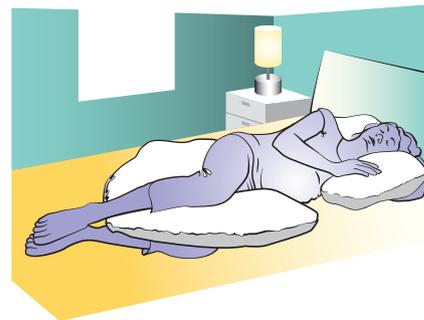


Sleep-disordered Breathing in Pregnancy: Part I

Pregnancy is a very demanding time in a woman's life and is associated with many physical and hormonal changes. Your sleep when you are pregnant can be disturbed by heartburn, leg cramps, and strange dreams. If you already have a problem with sleep-disordered breathing (SDB) it may get worse during pregnancy. Some women develop SDB during pregnancy.



What is sleep-disordered breathing?

SDB is the name given to breathing problems during sleep, ranging from snoring to obstructive sleep apnea (OSA). SDB occurs when the upper airway is blocked or narrowed restricting airflow into the lungs. Frequent snoring occurs in up to half of pregnant women, most commonly in the second half of pregnancy. OSA is a sleep disorder whose symptoms include daytime sleepiness, loud snoring, breathing pauses, gasping or choking during sleep associated with brief awakenings and/or drops in blood oxygen level. For further information, refer to the ATS Patient Information Series fact sheet "OSA in Adults."

What causes sleep-disordered breathing?

SDB may occur or get worse during pregnancy because of:

- **Obesity**—this is an important risk factor for SDB in people who are not pregnant as well as those who are.
 - Pregnancy may cause or worsen breathing problems during sleep in women who were obese before pregnancy. Excessive weight gain during pregnancy and lack of physical activity can play a role in having OSA.
 - You are obese if your body mass index (BMI) is more than 30 kg/m². The body mass index describes a person's weight in relation to height.
 - You can calculate out your BMI at the Centers for Disease Control website (https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html).
- **Increased hormone levels** during pregnancy including estrogen can cause swelling or blockage from tissue in the nasal passages and throat. As a result, pregnant women may have a stuffy nose and runny nose, without having a cold or allergies. This can lead to breathing problems during sleep.
- **Fluid retention** during pregnancy can also swell the upper airway and make it narrower.
- **Certain facial and mouth structures** such as a large tongue, enlarged tonsils, a very small lower jaw and/or a recessed chin can contribute to narrowing of the airway in pregnant women. While these may not be severe enough to cause SDB before pregnancy, in combination with pregnancy related changes, they may trigger SDB.
- **Sleeping position**—Sleeping on your back may increase the risk of snoring and breathing pauses.
- **Aging**—Older age mothers are more likely to experience snoring and breathing pauses than younger mothers are.
- **Race**—African-American women are at higher risk of having SDB than women of other races or ethnicities.
- **Smoking**—Women who are smokers are more likely to have SDB. Smoking can cause inflammation and fluid retention in your throat and upper airway. There are many other reasons to avoid smoking during pregnancy for your own health and your unborn baby's health.
- **Chronic high blood pressure** (hypertension) may also increase the risk of SDB in pregnancy. In addition, SDB is a known risk factor for high blood pressure.
- **Sleep deprivation** due to life style or interrupted sleep may worsen sleepiness, a common symptom of SDB.

How do I know if I have signs and symptoms of sleep-disordered breathing?

SDB has several signs and symptoms. A partner or family member may notice that you have these signs and symptoms before you become aware of them.

Main signs and symptoms:

- **Snoring** is the most noticeable symptom of SDB.



Snoring may begin for the first-time during pregnancy— Among pregnant women with SDB, snoring may or may not be loud but is present on most nights. Not everyone who snores has sleep apnea.

- *Short pauses in breathing* may occur while you snore, leading to *gasping and snorting sounds and frequent awakenings from sleep*. This may be worse when you sleep on your back.
- *Poor quality sleep* makes you feel *overly sleepy or tired*. Daytime sleepiness may also occur due to other changes such as pregnancy related hormones. So, this sign may not be specific to SDB.

Other common signs and symptoms:

- You may feel *irritable, depressed, or have trouble concentrating* on daily activities at work and home due to poor sleep quality.
- You may have a *dry mouth or sore throat* when you wake up.
- You may have *headaches* when you wake up.
- You can develop *high blood pressure*. Sleep apnea events during sleep are associated with a spike in blood pressure. When this happens repeatedly throughout the night to combat each time you stop breathing or have shallow breathing, high blood pressure begins to persist even during the day when you are breathing normally.
- Developing high blood pressure may be a symptom of *preeclampsia*, a serious complication of pregnancy. Symptoms include headache, swelling (often in the face) and blurred vision. Preeclampsia can lead to premature delivery.
- Women with SDB are more likely to have *nighttime stomach acid reflux*, which may cause cough, difficulty swallowing and heartburn. Reflux during pregnancy can also be caused by excessive weight gain and pregnancy-related changes in the abdomen.

Can sleep-disordered breathing be dangerous?

Your sleep quality can affect a number of hormonal, metabolic, and nervous system functions that are critical to having a healthy pregnancy and fetal growth. Sleep disturbances may be harmful to your well-being and your unborn baby's health. SDB is associated with many health problems in people who are not pregnant such as high blood sugar, abnormal metabolism, coronary artery disease and stroke.

Research shows that women with heavy snoring or OSA in pregnancy are at greater risk for developing gestational diabetes (high blood sugar problems during pregnancy), high blood pressure during pregnancy and preeclampsia. Studies have reported that snoring during pregnancy may be a risk factor for prenatal depression. The tiredness and fatigue associated with sleep apnea may also can put you at higher risk for car accidents and accidents at work and at home.

How is sleep-disordered breathing diagnosed?

Not all obstetric care providers screen for sleep disorders, refer, or treat women who have SDB. If you suspect you may have OSA, discuss your signs and symptoms with your obstetrician or primary care provider.

OSA is generally diagnosed by a sleep study (called polysomnogram). This sleep study is either done at a sleep center where you will be scheduled to sleep overnight or at home using a portable monitor. During this time, your breathing effort, heart rate, electrical activity of the brain, sleep state, and oxygen level will be monitored (For more information, see the ATS Patient Information Series: "Sleep Studies: In the Sleep Laboratory and in the Home").

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Rx Action Steps

- ✓ Recognize how important sleep is and talk to your healthcare provider if you are having sleep problems or symptoms.
- ✓ For treatment options, see "Preventing Sleep Problems and Treatment of Sleep-disordered Breathing in Pregnancy: Part 2".

Healthcare Provider's Contact Number:

For More Information

American Academy of Sleep Medicine

- <http://sleepeducation.org/news/2012/11/07/your-sleep-hygiene-questions-answered>
- <https://foundation.aasm.org/positional-sleep-therapy-pregnancy/>

National Sleep Foundation

- <http://www.sleepfoundation.org/article/hot-topics/sleep-tips-pregnant-women>
- <https://www.sleepfoundation.org/articles/treating-sleep-disordered-breathing-pregnancy-may-improve-fetal-health>

American Pregnancy Association

- <http://americanpregnancy.org/pregnancyhealth/insomnia.html>

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