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## Sleep Apnea

### Surgery

#### Surgery for adults

In general, surgery for obstructive [sleep apnea](#) (OSA) is considered only after other treatments have failed or when you are unable or choose not to use other treatments.

Surgery is used to:

- Remove excess soft tissue from the throat to widen the upper airway. This may involve removing the [tonsils and adenoids](#) and other tissues in the back of the throat (uvulopalatopharyngoplasty).
- Correct an abnormally shaped wall (septum) between the nostrils or [nasal polyps](#) that block airflow through the nose.
- Change the position of the bony structures in the upper airway, allowing air to flow more freely, especially during sleep. More than one surgery may be needed to make these changes.
- Create an opening for breathing below the area where airflow is blocked (tracheostomy). A tracheostomy is a permanent opening in the windpipe (trachea) into which a breathing tube can be inserted. Tracheostomy is rarely used as the first method to treat OSA because of cosmetic concerns and an increased risk of complications. However, when other techniques have failed, almost all people treated with tracheostomy will be cured of their OSA.

#### Surgery for children

In children, surgery ([tonsillectomy and adenoidectomy](#)) may be an appropriate first choice for treating obstructive [sleep apnea](#) (OSA).

- Removal of the tonsils and adenoids can clear a blockage of the upper airway that often causes OSA in children.
- Surgery may be needed to correct birth defects that can cause sleep apnea symptoms.

### Surgery Choices

The following surgical procedures may be used to treat OSA:

- [Uvulopalatopharyngoplasty](#) is the most common surgery to treat OSA in adults.
- [Tracheostomy](#) may be the most effective surgery for OSA. It is not used as often as other procedures because it creates a permanent opening in the windpipe (trachea) and can cause problems. Other, less invasive treatments also are available and are nearly as effective as tracheostomy for most people.
- [Tonsillectomy and adenoidectomy](#) may be used if you have enlarged [tonsils and adenoids](#)  that are blocking your airway during sleep.
- [Other surgical procedures](#) may be used to repair bone and tissue problems in the mouth and throat.



[Should I have surgery to treat obstructive sleep apnea?](#)

### What to Think About

If you are thinking about having surgery to treat obstructive sleep apnea (OSA), talk with your health professional about having a [sleep study](#) done first. Trying [continuous positive airway pressure \(CPAP\)](#)

before surgery is generally recommended. CPAP is a machine that increases air pressure in the throat, preventing tissues in the airway from collapsing when you inhale.

In adults, uvulopalatopharyngoplasty (UPPP) is the most common surgery used to treat OSA.

- There is no clear evidence on the outcome of using UPPP for OSA.<sup>11</sup>
- UPPP may stop snoring, but apnea episodes may continue.<sup>1</sup>
- About 40% to 60% of people who have UPPP have an improvement in their symptoms, but it is impossible to say who will benefit from the surgery and who will not.<sup>8</sup>
- Other forms of treatment, including continuous positive airway pressure (CPAP), may still be needed after surgery.
- Sleep studies are done shortly after surgery and later on to make sure periods of apnea do not continue or return.
- UPPP usually is not used to treat sleep apnea in children.

Tracheostomy is used only when all other treatments for [severe](#) OSA have failed or when you cannot tolerate other treatments. The use of tracheostomy has declined since CPAP has been available.

Rarely, repositioning of facial bones (maxillofacial reconstruction) is done when you are unable to benefit from CPAP and UPPP. This surgery is designed to increase the size of the bones around the tongue and to create pull (traction) on the base of the tongue, enlarging the airway. More than one surgical procedure usually is needed to reposition the facial bones in a way that will cure OSA.

More than one procedure may be done at the same time or in stages. When the procedures are done in stages, it is important to monitor OSA after each procedure to determine when symptoms are relieved and to avoid unnecessary surgery.

## Uvulopalatopharyngoplasty for obstructive sleep apnea

### Surgery Overview

Uvulopalatopharyngoplasty (UPPP) is a procedure used to remove excess tissue in the throat, which widens the airway. This sometimes can allow air to move through the throat more easily when you breathe, decreasing the severity of obstructive [sleep apnea](#) (OSA). The tissues removed may include:

- The soft V-shaped tissue that hangs down from the back of the roof of the mouth into the throat (uvula).
- Part of the roof of the mouth (soft palate).
- Excess throat tissue, [tonsils and adenoids](#), and the pharynx.

If a small part of the tongue also is removed, the procedure is called uvulopalatopharyngoglossoplasty. This procedure is done if the health professional believes an enlarged tongue is contributing to OSA symptoms.

### What to Expect After Surgery

[Continuous positive airway pressure \(CPAP\)](#), a machine that helps a person breathe, is used after surgery to prevent collapse of the airway. Medication for pain is avoided in order to make it less likely that you will have apnea episodes.

### Why It Is Done

Uvulopalatopharyngoplasty is used to treat OSA in people:

- With excess tissue in the nose, mouth, or throat that blocks their airway.

- Who choose not to use (or cannot use) CPAP.
- Who do not get better after using CPAP.
- Who do not want to have an opening made in their windpipe (tracheostomy) to treat sleep apnea.

Uvulopalatopharyngoplasty usually is not used in children. A tonsillectomy and adenoidectomy may be needed.

## How Well It Works

This is no good evidence on the outcome of using uvulopalatopharyngoplasty for obstructive sleep apnea.<sup>1</sup>

Uvulopalatopharyngoplasty may stop snoring, but apnea episodes may continue.<sup>2</sup>

About 40% to 60% of people who have UPPP have an improvement in their symptoms, but it is impossible to say who will benefit from it and who will not.<sup>3</sup>

Even if surgery is successful in removing blockage, you may still need CPAP after surgery.

## Risks

Complications during surgery include accidental damage to surrounding blood vessels or tissues.

Complications after surgery may include:

- Sleepiness and periods of not breathing (apnea) related to the medications used to put you to sleep.
- Swelling, pain, infection, or bleeding.
- Drainage of secretions into the nose and a nasal quality to the voice. Speech does not seem to be affected with this surgery.
- Narrowing of the airway in the nose and throat.

## What to Think About

Before considering surgery, all people who have OSA need to try CPAP.

Sleep studies are done after uvulopalatopharyngoplasty surgery to determine if apnea has improved. If apnea continues after surgery, CPAP also may be needed.

If you have severe OSA and cannot tolerate or choose not to use CPAP, a permanent opening into the windpipe (tracheostomy) may be an option.