



### **Stony Brook University**

School of Health Technology & Management Center for Community Engagement & Leadership Development

### **Drowsy Driving Prevention Program**



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Acknowledgements: Leo Gafney, Leonie Huddy, Carlos Vidal, Jie Yang Funded by: The National Highway Traffic Safety Administration with a gran<u>t from The New York State Governor's Traffic Safety Committee</u>





### **Unit 1: Overview Drowsy Driving**

- 1. Introduction to the Highway Transportation System
- 2. Introduction to Safe Driving Practices
- 3. Introduction to Dangerous Driving and Associated Behaviors
- 4. Introduction to Drowsy Driving and Prevention

### **Unit 2: Experiential Exercises**

- 1. Assertive Communication Role Play and Discussion; Alternative Drowsy Driving Video(s) and Discussion
- 2. Myth vs. Fact True/False Quiz and Discussion

### **Final Takeaways**







### **Highway Transportation System (HTS)**

### What is its purpose?

• To move goods and people efficiently, economically, and safely.

Traffic Bottlenecking and crashes are examples of breakdowns in the HTS

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>







## **Highway Transportation System (HTS)**

### Three basic parts of the HTS:

- 1. The driver (People)
- 2. Vehicles
- 3. Environment (Roadways)

### **Characteristics**

- Most important: The driver
- Least predictable: The driver
- Most difficult to control: Predicting the actions of other drivers
- Causes most crashes: The driver responsible for over 90% of crashes
- Compensation: The driver

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>









## **Connecting the HTS and Safe Driving**

### In driving, the following rules of behavior apply:

- Maintain a comfortable space around yourself
- Follow NYS laws and rules of the road
- Avoid crashes
- Signal your intentions
- Wear seat belts



New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>







## **Safe Driving Practices**

### **Driving Habit vs. Driving Skill**

### **Driving Habit**

- A driving habit is an action taken regularly.
  - An example of this is wearing a safety belt.



### **Driving Skill:**

- A driving skill is the ability to use your knowledge effectively and readily.
  - An example of a good driving skill is practicing the "three-second" rule to maintain a safe distance while following behind another vehicle.

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>







## **Safe Driving Practices**

#### What does Safe Driving involve?

- Defensive/careful driving to prevent crashes
- Making allowances for other drivers and allowing for changes in the highway environment
- Crash prevention and avoidance

#### Crash prevention and avoidance can be achieved by:

- Using your senses and developing good perceptual skills
- Making correct decisions and driving carefully to minimize errors
- Conceding the right of way to prevent a crash
- Using mirrors to avoid blind spots, using seat belts, and having perception to hazards

#### To be a safe driver, each motorist must demonstrate 7 key characteristics:

Physical fitness Mental fitness Driving skills Knowledge Good driving habits Emotional fitness Courteous attitude

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>













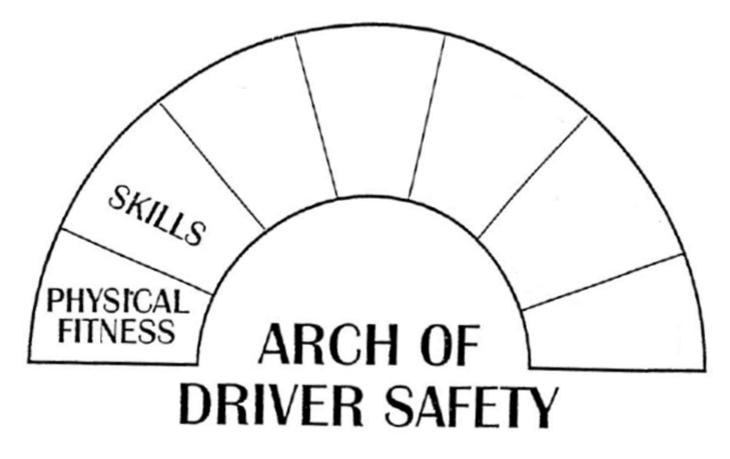








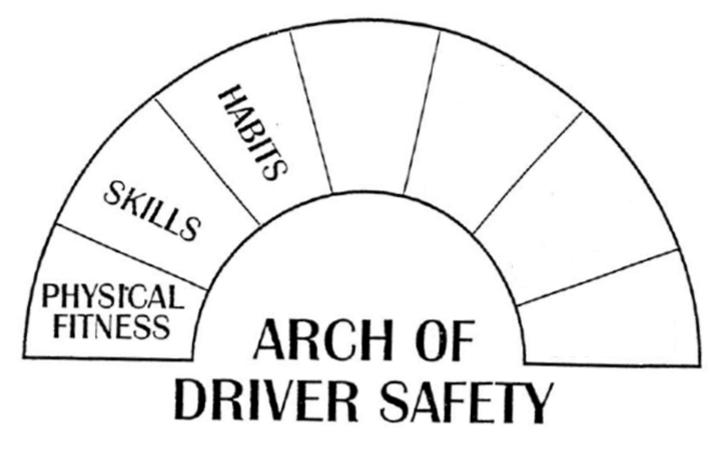








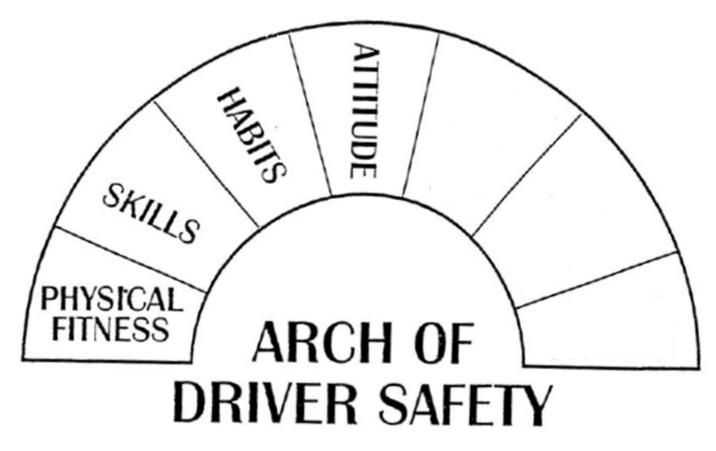








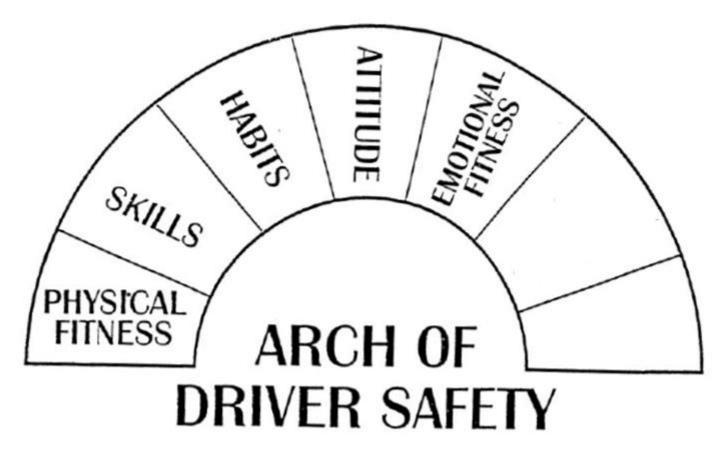








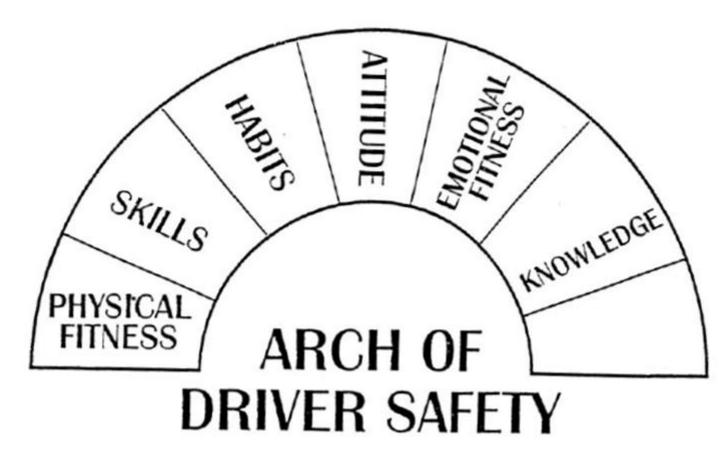








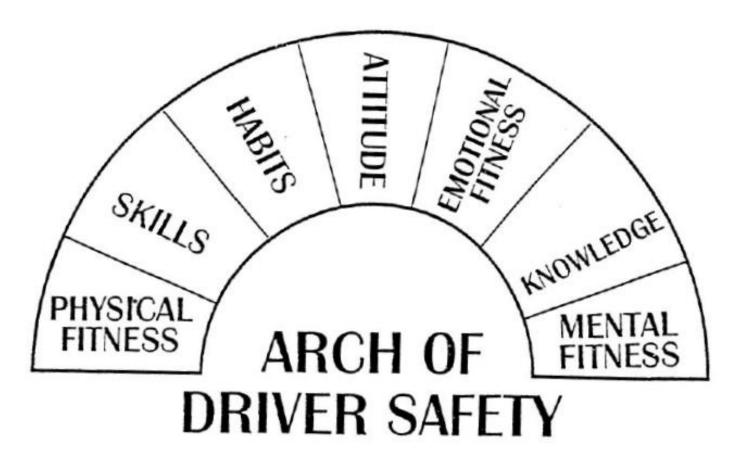
















### **Dangerous Driving and Associated Behaviors**

Newly licensed drivers, teens and young adults have the highest crash rates in comparison to older drivers.

Motor vehicle crashes have the following risk factor among teenagers and young adults:

- Inexperience
- Teenage passengers
- Distraction while driving, including from using cell phones and texting
- Driving at excessive speeds, close following, and other risky driving
- Drinking and driving
- Driving at night
- Being male
- Social norms

#### Often, several of these risk factors are present:

- Those who text while driving are more likely to have other risky driving behaviors as well, compared to those who don't text while driving
- Not using a seatbelt
- Young drivers who own their cars may take more risks

National Institute of Child Health and Human Development. (n.d.). What risk factors do all drivers face? Retrieved January 22, 2018, from https://www.nichd.nih.gov/health/topics/driving/conditioninfo/risk-factors







## The 4 D's of Impaired Driving

- Drunk
- Drugged
- Distracted
- Drowsy







## The 4 D's of Impaired Driving

- Drunk
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## **Impaired Driving - Drunk**

- Drunk Driving is the **#1 contributor** to highway death toll, claiming thousands of lives every year.
- Nationally, over **17,000 motor vehicle-related deaths** occur each year because of alcohol.
- Alcohol is an odorless, colorless, mind altering depressant drug, which in beverage form is in beer, wine and distilled spirits.
- The amount of alcohol is as follows:
  - Beer 3.2%-5 % alcohol
  - Wine coolers 4% to 8% alcohol
  - Malt Liquor: 5% 10% alcohol
  - Wine: 10% 16% alcohol
  - Distilled Spirits 39% 50% alcohol
- An increased Blood Alcohol Content (BAC), increases crash risk drastically.

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>



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## The 4 D's of Impaired Driving

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- Drowsy







### **Impaired Driving - Drugged**

Driving after marijuana use is more common than driving after alcohol use College and high-school seniors who drove or rode with a

driver after marijuana use ALCOHOL MARIJUANA **College Students** Of students who used in the past month, Drove 31% 7% nearly 1 in 3 drove after marijuana use and nearly 1 in 2 rode with a driver 16% Rode 45% who had been using.3 99 Drove 12% **High-School Seniors** In the past 2 weeks, 1 in 8 drove after Rode 15% 20% marijuana use and 1 in 5 rode with a driver who had been using.4 High-school seniors and 65% more likely 65 who smoke marijuana to get into a car crash are 2X more likely to than those who don't receive a ticket smoke.4

#### **Develop Social Strategies**

- Offer to be a designated driver
- Have the designated driver take all car keys
- Avoid driving to parties where drugs and alcohol are present
- Talk to friends about the risks of drugged driving

<sup>1</sup> NHTSA, 2010; <sup>2</sup> SAMHSA, NSDUH, 2014; <sup>3</sup> Whitehill et al., 2014; <sup>4</sup> O'Malley & Johnston, 2013

National Institute on Drug Abuse. (2015, July 22). Drugged Driving. Retrieved January 22, 2018; from https://www.drugabuse.gov/related-topics/trends-statistics/infographics/drugged-driving



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## The 4 D's of Impaired Driving

- Drunk
- Drugged
- **Distracted**
- Drowsy







### **Impaired Driving - Distracted**



### The three types of distraction

Traffic safety experts classify distractions into three main types:

- 1. Manual
- 2. Visual
- 3. Cognitive

End Distracted Driving. (2018). Distracted Driving Facts. Retrieved January 22, 2018, from <a href="https://www.enddd.org/the-facts-about-distracted-driving/">https://www.enddd.org/the-facts-about-distracted-driving/</a>







## The 4 D's of Impaired Driving

- Drunk
- Drugged
- Distracted
- Drowsy







## **Impaired Driving - Drowsy**

- Drowsy Driving is a serious issue that affects all drivers, and it's estimated that over 6000 fatal crashes per year are due to Drowsy Driving.
- **Proper sleep behaviors** encourage safe driving practices.









### The Importance of Sleep





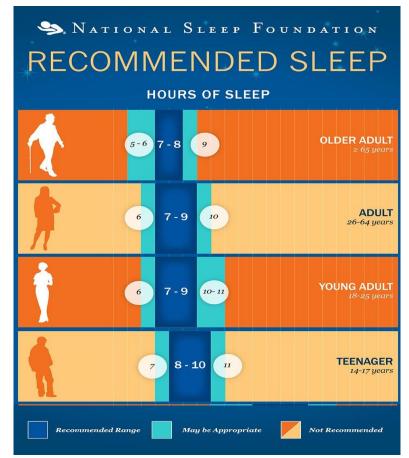




### **Proper Sleep Habits**

# What can I do to ensure proper sleep habits?

- 1. Stick to a sleep schedule
- 2. Practice a relaxing bedtime routine
- 3. Exercise daily
- 4. Evaluate your room
- 5. Use bright light to help manage your circadian rhythms
- 6. Avoid alcohol, cigarettes and heavy meals in the evening
- 7. Wind down
- 8. Speak with your doctor or sleep professional to better evaluate your common sleep habits and behaviors



National Sleep Foundation. (2017). Facts and Stats. Retrieved December 04, 2017, from <a href="http://drowsydriving.org/about/facts-and-stats/">http://drowsydriving.org/about/facts-and-stats/</a>







### **Drowsy Driving**

### What is Drowsy Driving?

• Driving while drowsy is driving while you're **sleepy**.

### Why is this important to understand?

- Driving is a complex mental test that deserves your full attention.
- It is estimated that 1 in 5 serious motor vehicle crashes are attributed to drowsy driving or falling asleep at the wheel.



National Sleep Foundation. (2017). Facts and Stats. Retrieved December 04, 2017, from <a href="http://drowsydriving.org/about/facts-and-stats/">http://drowsydriving.org/about/facts-and-stats/</a>













### What are the signs of sleep deprivation and drowsy driving?



Source: AAA





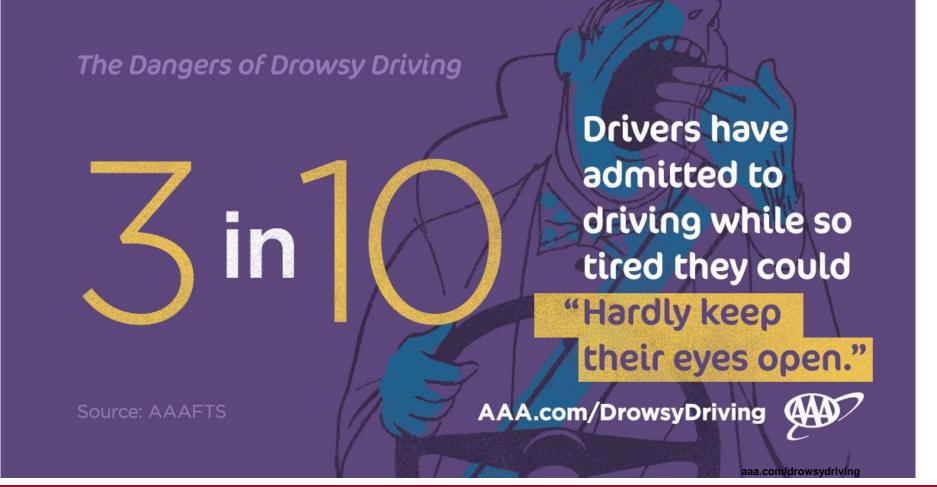
aaa.com/drowsydriving







### What are the signs of sleep deprivation and drowsy driving?









### **Drowsy Driving**

### Who does it affect?

- Teenagers and Young Adults
- Shift workers
- People with sleep disorders
- Men more than women

# Why is drowsy driving a common among teenagers and college-aged students?

- Most of fatigue-related crashes are caused by drivers **under age 25**.
  - o Sports/Extracurricular activities later
  - After school jobs
  - o Homework more demanding
  - o Socializing
  - o Digital media in bedroom
  - Early school start times remain

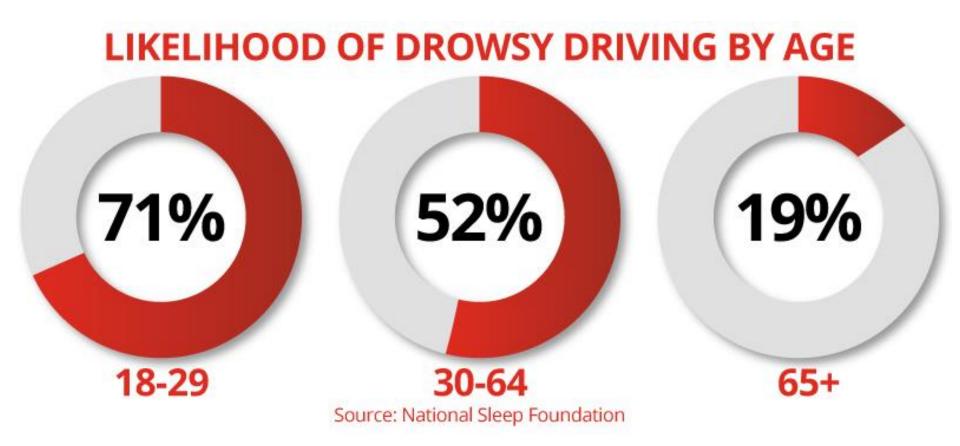


National Sleep Foundation. (2017). Facts and Stats. Retrieved December 04, 2017, from <a href="http://drowsydriving.org/about/facts-and-stats/">http://drowsydriving.org/about/facts-and-stats/</a>









National Sleep Foundation. (2017). Facts and Stats. Retrieved December 04, 2017, from http://drowsydriving.org/about/facts-and-stats/



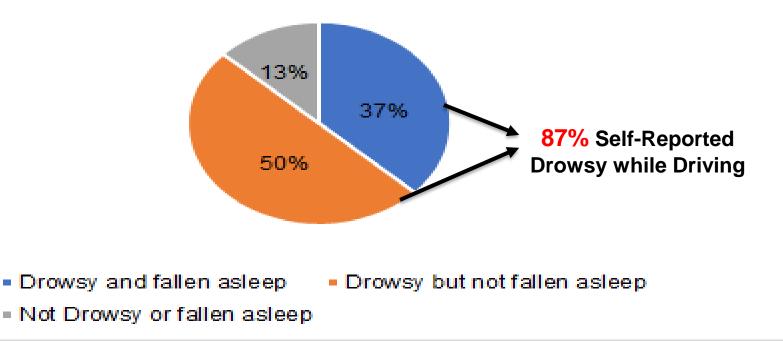




In a recent survey among commuter students at Stony Brook University...

### N = 1,119 Self-Reported Records

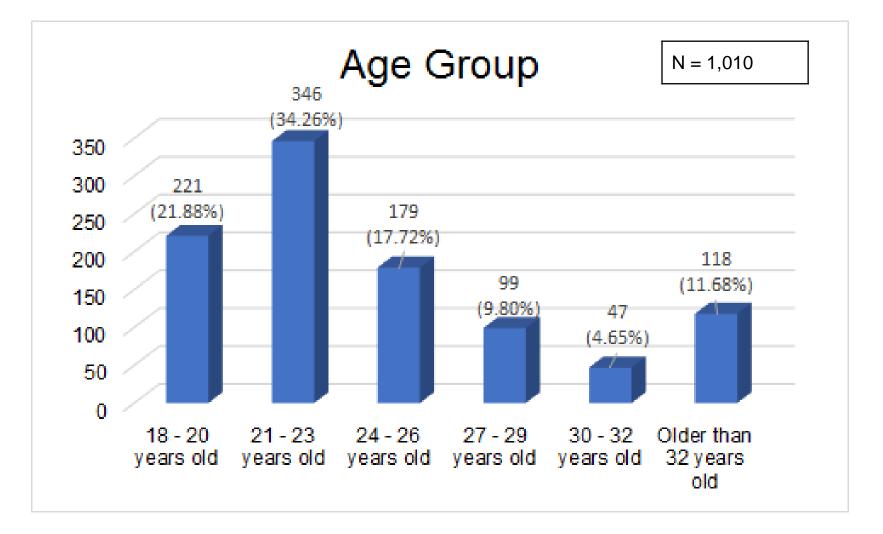
### Self-Reported Drowsy and/or Fallen Asleep Incidences Among Commuter Students







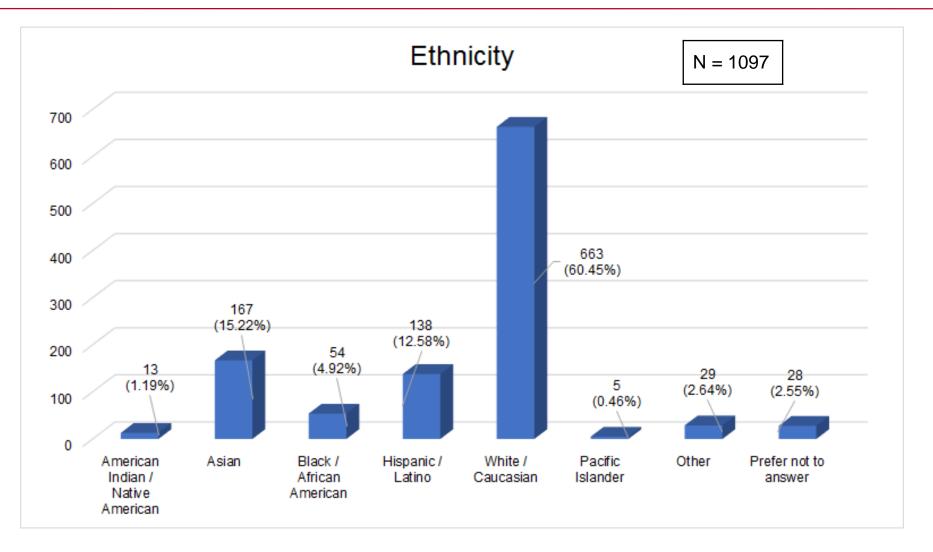








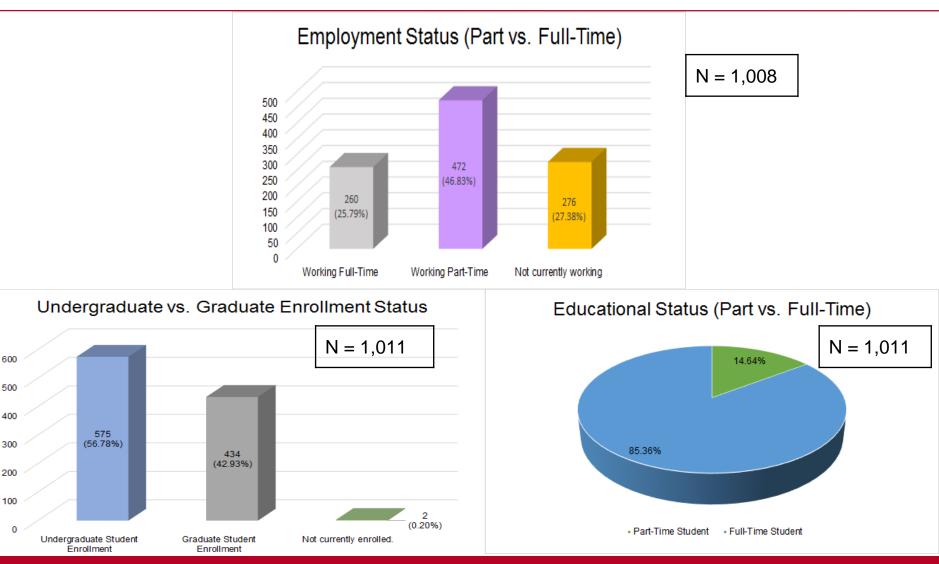








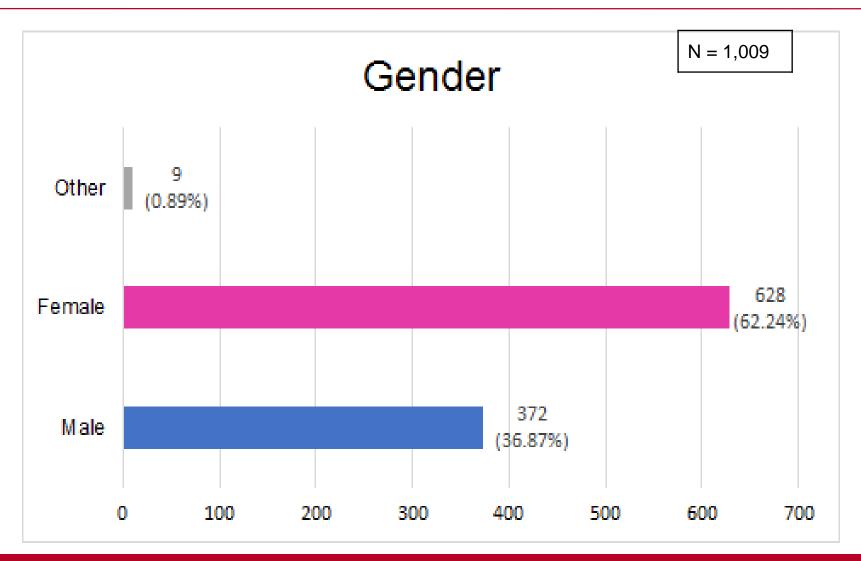
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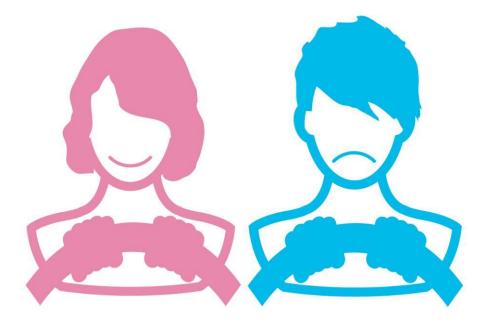








## Males were 1.42 times more likely to drive drowsy with or without falling asleep at the wheel than **Females**.









f 9

Info@stopdrowsydriving.org



HOME TAKE THE QUIZ ABOUT MYTHS SLEEP TIPS IMPORTANT INFORMATION NEWS



Drowsy Driving is a serious issue that affects all drivers, and it's estimated that over 6000 fatal crashes per year are due to Drowsy Driving.\*

Are you at risk? Take the Drowsy Driving Quiz and find out.



Six lucky recipients will be chosen at random to win a free My Pillow®!





a for Disease Control and Prevention (2015). Drower Driving: Advect at the Wheel, Accesse Designed and Prevention (2015).





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#### Sleepy (ESS Score 7-9)

 Estimated odds of drowsy driving status for people who were identified as sleepy (ESS score in 7-9) were
1.68 times the estimated odds for normal people (ESS score in 0-6)

#### Very Sleepy (ESS Score ≥ 10)

 Estimated odds of drowsy driving status for people who were identified as very sleepy (ESS score ≥ 10) were
3.12 times the estimated odds for normal people (ESS score in 0-6).





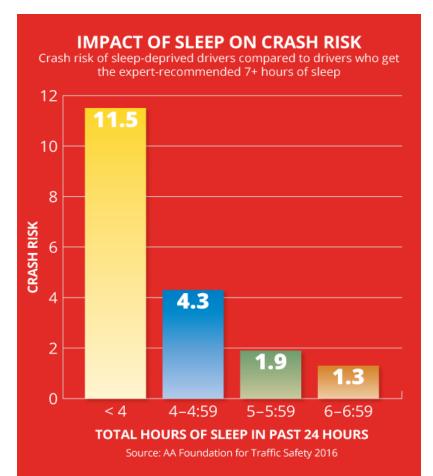




## **Drowsy Driving**

#### Why is driving while drowsy dangerous?

- Safe driving skills are crucial.
- When these skills are not at peak, you are at <u>risk for crashes</u>.
- Why? There is a much slower reaction time, or none at all, many drowsy driving crashes involve serious injuries and/or fatalities.



AAA Foundation for Traffic Safety. (2016). Retrieved March 14, 2018, from http://aaafoundation.org







The **sleep deprived** group was 2.29 times more likely to drive drowsy with or without falling asleep at the wheel than the **not sleep deprived** group.

Drowsy driving can be associated with episodes of "microsleep."

A "microsleep" includes occurrences of sleep (within seconds) when an individual is not engaged with the environment, with or without eyes closed.

(Marcus, J. H., & Rosekind, M. R., 2017)



Don't be like SpongeBob and try to pull an all-nighter writing a paper for Mrs. Puff's Driving Class!!!







More *total hours of sleep per week* would reduce the probability of driving while drowsy with or without falling asleep at the wheel.









#### Long Commuters

 Estimated odds of drowsy driving status for people who were long commuters (≥21 miles) being drowsy and falling asleep at the wheel were 1.64 times the estimated odds for short commuters (≤10 miles)

#### **Moderate Commuters**

 Estimated odds of drowsy driving status for moderate commuters (11-20 miles) being drowsy and falling asleep at the wheel were 1.43 times the estimated odds for short commuters (≤10 miles)

#### **Short Commuters**

• Short commuters were **less likely** to drive drowsy with or without falling asleep at the wheel.







## LACK OF SLEEP MIMICS BLOOD ALCOHOL CONCENTRATION

### 24 Hours without sleep = 0.10% 21 Hours without sleep = 0.08% (Legal limit) 18 Hours without sleep = 0.05%

Source: GHSA

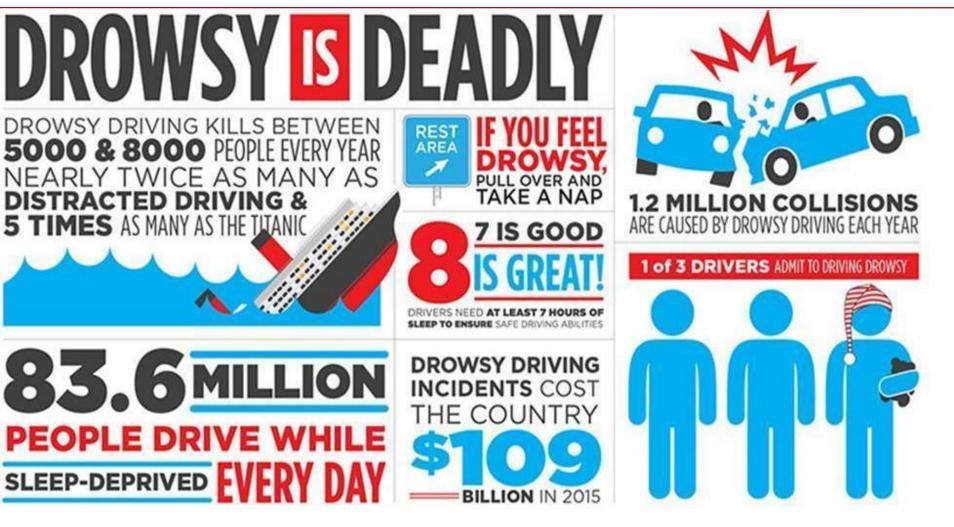


Governors Highway Safety Association, Hedlund, J., & E Foundation for Advancing Alcohol Responsibility. (2015, September). Drug-Impaired Driving: A Guide for States. Retrieved January 22, 2018, from <a href="https://www.ghsa.org/sites/default/files/2017-04/GHSA">https://www.ghsa.org/sites/default/files/2017-04/GHSA</a> DruggedDriving2017\_FINAL.pdf









Newton, L. (2017, November 06). Tired and driving? Take a break – drive awake. Retrieved March 14, 2018, from http://www.penndot.gov/PennDOTWay/Pages/Article.aspx?post=62







## **Prevention of Drowsy Driving**

• Drowsy Driving is just as dangerous as texting and driving, or drunk driving. It causes **crashes, serious injury and death**.

How do I prevent Drowsy Driving?









## **Prevention of Drowsy Driving**

### **10 Strategies to Reduce Risk of Drowsy Driving**

- 1. Drive during your **normal wake time**.
- 2. Driving during the <u>day</u>.
- 3. Obtain the **recommended** amount of sleep per night.
- 4. Practice good sleep habits (hygiene).
- 5. If driving long distances, **take breaks frequently**, get out and move your body around.
- 6. Drive with a <u>passenger</u> if possible.
- 7. Adjust the interior temperature to be <u>cool</u>.
- 8. Avoid using sleep aides the night before driving.
- 9. <u>Read all medication labels</u> for side effects and avoid driving when using ones that can make you sleepy.
  - a. <u>\*Prescription medications</u> and their side effects need to be considered **before** driving; prescription use does not excuse for impaired driving!
- 10. If you are constantly sleepy, <u>talk to your doctor</u>, as this can be a sign of an underlying sleep disorder.



Recommendations compiled from the <u>National Sleep Foundation</u>, <u>National Institute for Health</u>, <u>Centers for Disease Control and Prevention</u>, <u>American Academy of Sleep Medicine</u>.







## Introduction to Assertive Communication for Prevention of Drowsy Driving

- Effective communication skills are **key** to standing up for yourself in an uncomfortable or a potentially dangerous situation, such as when a friend or adult is drowsy while driving.
- Assertive communication is clear, calm and respectful.
- The goal of communication is **to be heard** by the person you are talking to.
- Your focus should be on **problem solving**, not blaming.
- Offer a solution.









## **Prevention of Drowsy Driving**

#### Traits of effective communication include:

- Making "I" statements.
- Listening to the other person's response.
- Reflecting what you heard to be sure that you understood what the other person was saying.
- Being respectful.
- Making eye contact.
- Making and sticking to your point.
- Expressing your feelings by clearly stating your needs and wants.









# **Experiential Exercises**









## **Assertive Communication- Role Play**

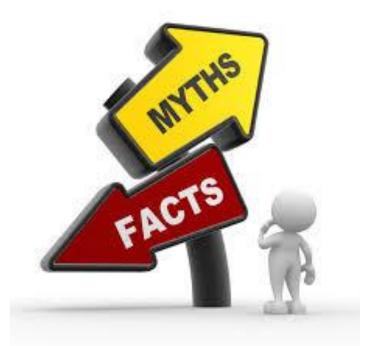
## What did you learn?











## **True/False Quiz and Discussion**





## Final Takeaways

#### You should now be able to:

- Recognize that driving is a **mental, physical, and social test** that involves the interaction of the operator, the environment, and the vehicle.
- Recognize the **importance of protecting motor vehicle occupants** from possible injury or death by using all occupant protection devices and **abiding by safe driving practices.**
- Understand the **rules of the road** emphasizing those that promote safe driving.
- **Identify factors** such as impairment, distractions, and DROWSINESS can severely decrease a driver's ability to operate a motor vehicle safely.
- Recognize **dangerous drivers and driving situations** (drowsy driving) and learn how to react safely.
- Understand the influence of a **driver state of mind and mental health** can have on their behavior and how this affects their actions while driving.

TRIVE BRIVE SAFELY

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New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <u>https://dmv.ny.gov/forms/mv277.pdf</u>





#### **USEFUL RESOURCES**

#### For more information about preventing dangerous driving visit:

- 1. AAA Traffic Safety Culture Index Archives: <u>http://newsroom.aaa.com/tag/traffic-safety-culture-index/</u>
- 2. DMV.org- Three Types of Driving Distractions: https://www.dmv.org/distracted-driving/three-types-of-distractions.php
- 3. End Distracted Driving- Distracted Driving Facts: https://www.enddd.org/the-facts-about-distracted-driving/
- 4. Governors Highway and Safety Administration -Drug-Impaired Driving: A Guide for States: https://www.ghsa.org/sites/default/files/2017-04/GHSA\_DruggedDriving2017\_FINAL.pdf
- 5. National Highway Traffic Safety Administration- Drunk Driving: https://www.nhtsa.gov/risky-driving/drunk-driving
- 6. National Highway Traffic Safety Administration Young Drivers Report the Highest Level of Phone Involvement in Crash or Near-Crash Incidences: <u>https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/811611-</u> youngdriversreport\_highestlevel\_phoneinvolvement.pdf
- 7. National Institute of Child Health and Human Development- What risk factors do all drivers face?: https://www.nichd.nih.gov/health/topics/driving/conditioninfo/risk-factors
- 8. National Institute on Drug Abuse- Drugged Driving: <u>https://www.drugabuse.gov/related-topics/trends-</u>statistics/infographics/drugged-driving
- 9. National Safety Council- Understanding the distracted brain: WHY DRIVING WHILE USING HANDS-FREE CELL PHONES IS RISKY BEHAVIOR: <u>http://www.nsc.org/DistractedDrivingDocuments/Cognitive-Distraction-White-Paper.pdf</u>
- 10. National Safety Council, The AAA Foundation for Traffic Safety, University Of Utah, & National Highway Traffic Safety Administration The Great Multitasking Lie: <a href="http://www.nsc.org/DistractedDrivingDocuments/The-Great-Multitasking-Lie-print.pdf">http://www.nsc.org/DistractedDrivingDocuments/The-Great-Multitasking-Lie-print.pdf</a>
- 11. New York State DMV Pre-Licensing Course Instructor's Manual: https://dmv.ny.gov/forms/mv277.pdf
- 12. New York State DMV Cell phone use & texting: http://dmv.ny.gov/tickets/cell-phone-use-texting
- **13.** New York State Governor's Traffic Safety Committee <u>www.safeny.ny.gov</u>
- 14. Utah Education Network: Distracted Driving. http://www.netsafeutah.org/teens/staysafe/distracted\_driving.html







## LEARN MORE

### **Social Media:**

Facebook – facebook.com/stopdrowsydriving

Twitter - twitter.com/DontDriveTired

Website: <a href="http://www.StopDrowsyDriving.org">www.StopDrowsyDriving.org</a>







## Thank you for your participation!



