

Behind the Wheel at Work – Vol 8 No 2



NIOSH CENTER FOR MOTOR VEHICLE SAFETY

Behind the Wheel at Work is an eNewsletter bringing you the latest news from the NIOSH Center for Motor Vehicle Safety.
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Well-being Matters for Driving on the Job

According to the National Highway Transportation Safety Administration, about 43,000 individuals lost their lives due to motor vehicle crashes in the U.S. in 2021 – and an estimated 2.4 million were injured.¹ Two-thirds of those who died were drivers, and three-fourths of those injured were drivers.¹ Driver well-being, such as drowsy driving, was one of the factors that contributed to these crashes. This month we're sharing what we know about driver well-being and how employers can promote best practices.

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Challenges to Driver Well-being

Professional drivers, particularly truck drivers, often spend long hours on the road. This work environment can lead to **physical health challenges**.

- More than 50% of truck drivers are obese, and over 40% have heart disease and musculoskeletal disorders.^{2,3} Obesity increases the chance for other health problems, including sleep apnea.³
- Twenty-eight percent of commercial truck drivers suffer from sleep apnea,⁴ which can increase the risk of being involved in a fatigue-related motor vehicle crash.

Isolation and stress associated with long hours on the road can also have a significant impact on drivers' **mental health**.

- Loneliness was reported by 28% of truckers, depression by 27%, anxiety by 21%, and other emotional problems by 13%.⁵

These physical and mental health conditions affect various aspects of truckers' lives, including their ability to drive, which demands focus and concentration.

How Well-being Impacts Driving

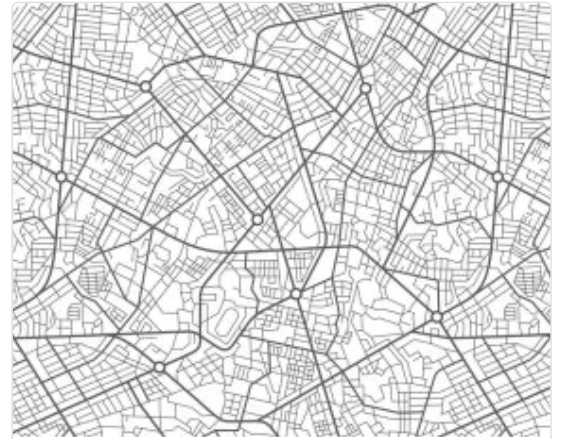


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Health conditions, fatigue, and stress can influence a driver's behavior, attention, and reaction time while on the road.² Several studies have explored the connections between well-being, crash risk, and driving performance.

A study involving 900 drivers showed that those with chronic medical conditions (e.g., heart disease, stroke, arthritis) were more likely to be involved in motor vehicle crashes.⁶

Results from a study of over 700 new truck drivers revealed that obese drivers have a 55% increased risk for heavy truck crashes compared to non-obese drivers.⁷

In a study of 800 truck drivers, those with heart diseases were at twice the motor vehicle crash risk compared to those with a lower risk of heart disease.⁸



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The findings from a study of 500 land-based oil and gas extraction workers indicated that longer commutes, nonstandard work schedules, and less sleep on workdays were associated with driving while feeling drowsy, falling asleep, and experiencing near miss crash events.⁹

In a study of over 3,500 drivers, those who were angry, sad, crying, and/or emotionally agitated had a crash risk nearly 10 times greater than those who exhibited model driving behavior.¹⁰

In a study sample of over 21,000 commercial drivers:¹¹

- Drivers with high blood pressure were 46% more likely to be involved in a crash compared to drivers without high blood pressure.
- Drivers with a treated nervous/psychiatric disorder were 75% more likely to be involved in a crash compared to drivers without a nervous/psychiatric disorder.
- Drivers with a musculoskeletal condition were about 3 times more likely to be involved in a crash compared to drivers without a musculoskeletal condition.

How Employers Can Promote Driver Well-being

Employers can take the following actions to promote driver well-being:^{2,12,13,14}

- Consider adopting a Total Worker Health (TWH) approach. TWH is a framework for implementing programs, practices, and policies to reduce or eliminate worker safety hazards while also promoting the well-being of workers. To learn more about TWH, go to: [Total Worker Health](#).
- Assess the level of worker well-being in your organization prior to implementing a new wellness program. One tool that can measure worker well-being within five domains and in a holistic manner is the: [Worker Well-Being Questionnaire \(WellBQ\)](#)
- Review your driver compensation practices to see if they impact crash risk. For example, truck drivers who are paid by the load are more likely to report sleepiness, fatigue, and crashes.
- Since it is often difficult to connect with truck drivers as they are always on the road, create a plan to share wellness program details in a way that is easy to understand, using a mobile app or a website.
- Encourage regular health check-ups and screenings that can help identify any health issues that might affect a driver's ability to drive safely.
- Check that the driver's seat, controls, and other ergonomics are properly adjusted to minimize the risk of musculoskeletal problems during long periods of driving.
- Inform staff of healthy food choices at truck stops that can result in healthier eating.
- Provide resources and support such as an employee assistance program for drivers to address any mental health challenges they may face.



Employers can share the following well-being information with workers:^{12,15,16,17}

- Try to get 7–9 hours of sleep each day.
- Drink water instead of sugary drinks like soda.
- Increase physical activity. Regular exercise can help manage weight, reduce stress, and boost overall energy levels.
- Increase intake of sources that are rich with omega-3 fatty acids, which can boost your alertness when taken regularly.
- Lose extra weight by cutting down on portion sizes and try eating a well-balanced diet.
- Eat smaller meals more often during the day to help steady your blood sugar level.
- Seek care for chronic medical conditions. Be aware of medication side effects that can impair driving.
- The combination of social isolation and stress resulting from extended hours on the road can affect the mental well-being of drivers. Get help from a mental health professional when necessary.

Q&A with Sergio Rojas

Sergio Rojas has been a functional fitness and nutrition coach for over 25 years, helping thousands of people improve both their physical and emotional well-being. Most recently, Sergio developed an award-winning wellness program that helped over 700 long-haul truck drivers improve their health.

What well-being challenges do workers face while driving on the job?

First and foremost, sitting for extended periods of time poses a variety of health issues. Sitting for a period of 8 hours or longer per day significantly increases our risk for heart disease and other chronic diseases. Dr. James Levine of the Mayo Clinic at ASU coined the statement, “sitting is the new smoking” based on the health effects of sitting research. Sitting stiffens the arteries, reduces circulation, and weakens our muscles, bones, and joints. There is also the issue of posture. Sitting in a car or truck for extended periods of time can cause low back pain, neck and shoulder pain, and even leg pain.

We should consider coaching and educating those workers that spend a significant portion of their workday driving. The challenge is the food choices available to them. It's easy to get tempted by fast food, and other poor health choices, as there are far more unhealthy options out on the road than healthy ones.



How does well-being impact driver safety?

Our brain function is directly impacted by our overall physical health, including our gut health, which both also strongly impact sleep and in turn further impact our brain function. For example, processed foods and fast foods deplete our bodies of energy, so we require more caffeine to stay energized and focused, which is critical for driver safety. Caffeine is a stimulant and our bodies adapt to it, so over time, you need more and more caffeine to get the same benefits. Eventually, this disrupts our hormones, plus we end up drinking caffeine later into the day, which both further disrupt sleep. Additionally, processed foods and fast foods both disrupt our gut microbiome and lead to poor gut health, which is directly connected to sleep. Add in a sedentary lifestyle, and sleep quality and quantity are compromised even further. Getting less than 7 hours of high-quality sleep impairs our brain function and reflexes by about ten percent per hour under 7 hours of sleep. Getting less than 5 hours of quality sleep has been shown to impair brain function and reflexes similar to being legally intoxicated by alcohol.

Add in the research on the benefits that exercise has on the brain, and it's truly a no-brainer that being healthier is directly connected to driver safety. Exercise and overall health help a person to better manage stress, and less stress may mean lower crash risk.






What can employers do to support drivers' well-being, on and off the job?

It's extremely important for employers to make health and well-being a significant part of their company culture. It doesn't have to be overbearing or shameful; it can and needs to be done in a way that shows employees that you genuinely care about them and their well-being. The issue is that many employers simply look at the numbers—the return on investment—and then bring on wellness programs that often don't stick or have impact. Employees know when it is done simply for the dollars or when it's genuinely about benefiting them. It starts with asking your employees about ways you can support them in their health journey.

The most successful wellness programs meet employees where they are, and simply support them to improve little by little, based on what the employee wants to improve upon. It also needs to be inclusive, so that people who are currently not in good health or fitness don't feel alienated or ashamed, which sadly occurs with many traditional wellness programs. Lastly, create wellness programs that cover topics employees are interested in, which is possible when you genuinely care and ask good questions.

The findings and conclusions in this article are those of the author(s) and do not necessarily represent the official position of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

References

- ¹ NHTSA [2023]. [Fatality and Injury Reporting System Tool \(FIRST\)](#) 
- ² Alexander M. Crizzle, Philip Bigelow, Diane Adams, Spencer Gooderham, Anita M. Myers, Pierre Thiffault, Health and wellness of long-haul truck and bus drivers: A systematic literature review and directions for future research, *Journal of Transport & Health*.2017;7:90-109.
- ³ Thiese MS, Moffitt G, Hanowski RJ, Kales SN, Porter RJ, Hegmann KT. Commercial Driver Medical Examinations: Prevalence of Obesity, Comorbidities, and Certification Outcomes. *J Occup Environ Med.* 2015;57(6):659-65
- ⁴ [FMCSA. Driving When You Have Sleep Apnea](#) 
- ⁵ Shattell M, Apostolopoulos Y, Collins C, Sönmez S, Fehrenbacher C. Trucking organization and mental health disorders of truck drivers. *Issues Ment Health Nurs.* 2012 ;33(7):436-44.
- ⁶ McGwin G Jr, Sims RV, Pulley L, Roseman JM. Relations among chronic medical conditions, medications, and automobile crashes in the elderly: a population-based case-control study. *Am J Epidemiol.* 2000;152(5):424-31.
- ⁷ Jon E. Anderson, Manjari Govada, Tricia K. Steffen, Chris P. Thorne, Vasileia Varvarigou, Stefanos N. Kales, Stephen V. Burks. Obesity is associated with the future risk of heavy truck crashes among newly recruited commercial drivers. *Accid. Anal. Prev.* 2012;49:378-384.
- ⁸ Ronna, Brenden B. BS; Thiese, Matthew S. PhD, MSPH; Ott, Ulrike PhD, MSPH; Effiong, Atim MPH; Murtaugh, Maureen PhD; Kapellusch, Jay PhD; Garg, Arun PhD; Hegmann, Kurt MD, MPH. The Association Between Cardiovascular Disease Risk Factors and Motor Vehicle Crashes Among Professional Truck Drivers. *J. Occup. Environ. Med.* 2016;58(8):828-832.
- ⁹ Hagan-Haynes K, Ramirez-Cardenas A, Wingate KC, Pratt S, Ridl S, Schmick E, Snawder J, Dalsey E, Hale C. On the road again: A cross-sectional survey examining work schedules, commuting time, and driving-related outcomes among U.S. oil and gas extraction workers. *Am J Ind Med.* 2022;65(9):749-761.
- ¹⁰ Dingus, T. A., Guo, F., Lee, S., Hankey, J., & Horrey, W. J. (Ed.). Driver crash risk factors and prevalence evaluation using naturalistic driving data. *Proceedings of the National Academy of Sciences.* 2016; 113(10), 2636-2641.
- ¹¹ Hickman, J., Mabry, J. E., Marburg, L., Guo, F., Huiying, M., Hanowski, R., Whiteman, J., & Herbert, W. Commercial Driver Safety Risk Factors (CDSRF). Report No. FMCSA-RRR-17-014. Virginia Tech Transportation Institute, Blacksburg, VA, USA. Road Ready, Inc., Springdale, AR, USA, June 2020.
- ¹² NETS. [Physical Wellness, Work-life Balance | Driven to Wellness](#) 
- ¹³ Quinlan M, Wright L. Remuneration and Safety in the Australian Heavy Vehicle Industry: A Review Undertaken for the National Transport Commission. Melbourne: National Transport Commission; 2008.
- ¹⁴ Thompson A, Newnam S, Stevenson M. A model for exploring the relationship between payment structures, fatigue, crash risk, and regulatory response in a heavy-vehicle transport system. *Transportation Research Part A: Policy and Practice.* 2015; 82:204-215.
- ¹⁵ FMCSA. [Tips for Driving Healthy and Safely \(dot.gov\)](#)  
- ¹⁶ [Obesity Can Take You Off The Road Infographic](#)
- ¹⁷ CDC [2014] [Diet and Exercise Options – Long-Haul Truck Drivers](#)

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Source: [National Institute for Occupational Safety and Health](#)