

Crash victims who drink sustain worse injuries

ANN ARBOR—Vehicle crash victims who have alcohol in their systems at the time of the crash suffer worse injuries, and are more likely to sustain a severe injury than those who haven't been drinking, a new University of Michigan study finds.

The difference, which was seen in both drivers and passengers of crashed vehicles, in victims of all kinds of crashes, and in people whose blood-alcohol levels were under the legal limit to drive, suggests that alcohol does something to the body that increases its vulnerability to injury.

The new results will be published in the April issue of the journal *Alcoholism: Clinical & Experimental Research* by a team from the U-M Health System and the U-M Transportation Research Institute.

PURPOSE

Among other things, the researchers hope their finding could improve emergency medical treatment for all types of injuries, if first-responders, doctors and nurses ask

whether patients have been drinking when they triage and evaluate them.

They also hope it will spur research on exactly what alcohol does to the human body on the microscopic level — perhaps leading to therapies that could reduce the impact of injury in people with alcohol in their systems.

"Drivers and passengers who had any level of alcohol in their bodies were, on average, more than one and a half times as likely to experience a serious injury as someone who hadn't been drinking, and their injury severity was 30 percent higher, controlling for the severity of the crash they were in, whether they were wearing their seat belt, or whether they had a high alcohol tolerance," says Dr. Ronald Maio, a U-M emergency medicine physician who helped lead the study. Maio directs the U-M Injury Research Center.

"We as a society may be grossly underestimating the burden of injury attributable to alcohol, and the need for more research and preventive efforts," Maio adds.

"Until we can learn more

about this effect and how it can be prevented, anyone who drinks before getting in a motor vehicle, even as a passenger, should give themselves more time to sober up, and stop drinking long before they leave."

DATA

The data were drawn from 1,362 motor vehicle crash victims ages 18 years or older who came to the emergency rooms of two different Michigan hospitals and were treated and released, admitted to the hospital, or died from their injuries.

The patients had been driving or riding in cars, vans or pickup trucks; motorcycle accidents were excluded. Just over three-quarters of the patients had been driving the vehicle at the time of the crash. Twenty-one percent of the patients had been drinking prior to the crash.

The study took into account the patients' medical conditions, their scores on a standard scale of injury severity, results from tests of their blood alcohol levels, answers to ques-

tions about their alcohol use, and information from police reports on the nature and severity of the crashes they were in, including seat belt use, which allowed them to estimate the strength of the crash forces.

Maio and his colleagues believe it is the most detailed study of its kind ever performed. Previous studies that suggested no connection between injury severity and alcohol did not include considerations of crash severity or the full range of injury.

According to the National Highway Traffic Safety Administration, alcohol-related motor vehicle crashes killed more than 17,440 people in 2001, and injured 300,000 more, costing \$45 billion.

Alcohol is well known to reduce the judgment and performance of drivers and others engaging in activities that require concentration, quick reaction, and precise movement.

ALCOHOL LEVELS

This knowledge has led to laws that set limits on the level of alcohol that drivers can have

in their blood, most commonly set by states at 0.08 or 0.1 percent of blood volume. It has also led to major public-health campaigns aimed at preventing drunk driving — such as efforts to encourage those who have been drinking to let someone else drive them home. A federal law passed in 2000 requires all states to have a legal limit of 0.08 by October 2003, or risk losing federal highway construction funds. Fourteen states have yet to comply.

But the U-M study shows that that even drivers and passengers with blood-alcohol percentages less than 0.1 percent suffered worse injuries and had higher likelihood of severe injury than those who were completely sober.

"Basically, this shows that alcohol can make one's risk of injury from a crash worse, and in fact the effect may be strongest in relatively minor crashes," says Maio. He notes that the effect of alcohol on injury varies with blood alcohol levels.

Though the exact mechanism for the increased injury is still a mystery, the researchers point to animal studies show-

ing that alcohol affects the membranes of cells. The kinetic energy of a vehicle crash could be enough to burst cell membranes that have been altered by alcohol, thereby increasing the severity of injury, Maio says. But only further research will tell for sure.

In the meantime, the researchers suggest that emergency medicine staff — at the crash scene and at the hospital — should begin taking alcohol intake into account when triaging and treating crash victims. Other injuries that result from some sort of impact — such as falls or assaults — may also be affected by alcohol intake, Maio suggests, though further research is needed.

And, as society grapples with measuring and reducing the impact of alcohol-related crashes, the researchers say their data should be taken into account.

"Because excess injury results even at alcohol levels below 0.10 percent, previous analyses of alcohol-related injury costs may have underestimated the true cost of alcohol in motor vehicle crashes," they write.

Caffeine could possibly trigger migraines

If you are one of the millions of migraine-sensitive Americans who need caffeine to rev you up for work in the morning or pick you up off your desk in the afternoon, you may actually be triggering a debilitating headache that will keep you out of the office altogether.

Researchers at the U-M Health System are now studying the relationship between migraine headaches and your daily caffeine habit.

Migraines are very common: 6 percent of men and 18 percent of women suffer from these disabling headaches at some point in their lives — most commonly between the ages of 25 to 55. Of those people, 60 percent have at least one fairly severe migraine every month — often severe enough to warrant calling in sick, says U-M neurologist Dr. Linda M. Selwa.

"Migraines differ from tension headaches in that they're usually only on one side of the head. They are often severe enough to be associated with nausea and to make sufferers shy away from light and sounds. Many have visual disturbances, and often migraines are not able to keep up with their usual daily

CAFFEINE TRIVIA

- The actual source of caffeine is the coffee bean, tea leaf, kola nut and cacao pod.
 - The caffeine for colas and other products is derived from the process of decalaminating coffee and tea.
 - Medically, caffeine is useful as a cardiac stimulant and also as a mild diuretic (it increases urine production).
 - Caffeine is an addictive drug. Among its many actions, it operates using the same mechanisms that amphetamines, cocaine and heroin use to stimulate the brain.
- (source: <http://home.howstuffworks.com/caffeine.htm>);

activities," says Selwa. Chris Holden has suffered from migraines for more than 20 years. "The pain goes to an entire side of my head. My ear hurts, my teeth hurt. It feels like someone's jabbing me with a pick. I get sensitive to light, very sensitive to smell, and the nausea and vomiting begin. At their worst, my migraines are totally debilitating."

TRIGGERS

For those unlucky enough to suffer from migraines, the triggers are lurking everywhere. Stress; sleep deprivation or

fatigue; skipped meals or certain foods; sensory overload in the form of bright lights, loud noises or strong smells; certain types of physical activity; and hormone fluctuations can

bring on the severe and lasting pain of a migraine. But what about caffeine? Known medically as trimethylxanthine, caffeine has been linked to everything from sleepless nights and jitteriness to birth defects and breast cancer. Yet caffeine is likely the most popular drug in the world — about 90 percent of Americans consume it in one form or another every single day.

Now Selwa and her colleagues at the U-M Health System are studying the importance of caffeine as a trigger for migraine.

"Many of my patients have told me stories about needing caffeine when they feel a headache coming on, or having headaches on the weekends when they haven't had their usual work-day amount of caffeine," she says.

Irene's Myomassology Institute hosts free Holistic Health Festival

Irene's Myomassology Institute, located 2600 Franklin Road in Southfield, will host its second annual free Holistic Health Festival 11 a.m. to 7 p.m. Saturday, May 10.

The event includes free massages, as well as classes in yoga, stress relief, pilates, body rolling, Feng Shui, self-care for sore muscles, posture management and guided imagery.

Throughout the day, there be lectures on intuition, vegetarianism, natural approaches to women's health, astrology and detoxification methods. In addition, experts in fitness training, chiropractic care, vegetarianism, personal development and handwriting analysis will offer advice and information. Patrons can also experience samples from the Whole

Foods Market and learn about community supported agriculture.

"We are looking forward to the public coming out to our larger facility to experience a variety of holistic health techniques and all they benefit they have to offer," said Irene's Myomassology Institute Director Kathy Gauthier.

The festival's atmosphere will be complemented with soothing flute music by Ralph Kuzlarski and dulcimer performances by Charlene Berry. Both musicians will be giving performances throughout the day.

Additional parking will be available at Christian Tabernacle Church, just west of Irene's, where a complimentary shuttle will be available throughout the event.

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