

AMERICAN POSTAL WORKERS UNION MOTOR VEHICLE SERVICE DIVISION



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SLEEP APNEA

PULMONARY REGULATION – CFR 391.41 (b)

- ▣ “A Person is physically qualified to drive a motor vehicle if that person;
 - (5) has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a motor vehicle safely.”

- ▣ Question
 - “sleep disorders, pauses in breathing while asleep, daytime sleepiness, loud snoring”

WHAT IS OSA?

- Obstructive sleep apnea (OSA is a syndrome characterized by sleep-disordered breathing, resulting in excessive daytime sleepiness, sleep attacks, psychomotor deficits, and disrupted nighttime sleep.
- OSA is a serious, potentially life threatening condition that often goes unrecognized and unreported by drivers and undiagnosed by primary care clinicians.
- OSA has also been found to increase inattention, alertness and fatigue while driving.
- The Good news is that OSA can be successfully treated as long as patient complies with his/her treatment plan.

OBSTRUCTIVE SLEEP APNEA

- OSA is a condition in which individuals obstruct their own airways while sleeping, typically resulting in hypoxia at night, interruptions in breathing lasting several seconds at a time, loud snoring, and non-restful sleep. They are frequently entirely unaware of the condition. Individuals with the disorder may have extreme daytime sleepiness and often fall asleep within minutes in a quiet or monotonous environment.
- A 2006 consensus statement from the Joint Task Force of the American College of Chest Physicians (ACCP), American College of Occupational and Environmental Medicine (ACOEM), and the National Sleep Foundation (NSF) on screening for OSA in commercial drivers recommended in part that drivers with a BMI of 35 or higher and hypertension that cannot be controlled on less than two medication not be certified for longer than 3 months pending a formal evaluation for OSA.

PHYSICAL EXAMINATION AND TESTS

A physical examination and a number of tests, including a blood pressure test, may be carried out. This is in order to rule out other conditions that could explain tiredness, such as an under-active thyroid gland.

A STUDY OF PREVALENCE OF SLEEP APNEA AMONG COMMERCIAL TRUCK DRIVERS

Study results were published in May 2002 and found that almost one-third (28%) of CMV drivers have mild to severe OSA, as follows:

Mild Sleep apnea in 17.6 percent of drivers.

Moderate sleep apnea in 5.8 percent of drivers.

Severe sleep apnea in 4.7 percent.

These prevalence rates are similar to sleep apnea rates found in other general populations.

CONSEQUENCES

Excessive Daytime Sleepiness

- Increased motor vehicle crashes
- Increased work-related accidents
- Poor Job Performance
- Decreased quality of Life

Cardiovascular

- Systemic Hypertension
- Cardiac Arrhythmias
- Myocardial Ischemia
- Cerebrovascular disease
- Pulmonary hypertension/
cor pulmonale

CARDIOVASCULAR PROBLEMS

Many people with obstructive sleep apnea (OSA) develop high blood pressure (hypertension). This also increases the risk of developing a cardiovascular disease such as a stroke or heart attack. This can lead to sudden death from a cardiac event. Sudden drops in blood oxygen levels that occur during sleep apnea increase blood pressure and strain the cardiovascular system. The more severe the obstructive sleep apnea, the greater the risk of high blood pressure. Patients with sleep apnea are more likely to develop abnormal heart rhythms such as atrial fibrillation.

DAYTIME FATIGUE

People with sleep apnea often experience severe daytime drowsiness, fatigue and irritability. They may have difficulty concentrating and find themselves falling asleep at work or even when driving. Children and young people with sleep apnea may do poorly in school, have reduced mental development or have behavior problems. Treatment of sleep apnea can improve these symptoms, restoring alertness and improving quality of life.

Sleep Apnea Risk Factors

- ▣ Obesity
- ▣ Increasing Age
- ▣ Male Gender
- ▣ Anatomic Abnormalities of upper airway
- ▣ Family History
- ▣ Alcohol or sedative use
- ▣ Smoking
- ▣ Associated conditions

SLEEPING WHILE DRIVING

Experiencing significant daytime sleepiness will have an adverse impact on driving ability. One study calculated that people with severe untreated OSA are 15 times more likely to be involved in a car accident. You should avoid driving until symptoms of OSA respond to treatment.

BODY MASS INDEX (BMI)

$$\text{BMI} = \frac{\text{Weight (lbs)} * 703}{\text{Height (in)}^2}$$

Category	BMI Range
Underweight	<18.5
Normal Weight	18.5-24.9
Overweight	25-29.9
Obese	30+

DIAGNOSIS: PHYSICAL EXAMINATION

- Upper Body obesity/thick neck

$\geq 17''$ males

$\geq 16''$ females

- Hypertension

- Obvious airway abnormality

BODY MASS INDEX TABLE

	120	130	140	150	160	170	180	190	200	210	220	230	240	250
5'0"	23	25	27	29	31	33	35	37	39	41	43	45	47	49
5'2"	22	24	26	27	29	31	33	35	37	38	40	42	44	46
5'4"	21	22	24	26	28	29	31	33	34	36	38	40	41	43
5'6"	19	21	23	24	26	27	29	31	32	34	36	37	39	40
5'8"	18	20	21	23	24	26	27	29	30	32	34	35	37	38
5'10"	17	19	20	22	23	24	26	27	29	30	32	33	35	36
6'0"	16	18	19	20	22	23	24	26	27	29	30	31	33	34
6'2"	15	17	18	19	21	22	23	24	26	27	28	30	31	32

HOW IS OBSTRUCTIVE SLEEP APNEA DIAGNOSED?

If experiencing the symptoms of excessive daytime sleepiness a useful first step may be to ask a partner, friend, or relative to observe you when you are asleep. They may be able to spot episodes of breathlessness that could help to confirm a diagnosis of obstructive sleep apnea (OSA).

BERLIN QUESTIONNAIRE SLEEP EVALUATION

RESMED

Berlin Questionnaire

Sleep Evaluation

1. Complete the following:
Height _____ Age _____
Weight _____ Male/Female _____
Has your weight changed? _____
2. Do you snore?
☐ Yes
☐ No
☐ Don't know
- If you snore:**
3. Your snoring is . . .
☐ Slightly louder than breathing
☐ As loud as talking
☐ Louder than talking
☐ Very loud
4. How often do you snore?
☐ Almost every day
☐ 3-4 times a week
☐ 1-2 times a week
☐ Never or almost never
5. Does your snoring bother other people?
☐ Yes
☐ No
6. Has anyone noticed that you quit breathing during your sleep?
☐ Almost every day
☐ 3-4 times a week
☐ 1-2 times a week
☐ Never or almost never
7. Are you tired after sleeping?
☐ Almost every day
☐ 3-4 times a week
☐ 1-2 times a month
☐ Never or almost never
8. Are you tired during waketime?
☐ Almost every day
☐ 3-4 times a week
☐ 1-2 times a month
☐ Never or almost never
9. Have you ever nodded off or fallen asleep while driving?
☐ Yes
☐ No
If yes, how often does it occur?
☐ Every day
☐ 3-4 times a week
☐ 1-2 times a week
☐ 1-2 times a month
☐ Never or almost never
10. Do you have high blood pressure?
☐ Yes
☐ No
☐ Do not know

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

PARTNERS OR FAMILY

- Loud snoring can keep those around from getting good rest. This can be eventually disruptive in relationships.
- People with obstructive sleep apnea may also complain of memory problems, morning headaches, mood swings or feelings of depression, and a need to urinate frequently at night.

Why Get A Sleep Study?

- ▣ Signs and symptoms poorly predict disease severity
- ▣ Appropriate therapy dependent on severity
- ▣ Failure to recognize and treat leads to:
 - Increased morbidity
 - Motor Vehicle Crashes
 - Mortality
- ▣ Other causes of daytime sleepiness

NOCTURNAL POLYSOMNOGRAPHY

During this test, the patient is hooked up to equipment that monitors the heart, lung and brain activity, breathing patterns, arm and leg movements, and blood oxygen levels while sleeping.

OXIMETRY

This screening method involves using a small machine that monitors and records blood oxygen level while sleeping. A simple sleeve fits painlessly over one finger to collect the information overnight at home. The results of this test will often show drops in blood oxygen level during apneas and subsequent rises with awakenings.

Behavioral Interventions

▣ Encourage patients to:

-Lose weight

-Avoid alcohol and sedatives

-Avoid sleep deprivation

-Avoid supine sleep position

-Stop Smoking

MEDICAL ADVISORY CRITERIA

- ▣ “There are many conditions that interfere with oxygen exchange and may result in incapacitation, including emphysema, chronic asthma, carcinoma, tuberculosis, chronic bronchitis and sleep apnea. If the medical examiner detects respiratory dysfunction, that in any way is likely to interfere with the driver’s ability to safely control and drive a commercial motor vehicle, the driver must be referred to a specialist for further evaluation and therapy.”

WHAT IS THE TREATMENT OF OBSTRUCTIVE SLEEP APNEA?

Lifestyle changes may be recommended for milder cases of obstructive sleep apnea, such as losing weight or quitting smoking. Therapies include:

- Positive airway pressure
- Mouthpiece (oral device) or Inter-oral devices (IODs)

THERAPEUTIC APPROACH

- ▣ Behavioral
- ▣ Medical
- ▣ Surgical

SURGERY OR OTHER PROCEDURES

- Surgery or removal of tissue
- Jaw correction
- Surgical opening in the neck
- Implants

COMPLICATIONS WITH MEDICATIONS AND SURGERY

Obstructive sleep apnea is a concern with certain medications and general anesthesia. People with the condition may be more likely to experience complications after major surgery. This is because they are prone to breathing problems , especially when sedated and lying on their backs. Inform your doctor before having surgery. Undiagnosed sleep apnea is especially risky in this situation. Use of analgesics and sedatives in these patient postoperatively should be minimized or avoided.

ALTERNATIVE TREATMENTS

- Treatments is offered by speech therapists to strengthen the muscle tone an neural pathways involved in breathing.
- Breathing exercises, such as those used in Yoga, the Buteyko method, or didgeridoo playing can be effective. There are muscles which act to tension and open the airway during each inspiration. Exercises can, in some cases, restore sufficient function to these muscles to prevent or reduce apnea.

POSITIONIAL TREATMENTS

Many people benefit from sleeping at a 30 degree elevation of the upper body.

LIFESTYLE CHANGES

- Avoiding alcohol during the evening.
- Losing weight
- Quitting smoking
- Sleeping on the side, rather than on the back, may also help to relieve symptoms of OSA
- Avoid medications such as tranquilizers and sleeping pills. These relax the muscles in the back of the throat, interfering with breathing.
- Keep nasal passages open at night. If there is congestion, use a saline nasal spray to help keep the nasal passages open. Get medical advice about using nasal decongestants or antihistamines, because , unlike saline sprays, these medications are generally recommended only for short term use.

SEVERITY

The severity of OSA is judged on how many episodes of apneas are experienced over the course of an hour. The number of episodes determines mild, moderate , and severe OSA:

- Mild OSA – between 5 to 14 episodes an hour.
- Moderate OSA – between 15 to 30 episodes an hour.
- Severe OSA – more than 30 episodes an hour.

SLEEP APNEA MEP - RECOMMENDATION

- ▣ Diagnosis of OSA – no unconditional certification.
- ▣ May be certified to drive if:
 - Has untreated OSA with an $AHI \leq 20$, AND
 - Has no daytime sleepiness, OR
 - Has OSA that is being effectively treated
- ▣ Certified Annually
- ▣ Must demonstrate satisfactory compliance