



AT THE FOREFRONT
**UChicago
Medicine**

Welcome to Orthognathic Surgery at The University of Chicago Medical Center!

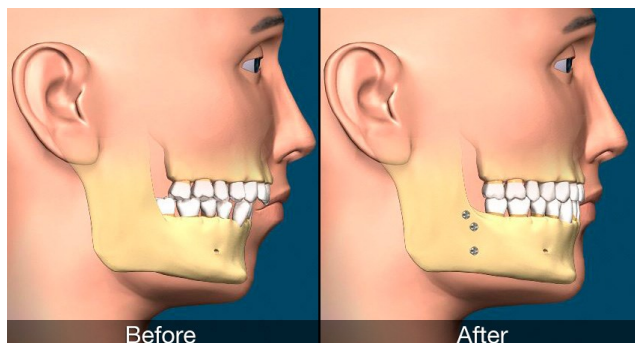


What does “orthognathic” even mean?

The term “orthognathic” derives from the Greek *orthos* (“straighten”) and *gnathos* (“jaw”). The goals of the surgery include the establishment/resoration of a normal bite, correction of the proper relationships of the upper jaw (maxilla) and lower jaw (mandible), and improvement in any pre-existing facial asymmetries that are associated with the jaw abnormality. All orthognathic surgeries require three phases of treatment, which involve a multidisciplinary approach from a team of physicians/caregivers:

- Orthodontist
- Surgeon
- Dentist
- Craniofacial Team Coordinator

Other caregivers involved may include a nutritionist, psychologist, speech/physical therapist, and social worker.



Hello!

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Here at The University of Chicago Medical Center we are committed to excellence in patient care, and committed to providing our patients with the information, education, and support they need to have a successful outcome.

We look forward to your success!

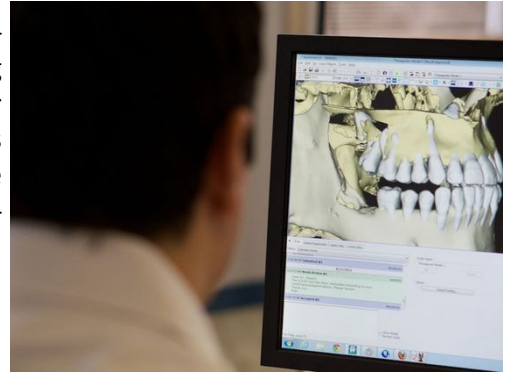


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What are the three phases of treatment?

1. The Presurgical Phase

The orthodontist is the key provider of care, preparing teeth for upcoming surgery, commonly by using orthodontic hardware (braces) to reposition the teeth. Orthodontist and surgeon communication is key during this phase, as the surgeon will guide the orthodontist on how to maneuver the teeth prior to jaw surgery, and the orthodontist will guide the surgeon as to how to move the jaw bones to achieve the absolute best occlusion (bite relationship) for the patient. Duration is anywhere from 6-18 months, depending on the severity of the bite/jaw abnormality. A consultation with a surgeon and an orthodontist is essential early, and you (your child) should anticipate a prolonged course of therapy prior to surgery. During this phase, your surgeon will outline to you the surgical plan, developed by the careful analysis of your (your child's) digital photography, x-rays, and dental casts.



If you (your child) do not have an orthodontist involved in your (your child's) care, please ask your surgeon for a referral. Here at *The University of Chicago*, we have a team of orthodontists who specialize in this type of diagnosis, and we can refer you (your child) to one that is convenient for you in terms of your location.

2. The Surgical Phase



Surgery, as outlined by the surgical plan, is performed, typically about 3-5 hours, depending on the type. Double-jaw surgeries typically take longer than single jaw surgeries. Once again, the surgical plan requires that your surgeon has the following:

- Digital photography -- performed in the surgeon's studio
- X-rays (panorex, AP/lateral cephalogram, submental vertex view)—provided by the orthodontist
- Dental casts and acrylic splint(s)—provided by the orthodontist

Most surgeries require a 1-2 day hospital stay. In the first 12-24 hours, patients are monitored carefully in an ICU/step-down setting. The diet will be established (see below) and a nutritionist will provide you with a customized diet plan tailored to your caloric needs. Patients are discharged with appropriate prescription medications to minimize discomfort, and prevent infection. Your surgeon will contact you (via phone call or electronic mail) to see how you (your child) is doing the day after discharge.

3. The Postsurgical Phase

The patient is checked by the surgeon to ensure proper healing after surgery, and to make sure that the facial and dental relationships are acceptable. Follow-up visits proceed approximately every two weeks until the bones are almost healed (6 weeks). Standard protocol for elastic wear is for the first two weeks after surgery in a continuous fashion; after these two weeks have passed, you (your child) will be placed on a regimen of "guiding elastics", where the dental elastics are kept on for most of the day, and just removed for meals. After the first two weeks post-surgery, the patient will also be switched from a full liquid/pureed diet to a soft diet. Please refer to our Soft Diet Instruction Sheet for further details.



Four weeks after surgery, the dental elastics will be removed and discontinued from the post-surgical regimen. Six weeks after surgery, the patient will be referred back to their treating orthodontist, who will begin the "finishing touches" on the teeth.

Frequently Asked Questions

At what age can a person have orthognathic surgery?

Conventional orthognathic surgery is generally performed when the jaws have reached skeletal maturity. In young women, skeletal maturity is achieved later (age 17-19 years). For severe jaw discrepancies or facial asymmetries, your child may be a candidate for a procedure known as a distraction (ask your surgeon if your child qualifies).

What is the recovery time?

Mild discomfort and getting used to the teeth being bound may take 3-5 days. Acute surgical swelling, nasal congestion, and sore throat can last approximately 7-10 days. Patients generally take a week out of work/school to recover at home.

When can I return to work (or when can my child return to school)?

Generally, patients return to work/school after one week off. Your surgeon will draft a letter to your workplace or school, stating the return date, and any restrictions.

What are my (my child's) restrictions after surgery? For how long?

Besides dietary restrictions (see right) the patient is restricted from the following activities:

- Nose blowing— especially in upper jaw surgery (none for 3 days)
- Tooth brushing (none for 2 weeks)**
- Heavy lifting (none for 3 weeks)
- Contact sports (none for 6-8 weeks)
- Driving a vehicle/operating heavy machinery (none until patient is pain-free and off prescription pain meds)
- Playing a wind/brass instrument (none for 4 weeks)

**In the case of tooth brushing, a Waterpik device can be used to help remove debris from the brackets as needed.

What can I (my child) eat after the surgery is performed?

Because the bone segments/incisions are healing, and the teeth are bound by elastics/wires, a full liquid/pureed diet is to be strictly maintained for 2 weeks after the surgery. After the two weeks, a soft mechanical diet is initiated to minimize loading on the healing jaw bones (please refer to Soft Diet Instruction Sheet). A nutritionist will consult with you on the first post-operative day prior to hospital discharge to recommend a diet tailored to you (your child's) caloric needs.



What should I expect after surgery?

After surgery, mild discomfort/soreness can be expected for the next week, which is controlled by pain medications (over the counter Tylenol, Motrin, or prescription Tylenol with Codeine). Acute swelling after surgery can peak (get worse) 72 hours after surgery, and can take 2 weeks to resolve. Other symptoms, such as nasal congestion, mild nasal discharge, sore throat, mild ear aches, can be anticipated.

In most cases, your (your child's) upper and lower teeth will be bound together with dental elastics, simply another measure used to stabilize the correction and allow the bones to heal. If segmental surgery on the upper or lower jaw is performed, the jaws may be wired closed for further stability. Please see previous section, "The Postsurgical Phase," to address concerns of how long elastics/wires are used.

Frequently Asked Questions (cont.)

Where are the incisions? Are there any visible scars?

For the most part, all incisions are kept inside the mouth, and may take up to 2 weeks to heal, thus the need to avoid solid food. In cases of lower jaw surgery, 2 small port scars are placed along the angle of the lower jaw (approx. 1cm in length); these ports facilitate screw fixation of the lower jaw.

Will there be sutures to be removed?

All sutures used are absorbable and so there are no sutures to remove after surgery.

What precautions do I (my child) need to take prior to surgery?

The specific precautions for this surgery are few. We ask that you (your child) refrain from smoking (at least 4 weeks prior), and particular medications (all herbal, aspirin and other anti-inflammatory drugs such as Motrin and Alleve) at least 7 days prior to surgery. Tobacco use prior to surgery can cause poor circulation to the healing bones and increase the risk of

wound healing problems. The aforementioned medications can cause bleeding and thus intraoperative complications.

What happens if I (my child) experiences extreme nausea and needs to vomit?

Our first priority is your (your child's) safety and comfort. If extreme nausea and vomiting occur, please:

- 1) Cut elastic bands/wires with instruments provided.
- 2) Discontinue all prescription narcotic medications.
- 3) Contact surgeon/surgical staff as soon as possible.
- 4) Keep patient hydrated, if tolerated.

Your (your child's) surgeon or staff will reapply the elastics/wires in a timely fashion to resume fixation of the teeth.

What problems do I need to look out for after surgery?

After discharge, the main issue that can arise infrequently is an infection. This is noted if you (your

child) experience fevers ($T > 101.5^{\circ}$ F), chills, sweats, increased redness/swelling of skin, develop drainage out of your (their) incision(s), or notices a bad taste in the mouth. Please call the hospital at the number provided and ask to speak to the Plastic Surgery Resident on Call for assistance.

What outcome can I expect?

The outcome will vary from patient to patient, but critically depends on the success of not only the surgery, but each of the treatment phases described above. At The University of Chicago, we are in tune to the fact that true success from orthognathic surgery comes from not only successful realignment of the teeth and restoration of correct dental and skeletal relationships, but also successful re-draping and re-positioning of the soft tissues that positively affect the patient's facial aesthetics. Although results are individualized, a photographic library of before-and-after images is available upon request.

Is this procedure covered by insurance?

Unfortunately, insurance coverage for orthognathic surgery has been dwindling, and coverage depends from state to state. Your surgeon will draft a letter to you insurance carrier stating the medical necessity of this surgery. Despite this, sometimes the insurance company will deny pre-authorization of the procedure. Here at The University of Chicago, we strongly advocate for patient's need for surgery, and will go through the appeal process, if necessary, to get the surgery approved. In the case that your insurance will not cover the surgery, then the procedure and hospitalization become an out-of-pocket expense for the patient. Surgical and hospital fees can be obtained through the Aesthetic Coordinator of the Section of Plastic Surgery. Please see the contact information.

What are the risks of surgery?

It is important for any patient and their family to know that the benefits of orthognathic surgery far outweigh the risks in an overwhelming majority of cases. However, surgery is not fail proof. The risks (bad things that may occur, but uncommonly do) depend on surgery type:

General

(Upper or Lower Jaw procedures)

- Postoperative infection
- Bleeding
- Scarring
- Hardware exposure
- Unanticipated fractures
- Tooth loss/tooth injury
- Failure of bones to heal properly (malunion/nonunion)
- Return of the bones/teeth to their preoperative position (relapse)

Maxillary Surgery

(Upper Jaw)

- Residual abnormal bite (malocclusion)
- Injury to salivary ducts
- Nerve injury (nerve that controls sensation to the lower cheek, upper lip and gums)- typically numbness will last for a few weeks then resolve
- Bone loss due to circulatory problems
- Sinus problems (e.g. sinusitis)
- Speech problems (especially in cleft palate patients)
- Nasal septal deviation/buckling

Mandibular Surgery

(Lower Jaw)

- Residual abnormal bite (malocclusion)
- Nerve injury (nerve that controls sensation to the chin)— fails to return in 10-20% of cases
- Bone loss due to circulatory problems
- Resorption of the condyle (ball and socket joint of the mandible)
- Malposition of the condyle requiring a second operation

Chin Surgery

(Osseous Genioplasty)

- Nerve injury (nerve that controls sensation to the chin)
- Contour irregularity
- Recession of the gums
- Drooping of the chin due to poor support of the mentalis muscle

Your surgeon will review these risks depending on the type of surgery indicated at the time of informed consent.

Who do I contact if there is a problem?

If there is an emergency or urgent matter that needs to be addressed right away, please call **The University of Chicago Medical Center hospital operator at 773-702-1000** and ask for the Plastic Surgery Resident on Call. For other matters or to set up an appointment, please call our Craniofacial Clinic Coordinator, or for insurance issues, please call our Aesthetic Surgery Coordinator using the following contact information:

- 1) **Craniofacial Clinic Coordinator, Heather Bailin, RN BSN, 773-702-6302**
- 2) **Aesthetic Surgery Coordinator, Kelsey Jacobson, 773-795-1240**

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