

## 1 **Dangers of Worker Fatigue**

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## 2 **What conditions can cause the following symptoms?**

- Increased errors in judgment
- Loss of memory and ability to recall details
- Reduced reaction time (speed and thought)
- Reduced decision making ability
- Increased forgetfulness
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## 3 **Fatigue Defined**

- The state of feeling very tired, weary or sleepy
  - Lack of sleep
  - Prolonged mental or physical work
  - Extended periods of stress or anxiety

(Canadian Centre for Occupational Health & Safety Fact Sheet)

## 4 **Types of Fatigue**

- Chronic
- Acute

(Canadian Centre for Occupational Health & Safety Fact Sheet)

## 5 **How is this a work problem?**

- Are worker sleep habits the employer's responsibility?
- What's the worst that can happen?

## 6 **Notable Fatigue-Related Incidents**

- Exxon Valdez Oil Spill
- Chernobyl Nuclear Explosion
- Three Mile Island
- Challenger Tragedy

(2016 RAND study [www.rand.org/t/RR1791](http://www.rand.org/t/RR1791) )

## 7 **The Employer Cost (USA only)**

- \$411 Billion\*
- \$2,000/worker/year +
- 13% increase in death +

- 1.2 million workdays +
- 9.8 million working hours \*
  - Highest lost workdays/hours among US, UK, Germany, Japan and Canada. – 'Merica!

\*2016 RAND study [www.rand.org/t/RR1791](http://www.rand.org/t/RR1791)

+ *Safety and Health Magazine* "Fatigue and Worker Safety" March 2017

## 8 **The Cost at Home**

- Depression
- Impaired thinking
- Moodiness
- Strained relationships
- Illness

## 9 **Major Fatigue Culprits**

1. Not Enough Sleep
2. Sleep Disorders
3. Hours Awake
4. Work Related Factors

## 10 **A Good Night's Sleep**

- Recommended hours of sleep?
- Estimated Annual Injury Incidence Rate (per 100 workers)
  - < 5 hours = 7.89
  - 5-6 hours = 5.21
  - 6-7 hours = 3.62
  - 7-8 hours = 2.27

*Safety and Health Magazine* "Fatigue and Worker Safety" March 2017

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## 11 **Sleep Disorders**

- Insomnia
- Sleep Apnea
- Restless Leg Syndrome
- Narcolepsy

## 12 **Not Just Lack Of Sleep...**

- 17 Hours Awake = .05
- 21 Hours Awake = .08
- 24-25 Hours Awake = .10

(Canadian Centre for Occupational Health & Safety Fact Sheet)

13  **At Work**

- Long hours of physical or mental activity
- Not enough break between shifts (OT)
- Stress
- Temperature
- Noise/Vibration
- Lighting

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What workers are at the highest risk for fatigue incident and injury?

15  **Shift Work**

- Shift workers get an average of 5 hours of sleep a day (1-1.5 hours less than non shift workers)
  - Example: A shift worker who sleeps until 1:00 p.m. and gets off work at 7:00 a.m. is driving after being awake for 18 hours

16  **Shift Work and Risk To Workers**

- 1 • Chronic sleep deprivation
  - Disrupted sleep patterns
  - Reduced alertness
  - Increased crashes on the job
- 2 • Falling asleep while driving or working
  - Low morale
  - Decreased motivation and productivity
  - Job burnout

17  **Drowsy Driving**

- 2013 NHTSA study estimates Drowsy Driving to be responsible for:
  - 72,000 crashes
  - 44,00 injuries
  - 800 deaths
- 1. Cite: cdc.gov

18  **Look for the Warning Signs**

- You can't stop yawning.
- Your eyelids droop or blink frequently.

- You have trouble keeping your eyes open and focused.
- Your mind wanders or you have disconnected thoughts.
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- You can't remember driving the last few miles.
- Your driving becomes sloppy - you weave between lanes, tailgate or miss traffic signals.
- You hit rumble strips or grooves in the road.

#### 19 **Thoughts on Driving...**

- Do your employees drive to work, during work and after work?
- Should non-commercial drivers be regulated by policy?
- Are there other ways the employer can maximize safety while driving?

#### 20 **What can be done?**

- How do we mitigate the risk of fatigue as
  - Individuals?
  - Employers?

#### 21 **7 Tips for Everyone**

- The following have been identified by the 2016 comprehensive Rand Study...

#### 22 **7 Sleep Habits**

1. Set a consistent wake up time
2. Limit time spent in bed when not sleeping
3. Don't stay in bed when not sleeping
4. Limit electronic devices
5. Limit consumption of substances which impair sleep quality
6. Address stressful issues before bed time
7. Exercise

#### 23 **For Employers**

1. Make sleep a priority
2. Improve sleep culture at work
3. Improve workspaces
4. Provide facilities and amenities to assist sleep hygiene
5. Combat workplace psychosocial risk
6. Address physical risk factors
7. Discourage extended use of electronics

8. Minimize variability in schedule and maximize employees' control

24  **Consider OSHA**

- OSHA's General Duty Clause (5a1)
  - "Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

25  **Does 5a1 apply to fatigue?**

- 4 Conditions Must be met
  1. Employees must be exposed to the hazard
  2. The hazard must be recognized by the employer
  3. The hazard must be likely to cause serious physical harm or death
  4. There must be a feasible way to correct the hazard

26  **Sleep Suggestions....**

- Make your room dark
- Block outside sounds by wearing earplugs or using a fan.
- Lower the thermostat to 60 to 65 degrees before going to bed.
- Try to stick to a regular sleep schedule, even on your days off.

27  **Don't Forget...**

- Avoid alcohol before going to bed.
  - It may make you fall asleep faster, but will make it harder to stay asleep.
  - Alcohol deprives your body of deep rest and you end up sleeping in fragments.
- Avoid caffeine several hours before going to bed.
  - Effects peak 2 to 4 hours later and may linger for several hours more.
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28  **More Suggestions**

- Maintain or improve your overall health.
  - Eat well and get exercise at least three times a week.
  - Allow at least three hours between exercise and bedtime.

29  **Sleep Tips**

- Develop a relaxing sleep ritual before bed:
  - Take a warm bath or shower
  - Listen to soothing music
  - Read until you feel sleepy

(but nothing too exciting or stimulating)

30  **Sleep Tips**

- Know the side effects of medications.
  - Some medications can increase sleepiness and make driving dangerous
  - Others can cause sleeping difficulties
  - Read all labels and talk to your doctor
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31  **Sleep Tips**

- Don't make bedtime the time to solve problems.
  - Try to clear your mind.
  - Make a list of things you are concerned about or need to do the next day so you don't worry about them when you are trying to sleep.

32  **Employer Considerations**

- Improve lighting quality
- Manage workplace temperature – especially at night
- Mitigate noise level if possible
- Understand work tasks (monotonous/routine)
- Remember the dangerous commute home

33  **Employer Considerations**

- Safety Talks
- Job Reassignment (safety sensitive functions)
- Risk Management System
  - Reporting fatigue incidents
  - Training on fatigue
  - Are sleep disorders covered on insurance plan?
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34  **Be Aware of Alertness Tricks...**

- These things will not keep you awake while driving.
  - Turning the volume up on the radio
  - Singing loudly
  - Chewing gum or eating

- Getting out of the car and running around
- Slapping yourself
- Sticking your head out the window

### 35 **Energy Drinks...**

- Caffeine level
- Could potentially be arrested for DUI
- Health concerns
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### 36 **Remember Shift Work Can Be Difficult On Family**

- You are not alone in your frustration.
- Communication and careful planning are key to mixing family, friends and shift work.
- Ask for understanding from your family and friends.
- Communicate.
- Understand shift work is hard on your family, too.
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### 37 **Review**

In regards to what we have discussed, think of your own life and work...

- What are some ways you can improve your sleep quality personally?
- What changes can be implemented at your work?

### 38 **If you think you may have a sleep disorder, call your doctor.**

### 39 **Other Resources**

- <https://www.osha.gov/SLTC/workerfatigue/index.html>
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- <https://www.cdc.gov/niosh/topics/workschedules/>
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- <https://www.cdc.gov/niosh/docs/97-145/pdfs/97-145.pdf>
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### 40 **Questions?**