



HELPING ELIMINATE DRIVER FATIGUE

Diet, good sleeping habits, physical activity, technology and even the truck's seat can help prevent fatigue for over-the-road truck drivers who spend countless hours behind the wheel of a tractor-trailer.

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Being tired on the job is a reality for many people, but when a truck driver is suffering from fatigue there can be dire consequences. While there is no agreement on how to directly measure the role of fatigue in accidents involving trucks, the National Transportation Safety Board estimates that fatigue played a role in 20% of the truck related accidents they investigated in 2015.

Let's look a little more closely at what that means. According to the Federal Motor Carrier Safety Administration, there were 4,050 accident involving large trucks in 2015. There were also 87,000 injury crashes in 2015 and 342,000 crashes involving property damage. From 2014 to 2015, large truck and bus fatalities per 100 million vehicle miles traveled by all motor vehicles increased 1.7 percent, the agency says. Interestingly, 60 percent of fatal crashes involving large trucks occurred on rural roads.

There are a number of reasons why a person may become fatigued while driving, including a lack of sleep, poor health, a pre-existing medical condition, driving too many hours without a break and even the physical stress of driving. The constant vibrations of the road get transmitted to the driver's body and have a fatiguing affect.

A fatigued driver is less alert, has slower reaction times and is less able to think clearly and process information efficiently, which can lead to poor decision making. The safe operation of a motor vehicle requires drivers to be alert and awake and "to have situational awareness and appropriately timed psychomotor and cognitive responses," according to Commercial Motor Vehicle Driver Fatigue, Long-Term Health & Highway Safety.

FMCSA offers commercial vehicle drivers tips for reducing fatigue, starting with enough sleep before getting behind the wheel. While that may be easier said than done, given the busy lives we all lead, the National Sleep Foundation recommends adults get seven to nine hours of sleep each night.

FMCSA also advises maintaining a healthy diet. "Skipping meals or eating at irregular times may lead to fatigue," the organization says. FMCSA also encourages drivers to recognize signs of drowsiness, which include frequent yawning, heavy eyes and blurred vision. Furthermore, the agency says turning up the radio, drinking coffee and opening the windows are not real cures for drowsiness and may give the driver a false sense of security.

There may be a solution to fatigue that is caused by drivers operating their trucks past their legal hours of service. Starting on December 18, 2017, new rules require that all drivers that currently have to report driver hours must switch to an automated driver log system. According to Sprint's Fleet Guide to Understanding the ELD Mandate, "ELDs can help reduce the temptation to drive while fatigued or to risk traffic and regulatory violations to get to the next destination. By knowing the real-time status of all driver hours, managers can quickly see when drivers are nearing their limits and plan accordingly."

But even if a driver conforms to Hours of Service requirements, begins his trip well rested and leads a healthy lifestyle, the very fact that he is spending 10 hours driving can take a physical toll. Truck drivers are subjected to something called whole body vibration. Whole body vibration is defined as a mechanical wave that manifests as the energy transfer from the vehicle traveling on the road surface to the driver. In other words, the driver absorbs the vibration of the road. Those vibrations take their toll on a driver's body in the form of fatigue and other physical issues, especially those related to the spine.

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Additionally, Doctor of Chiropractic Michael Peterson says sitting for prolonged periods of time “does not allow the lymphatic [system] to drain out toxicity that can be created with the option to shift around, which a truck driver does not have. This can affect lymphatic drain, and vasculature, which can have long term effects on your heart and your cardio-vascular health.”

In fact, according to Joseph Sweere, DC, DABCO, DABCOH, FICC, **“Statistics show that the trucking industry has one of the very highest incidents and severity of spine disorders.”**

In an article in Transport Topics, Peter Johnson, professor in the Occupational and Environmental Exposure Sciences program in the School of Public Health at the University of Seattle, is quoted as saying, “A number of scientific studies have shown an association between exposure to vehicle-related whole body vibration and the development of health problems.”

One key way to help improve the driver experience and reduce the impact of the road on the driver is by correctly supporting the body while driving. The proper seat — properly adjusted — with the right features can go a long way toward mitigating the effects of whole

body vibration and other physical stresses of driving. At their most basic level, a good seat must allow the driver to make adjustments for height, horizontal position and the recline angle of the backrest. According to Dr. Sweere, adjustability is the key to the seat being effective at lessening the affect of vibration on the driver and helping prevent the onset of fatigue.

Dr. Peterson adds, **“If the driver is shifting positions all the time, it puts traction on the nerve root and that leads to long-term problems.”**

It makes sense that the seating needs of a 6 ft. 4 in. male driver weighing 280 lbs. are different than those of 5 ft. 6 in. female driver weighing 112 lbs. “Their body proportions are different,” Dr. Sweere says, so they need to have the driver’s seat adjusted differently for maximum support and comfort.

Having an adjustable seat should make the driving experience more comfortable and help reduce drowsiness and fatigue. Coupling the proper seat with other things, such as getting the proper amount of sleep, eating a healthy diet and driving only during legal Hours of Service, should lead to fatigue becoming less of a problem for truck drivers.

HEAT DISSIPATION IS CRITICAL

Another thing drivers need to look for is a mattress that does not retain heat. Typical memory foam mattresses absorb body heat and can cause the person sleeping to become overheated. Consider a mattress made of organic latex that offers breathability and regulates body temperature as the driver sleeps.

The National Sleep Foundation says people need, on average, seven to eight hours of sleep per night. The proper mattress is a key element to getting a good night's sleep. While a driver may have good mattress at home, the mattress in the sleeper may not be as comfortable.

The ideal mattress reduces the pressure points on the body that develop from lying in one position for an extended period of time. The weight on that part of the body reduces blood flow, which can cause pain and cause you to shift positions, which interrupts your sleep.

Mattress selection is personal. Some drivers prefer a soft mattress while others want one that is firmer. Regardless of preference, drivers should look for a body-contouring mattress because it keeps the spine in alignment.

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"When you warm up at night, you tend to sweat," says Dr. Kelly Nesvold of Wellness 1st Chiropractic. "When you sweat, you're going to have a tendency to wake up more and lose quality of sleep. Latex has the ability to keep you cool all night long."

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Organic latex mattresses are also hypoallergenic and anti-bacterial, so drivers will not find mold, mildew, bacteria or dust mites in the mattress.

"When you think of allergens, you think of congestion," Nesvold said. Congestion means the airway is partially closed preventing the person from breathing normally. This means the sleeping person is not getting as much oxygen as they would if the airway was clear. "Sleep apnea is a huge issue in the trucking industry," Nesvold said, "so we want to make sure people have open airways and are breathing well, and a latex mattress helps bring that to the table."

The right mattress coupled with the right seat will ensure the driver is well rested and stays alert throughout the day.



SEAT ADJUSTABILITY IS CRITICAL

Seats play a significant role in preventing driver fatigue, as well as other physical issues that can affect truck drivers. The more adjustments the driver can make so that the seat is most comfortable to him or her, the better.

When considering a seat, drivers should look for these features:

- 1. Adjustable arm rests:** Allow drivers to set to their preferred height and feature infinite adjustments so the arm rests can be exactly where the driver wants them. Memory positioning means the driver only has to set the proper height once and the seat remembers the adjustment.
- 2. Full swivel base:** This allows the driver to rotate the seat inboard for easy access to the cab.
- 3. Seat tilt adjustment:** This adjusts the angle of the cushion to provide the proper support for the driver.
- 4. Seat cushion length adjustment:** The driver can adjust the length of the seat without having to move the backrest so he gets maximum support for his legs.
- 5. Fore-aft adjustment:** This allows drivers of different sizes to properly position the seat in order to reach the pedals and the steering wheel.
- 6. Fore-aft lockable isolator:** The driver can lock the seat into position, or unlock it and allow the seat to "float," which helps with back slap that can occur on rough roads.
- 7. Air dump:** This makes it easier for the driver to get in and out of the seat.
- 8. Adjustable shock absorber:** The driver can use this to set the firmness or softness of the ride.
- 9. Air height adjustment with memory:** Allows incremental setting of the height of the seat.
- 10. Lower air lumbar:** The driver can use this to support his lower back while driving.
- 11. Upper air lumbar:** Provides support of the upper back.
- 12. Side air support bolster:** Located on both sides of the seat, these can be inflated to support the back.
- 13. Head and shoulder adjustment capability**
- 14. Back rest:** Should offer incremental adjustments.

Other seat features to look for include:

- 1. Heated backrest and seat cushion**
- 2. Cooled backrest and seat cushion**
- 3. Massager:** This helps stimulate blood flow and improve circulation so the driver is not stiff when he tries to stand after hours behind the wheel.

Joseph Sweere, DC, DABCO, DABCOH, FICC, says that sitting for long periods of time causes the accumulation of fluids. "Anything that can be done to facilitate the reduction of that or to mobilize it [is beneficial.] One of the very best ways to do that is with movement," Dr. Sweere says. A massaging feature on the seat, turned on about 20 minutes before a driver plans to exit the vehicle, helps disperse fluids and loosen up the driver's muscles.

However, drivers will need to be trained on all the functions of the seat and on how to make proper adjustments that best suit their needs so they can find the best driving position.

