

UNITED STATES DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Long Work Hours, Extended or Irregular Shifts, and Worker Fatigue

What Causes Worker Fatigue?

Several factors including too little, poor quality, or interrupted sleep over a period of time can cause fatigue. Fatigue is the body's signal that a rest period is needed. Long work hours and extended and irregular shifts may be stressful physically, mentally, and emotionally. The body operates on a circadian rhythm sleep/wake cycle. It is naturally programmed for sleeping during night hours. Demanding work schedules may disrupt the body's natural cycle, leading to increased fatigue, stress and lack of concentration.

What are the Effects of Demanding Work Schedules?

Working extended shifts may involve prolonged exposure to potential health hazards such as noise, chemicals, and others. These exposures could exceed established permissible exposure limits (PELs) or violate other health standards. Employers must implement measures to monitor and limit worker exposures to health and physical hazards in the workplace as required by the Occupational Safety and Health Act.

What Worker Population Does This Affect?

Irregular and extended shifts are common among healthcare providers, transportation workers, first responders, firefighters, police officers, military personnel, construction workers, oil field workers, service and hospitality workers and many others.

What Are the Effects of Worker Fatigue?

- Worker fatigue increases the risk for illnesses and injuries. Accident and injury rates are 18% greater during evening shifts and 30% greater during night shifts when compared to day shifts. Research indicates that working 12 hours per day is associated with a 37% increased risk of injury. In a 2005 study reporting on a survey of 2737 [medical residents](#), every extended shift scheduled in a month increased the risk of a motor vehicle crash during their commute home from work by 16.2%.
- Decreased alertness from worker fatigue has been a contributing factor in:
 - Industrial disasters such as the [2005 Texas City BP oil refinery explosion](#), the [2009 Colgan Air Crash](#), the [explosion of the space shuttle Challenger](#), and the [nuclear accidents at Chernobyl and Three Mile Island](#).
 - Increased sleep problems and risk for injury among full-time employees in relation to the number of hours worked per week.
 - Errors in patient care, increased needlesticks and exposure to blood and other body fluids and increased occupational injuries among [healthcare workers](#).
 - Direct or indirect links to increased costs from lost productivity, increased injury and illness costs, increased time off the job due to illness, and increased workers' compensation costs.
 - An estimated annual cost of \$136.4 billion from fatigue-related, health-related lost productive work time to employers.



Fatigue can cause weariness, sleepiness, irritability, reduced alertness, impaired decision making, and lack of motivation, concentration, and memory. Studies have shown that fatigue is linked to health problems such as:

- Heart disease
- Stomach and digestive problems
- Musculoskeletal disorders
- Reproductive problems
- Depression
- Some cancers (breast and prostate)
- Sleep disorders
- Poor eating habits/obesity
- Worsening of existing chronic diseases such as diabetes and epilepsy

[OSHA](#) recommends the following measures to promote a restful and healthy sleep pattern:

- Sleep for 7-9 hours daily without disruptions;
- Try to sleep at the same time every day;
- Avoid drinks with caffeine prior to bedtime to improve sleep quality;
- If working evening or nights, make sure that you have slept within the last 8 hours before going to work;
- If napping before work, make sure that the duration is less than 45 minutes or greater than 2 hours to allow for a complete sleep/wake cycle;
- Make sure that the sleeping environment is comfortable, cool, dark and quiet;
- Exercise regularly, eat a balanced diet and maintain a healthy weight; and
- If you have difficulty sleeping, keep a sleep diary and talk to your doctor.