

## Executive Summary

# Sleep Apnea and Commercial Motor Vehicle Operators:

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

**Natalie Hartenbaum, MD, MPH, FACOEM**

**Nancy Collop, MD, FCCP**

**Ilene M. Rosen, MD, MSCE, FCCP**

**Barbara Phillips, MD, MSPH, FCCP**

**Charles F. P. George, MD, FRCPC**

**James A. Rowley, MD**

**Neil Freedman, MD, FCCP**

**Terri E. Weaver, PhD, RN, CS, FAAN**

**Indira Gurubhagavatula, MD, MPH**

**Kingman Strohl, MD**

**Howard M. Leaman, MD**

**Gary L. Moffitt, MD**

**Mark R. Rosekind, PhD**

---

From OccuMedix, Inc. (Dr Hartenbaum), Dresher, Pennsylvania; the Department of Medicine, Division of Pulmonary/Critical Care Medicine (Dr Collop), Johns Hopkins University, Baltimore, Maryland; the Department of Medicine, Divisions of Sleep Medicine and Pulmonary, Allergy & Critical Care Medicine (Dr Rosen), University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania; the Division of Pulmonary Critical Care and Sleep Medicine (Dr Phillips), University of Kentucky College of Medicine, Lexington, Kentucky; the Department of Medicine, Division of Respirology (Dr George), University of Western Ontario, and the Sleep Laboratory, London Health Sciences Centre, South Street Hospital, London, Ontario, Canada; the Department of Medicine, Division of Pulmonary, Critical Care & Sleep Medicine, Department of Internal Medicine (Dr Rowley), Wayne State University School of Medicine, Harper University Hospital, Detroit, Michigan; The Sleep and Behavior Medicine Institute and Pulmonary Physicians of the North Shore (Dr Freedman), Bannockburn, Illinois; Biobehavioral and Health Sciences Division (Dr Weaver), University of Pennsylvania School of Nursing, Philadelphia, Pennsylvania; the Department of Medicine, Divisions of Sleep, Pulmonary and Critical Care Medicine (Dr Gurubhagavatula), University of Pennsylvania Medical Center, Philadelphia, Pennsylvania; the Department of Medicine, Director (Dr Strohl), Center for Sleep Disorders Research, Case Western Reserve University School of Medicine, Louis Stokes DVA Medical Center, Cleveland, Ohio; the IHC Health Services to Business (Dr Leaman), Intermountain WorkMed, Salt Lake City, Utah; and Arkansas Occupational Health (Dr Moffitt), Springdale, Arkansas; Alertness Solutions (Dr Rosekind), Cupertino, CA.

Copyright © 2006 by American College of Occupational and Environmental Medicine

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 two- to seven-fold increased risk) and increases the possibility of an individual developing 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. U.S. 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 has a sleep disorder, pauses in breathing while asleep, daytime sleepiness, or loud snoring. So far, the only guidance available from 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.

Because public safety has always been of the highest priority when determining acceptable risk in relation to medical conditions in CMV drivers (this differs 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 U.S. Department of Transportation agencies and equivalent international groups; 3) review other relevant reports and recommendations from the National Transportation Safety Board, 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 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. 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 rather provided in detail with refer-

Screening Recommendation for Commercial Drivers With Possible or Probable Sleep Apnea

Medically Qualified to Drive Commercial Vehicles If Driver Meets Either of the Following	In-Service Evaluation (ISE) 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 CPAP compliance documented	2. Two or more of the following: a) BMI $\geq 35$ kg/m <sup>2</sup> ; b) Neck circumference greater than 17 inches in men, 16 inches in women; c) Hypertension (new, uncontrolled, or unable to control with less than 2 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. ESS >10	3. ESS $\geq 16$ or FOSQ <18
	4. Previously diagnosed sleep disorder; compliance claimed, but no recent medical visits/compliance data available for immediate review (must be reviewed within 3-mo period); if found not to be compliant, should be removed from service (includes surgical treatment)	4. Previously diagnosed sleep disorder: d) Noncompliant (CPAP treatment not tolerated); e) No recent follow up (within recommended time frame); f) Any surgical approach with no objective follow up.
	5. AHI >5 but <30 in a prior sleep study or polysomnogram and no excessive daytime somnolence (ESS <11), no motor vehicle accidents, no hypertension requiring 2 or more agents to control	5. AHI >30

AHI indicates apnea-hypopnea index; BMI, body mass index; CPAP, continuous positive airway pressure; ESS, Epworth Sleepiness Scale; FOSQ, Functional Outcomes of Sleep Questionnaire; OSA, obstructive sleep apnea.

Recommendation Regarding the Evaluation for Fitness-for-Duty for Commercial Drivers With Possible or Probable Sleep Apnea

Category	Recommendation
Diagnosis	<ol style="list-style-type: none"> <li>1. Diagnosis should be determined by a physician and confirmed by polysomnography, preferably in an accredited sleep laboratory or by a certified sleep specialist</li> <li>2. A full-night study should be done unless a split-night study is indicated (severe OSA identified after at least 2 hours of sleep)</li> </ol>
Treatment	<ol style="list-style-type: none"> <li>1. First-line treatment for CMV drivers with OSA should be delivered by positive airway pressure (CPAP, Bilevel PAP)</li> <li>2. All CMV drivers on PAP <i>must</i> use a machine that is able to measure time on pressure</li> <li>3. A minimum acceptable average use of CPAP is 4 hours within a 24-hour period, but drivers should be advised that longer treatment would be more beneficial</li> <li>4. Treatment should be started as soon as possible but within 2 weeks of the sleep study</li> <li>5. Follow up by a sleep specialist should be done after 2-4 weeks of treatment</li> </ol>
Return to work after treatment Treatment with PAP	<ol style="list-style-type: none"> <li>1. After approximately 1 week of treatment, contact between the patient and personnel from the durable medical equipment supplier, treating provider, or sleep specialist</li> <li>2. AHI <math>\leq 5</math> documented with CPAP at initial titration (full night or split night) or after surgery or with use of oral appliance; AHI <math>\leq 10</math> depending on clinical findings</li> <li>3. Query driver about mask fit and compliance and remind to bring card (if used) or machine to next session</li> <li>4. At a minimum of 2 weeks after initiating therapy, but within 4 weeks, the driver should be reevaluated by the sleep specialist and compliance and blood pressure assessed</li> <li>5. If driver is compliant and blood pressure is improving (must meet FMCSA criteria), the driver can return to work but should be certified for no longer than 3 months</li> </ol>
Return to work after treatment Treatment with oral appliances	<ol style="list-style-type: none"> <li>1. Oral appliances should only be used as a primary therapy if AHI <math>&lt; 30</math></li> <li>2. Before returning to service, must have follow-up sleep study demonstrating AHI ideally <math>&lt; 5</math>, but <math>\leq 10</math> while wearing oral appliance</li> <li>3. All reported symptoms of sleepiness must be resolved and blood pressure must be controlled or improving (must meet FMCSA criteria)</li> </ol>
Return to work after treatment Treatment with surgery or weight loss	Follow-up sleep study—AHI ideally $< 5$ but $\leq 10$ required to document efficacy

AHI indicates apnea-hypopnea index; CPAP, continuous positive airway pressure; FMCSA, Federal Motor Carrier Safety Administration; PAP, positive airway pressure; OSA, obstructive sleep apnea; CMV, commercial motor vehicle.

ences in the report. The recommendation categories focus on the following:

- Screening;
- Diagnosis;
- Treatment;
- Compliance and efficacy;
- Return to work after treatment for OSA; and
- Follow up.

The tables included in this article provide an overview of these recommendations. However, the Task Force recommends that the commercial driver medical examiner (CDME) 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 in this article. These criteria cannot predict every situation faced by the examiner, and the final judgment belongs to the CDME. Additional testing is optional, based on clinical judgment, to document absence of excessive somnolence. (*J Occup Environ Med. 2006;48:S1-S3*)