



## Gestational Obstructive Sleep Apnea

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### Introduction

Sleep apnea is a serious, potentially life threatening condition that is far more common than generally understood. First described in 1965, sleep apnea is a breathing disorder characterized by brief interruptions of breathing during sleep. It owes its name to a Greek word, apnea, meaning "want of breath." Obstructive sleep apnea is far more common type of sleep apnea and occurs when air cannot flow into or out of the person's nose or mouth although efforts to breathe continue [1-2]. When OSA is diagnosed for the first time during pregnancy it is called gestational obstructive sleep apnea. There is some evidence that gestational OSA may improve or resolve entirely after pregnancy [3]. Obstructive sleep apnea (OSA) affects 2 percent of middle-aged women and affects between 15-20% of obese pregnant women BMI > 40 kg.m<sup>-2</sup>; half of all pregnant women in the United States are overweight or obese.[4] Pien and colleagues, found an increase from 10.5% women with OSA in the first trimester to 26.7% in the third trimester among a group of women who underwent overnight polysomnography (PSG) at the two time points in pregnancy [1].

### Causes

Collapse of the pharyngeal and retrolingual airway is the primary cause of obstruction in OSA. Many factors may contribute to this collapse. When the muscles of the soft palate at the base of the tongue and the uvula relax and sag, the airway becomes blocked, making breathing labored and noisy and even stopping it altogether. The

genioglossus is considered to be most important muscle in maintaining airway patency [4]. Menopause is another risk factor for sleep-disordered breathing, likely related to estrogen depletion. survey data show that changes in body mass index (BMI) are only weakly associated with changes in (Apnoea-Hypopnoea Index) AHI, and the association between AHI and obesity is even weaker in older adults [5]. Women with PCOS had a greater incidence of developing OSA in later life [6]. Previous studies have supported a significant relationship between PCOS and obesity, as well as obesity and OSA. However, there is a growing body of evidence has indicated an independent role for PCOS in the development of OSA [7]. The PCOS-related gonadal hormone dysregulation may explain the association between PCOS and OSA [8].

### Clinical picture

Sleep apnea patients usually have heavy snoring ( $\geq 3$  times per week) and apparent struggle to breathe. Coworkers or friends of the sleep apnea victim may notice that the individual falls asleep during the day at inappropriate times (such as while driving a car, working, or talking).

### Diagnosis

- a. Patients often come because their partner cannot sleep due to their snoring. All patients should undergo physical examination and their history should be checked [9].

- b. Diagnostic tests usually are performed in a sleep center, but new technology may allow some sleep studies to be conducted in the patient's home. Sleep apnea can also be characterized by choking sensations. The frequent interruptions of deep, restorative sleep often lead to early morning headaches and excessive daytime sleepiness [10].
- c. However, The gold standard for the diagnosis of OSA is overnight, attended, in-laboratory IS Polysomnography (PSG) [11].

## Complications

- a. The consequences of sleep apnea range from annoying to life threatening. They include depression, irritability, sexual dysfunction, learning and memory difficulties,

and falling asleep while at work, on the phone, or driving. It has been estimated that up to 50 percent of sleep apnea patients have high blood pressure. Although it is not known with certainty if there is a cause and effect relationship, it appears that sleep apnea contributes to high blood pressure. Risk for heart attack and stroke may also increase in those with sleep apnea. In addition, sleep apnea is sometimes implicated in sudden infant death syndrome [12].

- b. Women with OSA have a significantly increased risk of entering pregnancy with chronic hypertension and/or developing hypertensive disorders of pregnancy (HDP), a spectrum of diseases that includes chronic hypertension, gestational hypertension, preeclampsia, and eclampsia [3].

	No OSA	OSA	P-value
Uncomplicated Pregnancy	27 (44.3%)	5 (26.3%)	0.19
Gestational Diabetes	9 (14.8%)	1 (5.3%)	0.4374
Cesarean Delivery	36 (59.0%)	14 (73.7%)	0.2488
Estimated blood loss	750 (350,850)	750 (400,800)	0.5576
Spontaneous Labor	11 (18.0%)	3 (15.8%)	0.8222
Induction of Labor	26 (42.6%)	6 (31.6%)	0.3909
Oxytocin during labor	26 (42.6%)	5 (26.3%)	0.2026
Adverse cardiovascular outcome	13 (21.3%)	8 (42.1%)	0.0720

Table 1: Maternal and neonatal outcome of obstructive sleep apnea[13].

## Management

- a. The individual should avoid the use of alcohol, tobacco, and sleeping pills, which make the airway more likely to collapse during sleep and prolong the apneic periods.
- b. Overweight persons can benefit from losing weight. Even a 10 percent weight loss can reduce the number of apneic events for most patients.
- c. Nasal continuous positive airway pressure (CPAP) is the most common effective treatment for sleep apnea. In this procedure, the patient wears a mask over the nose during sleep, and pressure from an air blower forces air through the nasal passages. The air pressure is adjusted so that it is just enough to prevent the throat from collapsing during sleep. The pressure is constant and continuous. Nasal CPAP prevents airway closure while in use, but apnea episodes return when CPAP is stopped or used improperly.

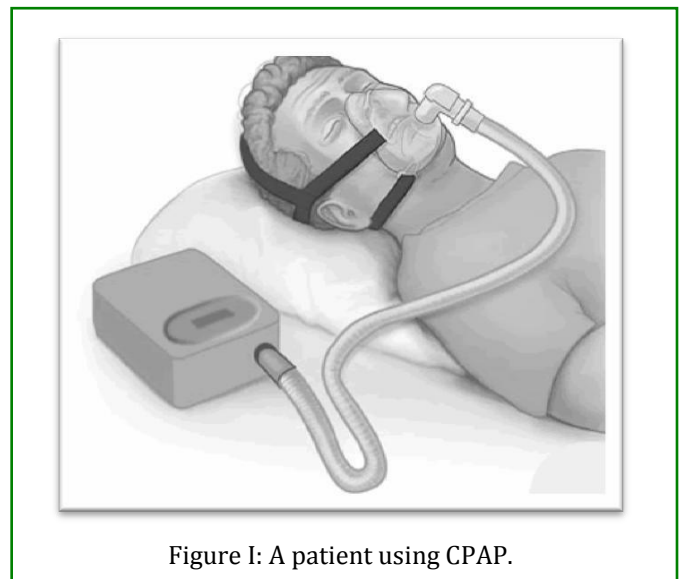


Figure I: A patient using CPAP.

- d. After delivery, women with sleep apnea are at risk for severe respiratory suppression and medications that suppress respiration should be limited in use.

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