

Fatigue in the Workplace: Causes, Consequences and Managing Risk

Emily Whitcomb

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Fatigue impairment

Causes & effects

Managing fatigue

Resources

WORKPLACE FATIGUE,

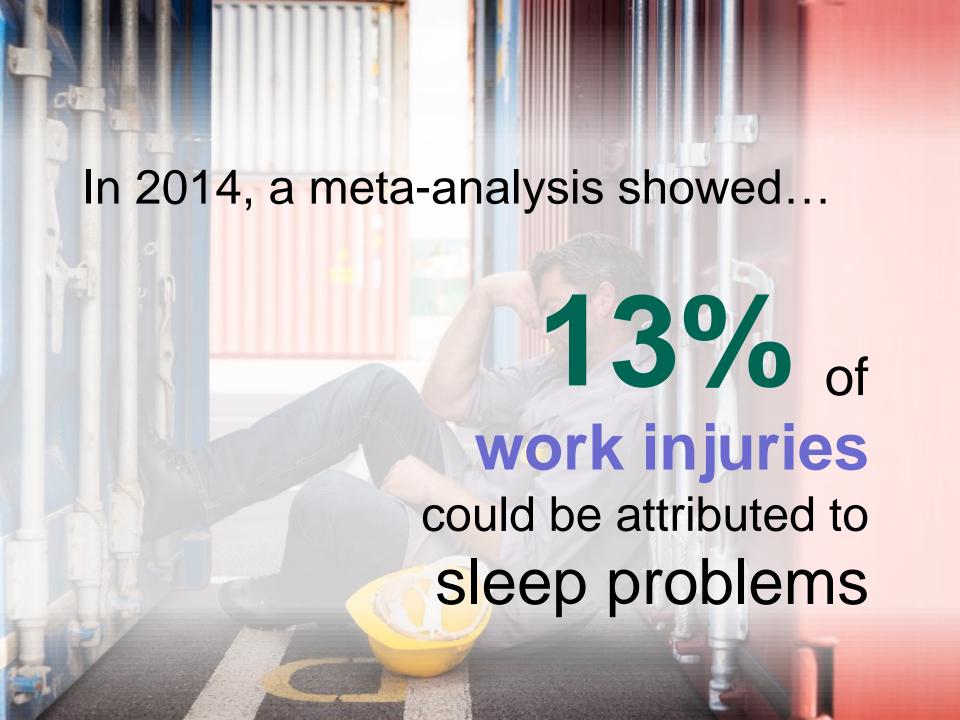




6% decrease in productivity

That's about 11 days a year in presenteeism for Untreated insomniacs







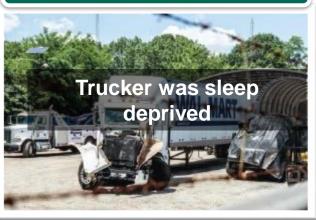
Three Mile Island



NASA Shuttle Challenger

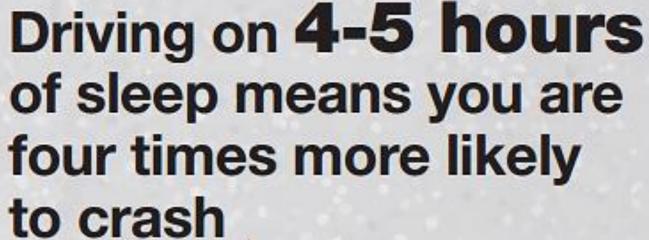


Tracy Morgan's Crash

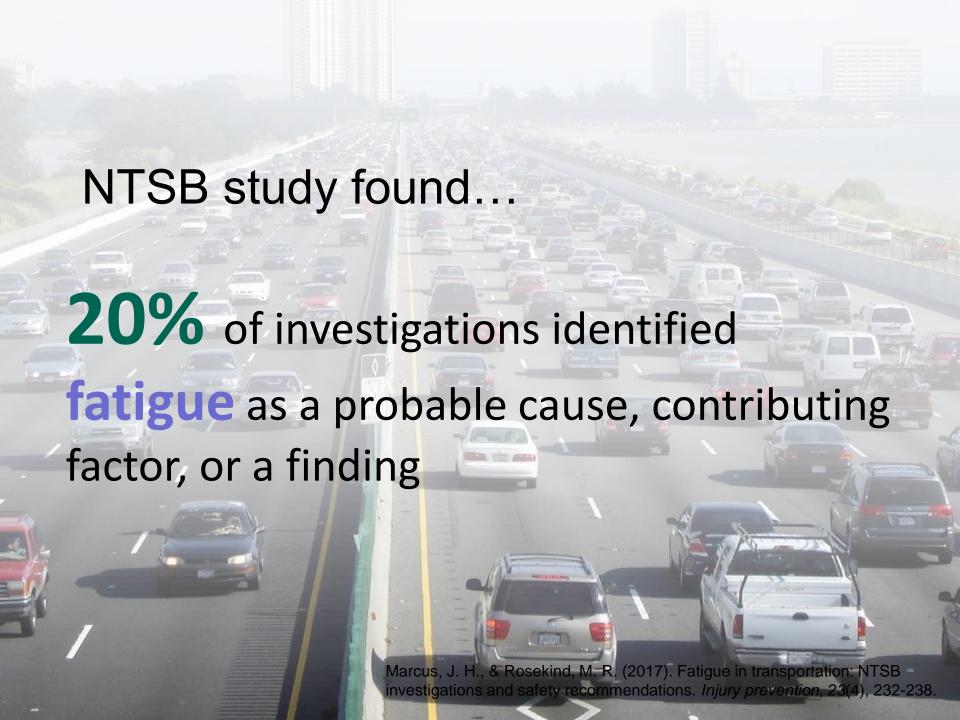


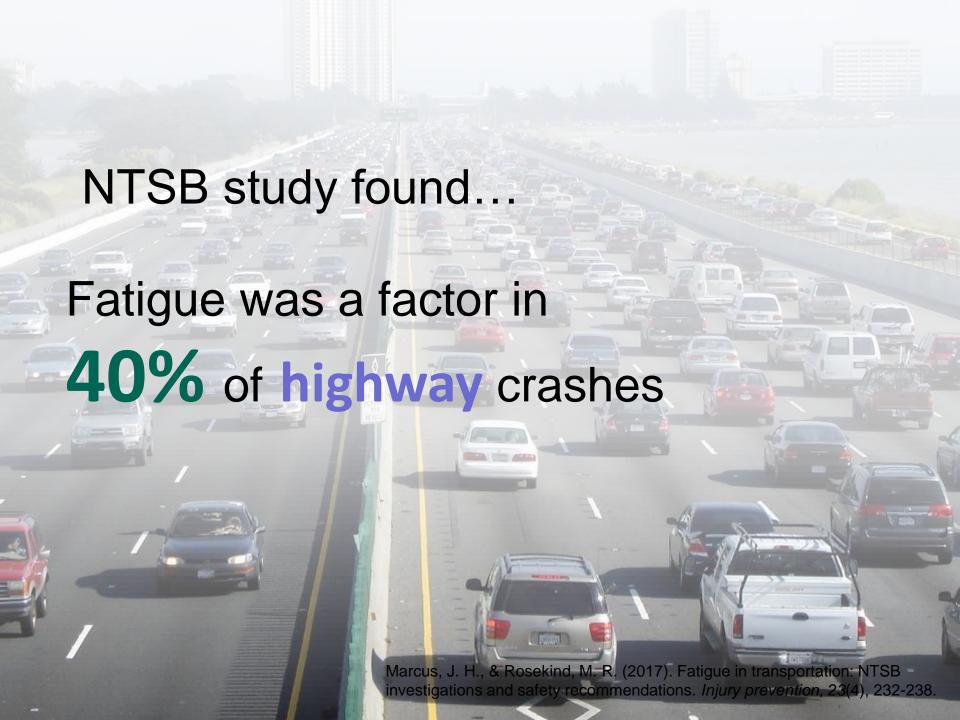
Credit: Sleep Health Institute of Brigham and Women's Hospital - Sleep Matters Initiative



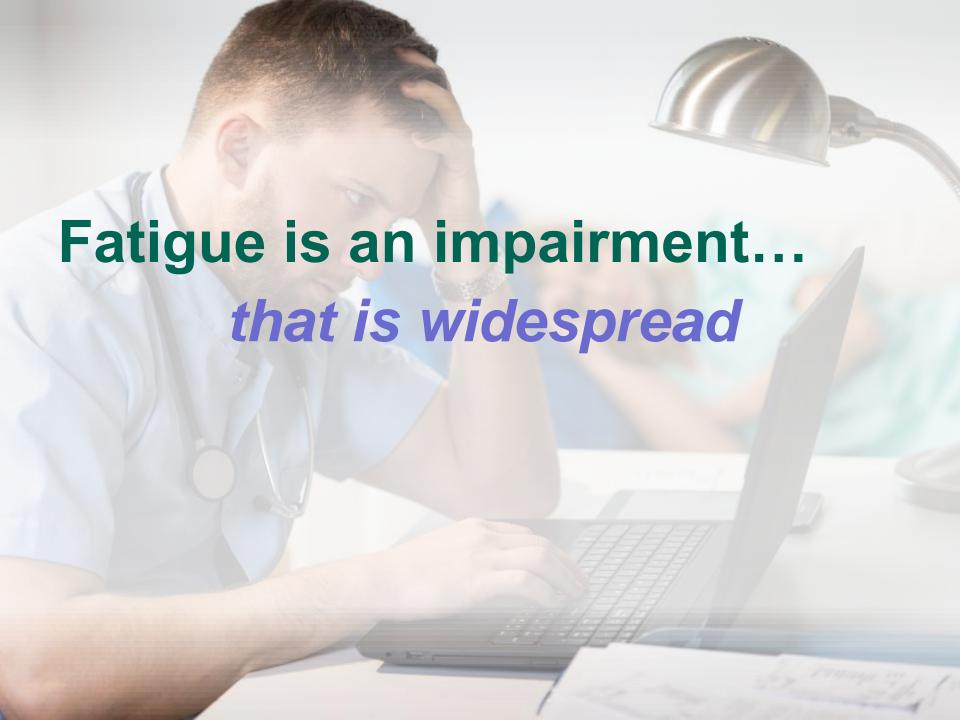








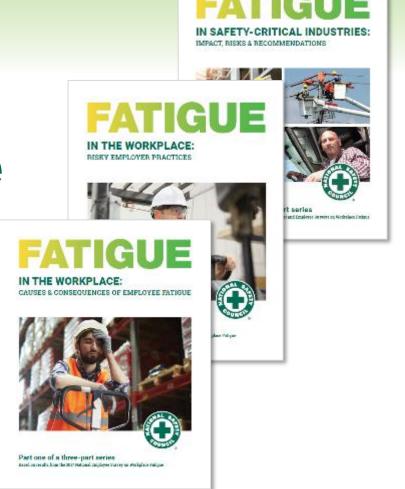






Fatigue in the Workplace

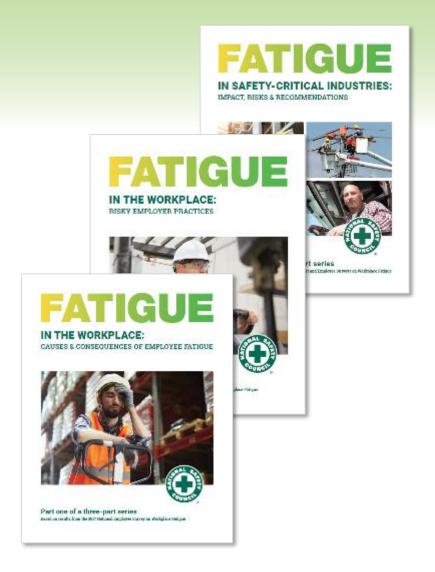
Survey Series
available at
NSC.org/FatigueSurvey

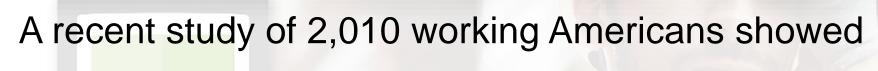




Prevalence of fatigue risk factors and safety critical incidents caused by fatigue

nsc.org/FatigueSurvey





97% of employees have at least one risk factor for fatigue



Microsleeps | 2

Microsleeps often involve drooping eyelids and head nods. Microsleeps are usually the first symptom a person notices when they're extremely fatigued. Unfortunately when an employee has become so fatigued they fall asleep, they've likely been performing at a reduced and possibly unsafe capacity.

Percentage of survey respondents that have fallen asleep unintentionally in the past month:







FATIGUE

IN THE WORKPLACE:

RISKY EMPLOYER PRACTICES



Part two of a three-part series

Based on results from the 2017 National Employer Survey on Workplace Fatigue

nsc.org/FatigueSurvey



90% of employers reported being negatively impacted by fatigue.

FATIGUE

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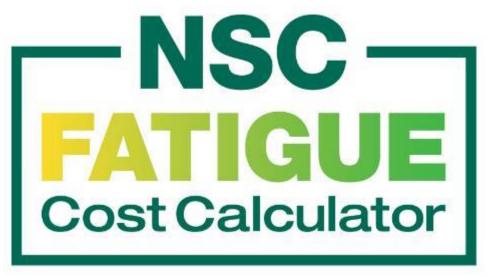








How much is fatigue costing your organization?



Visit nsc.org/TiredatWork



Real Costs of Fatigue in the Workplace

How much is fatigue costing the workplace? The National Safety Council has teamed with Brigham and Women's Hospital to develop an easy-to-use online tool, where employers can receive a tailored estimate of how much fatigue is costing their bottom line. The calculator will estimate how much of the burden can be avoided with programs implemented in the workplace.

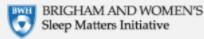
Calculate Your Costs

Where are your facilities/offices located?	Nationwide / More tha ▼
What is your industry?	Construction and Extra ▼
How many employees in your organization?	250
Do you have any shift workers in your organization?	Yes v
Choose all that apply?	Evening shift Early morning shift Rotating shift

About National Safety Council
Founded in 1913 and chartered by
Congress, the National Safety Council is a
nonprofit organization whose mission is to
eliminate preventable deaths at work, in
homes and communities, and on the road
through leadership, research, education and
advocacy.

Education Content Partner

BRIGHAM HEALTH



About the Sleep Matters Initiative
The mission of the Sleep Matters Initiative,
led by investigators from Brigham and
Women's Hospital and Harvard Medical
School, is to foster excellence in the
treatment of sleep and circadian disorders in
order to improve health, safety, and
performance; and to promote widespread
change in social norms that will engender a
culture of sleep health.

TOOLKIT

Email Address

Get Your Report

Irregular shift

We will email you the results of this calculator.





Real Costs of Fatigue in the Workplace

YOUR COSTS

This report uses the latest research to predict the prevalence of sleep deficiency and common sleep disorders among employees and estimates the annual costs associated with these conditions. Insufficient sleep and untreated sleep disorders lead to diminished alertness and contributes to absenteeism, decreased productivity, and increased healthcare costs. Click on the boxes below for more information.

TOTAL ANNUAL COST: \$394,397



Absenteeism

COST:

\$76,020



COST:

\$180,426



Healthcare

COST:

\$137,951

YOUR RISKS

Sleep disorders are common, often undiagnosed, and therefore untreated. The boxes below show how many employees in your workplace are likely suffering from a sleep disorder. Click the boxes below for more information.













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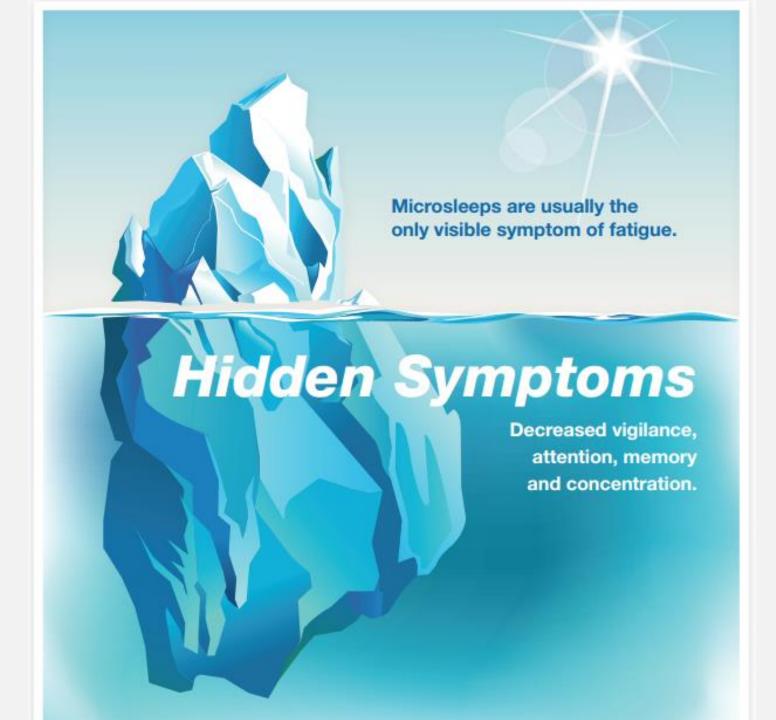
Fatigue impairs cognitive function

Fatigue decreases performance

Effects of fatigue

Fatigue increases safety risks

Fatigue affects your health



Fatigue deceases cognitive function...



Attention Memory Concentration Vigilance Impulse control Fatigue impairs cognitive function

Fatigue decreases performance

Effects of fatigue

Fatigue increases safety risks

Fatigue affects your health



Sleep loss mimics alcohol intoxication

A person who loses 2 hours of sleep performs similarly to someone who drinks 3 beers





Why are we poor drivers when we're tired?



Drowsy driving is impaired driving

Performance effects

- Slower reaction time
- Decreased vigilance
- Decreased attention
- Decreased impulse control

Microsleep

- Brain goes "offline"
- Short, unintended sleep episodes

Drowsy driving is impaired driving

Performance effects

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Microsleep

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Fatigue impairs cognitive function

Fatigue decreases performance

Effects of fatigue

3

Fatigue increases safety risks

Fatigue affects your health

Fatigue increases safety risks

Accidents and injuries Motor vehicle crashes

Tired workers are at higher risk of injury

Hours of sleep	Annual injury incident rate (per 100)
Less than 5 hours	7.89
5 to 5.99 hours	5.21
6 to 6.99 hours	3.62
7 to 7.99 hours	2.27
8 to 8.99 hours	2.50
9 to 9.99 hours	2.22



Less than 5 hours 7.89

5 to 5.99 hours 5.21

6 to 6.99 less likely to 7 to 7.99 hours 2.27

8 to 8. gets hurt at work

9 to 9.99 hours

Long hours put workers at higher risk of injury

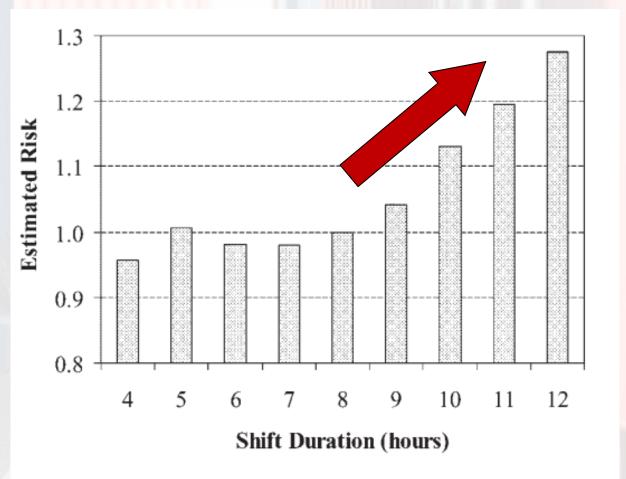


FIGURE 5. The estimated relative risk on different lengths of shift.

Fatigue impairs cognitive function

Fatigue decreases performance

Effects of fatigue

Fatigue increases safety risks

Fatigue affects your **health**

Sleep loss affects your health

Obesity Heart disease Diabetes Depression Early death

Sleep deficiency and untreated sleep disorders costs employers...

\$3,000 per employee per year in increased health care costs

Causes of Fatigue

Sleep loss

2 Circadian rhythm misalignment

3 Work or task demands



REQUIRED SLEEP

Why are we not getting enough sleep?

Not prioritizing sleep

Work schedules interfere

Untreated sleep disorders

Why are we not getting enough sleep?

Not prioritizing sleep

Work schedules interfere

Untreated sleep disorders

Why are we not getting enough sleep?

Not prioritizing sleep

Work schedules interfere

Untreated sleep disorders

50-70 million people in the U.S. are living with a sleep disorder

Up to 90% are undiagnosed and untreated



Obstructive Sleep Apnea

is associated with...

Diabetes
Hypertension
Cardiovascular
disease
Heart attack
Stroke
Mortality

Insomnia

is associated with...

Depression Hypertension Mortality

Obstructive Sleep Apnea

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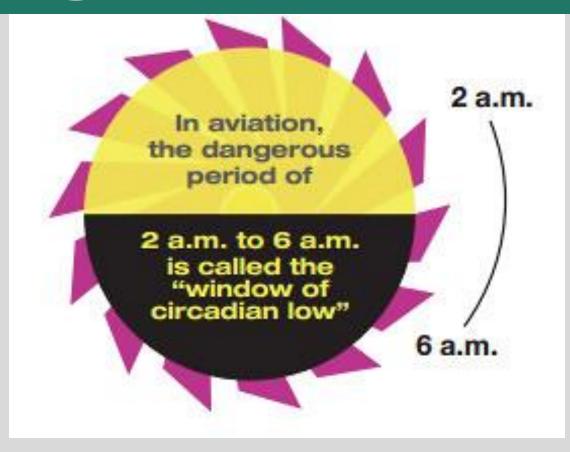
Causes of Fatigue

1 Sleep loss

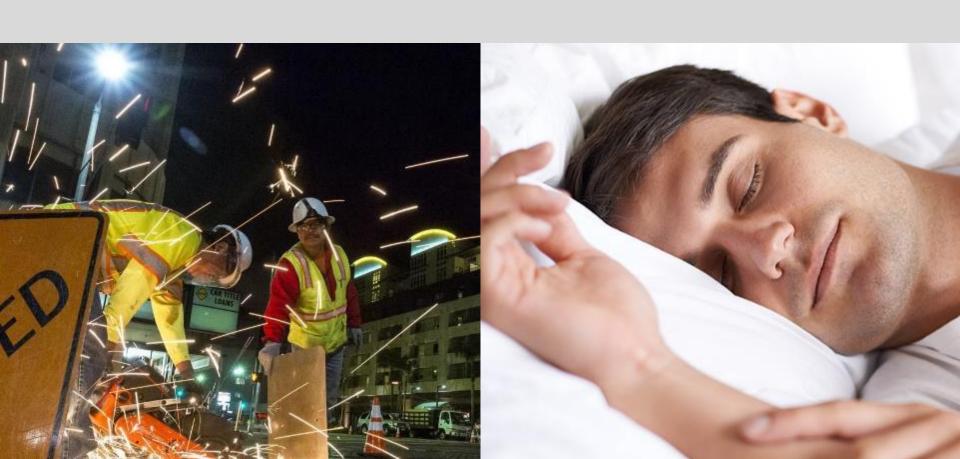
2 Circadian rhythm misalignment

3 Work or task demands

Circadian Rhythm Misalignment



Circadian Rhythm Misalignment



Circadian Rhythm Misalignment

59% of night shift WORKERS sleep less than 7 hours VS. of day shift **WORKERS**

nsc.org/FatigueSurvey

Causes of Fatigue

1 Sleep loss

2 Circadian rhythm

3 Work or task demands

Work Demands & Fatigue



Time on task

Boring or mentally demanding tasks are tiring

Work Demands & Fatigue



Work Demands & Fatigue





38% of the U.S. workforce reports being sleep deprived.

NIGHT SHIFTS

Safety incidents are 30% higher during night shifts



EARLY MORNING START

Before 7:00am, body is still in sleep mode



Schedules changing daily or weekly upsets your body clock



LONG HOURS

The longer the shift, the higher the risk





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Fatigue can be managed at home and in the workplace



FRMS

Fatigue risk management systems

Policies, practices, programs and procedures that incorporates fatigue risk management into an existing safety system.



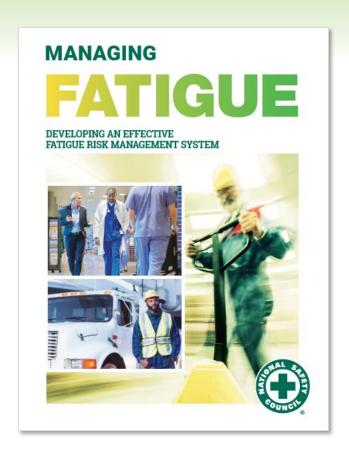


Minimizing factors that cause fatigue is one way to control health and safety risks in the workplace.

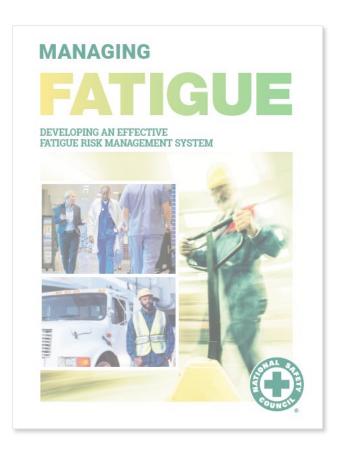


Newest report detailing a fatigue risk management system

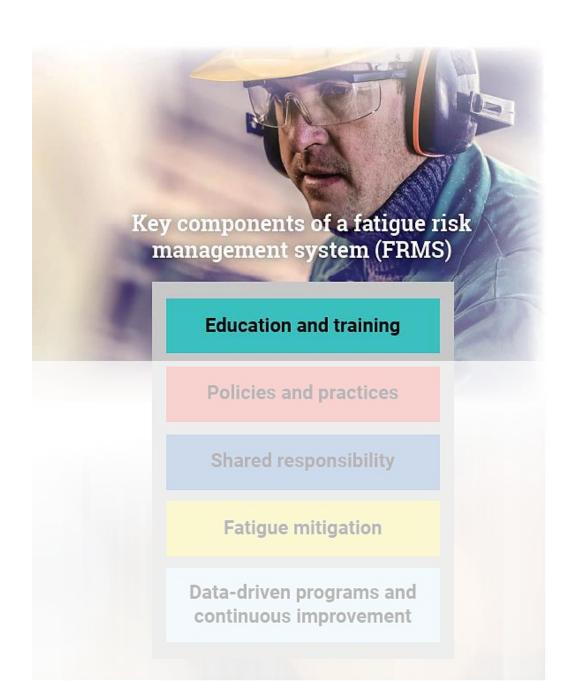
nsc.org/FatigueReport







nsc.org/FatigueReport



Sleep Health Education & Screening

SCHNEIDER



"When you live and breathe safety like we do, screening and treating drivers with sleep apnea is just the right thing to do."

- Tom DiSalvi,
- Schneider vice president of safety and loss prevention



Drivers with untreated OSA had 5x the crash risk as those complying with treatment



OSA treatment resulted in a 73% reduction in preventable crashes





OSA treatment resulted 47.8% reduction in per member per month (PMPM) health care spending

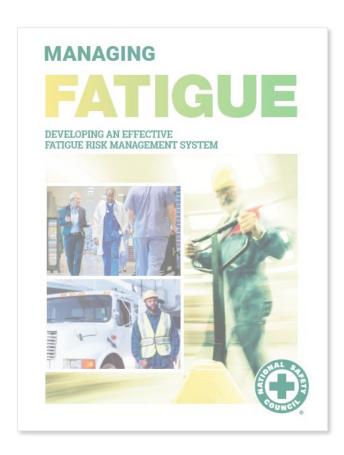


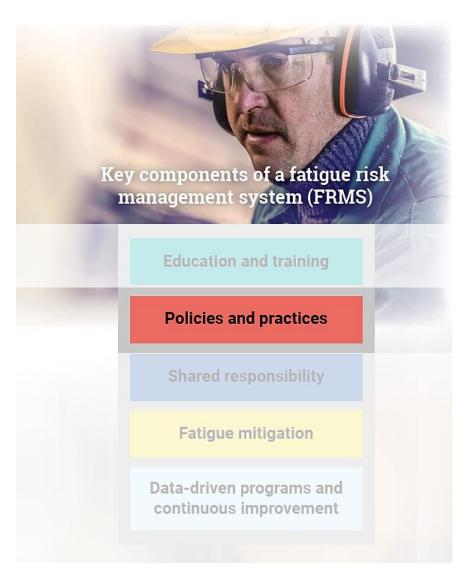
Policies and practices

Shared responsibility

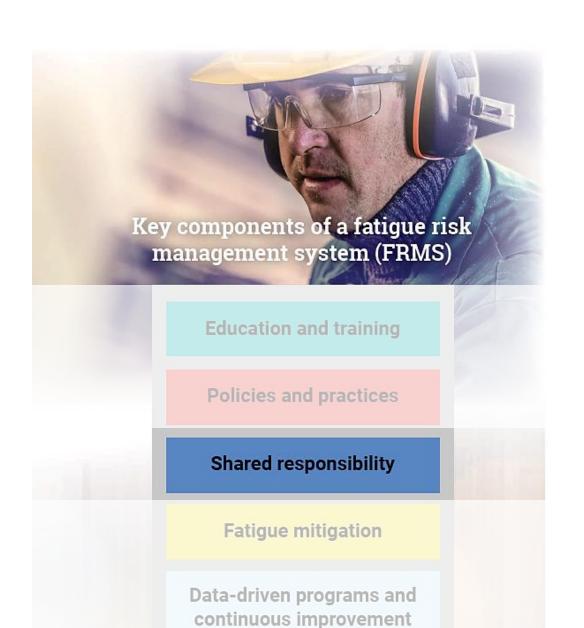
Fatigue mitigation

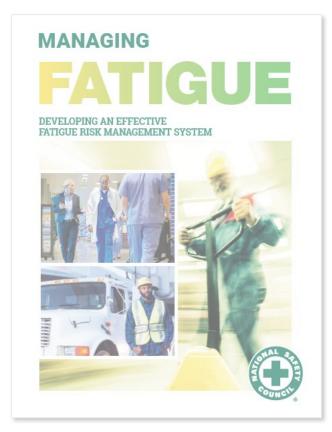
Data-driven programs and continuous improvement

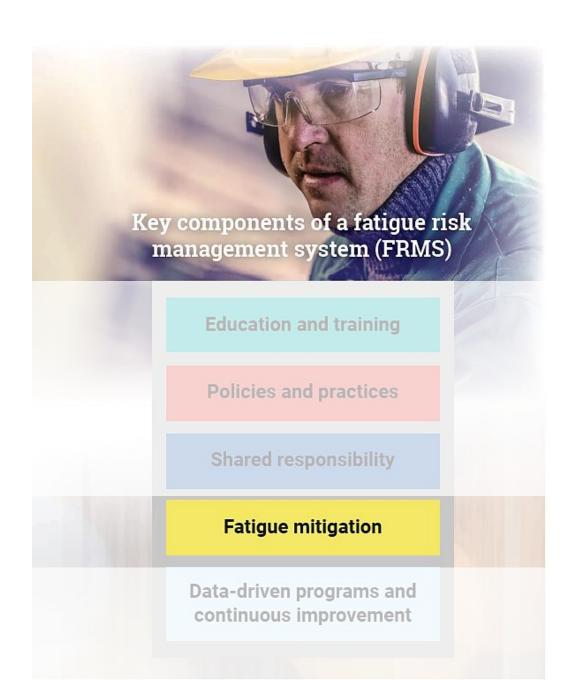


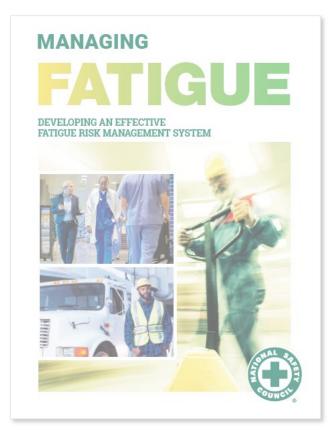


- Daily and weekly limits
- Limits on night shifts or early morning shifts
- Rest period & shift returns











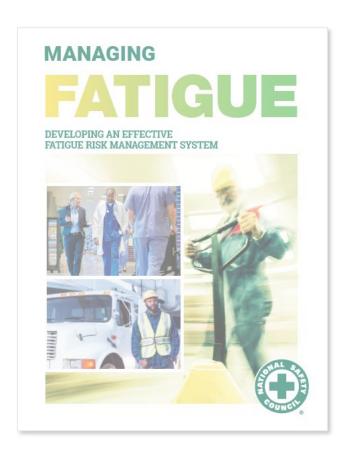
Education and training

Policies and practices

Shared responsibility

Fatigue mitigation

Data-driven programs and continuous improvement





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WORKPLACE FATIGUE,





nsc.org/FatigueAtWork



Video instructions for using each section of the kit:

- Education & Training
- Policies and Practices
- Shared Responsibility
- Data-driven Programs





Education & Training

Topic Areas:

- Sleep health
- Drowsy driving
- Fatigue

- Safety talks
- Fact sheets
- Posters
- Training videos





Policies & Practices

- FRM program manual templates
- Infographics
- Fact sheets



FATIGUE AT WORK EMPLOYER TOOLKIT



Shared Responsibility

- Safety talk
- Fact sheet
- Poster

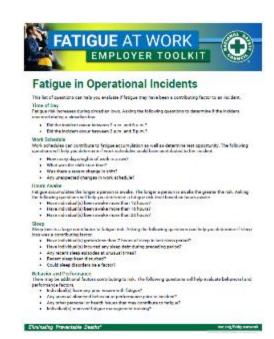


FATIGUE AT WORK EMPLOYER TOOLKIT



Data-driven Programs

- Assessments
- Incident reporting
- Signs and symptoms checklist



Questions, comments?



nsc.org/FatigueAtWork

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nsc.org/TiredatWork