SLEEP DEPRIVATION AND FATIGUE IN COMMERCIAL TRUCK CRASHES
According to the National Highway Traffic Safety Administration (NHTSA), sleep deprivation is a factor in almost 100,000 motor vehicle accidents and 1,550 fatalities per year in the United States. In fact, studies suggest that fatigue and/or sleep deprivation may be a contributing factor in at least 30 to 40 percent of all heavy truck crashes.

Sleep deprivation not only affects a person’s health, it also affects a driver’s ability to safely operate a motor vehicle. The effects of sleep deprivation on drivers include:

- Increased reaction time
- Decreased alertness
- Degraded attention and vigilance
- Decreased motivation
- Increased “microsleeps”
- Increased chance of driver error

Long-distance truck drivers driving overnight or early morning routes are even more susceptible to the effects of sleep deprivation than an average driver because of disruptions to their natural sleep patterns by working nights or long and irregular hours.

The graphic below shows the times of day when a driver is most susceptible to the effects of sleepiness based on the body’s circadian rhythm. As sleepiness increases, a driver’s alertness decreases. Most drowsy driving crashes occur between midnight and 8am and between 1pm and 3pm, consistent with decreased alertness as predicted by dips in their circadian rhythm.
The Federal Motor Carrier Safety Administration (FMCSA) publishes a set of rules that limit the maximum amount of time truck drivers can work and drive before taking a required break. The Hours of Service (HOS) rules identify a truck drivers’ time as falling into one of four categories:

**Off Duty** – Time when a truck driver is free from any work related responsibility.

**Sleeper Berth** - Time spent physically in the sleeping compartment of a commercial truck for the purpose of obtaining sleep and rest.

**Driving** – All time spent at the driving controls of a commercial motor vehicle in operation.

**On Duty – Not Driving** - All time from the time a driver begins to work or is required to be in readiness to work until the time the driver is relieved from work and all responsibility for performing work.

“Driving” and “On Duty – Not Driving” time is combined to determine the total hours a truck driver can work. Truck drivers must record, or “log”, their time, activity, and location in a logbook:

In its simplest form*, the FMCSA mandates:

- **Once reporting on duty, a truck driver can drive/work a maximum 14-hour shift before they are required to go off duty or into the sleeper berth for 10 hours.**

- **During that 14-hour shift, a truck driver can drive a maximum of 11 hours.**

- **A truck driver may not drive once they reach 60 hours of work/driving in a 7 day period, or 70 hours in an 8 day period.**

(*some variations apply depending on the nature of the trucking operations)

Trucking is a 24/7 business. It is not uncommon for a truck driver to be awake and working during every hour on the clock over a week’s time. Add to this the difficulties of attempting to get proper sleep during times when people are typically awake.

Motor Carriers have a duty to develop Safety Management Controls and Oversight of their truck drivers. These Management Controls must include: “systems, policies programs, practices, and procedures used by a motor carrier to ensure ... the safe movement of products and passengers through the transportation system, and to reduce the risk of highway accidents ... resulting in fatalities, injuries, and property damage. (FMCSR 385.3 – excerpted)
Drowsy Driving Investigations

The role that sleep deprivation may have played in a truck driving crash is a complex issue that requires experts with specialized knowledge and expertise in the areas of sleep deprivation and human factors as well as hours-of-service regulations and trucking safety programs. Some of the challenges with drowsy driving cases include:

- **There is no “sleepalyzer” test to determine how sleep-deprived a driver is**
- **Drivers aren’t always aware that they were asleep (microsleeps)**
- **Drivers are often alert after a crash due to adrenaline and may not appear tired**
- **Truck drivers that have not violated HOS regulations can still be driving while sleep-deprived**

To overcome these challenges, our experts use a combination of accident analysis techniques, knowledge of human behavior and performance, and experience investigating trucking safety violations to determine the relevant factors in a crash. Some initial indicators that fatigue or sleep deprivation may have been a factor in a crash include the following:

- **A single vehicle leaves the roadway**
- **The crash occurs on a high-speed road**
- **The driver does not attempt to avoid crashing**
- **Fall-asleep crashes are likely to be serious**
- **The driver is alone in the vehicle**
- **Alcohol is also involved**

If you think sleep deprivation or fatigue may have played a role in a trucking crash, contact one of our experts to discuss your case.

Our Experts

Dr. Nancy Grugle is an expert in forensic human factors with significant research experience in the area of sleep deprivation and driver performance. Dr. Grugle has investigated the effects of sleep deprivation on human performance at the Walter Reed Army Institute of Research and also conducted research on distracted driving while an Assistant Professor of Industrial and Manufacturing Engineering at Cleveland State University. Dr. Grugle received competitive research grants from the National Science Foundation, the Ohio Department of Transportation, and the Cleveland State University Transportation Center and has been published in national and international peer-reviewed journals. Her combined expertise in both sleep deprivation and human factors can be applied to cases involving drowsy driving, industrial accidents, aviation, and medical errors.

Brooks Rugemer is a Commercial Transportation Expert specializing in trucking, warehousing, intermodal, and logistics related claims. After 13 years and 1.4 million miles as a CDL tractor trailer driver, Brooks spent the next 17 years in Transportation Management, holding the positions of Safety Instructor, Driver Recruiter, Safety & Risk Manager, Terminal Manager, and Regional Manager. Brooks is also the former owner of Maryland Safety Services, a firm that provided CDL driver recruitment services as well as driver and warehouse training and compliance assistance.