



University of Michigan
C.S. Mott Children's Hospital

Jaw (Orthognathic) Surgery (Pediatric)

What is jaw surgery?

Corrective jaw surgery (orthognathic surgery) is used to correct different types of problems in the jaws and teeth including misalignment. Misalignment means that the teeth and/or jaws are not positioned correctly in the mouth. Jaw misalignment may include the upper jaw (maxilla), lower jaw (mandible) or chin. Injuries and birth defects may also affect jaw alignment and be a cause for surgery.

Orthodontists can usually correct bite (occlusion) problems when only your teeth are misaligned. Surgeons may need to correct misalignment of your jaws.



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Why is this surgery used?

People who need corrective jaw surgery have an abnormal bite, where the teeth do not align correctly. This is usually because the upper or lower jaw bones grow unevenly. People with any of the following conditions may benefit from jaw surgery:

- difficulty chewing or biting
- chronic jaw or jaw joint pain
- headaches
- excessive teeth wear
- sleep apnea
- “toothless” or “gummy” smiles
- speech and articulation problems

People with certain anatomical conditions may also require corrective jaw surgery. These include having:

- a receding chin
- an open bite
- history of a traumatic facial injury
- asymmetry of the face

What are the benefits of jaw surgery?

Corrective jaw surgery is performed mainly to correct your bite. Jaw surgery may also help with:

- elimination of snoring or sleep apnea
- improvement in breathing
- restoration of facial symmetry
- correction of facial defects or facial abnormalities
- enhancement of self-esteem
- improvement in speech problems

What are the risks of jaw surgery?

Overall, jaw surgery is safe when done by a well-trained, experienced surgeon in a center that performs many similar surgeries. Despite our best intentions, any surgery has possible risks. Your surgeon will discuss these in more detail.

Please note some complications apply to lower jaw surgery while others apply to upper jaw surgery.

- Numbness of the upper lip, nose and lower eyelids is expected after upper jaw surgery. Sensation is expected to return 2-6 months after surgery. A numb feeling in the upper gums and roof of your mouth may persist after surgery.
- Numbness of the lower lip and chin is also expected after lower jaw surgery. Recovery of sensation may take 12 months. Some permanent numbness is seen in up to 10 in 100 cases (10%).
- Pain after surgery is typically temporary. Most patients use pain medications for the first 2 weeks. Rarely, pain may persist.
- TMJ pain or inflammation that may require treatment. This is very rare.

- Limited mouth opening is expected after surgery and sometimes requires some active home stretching exercises to improve jaw mobility.
- Relapse and unfavorable changes in the bite after surgery may occur. Your surgeon will discuss the risk of this happening based on your condition. Relapse occurs in less than 3 in 100 cases (3%) and may require additional corrective jaw surgery.



When can I get jaw surgery?

Corrective jaw surgery is usually performed once you have finished growing. Your surgeon, orthodontist, and dentist will tell you about the timing of surgery based on your needs. It is important to understand that your treatment may take several years to complete and will probably include orthodontics.

What preparation is needed before jaw surgery?

Once the teeth are aligned by your orthodontist we will start to prepare for surgery in several steps:

- your orthodontist will apply surgical wires and hooks on your braces
- our surgical team will perform a pre-surgical examination, which includes taking photographs, impressions of your teeth, and CT (Computerized tomography) scan. Your surgeon will use this information to plan your surgery using 3D software.

How is jaw surgery done?

Corrective jaw surgery is performed under general anesthesia. Incisions for your surgery generally take place in your mouth. For **upper jaw surgery**, your surgeon cuts the bone above your teeth so that the entire top jaw, including the

roof of your mouth and your upper teeth, can move as one unit. Your surgeon will then move the jaw and upper teeth until they fit properly with the lower teeth.

For **lower jaw surgery** the surgeon makes cuts behind the molars and lengthwise down the jawbone, so the front of the jaw can move as one unit. As a result, they can slide the jaw smoothly to its new position. Your bones are held in their new position with mini-plates and screws made of titanium. The surgeon closes the incisions with dissolving sutures.

What can I expect after jaw surgery?

After corrective jaw surgery, you can expect to have:

- numbness to the middle and lower face
- sore throat
- drooling
- nose bleeding

You may also have:

- nausea and vomiting
- difficulty tolerating food or medications
- difficulty urinating
- constipation
- diarrhea
- dizziness or light-headedness

These symptoms are usually temporary, and we will be available to help you manage them.

How will I recover after jaw surgery?

Hospital stay

You can anticipate a 1-2 day hospital stay after your surgery.

Return to work or school

We advise taking between 2-3 weeks off before returning to work or school. This period may be shorter or longer based on your surgical procedure. It takes at least 6 weeks for initial healing of your jaw.

How will I take care of myself after jaw surgery?

Physical activity

You can resume light physical exercise as soon as you feel able following your surgery. You must not participate in any exercise or sports that may involve hitting your jaw. This includes all contact sports. Do not clench or stress your jaw muscles with heavy lifting more than 10 pounds. If you had a bone graft from your hip area, resume any physical activity slowly and carefully. During this time it's very important to protect the area and prevent any hits or bumps to your jaw which may cause some shifting in your jaw and bite.

Diet

The swelling and the numbness will make eating and drinking difficult. During this period, it is helpful to make the food and drinks a bit thinner. We advise patients to put foods through a blender or a food processor. It is sometimes difficult to find foods already in the liquid form, so creating your own pureed diet is helpful. Nutritional supplements are also helpful, such as Ensure[®].

Your diet plan will be similar to this:

- 2 weeks of liquid or blended foods
- 2 weeks of a non-chew or pureed food diet
- 2 weeks of a soft mechanical(chewing) diet
- Return to a regular diet 6 weeks after surgery

How will I eat?

During the first 2 weeks after your surgery, you may use a syringe, sip through a cup, or use a spoon. After the initial 2 weeks, you may use a straw to assist in eating.

Will I lose weight?

Many patients lose weight after surgery. This is temporary, and will improve as you are able to advance your diet.

Pain Control

Your doctor may prescribe anti-inflammatory medicines, muscle relaxants, or opioid pain medications to help treat pain or discomfort following surgery. You must not drive or drink alcohol while taking opioid pain medications.

Swelling

Swelling is normal after surgery, the amount varies between individuals. More swelling usually occurs with lower jaw surgery than with upper jaw surgery. Your appearance will begin to improve as the swelling resolves. Since almost all the surgery is performed from inside your mouth, your lips will be stretched and slightly cracked, especially at the corners. You may apply Vaseline[®] to your lips for comfort.

Nasal Congestion

You may have nasal congestion after upper jaw surgery. When this occurs, you can manage the congestion by using nasal sprays and cleansing your nostrils. You can use cotton Q-tips soaked in warm water to remove nasal secretions. Nasal congestion will usually resolve 1 to 2 weeks after surgery. Do not blow your nose for the first 6 weeks after your surgery.

Jaw stabilization

Your jaw bones will be held in their new position by small metal plates and screws. These are not removed unless they start to cause problems. You may also have a splint attached to your upper braces to hold your jaw in its new position. This splint will stay in place for 6 weeks. You will also have elastic bands in place to stabilize your jaws in their new position.

Scarring

Most of this type of surgery is carried out inside your mouth, which means you will not have obvious scars. In some cases where the surgery is on the lower where the lower jaw you may have very small incisions both sides of your neck.

Why should I have jaw surgery at University of Michigan?

Oral and Maxillofacial Surgeons at the University of Michigan have special training and extensive experience in jaw surgery. With over two hundred jaw surgeries a year, our surgeons excel in the latest surgical tools and techniques to give you the best possible outcome. At the University of Michigan, you will receive compassionate and professional care in a relaxed environment.

Videos on orthognathic surgery:

Demonstrations of surgical procedures for:

- Upper Jaw Surgery (LeFort Osteotomy)
- Lower Jaw Surgery (Bilateral Sagittal Split Osteotomy)
- Surgical Correction of Long Faces
- Surgical Correction of Open Bite

To access the videos follow these instructions:

1. Visit <http://careguides.med.umich.edu/>
2. In the search box type a **keyword** and hit **Enter** (or **Search**)
3. Click the title to view the video

The screenshot shows a search interface with the following elements:

- Find a Care Guide** [advanced search]
- Results**
- Page 1 (of 1): Showing records 1 - 1 (of 1)**
- A search box containing the text "long faces surgery" and a "Search" button.
- A red callout bubble pointing to the search box with the text: "Type a keyword and hit Enter or Search".
- A purple callout bubble pointing to the search results with the text: "Click title to play the video".
- A search result card for "Surgical Correction of Long Faces (Orthognathic Surgery)" with a "MOV" icon, a "Disclaimer »" link, and a "More Details..." link.
- Page 1 (of 1): Showing records 1 - 1 (of 1)**

Whom can I contact with additional questions about my surgery:

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