



Injury Briefing

A review of the latest studies from Dr. Michael D. Berry.

Hands-Free Texting: Just as Dangerous

More and more new cars are coming equipped with elaborate voice-activated systems that allow drivers to text, call, and even check their email with ease. But does hands-free mean risk-free? No, according to a new study that found that hands-free tasks can lead to dangerous distracted driving.

The study from the AAA Foundation and the University of Utah shows that any task that increases mental workload while driving can put drivers at an increased risk of an accident.

Earlier research from the US Department of Transportation¹ found that 78% of all crashes and near crashes are caused by inattentive driving. The DOT study characterized inattention as any task that created visual, physical, and cognitive distractions.

In this latest AAA study, researchers² tracked drivers' eye and head movement; reaction time to triggers of red and green lights; and mental workload with EEG skull caps that measured brain activity. Drivers performed various hands-free tasks while keeping their hands on the wheel and their eyes on the road. In one task, participants interacted with a voice-command system to answer messages and dictate texts. Based on these measurements, researchers rated drivers' attention on a scale of 1-5. A score of 1 meant no distraction, and a score of 5 indicated the mental attention it would take to solve a challenging math or memory problem.

Drivers were the least distracted while listening to the radio (with a score of 1.21) or when listening to an audio book (1.75). Having a conversation with another person in the car scored a 2.33. Phone calls with a hands-free device were scored at 2.27 and without a hand-held phone at 2.45. By the far the most distracting task was hands-free texting, which received a score of 3.06. The results suggest that hands-free texting and voice-command systems require enough mental workload to make drivers dangerously distracted.

"These findings reinforce previous research that hands-free is not risk-free," remarked AAA Foundation President and CEO Peter Kissinger in a press release. "Increased mental workload and cognitive distractions can lead to a type of tunnel vision or inattention blindness where motorists don't see potential hazards right in front of them." Kissinger said there was a "looming public safety crisis ahead" with the growth in hands-free technologies in new vehicles.

The AAA foundation encouraged automakers to limit voice commands to driving-related activities and to disable social media and texting functions while the car is in motion.

1. *Why is hands-free texting dangerous? The Economist. June 24, 2013. Accessed June 25, 2013.*
2. *Strayer DL, et al. Measuring cognitive distraction in the automobile. June 2013. AAA Foundation.*

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Dizziness and Whiplash: Can Vestibular Rehab Help?

Dizziness is a common complaint after auto injury, affecting between 15-25% of patients with whiplash. Within the neck are tiny sensory receptors called muscle spindles working with a number of reflexes to stabilize the head and eyes. A neck injury may impair these receptors, disrupting the body's ability to maintain postural control. Studies have shown that whiplash patients are more likely to have poor balance and postural control compared to people without the disorder.

Earlier research¹ has indicated that vestibular rehabilitation may help patients with whiplash-associated disorders (WAD). Vestibular rehabilitation is a therapy that aims to stabilize gait and gaze through visual and balance exercises.

In a new study, researchers² from Lund University in Sweden tested whether vestibular rehabilitation could alleviate pain and disability among whiplash patients. Their study included 29 patients with whiplash who were assigned to either a control group or a treatment group receiving vestibular rehabilitation. At both the six week and three month follow-up, the vestibular rehabilitation program did not significantly impact neck pain scores or cervical range of motion.

Despite these results, previous studies have suggested that vestibular rehabilitation can decrease symptoms of dizziness. The same group of researchers from Lund University conducted a study in 2006 showing that vestibular rehabilitation led to significant improvements in postural control.

While more research is needed to investigate these conflicting results, it's possible that vestibular rehabilitation may help to improve dizziness without significantly decreasing range of motion and neck pain. Combining vestibular rehabilitation with exercise and chiropractic care could ultimately prove most successful by addressing the multifaceted nature of whiplash-associated disorders. Chiropractic care significantly decreased dizziness in patients with vertigo in one recent study.

1. *Hansson EE, et al. Dizziness among patients with whiplash-associated disorder: a randomized controlled trial. Journal of Rehabilitation Medicine 2006; 38 (6): 387-90.*
2. *Hansson EE, et al. Influence of vestibular rehabilitation on neck pain and cervical range of motion among patients with whiplash-associated disorder: A randomized controlled trial. Journal of Rehabilitation Medicine 2013; doi: 10.2340/16501977-1197.*