

Asleep at the Wheel: The Impact of Drowsy Driving

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Alabama Association of Sleep Professionals
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- **The Scope of the Problem**
- **Drowsy Driving Characteristics**
- **At risk Groups**
- **Legal and Legislative Aspects**
- **Countermeasures and Prevention**

How Big is the Problem of Drowsy Driving?



The Problem

Sleep deprivation has been shown to:

- Slow reactions to stimuli
- Decrease accuracy of responses
- Lead to long lapses in attention

Previous studies have shown that the effects of sleep deprivation on attention and performance are greater during the early morning hours

• Previous research by the AAA Foundation found that drowsy driving is involved in as many as:

- 7% of all crashes where a vehicle was towed
- 13% of all crashes resulting in hospital admission
- 21% of all fatal crashes

However, there is little scientific research on the relationship between *specific amounts of sleep deprivation* and *crash risk* amongst the general driving population.

The Problem

Experts recommend that healthy adults should sleep for 7-9 hours daily; (and more for teens and young adults, people experiencing illness, and people recovering from sleep debt)^{1,2}

Surveys by the Bureau of Labor Statistics³ show that in a typical 24-hour period, **18%** of adults sleep for less than 7 hours, including:

- **1.3%** who sleep less than 4 hours
- **0.3%** who sleep for less than 2 hours

Surveys by the Centers for Disease Control & Prevention⁴ report that **35%** of adults reported usually sleeping **less than 7 hours** daily, including **12%** reported commonly sleeping **less than 5 hours** daily

1. Hirshkowitz M et al. 2015. National Sleep Foundation's updated sleep duration recommendations: final report. *Sleep Health*, 1(4): 233-243.
2. Watson NF et al. (2015). Recommended amount of sleep for a healthy adult: A joint consensus statement of the American Academy of Sleep Medicine and Sleep Research Society. *Sleep*. 38(6): 843-844.
3. American Time Use Survey. 2015. American Time Use Survey—2003-2014 Microdata files. Washington, DC: Bureau of Labor Statistics.
4. Liu Y, Wheaton AG, Chapman DP, Cunningham TJ, Lu H, Croft JB. 2016. Prevalence of healthy sleep duration among adults – United States, 2014. *MMWR Morbidity and Mortality Weekly Report*.

The Problem in Alabama

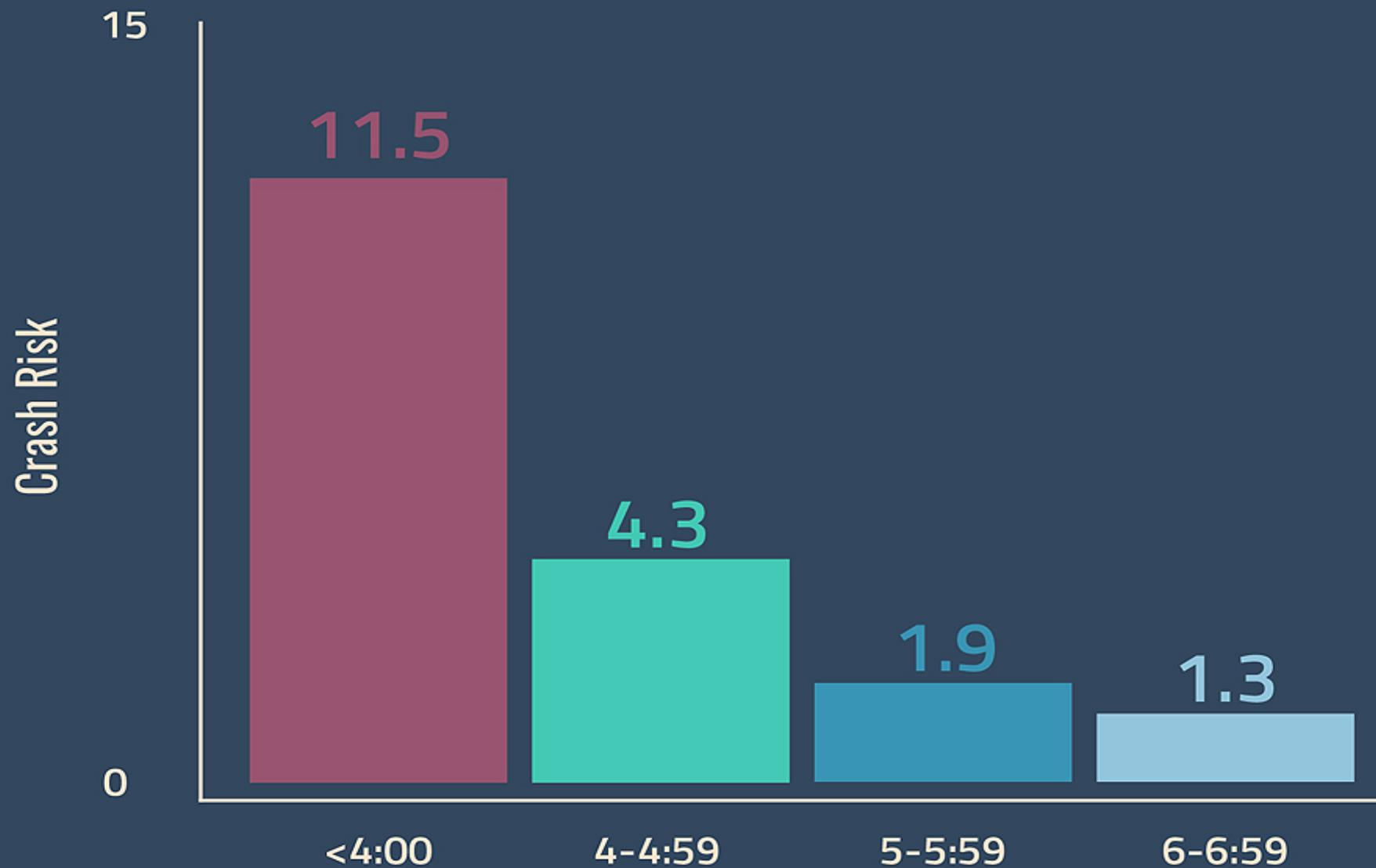
- Fatality crashes involving asleep/fatigued drivers
 - 2016- 43 ¹
 - 2015- 32 ²
- All crashes involving asleep/fatigued drivers
 - 2015- 2505 of a total 147,452 crashes ²
- Truck crashes involving asleep/fatigued drivers
 - 2015- 180 of a total of 8484 crashes ²
- Alcohol or drug related crashes
 - 2015- 4718 of a total 147,452 crashes ²

1. ALEA FARS Data
2. ALDOT 2015 Crash Facts



IMPACT OF SLEEP ON CRASH RISK

CRASH RATES OF SLEEP-DEPRIVED DRIVERS COMPARED TO DRIVERS WHO GET THE EXPERT-RECOMMENDED 7+ HOURS OF SLEEP



Total hours of sleep in past 24 hours

Source: AAA Foundation for Traffic Safety, 2016



AAA.com/DrowsyDriving

The Problem



It is estimated that Drowsy Driving causes up to \$109 billion in monetary losses due property damage, injuries and death.

The Problem

- In 2002 NHTSA-sponsored a survey,
 - 95 % of the driving population considered drowsy driving by other people to be a major threat to their safety.
 - 37% of drivers reported that they had nodded off or fallen asleep at least once since they began driving.
- AAA's had similar findings in 2014 study
 - 96.2% of drivers consider it unacceptable for someone to drive when they are so sleepy that they have a hard time keeping their eyes open
- Despite these findings
 - 1 in 4 drivers (29.4%) reported having driven when they were so tired that they had a hard time keeping their eyes open in the past 30 days.
 - One in five (19.8%) reported having done this more than once
 - 2.4 percent reported having done this fairly often or regularly.

The Problem

- Current estimates range from 2 percent to 20 percent of annual traffic deaths attributable to driver drowsiness.
- Nationally from 2009 to 2013, there were over 72,000 police-reported crashes involving drowsy drivers
 - Injured approximately 41,000 people
 - Fatal more than 800
- Researchers believe the existence of additional drowsy-driving crashes by looking for correlations with related factors such as the number of passengers in the vehicle, crash time and day of week, driver sex and crash type.
 - It is estimated that 7 percent of all crashes and 16.5 percent of fatal crashes involved a drowsy driver.
 - This estimate suggests that more than 5,000 people died in drowsy-driving-related motor vehicle crashes across the United States last year.
- Although numbers and percentages differ, most experts agree that drowsy driving is an important traffic safety issue

Characteristics

- Most happen between midnight – 6:00 am & in the midafternoon
 - circadian dip
- The driver is alone and more likely to be male
- A single vehicle drifts off the road and hits a stationary object
- Most are rear-end or head-on collisions
- Many involve serious injuries and/or fatalities
- There is no evidence of braking or evasive maneuvers
 - **NO SKID MARKS!!**

Characteristics

- A study of car crashes and near misses identified the leading contributing factors in unsafe driving behavior.
 - 22.16% Drowsiness
 - 3.58% Dialing hand held devices
 - 3.56% Talking/listening to a hand held device
 - 2.85% Reading
 - 2.15% Eating
 - 1.41% Applying make-up
 - 1.23% Reaching for an object
 - 1.11% Reaching for a moving object
 - 0.91% Looking at external object
 - 0.35% Insect in vehicle
- Cameras in 100 cars for 1 year. 241 drivers were involved in 82 crashes, 761 near crashes, and 8,295 critical incidents.

At Risk Groups

- Shift workers
- Commercial drivers
- People with undiagnosed or untreated sleep disorders
- Business travelers
- The elderly
- Young people



At Risk Groups

- Occupational Factors.
 - People with more than one job are 2x more likely to have a fall-asleep crash
 - Working the night shift increases the risk by 6x
 - Working more 60 hrs per week increased the risk by 40%
- Amount of Sleep.
 - One fourth of drivers in sleep-related crashes and 1/3 of drivers fatigue-related crashes got less than 6 hrs of sleep.
 - 7 to 8 hrs = 1.2x higher risk
 - 6 to 7 hrs = 1.8x higher risk
 - 5 to 6 hrs = 3.3x higher risk



At Risk Groups



of drowsy driving crashes
involve drivers 25 and younger.

- 51% of adolescents who drive report that they have driven drowsy in the past year
- 16% of 11th graders and 20% of 12th graders drive drowsy once a week or more.
- Drivers ages 16-24 were nearly twice as likely to be drowsy at the time of their crash in comparison to drivers ages 40-59.
- Drivers age 24 and younger were most likely to report having fallen asleep at the wheel in the past year, and they were least likely to report having never fallen asleep at the wheel.

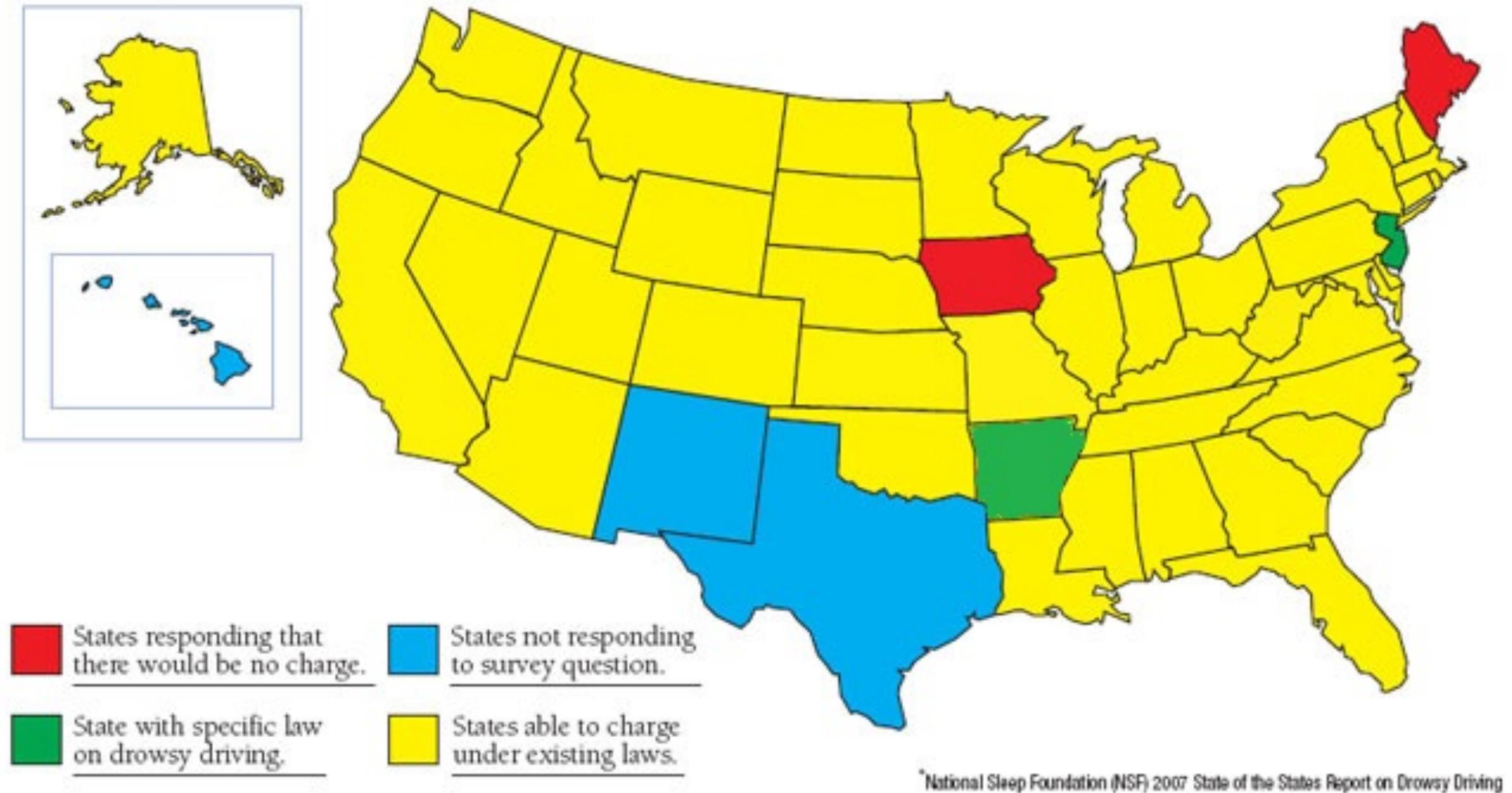
Do Officers Consider Drowsy Driving To Be a Problem?

2004 AAA Foundation survey of U.S. and Canadian police

- 9 out of 10 officers (93%) believed that drowsy driving was a serious problem
- 88% had stopped a driver who they believed was drunk, but turned out to be drowsy
- 89% said drowsy driving is as dangerous as drunk driving
- 95% believed that drivers who cause a crash while fatigued should be charged with a violation
- 96% believed more education is needed

Legal Aspects

States' Ability to Charge Drivers for Drowsy Driving Fatalities



Only New Jersey and Arkansas currently have specific laws pertaining to drowsy driving

Alabama Law

- Section 32-5A-190 Reckless driving.
 - (a) Any person who drives any vehicle carelessly and heedlessly in willful or wanton disregard for the rights or safety of persons or property, or without due caution and circumspection and at a speed or in a manner so as to endanger or be likely to endanger any person or property, shall be guilty of reckless driving.
- Section 13A-6-20 Assault in the first degree.
 - (3) Under circumstances manifesting extreme indifference to the value of human life, he or she recklessly engages in conduct which creates a grave risk of death to another person, and thereby causes serious physical injury to any person;
 - (5) While driving under the influence of alcohol or a controlled substance or any combination thereof in violation of Section 32-5A-191 or 32-5A-191.3, he or she causes serious physical injury to the person of another with a vehicle or vessel.

Alabama Law

- Section 13A-6-4 Criminally negligent homicide.
 - (a) A person commits the crime of criminally negligent homicide if he or she causes the death of another person by criminal negligence.
- Section 13A-6-3 Manslaughter.
 - (a) A person commits the crime of manslaughter if:
 - (1) He recklessly causes the death of another person,

Alabama Law

- Section 13A-6-2 Murder.
 - (a) A person commits the crime of murder if he or she does any of the following:
 - (1) With intent to cause the death of another person, he or she causes the death of that person or of another person.
 - (2) Under circumstances manifesting extreme indifference to human life, he or she recklessly engages in conduct which creates a grave risk of death to a person other than Section 13A-6-4 Criminally negligent homicide.
- SB221-March 2017
 - says that ALEA must include information about the dangers of drowsy driving in its driver's manual and licensing examination materials and specifies that the state department of education must require any driver's education course offered at a public high school to include in its curriculum instruction on the dangers of drowsy driving.

Other States

- New Jersey (Maggies Law)
- N.J.S.2C:11-5 is amended to read as follows:
 - 2C:11-5. Death by auto or vessel.
 - a. Criminal homicide constitutes vehicular homicide when it is caused by driving a vehicle or vessel recklessly.
 - For the purposes of this section, driving a vehicle or vessel while knowingly fatigued shall constitute recklessness. “Fatigued” as used in this section means having been without sleep for a period in excess of 24 consecutive hours



You Snooze You Lose
Don't Drive Drowsy

Other States

- Illinois – SB104 (add “fatigue” to reckless driving in vehicular homicide statute)
- Kentucky – HB 150 (add “fatigue” to reckless driving in vehicular homicide statute)
- Massachusetts – SB730 – Creates special commission for drowsy driving
- New York
 - A00970 – Screening for OSA (Obstructive sleep apnea) in CMV drivers
 - A01234 – Drowsy driving a misdemeanor; felony for vehicular homicide
 - A02332 – Death from drowsy driving a misdemeanor
- Tennessee – SB0071 (add drowsy driving to vehicular homicide statute)

Symptoms

LEARN THE WARNING SIGNS OF DROWSY DRIVING

- **Yawning** or **blinking** frequently.
- **Difficulty remembering** the past few miles driven.
- **Missing** your exit.
- **Drifting** from your lane.
- **Hitting** a rumble strip on the side of the road.



For more warning signs visit the [American Academy of Sleep Medicine](#)

Roadway and Technology

- Many roads feature rumble strips, or sequences of plastic bumps along the shoulder or grooved patterns on the roadway designed to alert drivers when their vehicle leaves the roadway.
- Cable fences in road medians for lane crossings
- Frequently spaced and better advertised rest areas can also cut down on driver fatigue.



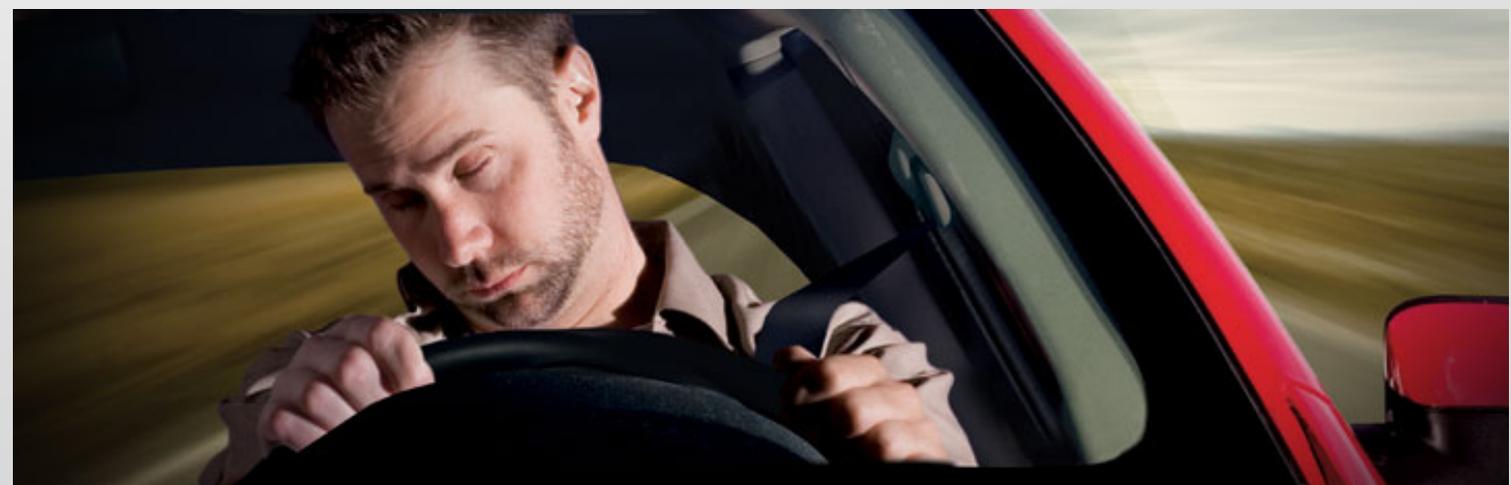
Roadway and Technology

- Wake up Smartphone App to Alert Drowsy Drivers
- **MAY NOT WORK!!**
- **Stop driving – Only 100% method!**



Countermeasures

- **Before “hitting the road”**
 - Get adequate sleep—most adults need 7-9 hours to maintain proper alertness during the day
 - Schedule proper breaks—about every 100 miles or 2 hours during long trips
 - Arrange for a travel companion—someone to talk with and share the driving
 - Avoid alcohol and sedating medications—check your labels or ask your doctor
- **Countermeasures to Prevent a Fall-Asleep Crash While Driving**
 - Stop driving
 - Take a nap
 - Be aware of rumble strips

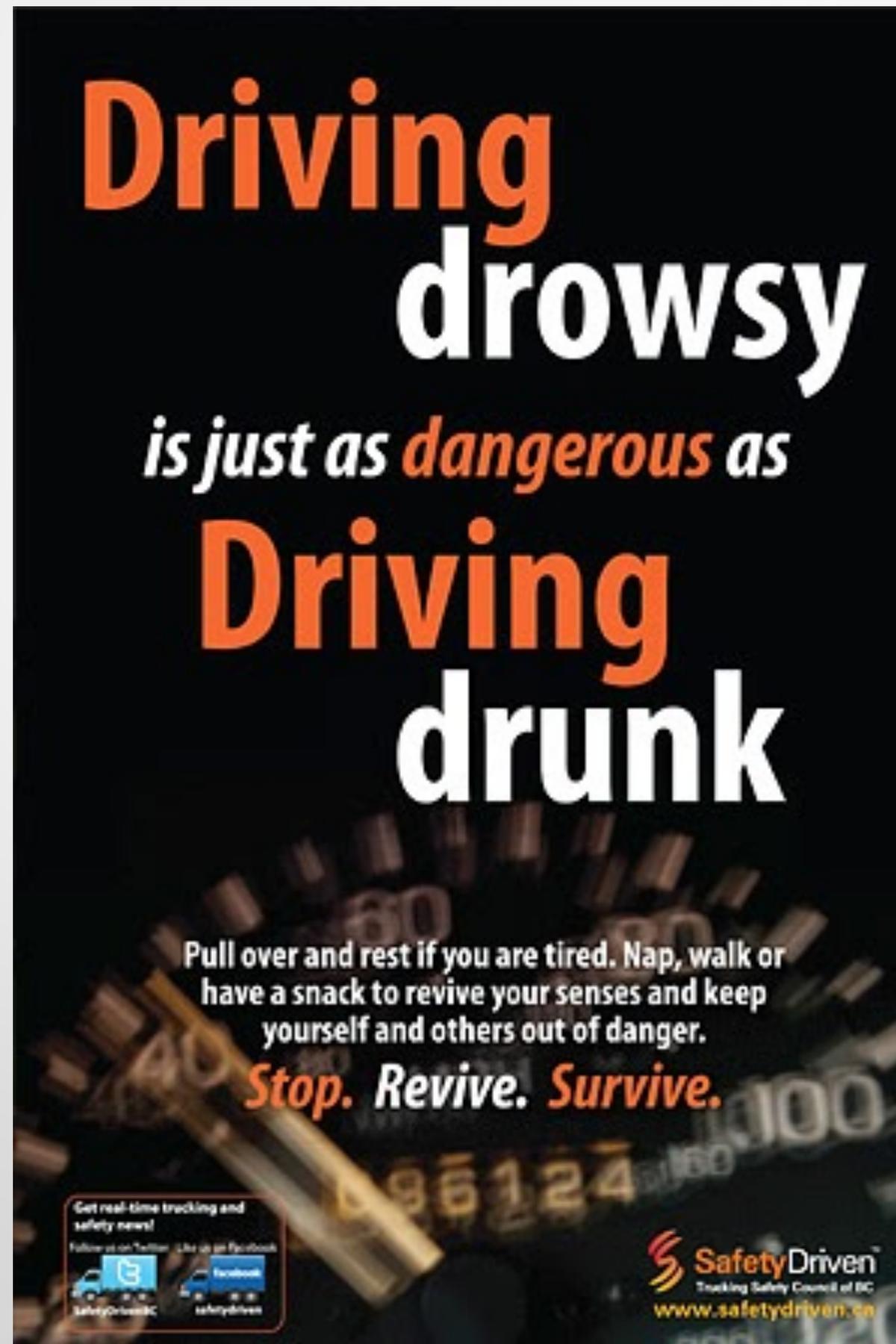


Summary

- Drowsy Driving is an underreported and unrecognized safety problem
- It needs to be handled like other traffic safety problems through Education, Enforcement and Engineering
- Like drunk driving, it is a public health issue that requires public health interventions that ensure that people with sleep problems are properly treated



Questions?



Driving
drowsy

is just as dangerous as

Driving
drunk

Pull over and rest if you are tired. Nap, walk or have a snack to revive your senses and keep yourself and others out of danger.

Stop. Revive. Survive.

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Sources



Saving lives through research and education



www.nhtsa.gov



Centers for Disease Control and Prevention

CDC 24/7: Saving Lives, Protecting People™



NATIONAL SLEEP FOUNDATION

