# Why We Must Disconnect While Driving

RAMP Risk Assessment Management & Prevention

## How Cell Phones Distract

- Visual – Eyes off the road
- Mechanical – Hands off the wheel
- Cognitive – Mind off driving

## Hands-free devices offer no safety benefit when driving

- Hands-free seen as asolution and are mistakenly believed to be safer than handheld
- People recognize the risk of talking on handheld and texting more than the risk of hands-free

## What is a Hands-Free Device?

- Headset that communicates via wire or wireless connection to cell phone
- Factory-installed or aftermarket feature built into vehicle (voice recognition)

## Hands-free devices do not eliminate cognitive distraction

- Cognitive distraction still exists with hands-free
- Talking occurs on both handheld and hands-free cell phones
- Mind focuses on conversation
- Listen and respond to disembodied voice
- Multitasking: A Brain Drain
- Multitasking for the brain is a myth
- 100% of attention can be given to only one thing at a time
- Driving requires 100% focus to be the safest it can be
- Human brains do not perform two tasks at the same time
- Brain handles tasks sequentially
- Brain switches between one task and another

*A new generation of drivers sees cars as an extension of their plugged-in lives, with iPods, DVD players and other gadgets." USA Today, 2-17-2009. Distractions now join alcohol and speeding as leading factors in fatal and serious injury crashes.*

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- Brain engages in a constant process to:
    - Select information brain will attend to
    - Process information
    - Encode to create memory
    - Store information
    - Retrieve information
    - Execute or act on information

## When the brain is overloaded these steps are affected:

- Brain filters information due to overload
- Drivers not aware of information filtered out
- Information does not get into memory
- Drivers miss critical information on potential hazards
- Brain juggles tasks, focus and attention
- Brain switches between primary and secondary tasks
- Inattention blindness - When people do two cognitively complex tasks (driving and using a cell phone), causing the brain to shift focus
- "looking" but not "seeing"
- Hands-free drivers less likely to see:
- High and low relevant objects
    - Visual cues
    - Exits, red lights and stop signs
    - Navigational signage
    - Content of objects

*CHALLENGE:*

*Drivers don't understand or realize that talking on a cell phone distracts the brain and takes focus away from the primary task of driving.*

## Multitasking: Impairs Performance

- We can walk and chew gum safely because it is not a cognitively-demanding task
- Even cell phone-using pedestrians act unsafely. They are less likely to:
  - Look for traffic before stepping into street
  - Look at traffic while crossing street
  - Notice unusual objects placed along path

## Driving involves a more complex set of tasks than walking

- Visual
- Manual
- Cognitive
- Auditory

## A driver's job is to watch for hazards, but this cannot be done when the brain is overloaded.

## Cell Phone: Typical driver behaviors

- Inattention blindness
- Slower reaction/response times
- Problems staying in lane

*Ref: Carnegie Mellon University Study (Multitasking); National Safety Council*



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