Sleep Apnea and Commercial Motor Vehicle Operators*

Statement From the Joint Task Force of the American College of Chest Physicians, the American College of Occupational and Environmental Medicine, and the National Sleep Foundation

Natalie Hartenbaum, MD, MPH; Nancy Collop, MD, FCCP; Ilene M. Rosen, MD, MSCE; Barbara Phillips, MD, MSPH, FCCP; Charles F. P. George, MD; James A. Rowley, MD; Neil Freedman, MD; Terri E. Weaver, PhD, RN; Indira Gurubhagavatula, MD, MPH; Kingman Strohl, MD; Howard M. Leaman, MD; and Gary L. Moffitt, MD

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Abbreviations: CMV = commercial motor vehicle; FMCSA = Federal Motor Carrier Safety Administration; OSA = obstructive sleep apnea

Executive Summary

Obstructive sleep apnea (OSA) has been demonstrated to significantly increase safety and health risks. Medical research has shown that OSA is a significant cause of motor vehicle crashes (resulting in a twofold to sevenfold increase in risk) and increases the possibility of an individual having significant health problems such as hypertension, stroke, ischemic heart disease, and mood disorders. Studies suggest that commercial motor vehicle (CMV) operators have a higher prevalence of OSA than the general population. US federal statute requires CMV drivers to undergo medical qualification examinations at least every 2 years; the federal medical standard that deals with OSA is section 49 CFR 391.41 (b) (5) of the Federal Motor Carrier Safety Regulations. This section states that the driver must have "no established medical history or clinical diagnosis of respiratory dysfunction likely to interfere with the ability to control and drive a commercial motor vehicle safely."

Recently, the Federal Motor Carrier Safety Administration (FMCSA) changed the medical examination reporting form to include a question that asks a driver whether he or she suffers from a sleep disorder, pauses in breathing while asleep, daytime sleepiness, or loud snoring. So far, the only guidance available from the FMCSA on the diagnosis and treatment of OSA in CMV drivers was issued in 1991, the result of a report from a conference sponsored by the Federal Highway Administration. However, in the past 15 years, there has been a tremendous increase in the scientific and clinical knowledge regarding the diagnosis and treatment of OSA. This new information is not reflected in the current FMCSA guidance and has created challenging and, at times, conflicting approaches to managing OSA in commercial drivers.

As public safety has always been of the highest priority when determining acceptable risk in relation to medical conditions in CMV drivers (this differs

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significantly from the usual approach in clinical medicine), it is well accepted that when assessing risk of accidents due to a medical condition, CMV drivers are held to a higher medical standard than the general population. Given the public safety risks associated with OSA, its prevalence in the CMV driver population, and the fact that the guidance on OSA diagnosis and management is 15 years old, the American College of Chest Physicians, the American College of Occupational and Environmental Medicine, and the National Sleep Foundation convened a task force to address this important safety and medical risk in CMV drivers. The task force pursued the following activities: (1) review the existing scientific literature related to the diagnosis and management of OSA; (2) review the medical standards and guidelines related to OSA from US Department of Transportation agencies and equivalent international groups; (3) review other relevant reports and recommendations from the National Transportation Safety Board, the FMCSA, and others; (4) draft a preliminary document of findings; (5) develop recommendations related to screening, diagnosis, treatment, return to work, and follow-up; and (6) address other relevant topics such as compliance, duration of certification, and research needs.

This report of the task force[1] provides the detailed findings of the extensive reviews conducted of documents from diverse resources on many relevant topics. The detailed reviews address the following areas: (1) definition of sleep apnea; (2) current regulations, recommendations, and guidelines; (3) identification of patients at risk for sleep apnea and diagnosis; (4) objective assessment of sleepiness and performance; (5) identification of CMV drivers with sleep apnea who are at high risk for crashes; (6) management of sleep apnea in the CMV driver; (7) practical considerations; and (8) additional research questions. These findings formed the foundation for consensus recommendations regarding the diagnosis and management of OSA in commercial drivers. The information presented in the eight sections are not summarized here but are provided in detail with references in the report.[1] The recommendation categories focus on the following: screening; diagnosis; treatment; compliance and efficacy; return to work after treatment for OSA; and follow-up.

Tables 1,2 provide an overview of these recommendations. However, the task force recommends that the commercial driver medical examiner evaluate each driver individually and make a judgment about his or her fitness for duty based on specific criteria including those listed in the Tables 1,2. These criteria cannot predict every situation faced by the examiner, and the final judgment belongs to the commercial driver medical examiner. Additional testing is optional, based on clinical judgment, in order to document absence of excessive somnolence.

*From OccuMedix, Inc. (Dr. Hartenbaum), Dresher, PA; Division of Pulmonary/Critical Care Medicine (Dr. Collop), Johns Hopkins University, Baltimore, MD; Divisions of Sleep Medicine and Pulmonary, Allergy and Critical Care Medicine (Dr. Rosen), Department of Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA; Division of Pulmonary Critical Care and Sleep Medicine (Dr. Phillips), University of KY College of Medicine, Lexington, KY; Division of Respirology (Dr. George), University of Western Ontario, Director, Sleep Laboratory, London Health Sciences Centre, London ON, Canada; Division of Pulmonary, Critical Care and Sleep Medicine (Dr. Rowley), Department of Internal Medicine, Wayne State University School of Medicine, Harper University Hospital, Detroit, MI; The Sleep and Behavior Medicine Institute and Pulmonary Physicians of the North Shore (Dr. Freedman), Bannockburn, IL; Biobehavioral and Health Sciences Division (Dr. Weaver), University of Pennsylvania School of Nursing, Philadelphia, PA; Indira, MD, MPH, Assistant Professor of Medicine, Divisions of Sleep, Pulmonary and Critical Care Medicine (Dr. Gurubhagavatula), Department of Medicine, University of Pennsylvania Medical Center, Philadelphia, PA; Center for Sleep Disorders Research (Dr. Strohl), Case Western Reserve University School of Medicine, Louis Stokes DVA Medical Center, Cleveland OH; IHC Health Services to Business (Dr. Leaman), Intermountain WorkMed, Salt Lake City, UT; and Arkansas Occupational Health (Dr. Moffitt), Springdale, AR.
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Correspondence to: Nancy Collop, MD, FCCP, Associate Professor of Medicine, Division of Pulmonary/Critical Care Medicine, Johns Hopkins University, 1830 East Monument St, Room 555, Baltimore, MD 21205; e-mail: ncollop1@jhmi.edu
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Reference

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Table 1—*Screening Recommendation for CMV Drivers With Possible or Probable Sleep Apnea*

Medically Qualified To Drive Commercial Vehicles if Driver Meets Either of the Following:	In-Service Evaluation Recommended if Driver Falls Into Any One of the Following Five Major Categories (3-mo Maximum Certification):	Out-of-Service Immediate Evaluation Recommended if Driver Meets Any One of the Following Factors:
1. No positive findings or any of the numbered in-service evaluation factors	1. Sleep history suggestive of OSA (snoring, excessive daytime sleepiness, witnessed apneas)	1. Observed unexplained excessive daytime sleepiness (sleeping in examination or waiting room) or confessed excessive sleepiness
2. Diagnosis of OSA with continuous positive airway pressure compliance documented	2. Two or more of the following (1) body mass index > 35 kg/m^2; (2) neck circumference > 17 inches in men and 16 inches in women; (3) hypertension (new, uncontrolled, or unable to control with fewer than two medications)	2. Motor vehicle accident (run off road, at fault, rear-end collision) likely related to sleep disturbance unless evaluated for sleep disorder in the interim.
	3. Epworth sleepiness scale score > 10	3. Epworth sleepiness scale score ≥ 16 or functional outcomes of sleep questionnaire score < 18
	4. Previously diagnosed sleep disorder; compliance claimed, but no recent medical visits/compliance data available for immediate review (must be reviewed within 3-month period); if found not to be compliant, should be removed from service (includes surgical treatment)	4. Previously diagnosed sleep disorder (1) noncompliant (continuous positive airway pressure treatment not tolerated); (2) no recent follow-up (within recommended time frame); (3) any surgical approach with no objective follow-up
	5. Apnea-hypopnea index > 5 but < 30 in a prior sleep study or polysomnography and no excessive daytime somnolence (Epworth sleepiness scale score < 11); no motor vehicle accidents; no hypertension requiring two or more agents to control	5. Apnea hypopnea index > 30.

Table 2—*Recommendation Regarding the Evaluation for Fitness for Duty for Commercial Drivers With Possible or Probable Sleep Apnea*

Categories	Recommendations
Diagnosis	1. Diagnosis should be determined by a physician and confirmed by polysomnography, preferably in an accredited sleep laboratory or by a certified sleep specialist. 2. A full-night study should be done unless a split-night study is indicated (severe OSA identified after at least 2 h of sleep).
Treatment	1. First-line treatment for CMV drivers with OSA should be delivered via positive airway pressure (continuous positive airway pressure, bilevel positive airway pressure). 2. All CMV drivers receiving positive airway pressure must use a machine that is able to measure time on pressure. 3. A minimum acceptable average use of continuous positive airway pressure is 4 h within a 24-h period, but drivers should be advised that longer treatment would be more beneficial. 4. Treatment should be started as soon as possible, but within 2 wk of the sleep study. 5. Follow-up by a sleep specialist should be done after 2 to 4 wk of treatment.
Return to work after treatment (treatment with positive airway pressure)	1. After approximately 1 wk of treatment there contact between the patient and personnel from either the durable medical equipment supplier, treating provider, or sleep specialist. 2. An apnea-hypopnea index < 5 is documented with continuous positive airway pressure at initial titration (full night or split night) or after surgery or with use of oral appliance; apnea hypopnea index is ≤ 10 depending on clinical findings. 3. Query the driver about mask fit and compliance, and remind him/her to bring card (if used) or machine to next session. 4. At a minimum of 2 wk after initiating therapy, but within 4 wk, the driver should be re-evaluated by the sleep specialist, and compliance and BP assessed. 5. If the driver is compliant and BP is improving (must meet FMCSA criteria), the driver can return to work but should be certified for no longer than 3 mo.
Return to work after treatment (treatment with oral appliances)	1. Oral appliances should only be used as a primary therapy if the apnea-hypopnea index is < 30. 2. Prior to returning to service, the driver must have a follow-up sleep study demonstrating an apnea-hypopnea index < 5, but ≤ 10 while wearing an oral appliance. 3. All reported symptoms of sleepiness must be resolved, and BP must be controlled or improving (must meet FMCSA criteria).
Return to work after treatment (treatment with surgery or weight loss)	The driver should have a follow-up sleep study; the apnea-hypopnea index is ideally < 5, but ≤ 10 required to document efficacy.