

JIFNEWS

A Quarterly Newsletter from the Somerset County Joint Insurance Fund featuring Safety, Health & Wellness

Why do drivers miss important driving cues?

Everything people see, hear, feel, taste or think – all sensory information – must be committed to short-term memory before it can be acted on. Short-term memory can hold basic information for a few seconds. However, to get even very basic information into short-term memory, the brain goes through three stages to prioritize and process information. The first stage is called “encoding.”

Encoding is when the brain selects what to pay attention to. Encoding is negatively affected by distractions and divided attention. During this first state, the brain will “screen out” information as a way to deal with distraction overload.

All human brains have limited capacity for attention. When there is too much information, the brain must decide what information is selected for encoding. Some decision processes are conscious and within a person’s “control,” while other decisions are unconscious so we’re not aware of them. Therefore, people do not have control over what information the brain processes and what information it filters out.

For example, a person who is talking on a cell phone while driving has a brain that’s dealing with divided attention. The brain is overloaded by all the information coming in. To handle this overload, the driver’s brain will not encode and store all of the information.

Some information is prioritized for attention and possibly action, while some is filtered out. The driver may not be consciously aware of which critical roadway information is being filtered out.

Performance is impaired when filtered information is not encoded into working short-term memory. The brain doesn’t process critical information and alert the driver to potentially hazardous situations. This is why people miss critical warnings of navigation and safety hazards when engaged in cell phone conversations while driving.



Where is your brain power going?

The activity in the area of the brain that processes moving visual images – important to safe driving – decreases by 1/3 when listening to a phone conversation.

Today there are more than 320 million wireless connections in the U.S. And although public sentiment appears to be turning against cell phone use while driving, many admit they regularly talk or text while driving. The National Highway Traffic Safety Administration estimates that nine percent of all drivers at any given time are using cell phones, and the National Safety Council estimates about one in four motor vehicle crashes involve cell phone use at the time of the crash.

Cell phone distracted driving has become a serious public health threat. A few states have passed legislation making it illegal to use a handheld cell phone while driving. These laws give the false impression that using a hands-free phone is safe.

Vision is the most important sense for safe driving. Yet, drivers using hands-free phones (and those using handheld phones) have a tendency to “look at” but not “see” objects. Estimates indicate that drivers using cell phones look but fail to see up to 50 percent of the information in their driving environment. Distracted drivers experience what researchers call inattention blindness, similar to that of tunnel vision. Drivers are looking out the windshield, but they do not process everything in the roadway environment that they must know to effectively monitor their surroundings, seek and identify potential hazards, and respond to unexpected situations. Their field of view narrows.

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Inattention Blindness

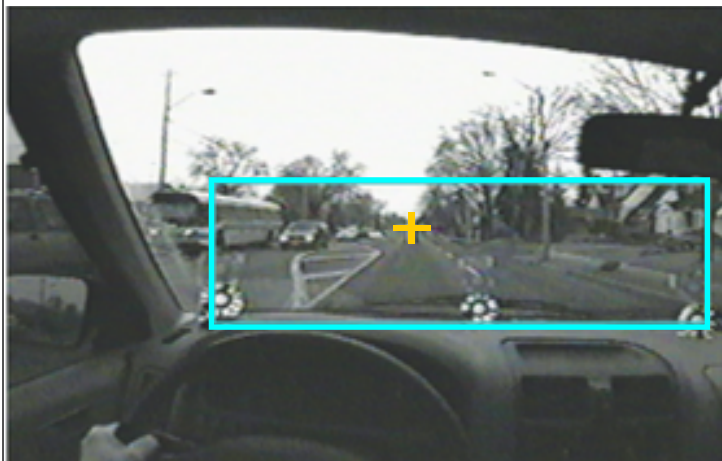


FIGURE 4. WHERE DRIVERS NOT USING HANDS-FREE CELL PHONE LOOKED. SOURCE: TRANSPORT CANADA

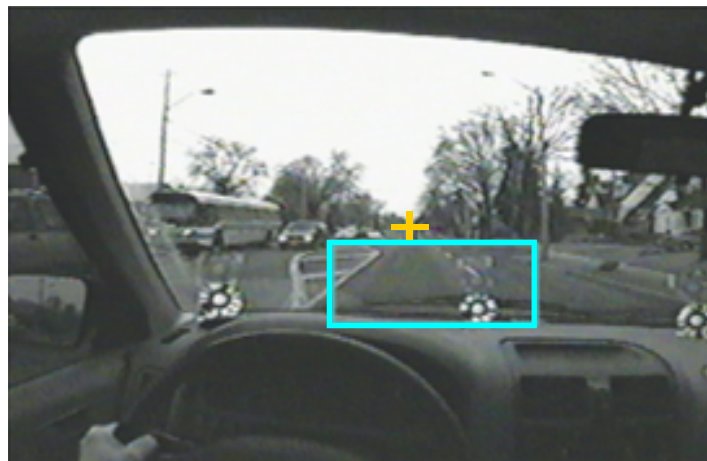


FIGURE 5. WHERE DRIVERS USING HANDS-FREE CELL PHONE LOOKED. SOURCE: TRANSPORT CANADA

To demonstrate this, Figure 4 is typical representation of where a driver would look while not using a phone. Figure 5 shows where drivers looked while talking on hands-free cell phones.

Drivers talking on hand-free cell phone are more likely to not see both high and low relevant objects, showing a lack of ability to allocate attention to the most important information. They miss visual cues critical to safety and navigation. They tend to miss exits, go through red lights and stop signs, and miss important navigational signage. Drivers on cell phones are less likely to remember the content of objects they looked at, such as billboards. Drivers not using cell phones were more likely to remember content.

The danger of inattention blindness is that when a driver fails to notice events in the driving environment, either at all or too late, it's impossible to execute a safe response such as a steering maneuver or braking to avoid a crash.

There is a shared responsibility among all involved in cell phone conversations to avoid calling and talking while driving – including drivers, callers and the people that drivers may call. Vehicle manufacturers are including more wireless and voice recognition communications technologies in vehicles, but their impact on distraction has yet to be fully studied. Consumers should consider their exposure to cognitive distraction and increased crash risk while using these in-vehicle technologies.

SOURCE: WWW.EHOW.COM

Key Facts and Statistics

- In 2011, 3,331 people were killed in crashes involving a distracted driver, compared to 3,267 in 2010. An additional, 387,000 people were injured in motor vehicle crashes involving a distracted driver, compared to 416,000 injured in 2010.
- 18% of injury crashes in 2010 were reported as distraction-affected crashes.
- In the month of June 2011, more than 196 billion text messages were sent or received in the US, up nearly 50% from June 2009. (CTIA)
- 11% of all drivers under the age of 20 involved in fatal crashes were reported as distracted at the time of the crash. This age group has the largest proportion of drivers who were distracted.
- 40% of all American teens say they have been in a car when the driver used a cell phone in a way that put people in danger. (Pew)
- Drivers who use hand-held devices are 4 times more likely to get into crashes serious enough to injure themselves. (Monash University)
- Text messaging creates a crash risk 23 times worse than driving while not distracted. (VTTI)
- Sending or receiving a text takes a driver's eyes from the road for an average of 4.6 seconds, the equivalent-at 55 mph-of driving the length of an entire football field, blind. (VTTI)
- Headset cell phone use is not substantially safer than hand-held use. (VTTI)

Hot Weather and Safety Eyewear:

A closer look at the hazards

The calendar says summer's on the way. Temperatures already are beginning to spike in many parts of the country – if they ever stopped. For safety professionals, that means it's the time of year to begin preparing plans to protect outdoor workers from heat stress.

The most common risks associated with high heat are well known: heat rash and cramps, to heat exhaustion and heat stroke. There's one more that needs to be on the radar: Both OSHA's and CDC's educational materials advise that "Exposure to heat can also increase the risk of injuries because of fogged-up safety glasses."

Two specific injury risks come to mind. First, when safety eyewear fogs up on a hot and steamy afternoon, workers may simply take it off, exposing themselves to a variety of hazards. The second risk of fogged eyewear is impaired vision that can leave the outdoor worker open to injury while handling everyday tasks, a fact well understood by safety professionals who deal with high-heat indoor environments, such as utilities, metal fabrication, and paper mills. In fact, a survey among safety professionals found that 28 percent of them believed fogged eyewear had contributed to injuries in their own workplaces.

Lost productivity is also a consideration when employees struggle with fogging. A conscientious person who removes, wipes, and re-dons safety eyewear multiple times during a shift can't be working up to potential.

WHY SAFETY EYEWEAR FOGS MORE IN SUMMER

Why does any worker, for that matter – encounter more fogging in summer? There are three reasons. Two of them are environmental issues – heat and humidity. The third is a biological one – human exertion. Here's how it works.

We're all familiar with the layer of water droplets that forms on the outside of a cold glass of lemonade sitting in muggy July heat. Because there's a temperature difference between the inner and outer surface, moisture in the air condenses onto the warmer surface – the outside of the glass. The same process is at work with eyewear, except the droplets are tiny, creating fog.

In hot weather, the ambient temperature is already high, and the air between the wearer's face and the eyeglass lens can be even hotter, the way the air inside a closed car is hotter than the outside temperature. Then add the biological factor: The person laboring under the sun is likely to be generating increased body heat, so that temperature difference gets even higher. The conditions are ripe for fogging.

Next, add increased summer humidity. There's more water in

the air waiting to be converted to fog, plus there's the human component of perspiration. Even a worker in dry-as-a-bone Phoenix perspires more in the heat, which increases the moisture on the face, right behind the safety glasses, and increases the prospect of fogging.

The tighter the eyewear fits, the higher the risk.



Movement of air around the face and safety eyewear can help to lower the temperature and evaporate humidity, reducing the fogging risk. However, some of today's wraparound eyewear designs hug the face and reduce air flow. Workers who never experienced a fogging problem in spring and fall weather may see one develop. Goggles can present an even greater concern because their snug fit, a key to safety, may reduce ventilation.

HOW CAN YOU PREPARE?

The hot-weather injury risk of fogged-up safety glasses is a reality, as OSHA notes. For that reason, the topic needs to be integrated into heat stress safety planning. It should be incorporated as a part of an effective safety culture. Here are some key considerations:

- Train for it. Just as you cover the symptoms of, and safety precautions for, heat stress, discuss fogging. Explain the potential for fogging problems. Review the organization's safety eyewear policy and the injury risks of removing safety eyewear or working with fogged-up lenses. Inform workers of solutions available from the company.
- Provide ways to prevent fogging. Consider offering workers anti-fog treatments or lenses. Think about adding additional styles of eyewear during the summer that could improve air flow.
- Remember to address other barriers to safety eyewear compliance that might be aggravated by heat and humidity. Comfort matters; when nosepieces or temples get sweaty and slippery, they can slip off or chafe. A worker may solve the problem with a different eyewear design. Provide a strap; if glasses are removed during a break, they are less likely to be left on a bench or in the truck.
- Be vigilant about compliance. If you see workers without eyewear, address it immediately and look into root causes.

Source: OHS Magazine