
- Causing them to lose awareness in critical situations.

Managing Fatigue In The Workplace

Progressive companies have been quick to grasp the danger and develop systems to manage fatigue.

The Fatigue Risk Management System

Such systems are similar to OHS systems and can be incorporated into an organization's existing OHS system. The guide lists the key elements of a Fatigue Risk Management System, Including:

A fatigue management policy spelling out how the company plans to address fatigue in the workplace and lists the roles and responsibilities of all stakeholders.

Fatigue risk management which involves collecting and analyzing relevant data to assess fatigue hazards and implementing controls to minimize identified risks. The ACOEM identifies 5 types of controls:

1. Balancing workload and staffing;
2. Shift scheduling;
3. Worker fatigue training and sleep disorder management;
4. Workplace environment design; and
5. Fatigue monitoring and alertness for duty.

Fatigue reporting system that workers can use to report when they feel unfit to work safely as a result of fatigue or report workplace incidents caused by fatigue.

Fatigue incident investigation which should basically parallel standard incident investigation but also focus on the role played by fatigue, why the worker was fatigued and why any fatigue-control mechanisms in place failed.

Fatigue management training and education of both management and workers on the fatigue risk management system, including:

- Hazards of working while fatigued and the benefits of being well rested;
- Impact of chronic fatigue on personal relationships, mental/physical well-being and general happiness;
- Recognition that while fatigue can't be eliminated, it can be managed;
- The key role quantity and quality of sleep play in managing fatigue;
- Basics of sleep physiology and circadian rhythms;
- Sleep hygiene, i.e., how to get adequate sleep;
- The potential results of sleep disorders and how to manage them;
- Importance of diet, exercise, stress management and management of other health conditions;

- How to recognize fatigue in themselves or co-workers; and
- Alertness strategies to use at work, e.g., caffeine, rest or exercise breaks.

Sleep disorder management programs that screen workers for sleep disorders and help them get appropriate treatment.

System auditing on a regular basis to ensure that it’s effective, identify weaknesses and implement corrections or improvements.

What Can Employers Do?

Employers can reduce the risk of worker fatigue in the workplace by:

- Examine staffing issues such as workload, work hours, understaffing and worker absences, scheduled and unscheduled, which can contribute to worker fatigue.
- Arrange schedules to allow frequent opportunities for rest breaks and nighttime sleep.
- Make adjustments to the work environment such as lighting, temperature and physical surroundings to increase alertness.
- Provide worker education and training addressing the hazards of worker fatigue, the symptoms of worker fatigue, the impact of fatigue on health and relationships, adequate quality and quantity of sleep and the importance of diet, exercise and stress management strategies to minimize the adverse effects of fatigue.
- Consider implementing a Fatigue Risk Management Plan under which, like other risk factors, fatigue can be managed.

Look Out for the Symptoms of Fatigue

Train your managers and supervisors to recognize the signs of fatigued workers, including:

- excessive yawning;
- irritability;
- bloodshot eyes;
- poor performance;
- lack of focus

If you have identified any fatigued workers in your workplace, discuss the issue of fatigue with them as soon as practicable. You may also choose to discuss the issue with other workers who could be at risk of fatigue.

Direct a worker to take leave

Following discussion with a fatigued worker, you may:

- direct a worker to take paid personal or annual leave if they have any paid leave entitlements;
- allow a worker to take unpaid leave if they wish to do so; or
- choose to grant a worker paid leave if they have exhausted all of their leave entitlements.

Better Recommendations

It’s also recommended that you include a clause in your workers’ employment contracts that states that you reserve the right to send a worker home from work if you believe that the worker is not fit to perform their duties.

Driving while fatigued could be dangerous, so if you decide to send a fatigued worker home, arrange a safe method of travel for them, e.g. a taxi or colleague, and check that they have arrived home safely.

What can workers do?

One of the most important ways to protect against fatigue is to get enough rest. For most people that means seven to eight hours of sleep per night.

Tips for getting a good night's sleep:

1. Go to bed and get up at the same time every day, even on weekends.
2. Don't eat too close to bedtime, as doing so can cause heartburn and just generally make it hard to fall asleep. Do eat a balanced diet of fruits, veggies, healthy fats, proteins and whole grains.
3. Turn off your cell phone or tablet at least one hour before you go to sleep and don't watch TV in bed.
4. Exercise regularly, but not too close to bed time. Exercising an hour or so before bed can make it hard to fall asleep.
5. Avoid caffeine, tobacco and alcohol before bed as well. Stay away from foods and drinks that contain caffeine for at least five hours before bedtime.
6. Keep your room dark and cool. Most of us sleep better in a cooler room.
7. If you can't sleep, get up and go into another room and read or perform some other quiet activity that doesn't involve staring at a screen until you feel sleepy.

At work, remember these fatigue-triggering factors and try to avoid them:

1. Dim lighting.
2. High temperatures, high noise, and high comfort, such as sitting for long periods in a very comfortable chair.
3. Repetitive, long, boring and monotonous tasks.

Tips for staying alert:

1. If you can, take breaks or break up tasks and keep the lights bright.
2. On longer breaks or lunch time go for a run, bicycle ride or brisk walk in every kind of weather.
3. Perform the most boring tasks at the start of your shift if permitted.
4. Eat light, healthy snacks throughout your shift instead of heavy, fatty snacks.
5. If you're driving, be sure to take breaks at least every few hours and change drivers if you can.