

# Diabetes and the Commercial Motor Vehicle Driver

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A 60-year-old man is sent by his new employer to your urgent care for a pre-employment Department of Transportation (DOT) physical to obtain clearance to drive a commercial motor vehicle. His medical history is significant for hypertension, for which he takes lisinopril. Otherwise, he is healthy, with normal vital signs. His physical exam is unremarkable, but the urine sample is notably positive for glucose. A fingerstick glucose test yields a measurement of 212 mg/dL. What is your next appropriate step to medically clear the patient to drive commercially?

Commercial motor vehicle (CMV) drivers are mandated by the Federal Motor Carrier Safety Administration (FMCSA) to receive a DOT physical examination by a licensed medical examiner. To qualify to perform the exam, physician assistants, advanced practice nurses, physicians, and chiropractors must complete an educational program and pass a written certification examination.<sup>1</sup> Subsequently, the examiners are placed on a national registry—the National Registry of Certified Medical Examiners—with the mission to improve highway safety by determining whether a CMV driver’s health meets standards and guidelines set by the FMCSA.<sup>2</sup>

Under current guidelines, a DOT physical exam for a healthy CMV driver is considered valid for a maximum of 24 months. However, some diseases and medications require frequent follow-up, which can shorten the length of time a driver can be medically cleared to operate a CMV. Furthermore, certain conditions can disqualify the driver from meeting the necessary standards required for medical certification.

This case presentation offers the opportunity to review the requirements for evaluation and certification of a CMV driver with

new-onset hyperglycemia and, ultimately, diabetes. In the United States, types 1 and 2 diabetes are estimated to affect 30.3 million people.<sup>3</sup> About 33% of CMV drivers have been diagnosed with diabetes, which is significant since research has demonstrated an increased risk for crashes in individuals with diabetes, due to potential incapacitation from hypoglycemia.<sup>4-6</sup>

Thus, for practitioners and medical examiners, it is prudent to screen and manage diabetes in CMV drivers. In fact, over the past 15 years, federal regulations have stipulated that any driver with diabetes requiring insulin for control was disqualified from this type of work.<sup>7</sup> This standard was developed in response to the increased risk for hypoglycemic reactions with the use of insulin. However, in September 2018, the FMCSA revised this regulation, permitting individuals with a stable insulin regimen and properly controlled diabetes to be qualified to operate a CMV. As a result, for drivers requiring insulin, the treating clinician must complete a standardized form within 45 days of the DOT exam, documenting management of the patient’s diabetes.<sup>8</sup> For drivers with diabetes who do not require insulin, determinations are made on a case-by-case basis, with discernment of the driver’s ability to manage the disease and concurrently meet other standards for qualification.

## HEALTH HISTORY AND EXAMINATION

Each CMV driver completes a standard medical history form that asks about specific medications, surgeries, or medical conditions, including diabetes or blood glucose problems. Subsequently, the driver and, ultimately, the medical examiner must expand upon and discuss every “yes” response to this questionnaire.

Regarding diabetes, the examiner should determine whether the disease is controlled by diet, pills, and/or insulin, with clarification of the doses, frequency, and prescriber. In addition, the examiner should review and document glucose control, blood glucose monitoring, history of hypoglycemic episodes, and episodes of fainting, dizziness, or loss of consciousness.<sup>7</sup>

The physical exam should focus on identifying signs of complications from diabetes, such as retinopathy, nephropathy, or peripheral neuropathy. At each certification visit, the examiner should assess the patient's height and weight, BMI, vision, hearing, blood pressure, and heart rate, and perform urinalysis to screen for proteinuria or glycosuria. A fingerstick test to obtain a random blood glucose reading is often performed in a driver with glycosuria.

Likewise, the A1C level should be documented in every patient with new-onset or known diabetes, with the recommendation from the FMCSA that a level >10% is an indicator of poor glucose control.<sup>7</sup> It is important to note that an A1C level up to 10% is *not* the glycemic target recognized by the American Diabetes Association and the American Association of Clinical Endocrinologists. The FMCSA is focused more on hypoglycemic concerns than on providing management guidelines.

## DETERMINING CERTIFICATION

Currently, the recertification time recommended for CMV drivers with diabetes and documented glucose control is 1 year. This is based on the assumption that the driver is under medical care with a treatment plan and that he/she is not currently experiencing any complications from the disease. Furthermore, insulin secretagogues (eg, sulfonylureas) can be used for glucose control as long as adverse effects (eg, hypoglycemia) do not interfere with safe driving. However, the FMCSA does not recommend certifying any driver who

- In the past 12 months has experienced a hypoglycemic reaction resulting in seizure; loss of consciousness; need of

assistance from another person; or period of impaired cognitive function that occurred without warning.

- In the past 5 years has had recurring ( $\geq 2$ ) disqualifying hypoglycemic reactions.
- Has received a formal diagnosis of peripheral neuropathy, loss of position, or pedal sensation.
- Has resting tachycardia or orthostatic hypotension.
- Has severe diabetic nephropathy requiring dialysis.
- Has severe nonproliferative or proliferative retinopathy.<sup>8</sup>

In drivers with new-onset hyperglycemia, it is appropriate for the medical examiner to refer the driver to his/her primary care provider for further testing (eg, A1C), determination of treatment, a copy of the diabetes medical standard for driving, and written opinion of the driver's medical fitness for duty. Subsequently, the medical examiner can utilize this information from the primary care provider to determine certification for the driver. While there are no specific guidelines on the waiting period for certification, the driver should demonstrate glucose control with treatment that is adequate, effective, safe, and stable.<sup>7</sup>

Overall, while living with diabetes can be challenging, patients who demonstrate control of the disease can maintain their occupation as a CMV driver. The role of the medical examiner is to evaluate the driver's risk to safely operate a CMV—in particular, considering the possibilities of a severe hypoglycemic episode or target organ dysfunction—whereas the clinician treating the driver's diabetes is focused on minimizing the complications associated with hyperglycemia.

As a reminder, due to the progressive nature of the disease, recertification is recommended annually for drivers.<sup>7</sup> Nevertheless, it is reassuring that the DOT has implemented safeguards designed to keep our citizens safe while travelling the highways and byways of the United States.

Given the patient's elevated glucose, more information is needed to safely provide

clearance for driving a CMV. The patient would be disqualified until he could provide documentation of glucose control. Therefore, this patient would benefit from a referral to his primary care provider to obtain a list of medications used to manage his disease, documentation of an A1C level <10% and no evidence of complications from diabetes, and a written opinion from the primary care provider indicating the driver is medically fit for duty. Accordingly, the primary care provider can ensure the patient demonstrates compliance in managing diabetes and can safely operate a CMV. **CR**

## REFERENCES

1. Federal Motor Carrier Safety Administration. DOT Medical Exam and Commercial Motor Vehicle Certification. [www.fmcsa.dot.gov/medical/driver-medical-requirements/dot-medical-exam-and-commercial-motor-vehicle-certification](http://www.fmcsa.dot.gov/medical/driver-medical-requirements/dot-medical-exam-and-commercial-motor-vehicle-certification). Accessed February 22, 2019.
2. Federal Motor Carrier Safety Administration. National Registry of Certified Medical Examiners. [www.fmcsa.dot.gov/medical/driver-medical-requirements/national-registry-certified-medical-examiners](http://www.fmcsa.dot.gov/medical/driver-medical-requirements/national-registry-certified-medical-examiners). Accessed February 22, 2019.
3. CDC. National Diabetes Statistics Report, 2017: estimates of diabetes and its burden in the United States. [www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf](http://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf). Accessed February 22, 2019.
4. Abu Dabrh AM, Firwana B, Cowl CT, et al. Health assessment of commercial drivers: a meta-narrative systematic review. *BMJ Open*. 2014;4:e003434.
5. Laberge-Nadeau C, Dionne G, Maag U, et al. Medical conditions and the severity of commercial motor vehicle drivers' road accidents. *Accid Anal Prev*. 1996;28:43-51.
6. Redelmeier DA, Kenshole AB, Ray JG. Motor vehicle crashes in diabetic patients with tight glycemic control: a population-based case control analysis. *PLoS Med*. 2009;6:e1000192.
7. Federal Motor Carrier Safety Administration. Medical Examiner Handbook. [www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/mission/advisory-committees/mrb/83401/fmcsamedicalexaminerhandbook.pdf](http://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/mission/advisory-committees/mrb/83401/fmcsamedicalexaminerhandbook.pdf). Accessed February 22, 2019.
8. Federal Motor Carrier Safety Administration. Qualifications of Drivers; Diabetes Standard. *Federal Register*. September 19, 2018. [www.federalregister.gov/documents/2018/09/19/2018-20161/qualifications-of-drivers-diabetes-standard](http://www.federalregister.gov/documents/2018/09/19/2018-20161/qualifications-of-drivers-diabetes-standard). Accessed February 25, 2019.