

# Orthognathic (Jaw) Surgery information

## What is Oral and Maxillofacial Surgery?

Oral and maxillofacial surgery is a recognized specialty of the dental profession, encompassing the surgical and related treatment of diseases, injuries and deformities involving both the functional and esthetic aspects of the head, face, mouth, teeth, gums, jaws, neck and related structures.

## Who are Oral and Maxillofacial Surgeons?

Oral and maxillofacial surgeons are dental specialists who treat conditions, defects, injuries and esthetic aspects of the mouth, teeth, jaws and face. Their training includes a four year graduate degree in dentistry and the completion of a minimum four year hospital surgical residency program.

Oral and maxillofacial surgeons care for patients who experience such conditions as problem wisdom teeth, facial pain, and misaligned jaws. They treat accident victims suffering facial injuries, offer reconstructive and dental implant surgery, and care for patients with tumors and cysts of the jaws and functional and esthetic conditions of the maxillofacial areas. With specialized knowledge in pain control and advanced training in anaesthesia, the oral and maxillofacial surgeon is able to provide quality care with maximum patient comfort and safety in both an office and hospital setting.

## What is Orthognathic Surgery?

Orthognathic surgery is sometimes called “Surgical Orthodontics” because, just as an orthodontist repositions teeth, an oral and maxillofacial surgeon uses orthognathic surgery to reposition one or both jaws. Just as “orthodontics” means “straight teeth”, “orthognathic” means “straight jaws”. In fact, because moving the jaws also moves the teeth, orthognathic surgery is usually performed in conjunction with orthodontics so that the teeth are in proper position after surgery. The objective of orthognathic surgery is the correction of a wide range of minor and major facial and jaw irregularities; benefits include an improved ability to chew, speak and breathe. In many cases an enhanced appearance can also result.

## Who needs Orthognathic Surgery?

People who can potentially benefit from orthognathic surgery include those with an improper bite and those with jaws that are positioned incorrectly. Jaw growth is a slow and gradual process and in some instances the upper and lower jaws may grow at different rates. The result can be a host of problems that can affect chewing function, speech, long term oral health and appearance. Injury to the jaw and birth defects can also affect jaw alignment. While orthodontics alone can correct many “bite” problems if only the teeth are involved, orthognathic surgery may be required if the jaws also need repositioning. The following are some of the conditions that may indicate a need for orthognathic surgery:

- Difficulty chewing or biting food
- Difficulty swallowing
- Speech problem
- Chronic jaw pain
- Excessive wearing of the teeth
- Open bite (space between upper and lower front or back teeth when mouth is closed)
- Unbalanced facial appearance
- Facial injury or birth defects
- Receding chin
- Protruding jaw
- Inability to make lips meet without effort
- Chronic mouth breathing with dry mouth
- Sleep apnea (breathing problems when sleeping such as snoring, difficulty breathing, etc.)

Unequal growth of the jaws, injury or birth defects can produce problems and symptoms that require treatment by a team that usually includes an oral and maxillofacial surgeon, an orthodontist, and sometimes your dentist. In order to determine if you are a candidate for orthognathic surgery and evaluation of your condition by this team is necessary.

## Evaluating your need for Orthognathic Surgery

In diagnosing your need for orthognathic surgery the oral and maxillofacial surgeon and the orthodontist will work closely together. The orthodontist is responsible for moving the teeth so they will fit together properly after the jaws have been repositioned. The oral surgeon is responsible for repositioning the jaw(s) so the teeth and jaws are in proper alignment. In addition, your general dentist is responsible for maintaining your oral health before, during and after your orthodontic and surgical treatment.

Before any treatment begins an initial consultation will be held to get acquainted and answer any preliminary questions you may have. It is important to understand that your treatment including pre-surgical orthodontics, orthognathic surgery and post-surgery healing may take from several months to two years or more to complete. You should be prepared to make a

long term commitment in order to derive the benefits of orthognathic surgery and in some cases psychological counseling may be an important part of the treatment process.

After the initial consultation a thorough examination with facial measurements, photographs, x-rays and dental impressions will be made. A medical history will also be taken to ensure that there are no health problems that would interfere with surgery or the administration of anaesthesia. If input from other specialists is needed you will be referred for additional consultations as appropriate.

Based on the results of your examination, consultations and other diagnostic procedures, you and the evaluation team will decide on the course of treatment that is best for you. Depending on the extent of your problem; orthodontic treatment alone may be sufficient or orthognathic surgery may be indicated. Surgery can range from minor movement of a single part of your dental arch to the repositioning of both jaws. During the pre-treatment consultation process feel free to ask any questions that you have regarding your treatment. When you are fully informed about the aspects of your case you and your dental team will make the decision to precede with treatment together.

Some people may consider having cosmetic procedures to enhance their new appearance such as surgery on the eyes, nose, chin or neck. You may wish to discuss these options with your surgeon including if and when these procedures should be performed.

## **Steps in Orthognathic Surgery**

### **Pre-Surgical Orthodontics**

Pre-surgical orthodontics will move your teeth into a new position so they will fit together properly when the jaws are surgically repositioned. During this pre-surgical orthodontic phase of treatment, which usually lasts 6 – 18 months, you will be wearing braces and will visit your orthodontist regularly for necessary adjustments to your braces and ongoing evaluation. You will also require reassessments by the oral surgeon. The surgeon will ask you, in most cases, to return to his office for a reassessment 6 months after the braces are started. Because your teeth are being moved into a position that will be correct after surgery you may think that your bite is getting worse rather than better during this phase of treatment. However, when the oral and maxillofacial surgeon realigns your jaws into proper alignment during orthognathic surgery, the teeth will be moved into proper position. After surgery, final orthodontic tooth movement is usually necessary to “fine tune” your bite. Following removal of your braces, you may be required to wear a retainer. If you still have your wisdom teeth or your teeth are too crowded it may be necessary to remove certain teeth prior to beginning orthodontic treatment in order to make space for proper tooth movement.

### **Pre-Surgical Records**

As your pre-surgical orthodontic treatment nears completion the oral and maxillofacial surgeon will make final preparations for the surgical procedure. Additional records will be taken similar to the previous ones. Your surgeon may use new x-rays and models of your teeth and jaws to “simulate” surgery in order to finalize the surgical movements of your jaws and anticipate the results of the procedure. From these models a plastic bite wafer (“splint”) can be made to serve as a guide for proper tooth realignment. When the team determines that your teeth are in the correct pre-surgical position, surgery will be scheduled.

### **Preparing for Orthognathic Surgery**

Orthognathic surgery is performed in a hospital under general anaesthesia. Prior to surgery you will have a physical examination to ensure that you are in good overall health. You may be advised to donate blood in the event you need a transfusion during surgery. Certain dietary supplements and exercises may be prescribed to achieve optimum health so that healing after surgery will be as rapid and uneventful as possible. Any required lab tests will also be done prior to surgery.

In most cases you will check into the hospital on the day of your surgery. Your anaesthesiologist will discuss the general anaesthetic procedure to be used and answer any questions you may have. In addition to the use of general anaesthesia which “puts you to sleep” during surgery, you will be receiving intravenous fluids and medication to prevent dehydration and infection and to minimize swelling and pain. It is very important that you adhere to any medication schedule or diet prescribed by your surgeon. You may receive pre-operative medications to reduce normal pre-surgical anxiety.

### **The Surgical Procedure**

Orthognathic surgical procedures last anywhere from one to several hours depending on the amount and type of surgery needed. In lower jaw surgery the rear portion of the jawbone behind the teeth is separated and the tooth-bearing portion is moved forward or backward as appropriate. In upper jaw surgery the jaw can be repositioned forward or backward, or the jaw can be raised or lowered. Certain movements may require the jaws to be separated into several parts with bone added or removed to achieve the proper alignment and stability. Other facial bones that contribute to the imbalance may also be repositioned, augmented or reduced in size. In most cases incisions are made inside the mouth and there will be no visible external scars.

### **Immediately Following Surgery**

Immediately after surgery you will be moved to the recovery room until the general anaesthesia has worn off. Your family may not be allowed in the recovery room but they should be able to visit you shortly thereafter. An intravenous apparatus attached to your arm can provide required medications and nutrients until you are able to take sufficient liquids by mouth. Medications may be administered to control post-surgical discomfort or pain. The length of stay can be one or more days. You can expect temporary swelling, especially of the lips and cheeks and perhaps bruising, but this is a normal healing response and should disappear over time.

For the first few days after surgery you may experience nasal congestion or sore throat due to the nasal tubes used for anaesthesia. Post-operative discomfort is usually not significant and can be controlled with medications. To aid in healing your jaws may be prevented from moving with the use of fixation appliances (“elastics”). In many cases the jaw bone sections are held together during the healing period by small screws and plates placed by the surgeon. Tight elastics holding the jaws together may be necessary after surgery and may be required for a few days or for the entire healing period. While your jaws are fixed and healing you may consume a liquid diet. During this time period you may lose weight, but this can be regained after the fixation period is over. During the first week after surgery your dietary intake is very important and you may be advised to supplement your diet with liquid vitamins and minerals. A blender can be used to liquefy almost any food to provide a balanced diet.

Smoking is highly discouraged as it can retard the healing process. Strenuous activities should be avoided during the first postoperative weeks.

### **During Healing**

When you leave the hospital or surgical facility you should be able to return to work or school as soon as you feel like it, often within two weeks for most people. Your appearance may have changed somewhat due to the repositioning of your jaws and associated swelling, so you should be prepared for signs of surprise from your family and friends. It won't take long for them to adjust to the “new” you.

You will see the oral and maxillofacial surgeon and the orthodontist for regular evaluation visits and it is very important that you keep these appointments. The surgeon will monitor your healing and at the appropriate time remove fixation devices if they were used.

The initial healing phase will take approximately 6 weeks, but completion of the healing process will take 9 to 12 months. During the entire healing phase it is critical that you practice the best possible oral hygiene. Your surgeon and orthodontist can assist you in this area and may recommend the use of some special oral care devices.

The orthodontist will usually begin the post-surgical phase of orthodontic treatment 4 to 6 weeks after surgery to “fine tune” your bite. In most cases braces are removed within 6 to 12 months following surgery.

### **Follow-up Care**

After your orthognathic surgery and related orthodontic treatment are completed, your surgeon and orthodontist will want to see you periodically to monitor you and make sure your teeth and jaws are staying properly aligned. You should maintain your oral health and visit your family dentist regularly and have any other needed dental work completed.

### **Known Risks and Complications**

As with any surgical procedure, certain side effects and complications are possible with orthognathic surgery. You should understand these before you consent to surgery. Your surgeon can answer questions you have about the following possible risks:

1. **Swelling** is a normal reaction to any surgical procedure. The amount varies with the individual and the procedure. Swelling will likely increase for approximately 24 to 72 hours following surgery, typically remains unchanged for approximately one week, and then usually subsides by the third to fourth week.
2. **Nausea and vomiting** are complications of general anaesthesia, but occur infrequently. Because you are on a liquid diet, anything that “comes up” will be liquid and can escape between and behind your teeth. Medications can be given to control any nausea that might occur.
3. **Pain** following orthognathic surgery is usually moderate and can be controlled by medication. If symptoms persist that cannot be relieved by prescribed medication, contact your surgeon.
4. **Minor Bleeding** may be experienced after surgery. If upper jaw surgery has been performed, there may be some oozing of blood from the nose. This bleeding is easily controlled in the hospital setting. In the rare event excessive or prolonged bleeding occurs after you return home, contact your surgeon immediately.
5. **Loss or alteration of nerve sensation** resulting in numbness or a tingling sensation in the face, jaw, teeth or tongue may occur as nerve fibers are regenerating and mending. As healing takes place you may have sensations of warmth and tingling in the affected areas. It is infrequent that these remain longer than six months; however, some individuals may experience permanent altered sensations, particularly in lower jaw operations.
6. **Infection** is a potential risk following any surgical procedure. If an infection does occur, it is usually treated with antibiotics. If fever, persistent swelling/pain or pus develops following surgery, contact your surgeon immediately.

7. **Sinus complications** such as drainage or pain (sinusitis) may occur in some cases involving surgery of the upper jaw. This may or may not require further treatment, but any symptoms of sinus trouble should be reported to your surgeon.
8. **Injuries to adjacent teeth** and roots, fillings or bridgework can occur during orthognathic surgery. These may later require appropriate dental treatment.
9. **Relapse** of the new jaw position or unpredicted shifting of jaw structures is uncommon following orthognathic surgery, but can occur. If it does, further treatment may be necessary.
10. **Persistent limited range of movement** of the jaw or impaired chewing or speech function can occur following orthognathic surgery. Special jaw exercises and/or physiotherapy can usually help to improve this condition.
11. **TMJ (jaw joint) pain** or abnormal function happens in rare instances following orthognathic surgery. Surgery may aggravate pre-existing jaw joint problems. If these conditions persist, further treatment may be necessary.
12. **Prolonged recovery** or pneumonia are rare, but are potential risks of general anaesthesia associated with any procedure, including orthognathic surgery.

### **Enjoying the Benefits of Orthognathic Surgery**

Orthognathic surgery moves your teeth and jaws into a new position that is more balanced, functional and healthy. Not only should you be able to bite and chew better than ever before, but your appearance and speech may be enhanced as well. If you have any further questions or concerns please call our office.

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**If you have any questions, do not hesitate to call during office hours  
(8 am – 4 pm, Monday – Friday) at 454-6565 or 1-800-379-9474**

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