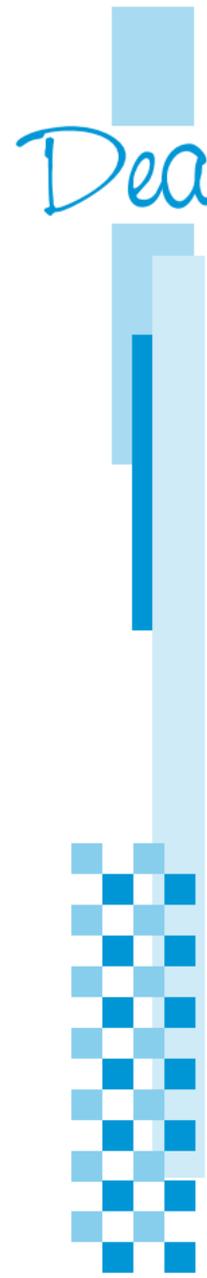


teenagers DROWSY DRIVING

Staying safe
behind the wheel



a wellness booklet from
the American Academy of Sleep Medicine



Dear Reader—

Sleep isn't just "time out" from daily life. It is an active state important for renewing our mental and physical health each day. More than 100 million Americans of all ages, however, regularly fail to get a good night's sleep.

At least 84 disorders of sleeping and waking lead to a lowered quality of life and reduced personal health. They endanger public safety by contributing to traffic and industrial accidents. These disorders can lead to problems falling asleep and staying asleep, difficulties staying awake or staying with a regular sleep/wake cycle, sleepwalking, bedwetting, nightmares, and other problems that interfere with sleep. Some sleep disorders can be life-threatening.

Sleep disorders are diagnosed and treated by many different healthcare professionals, including general practitioners and specialists in neurology, pulmonary medicine, psychiatry, psychology, pediatrics, and other fields. As part of its mission, the **AMERICAN ACADEMY OF SLEEP MEDICINE (AASM)** strives to increase awareness of sleep disorders in public and professional communities. The AASM is the major national organization in the field of sleep medicine. We represent several thousand clinicians and researchers in sleep disorders medicine.

For more information about sleep disorders, contact your healthcare professional. For a list of accredited member sleep disorders centers near you, write to us or visit our web site.

Sincerely,

AMERICAN ACADEMY OF SLEEP MEDICINE

One Westbrook Corporate Center, Suite 920
Westchester, IL 60154

Visit our website: www.aasmnet.org

For patient information: www.sleepeducation.com

TEENAGERS AND DROWSY DRIVING

Drowsy driving is a problem for everyone on the road – no one is safe if you are driving while tired. In fact, drowsy driving is just as dangerous as drunk driving. More than 100,000 accidents a year are caused by drowsy drivers. You may not actually fall asleep at the wheel. Some drivers have delayed reactions and make mistakes in driving because of tiredness. Both situations put you at risk for the serious results of drowsy driving. Teenagers are at an even higher risk for drowsy driving because of a number of factors, including less experience with driving and different sleep needs than adults.



What is Drowsiness?

You know when you are tired and about to fall asleep, right? The answer to that question is “not always.”

Sleep is a basic human need. Your body’s need to sleep can be so strong that even if you try to stay awake, you may not be able to do so. Teenagers who are sleep deprived may not even complain of feeling sleepy. Instead they may feel restless, irritable or hyperactive. But you cannot control your own sleep and often people can fall asleep without actually feeling sleepy beforehand.

Several factors contribute to when we feel sleepy. The first factor that determines sleepiness is the body’s internal clock. There is an internal or biological clock that signals us when to feel sleepy. Its strongest signal for sleepiness occurs in the evening,



around bedtime. There is another, somewhat reduced signal which occurs in the mid-afternoon (“siesta” time). Adolescents typically go to sleep between midnight and 1 AM and get up at 10 AM. Late sleep times and early rise times lead to chronic sleep debt. The second factor that determines



how sleepy we are is simply how long we have been awake. The longer you are awake, the sleepier you will become.

Everyone has somewhat different sleep needs, but most adults need an average of eight hours of sleep per night to feel well rested and alert during the day. However, we need more sleep when we are younger. By the time you reach the teenage years, you actually need an average of nine hours of sleep per night. Even if you miss small amounts of sleep a night, if it happens night after night it can build up so that you become chronically sleep deprived.

The longer you try to stay awake and the more nights you do not get enough sleep the more sleep you need.

“BY THE TIME YOU REACH THE TEENAGE YEARS, YOU ACTUALLY NEED AN AVERAGE OF NINE HOURS OF SLEEP PER NIGHT.”

This is often called “sleep debt.” As your sleep debt worsens, drowsiness has a greater effect on your mental and physical abilities. Over time, sleep deprivation will:

- Make your reaction time slower
- Cause you to have trouble thinking clearly
- Cause you to have difficulty making decisions
- Impair your memory and coordination

People who are drowsy often don't even realize they are

having any of these problems. This makes drowsiness all the more dangerous.

Studies show that the effects of sleep deprivation are similar to the effects of drinking alcohol. Most people know that alcohol consumption impairs judgment and reaction times. This can have devastating consequences while driving. What many people don't realize, however, is that sleep deprivation can cause the same impairments. Sleep deprivation can increase the likelihood of having a car crash.

The legal limit for blood alcohol concentration (BAC) in

“STUDIES SHOW THAT THE EFFECTS OF SLEEP DEPRIVATION ARE SIMILAR TO THE EFFECTS OF DRINKING ALCOHOL.”

all states is 0.08. Studies have found that being awake for 18 hours in a row reduced driving ability the same as a blood alcohol concentration of 0.05. After staying awake for 24 hours (just one night of sleep deprivation) driving ability is the same as someone with a BAC of 0.10. Another study showed that with only four hours of sleep, drinking just one beer can cause the same level of impairment caused by a six-pack in someone who has slept a full eight hours. Even if you only lose one or two hours of a sleep a night for several days,

drowsiness can impair your ability to drive at a rate that is equal to or even higher than the legal alcohol limit.

These facts are even more disturbing when one considers that most teenagers do not get the recommended number of hours of sleep per night.



The 2006 National Sleep Foundation Poll indicated that the typical high school senior sleeps just 6.9 hours per night. It is recommended that teenagers get nine hours



of sleep per night. This means that the average teenager misses nearly 12 hours of sleep per week!

Whether you drive sleepy only once in your lifetime, or you are sleepy all the time, the consequences can be fatal.

How Widespread is Drowsy Driving?

The United States National Highway Traffic Safety Administration (NHTSA) reports:

- 100,000 police-reported crashes caused by drowsiness per year
- 40,000 injuries caused by drowsy driving accidents
- 1,500 deaths a year due to drowsy driving

These numbers probably underestimate the role that drowsiness plays in car crashes. Surveys indicate that more than half of teenage drivers drove drowsy in the past year and 15% of drivers in the 10th thru 12th grades drove drowsy once a week. One study of fall-asleep crashes indicated that drivers were under age 26 in 55% of the crashes.

Police have a test for drunk driving – the Breathalyzer – so it is easy for them to tell if someone has been driving drunk. But there is no test for drowsy driving. There are some clues that can be used to suggest that someone was too sleepy to drive, such as failure to break or reports of long hours without sleep. It is likely that many crashes reported to be caused by speeding or drinking are in fact

caused by sleepiness.

Another problem is that drivers often do not realize that they are sleepy. There are usually no witnesses to a driver's drowsiness prior to a crash. If you are not hurt, a crash will make you wide awake and you will no longer have the symptoms or feelings of sleepiness.

“DROWSY DRIVING ACCIDENTS ARE MORE OFTEN FATAL THAN OTHER ACCIDENTS BECAUSE THERE IS NO ATTEMPT TO AVOID THE CRASH.”

After an accident, many drivers are reluctant to tell the police they were drowsy.

Drowsy driving is very common. It may be overlooked or not recognized. Teenagers and adults need to learn good sleep habits and reduce sleep deprivation to avoid possible disaster.

What are the Common Characteristics in Drowsy Driving Accidents?

Time of day. Most drowsy driving crashes occur between midnight and 8 AM; the remainder typically occur between 1:00 PM and 3:00 PM. As discussed earlier, this is because there are two times during a 24-hour period when our body clock tells us to feel



sleepier – at night and in the mid-afternoon (“siesta time”). These are also the most common times for drowsy driving accidents.

Single driver.

In one study, 82% of crashes



caused by sleepiness involved someone driving alone. A single driver has no one to interact with and help keep him or her alert. Also, there is no one else to take over driving if the driver gets sleepy.

“ONE STUDY SHOWED DRIVERS AWAKE FOR 15 OR MORE HOURS HAD FOUR TIMES THE RISK OF A DROWSY DRIVING CRASH.”

No attempt to avoid crash. Drowsy driving accidents are more often fatal than other accidents because there is no attempt to avoid the crash. Drowsy drivers may close their eyes while driving for a few seconds. A sleepy driver is also less able than an alert driver to take corrective action prior to a crash. The time it takes to respond to danger is increased. This is often shown by a lack of evidence of skid marks or witness accounts of seeing brake lights. Adding to the danger of a fatal accident is the fact that teenagers are more likely to drive faster and less likely to wear seat belts.

Who is Most at Risk?

Young drivers. The risk of motor vehicle crashes in general is much higher among teen drivers than among any other group. There are many causes that contribute to the increased risk of drowsy driving in teenagers. One cause is a lack of driving experience. Also, teens may make lifestyle and behavior choices that lead to less sleep (e.g., staying out late at a party). Studies have shown that teenagers actually need more sleep than adults. This difference between sleep needs and actual sleep leads to an increased risk of drowsy driving crashes in young drivers. Young men, in particular, are at the highest risk for fall-asleep crashes. Several studies have shown that 70-75% of drivers involved in fall-asleep crashes are men.

Drivers suffering from chronic partial sleep deprivation. Many people suffer from chronic partial sleep deprivation. They get less sleep than their body needs for weeks or months. Even an hour or two less sleep per night will add up over time. Teenagers frequently stay up too late at night doing homework or socializing, and then get up early to go to school. People with chronic partial sleep deprivation often doze off in inappropriate situations. They often have difficulty with attention and focus. This affects many tasks including driving.

Drivers suffering from acute sleep deprivation. People who have acute sleep deprivation have been awake for many hours; for example, pulling an “all-nighter” and then driving, or staying up all day and then making a trip that same night. This lack of sleep has a serious impact on their ability to pay attention and react while driving. One study showed drivers awake for 15 or more hours had four times the risk of a drowsy driving crash. If a driver had been awake for 20 or more hours, the risk of crashing increased by 30 times.

Drowsy drivers who have consumed alcohol. Alcohol alone can be enough to cause a vehicle crash. But it also makes you sleepy. When alcohol is combined with excessive drowsiness, the effects are much greater. Alcohol interacts with sleepiness, greatly lowering mental and physical alertness.

This causes a greater amount of swerving and drifting off the road than either alcohol or drowsiness alone. In one driving simulation study, a small amount of alcohol (below the legal driving limit) produced a higher number of mistakes after four hours of sleep than eight hours of sleep. The study also showed for a driver with only four hours of



sleep, drinking one beer had the same effect that a six-pack had on a well-rested person.

Drivers using medications that cause sleepiness.

Many over the counter and prescription medications can cause you to feel drowsy. This includes over the counter and prescription sleeping pills, narcotic pain medications, muscle relaxants and many antidepressant medications. Many people do not realize that cold and allergy medications can also make you sleepy. These medications have warning labels because they can impair a driver's attention and ability to react quickly. This effect is much worse when combined with sleep deprivation or alcohol. These effects can stay with you on the next day after use at night.

Drivers with circadian rhythm disorders. Teenagers are at risk for developing a type of circadian rhythm disorder called delayed sleep phase syndrome. In this disorder, the body clock is shifted. The natural tendency to fall asleep is delayed. Teenagers with this disorder do not feel sleepy until very late at night, so they often cannot fall asleep until the early morning. Since they still need to wake up at the same time in the morning to go to school or go to work, people with a delayed sleep phase disorder



“THE MOST EFFECTIVE WAY TO PREVENT DROWSY DRIVING IS TO MAKE SURE YOU HAVE ENOUGH SLEEP BEFORE DRIVING!”



often lose sleep. This puts them at risk for drowsy driving accidents. Another circadian rhythm disorder is jet lag, caused by travel across several time zones. This can lead to lack of sleep while the person tries to adjust their body clock to a



different schedule. Finally, those who are shift workers (people who work overnight or on rotating shifts) are often trying to sleep when their bodies want to be awake. Shift workers often cannot get enough sleep, especially when they try to sleep during the day. All of these circadian rhythm disorders may lead to sleep deprivation and may cause drowsy driving.

Drivers suffering from untreated sleep disorders. Many sleep disorders, such as narcolepsy and obstructive sleep apnea syndrome (OSAS), cause daytime sleepiness. If not treated, patients with these disorders are at risk for drowsy driving accidents. Narcolepsy often begins in the teenage years, and one of the first symptoms may be daytime sleepiness. Studies in untreated OSAS patients have shown that they have an increased risk of drowsy driving crashes. OSAS is more common in adults, but it also occurs in younger people. In children and teenagers, the typical symptoms include snoring, falling asleep in class and difficulty concentrating in school. You should talk with your healthcare provider if you think you may have OSAS or another sleep disorder.

What Are the Signs of Drowsy Driving?

Sometimes you may not know that you are very drowsy and at risk for having a car accident. Below are some of the signs that should tell a driver to stop and rest:

- Difficulty focusing, frequent blinking, or heavy eyelids
- Daydreaming; wandering or disconnected thoughts
- Trouble remembering the last few miles; missing exits or traffic signs
- Yawning repeatedly or rubbing your eyes



- Trouble keeping your head up
- Catching yourself “nodding off”
- Drifting from your lane, tailgating or hitting a shoulder rumble strip
- Feeling restless and irritable

“TURNING THE RADIO UP OR ROLLING DOWN THE WINDOWS MAY HELP FOR A FEW MINUTES BUT WILL NOT KEEP YOU FROM FALLING ASLEEP IF YOU ARE DROWSY.”

How Do We Prevent Drowsy Driving?

The most effective way to prevent drowsy driving is to make sure you have enough sleep before driving! Having good sleep habits is the best way to prevent drowsy driving.

Unfortunately, most people don't think of the effects of drowsy driving until they are already drowsy. If you find that you feel drowsy while driving, or if you have any of the signs listed above, there are things you can do to decrease your risk of falling asleep and having a car accident. The best thing to do is to pull off the road into a safe parking space (such as a rest area) and take a 15-30 minute nap. If an alert driver is available, they can take over driving while you nap. Drinks with caffeine, such as soda or coffee, may help keep you alert. It takes about 30 minutes to feel the alerting effects of caffeine. If possible, you should nap while waiting for the caffeine to start working. Call a parent or other alert driver for a ride if you are sleepy.

Do not try to “push through” the drowsiness and

keep driving. Even if you think you can handle it, remember that it is not easy for drowsy drivers to realize how much danger they are in. Turning the radio up or rolling down the windows may help for a few minutes and will not keep you from falling asleep if you are drowsy.

In addition to getting enough sleep, do not drink alcohol before driving. Remember that even a small amount of alcohol combined with sleepiness will impair your ability to drive. Try to avoid medications that may cause you to be sleepy while driving. Check over the counter medications for side effects of sleepiness or drowsiness before use. It is important to talk to your doctor if you think that you may have a medical problem or a sleep disorder that might make you sleepy during the day.



GOOD SLEEP HABITS FOR TEENAGERS

Good sleep habits are important for everyone, although what works for a small child or older adult may not be appropriate for a teenager. Teens have unique sleep requirements. Below are some suggestions for promoting good sleep habits and decreasing the likelihood of sleep problems as well as drowsy driving:

- Have a regular, relaxing routine at night to help signal to your body that it is time to sleep.
- Avoid stimulating activities in the late evening, such as heavy studying, computer games, and violent or frightening television shows, books or videos.
- Avoid products with caffeine (coffee, soda, chocolate, etc.) after about 4:00 PM.
- Avoid smoking – nicotine can cause difficulty getting to sleep or disrupted sleep at night, in addition to its many other negative health effects.
- Keep a regular wake time, even on vacations and weekends to keep your body clock from getting disrupted
- Try to go to bed only when you are drowsy.
- Do not fall asleep watching television or videos.
- If you are unable to fall asleep after approximately 20 minutes, leave your bedroom and do a quiet activity elsewhere, such as reading or listening to an audio book. Don't let yourself fall asleep outside of your bedroom. Return to bed only when you are sleepy.
- If possible, avoid napping during the day.
- Don't drink alcohol to help you fall asleep. Although alcohol can make you drowsy at bedtime, it causes a poor quality sleep, with increased awakenings later in the night.

Promoting Education & Funding Research



American Sleep Medicine Foundation
Enhancing Sleep Health for All



WHO WE ARE

The American Sleep Medicine Foundation (ASMF) is the leader in supporting sleep research and education. Established in 1998 by the American Academy of Sleep Medicine, the ASMF is the premier professional society in the field of sleep medicine.

WHAT WE DO

The mission of the ASMF is to enhance sleep health for all.

- ASMF grants fund strategic research to help improve the quality of health care for sleep disorders patients.
- The ASMF supports the education and training of sleep scientists and sleep medicine specialists who will shape the future of the sleep field.
- The ASMF provides humanitarian aid to sleep centers and patients following natural disasters.

HOW YOU CAN HELP

The ASMF is a not-for-profit 501(c)(3) charitable and scientific organization. Invest in the future of sleep research and education to enhance sleep health for all.

**To make an online donation visit
www.discoversteeep.org.**

American Sleep Medicine Foundation
2510 North Frontage Road
Darien, IL 60561-1511
(630) 737-9700
www.discoversteeep.org

TEENAGERS AND DROWSY DRIVING



Driving while tired or sleepy is extremely dangerous – more than 1500 deaths and 100,000 car crashes a year are caused by drowsy driving. You need not actually fall asleep at the wheel to be at risk for a crash. Drowsiness can cause delayed reactions, making it difficult to think clearly and make quick decisions, as well as impairing your memory and coordination. Whether you fall asleep driving or simply feel tired, you are at a very high risk for having a car crash that may injure or kill you or someone else.



“ONE OF THE PROBLEMS WITH DROWSY DRIVING IS THAT YOU CAN FALL ASLEEP WITHOUT REALIZING YOU WERE THAT SLEEPY.”



One of the problems with drowsy driving is that you can fall asleep without realizing you were that sleepy. You may feel that although you are tired you will be able to make it to your destination without trouble. Your body's need to sleep, however, can be so strong that you often cannot control when you doze off, even if you don't feel very sleepy beforehand.

Indeed, drowsy driving is just as dangerous as driving after drinking alcohol. Alcohol similarly impairs judgment and reaction time while driving. Scientific studies show that sleep deprivation can cause these same impairments. What's more, sleep deprivation and alcohol consumption together can have additive effects, with potentially devastating consequences while driving.

Teenagers are at an especially high risk of having a car

crash from drowsy driving. One reason is that teens are more likely to be sleep deprived. Studies have shown that teenagers actually require more sleep than adults, needing an average of 9 hours per night. Many teens do not get that much sleep each night because of lifestyle and behavior choices, often staying up too late and coming up short on the amount of sleep they get each night. Even missing small amounts of sleep can have a negative effect, since you can become chronically sleep deprived if this happens night after night and are more likely to experience the effects of drowsiness on your mental and physical capabilities.

Though you may not realize that you are drowsy and at risk for a car crash, here are some signs that should tell a driver to stop and rest:

- Difficulty focusing, frequent blinking, or heavy eyelids
- Daydreaming-, wandering or disconnected thoughts
- Trouble remembering the last few miles; missing exits or traffic signs
- Yawning repeatedly or rubbing your eyes
- Trouble keeping your head up
- Catching yourself “nodding off”

How can you prevent drowsy driving? The most effective way is to make sure you get enough sleep before driving!

However, if you do notice any of the signs of drowsy driving there are things you can do to decrease your risk of having a crash:

- Pull off the road to a safe place and take a 15-30 minute nap
- Switch drivers if an alert driver is available
- Drink a caffeinated beverage, such as soda or coffee. This can take 30 minutes to become effective, so pull over and nap or rest while waiting for the alerting effects of the caffeine
- Call a parent or another alert driver for a ride

