

# JAW SURGERY

*Everything you need to know*



JAW CENTER





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Orthognathic Jaw Surgery can have dramatic and positive effects on many aspects of your life. While the appearance of your face and smile may be enhanced through treatment, the core objective with Jaw Surgery is to correct for wider facial, health and medical issues.

# CHOOSING BETWEEN JAW SURGERY OR ORTHODONTICS?

Traditional orthodontic treatments such as braces or Invisalign are commonly used to straighten crooked teeth and relieve dental crowding. Orthodontics generally focuses on the appearance of your teeth with the aim of giving you a straighter smile.

But have you thought about why you might have crowded teeth, a bad bite, or an uneven smile? You may have been told modern humans have too many teeth, or the teeth you inherited are too big. The answer, however, comes down to imbalances in the size and position of your jaws.

Traditional orthodontics commonly relies on removing teeth to “camouflage” the true cause of dental crowding. Or it might try to mask jaw imbalances by holding back normal facial growth, or training you to hold your jaw forward.





In most cases, traditional orthodontics does nothing to address the root cause of crooked teeth, dental crowding and bad bites. In fact, such treatments often have lasting and damaging effects that are difficult to resolve.

Medical conditions associated with jaw development are usually ignored. Imbalances in jaw growth are often associated with breathing difficulties, snoring and sleep apnea, and TMJ (temporomandibular joint) or jaw joint dysfunction.

Left untreated, these medical conditions can lead to jaw arthritis, future dental disease, and the many long term effects of snoring and sleep apnea such as hypertension, obesity, diabetes, heart disease, stroke and early death.

For some people, traditional orthodontics might be an appropriate, cost effective treatment option. But before you make a choice, you need to ask the question.... is this treatment disguising more significant issues that should be addressed medically?

**The cornerstone of Jaw Surgery is realigning the jaws and teeth in order to improve the way they work together, and to enhance airway and facial aesthetics.**

Jaw surgery, often combined with the ideal orthodontic treatments, may be the best solution for adults in correcting jaw imbalances. This ebook will help you decide whether jaw surgery is an option for you.

We fully understand that deciding on surgery is a big step, and it's completely natural to have concerns and questions. In your consultation, our Orthodontic Center LA Surgical Doctor will talk through all your issues to help you make a decision that's right for you.

**Jaw surgery is not just about enhancing your profile.  
It's also about freeing your airway to make breathing easier.**

# WHAT IS JAW SURGERY?

Jaw surgery aligns your jaws to their ideal position within the architecture of your face. The ultimate aim of jaw surgery is to enhance your chewing, speaking and breathing. The improvements to your facial profile and appearance are an added benefit of treatment.

At its core, corrective jaw surgery is a functional medical procedure. It is not performed for the deliberate enhancement of facial aesthetics, and is not to be considered a “cosmetic” surgery procedure.

Jaw surgery is designed to open up the airway behind the tongue, in order to relieve airway obstruction and improve breathing. This can ultimately relieve a person's snoring, sleep-disordered breathing, and their risk of developing sleep apnea.

Another aim of treatment is to create space for teeth to uncrowd naturally, or with the assistance of gentle orthodontic treatments. The newly established bite at the end of treatment helps balance your chewing and eliminate current or future jaw joint problems.

There are many different types of jaw surgery, and the ones you may benefit from are unique to you. We can present your available treatment options using detailed 3D imagery of your jaw and facial structures.

**Jaw surgery allows your teeth to straighten naturally without the need to remove teeth.**



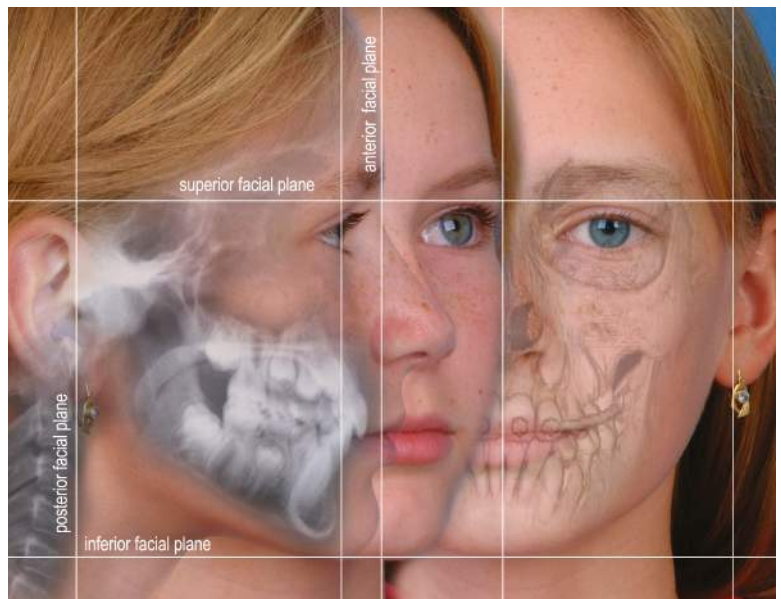
# WHY CHOOSE JAW SURGERY?

If you're seeking treatment for any condition that results from jaw and facial imbalance, jaw surgery should always be part of your informed consent. Your specialist jaw surgeon is the only professional qualified to give you appropriate advice concerning jaw surgery.

Mild teeth misalignment and jaw imbalance may be treated with traditional orthodontics with only little compromise, and the impact on your health and wellbeing in such situations may be small.

Where there are larger imbalances in your jaw size and position, you are more likely to experience some of the following...

- Tiredness
- Lack of concentration
- Breathlessness on exertion
- Jaw joint problems
- Headaches or migraines
- Snoring and sleep apnea
- Difficulty chewing
- Affected speech
- Open mouth breathing
- Chronic nasal congestion
- Neck posture issues



Standalone orthodontic treatments will not address such concerns, and also have the potential to make such issues worse. These wider medical issues, as well as the underlying jaw imbalances, will still be present after your teeth are “straightened”.

Jaw surgery treats the central issue. By doing so, many of the flow-on effects from jaw imbalance such as airway obstruction, jaw joint problems, and postural issues can be improved on or eliminated entirely.

# THE IMPORTANCE OF AIRWAYS



Correcting jaw and facial imbalances has positive effects on our health that extend beyond aesthetic and dental benefits. Having small jaws often produces a narrowing effect on our airway as it travels behind our tongue and soft palate.

Restricted airways cause snoring and of greater concern, sleep apnea. These increase our future risk of heart attack, stroke, depression and type 2 diabetes. Sleep-disordered breathing affects not only older people, but children and teens with restricted airways.

Successful treatment of airway obstruction improves your breathing and quality of sleep. Better sleep enhances your concentration levels and daytime performance. Normal breathing also helps you to participate in sports and lead a healthier lifestyle.

The primary focus of jaw surgery is to correct the size and position of your jaws in a fashion that maximise the opening of your airway. Of all the things a facial correction specialist can assess for you, airway function is of greatest importance.



# THE JAW SURGERY PROCESS

## Step 1: Initial Consultation

At your first consultation, we will broadly discuss the concept of jaw surgery with you. We'll give you an idea of your treatment options and the outcomes you can expect from jaw surgery. We'll show you cases similar to your own, and answer any of your questions.

Your first consultation is a discussion of ideas, and how treatment may or may not benefit you. This typically lasts 45-60 minutes, and if you and your surgeon wish to plan for jaw surgery, you may progress to the next step.

We can arrange a consultation for you in our office at Los Angeles from Monday to Friday from 8:30am to 5:30pm and weekends by appointment.





## Step 2: Surgical Planning

Once you have decided to proceed with exploring a defined jaw surgery plan, we'll arrange for you to have a low-radiation medical CT scan using one of our chosen radiology partners. This will be bulk-billed if you have a current Medicare card.

Using the data from your CT scan, we digitally reconstruct your jaws, teeth, airway, and facial soft tissues. This is a very time intensive process, requiring a lot of preparation by our surgeon and ancillary staff before we see you next.

During your planning appointment, we'll show you the intended results of your surgery using our digital planning software. If you are provided with more than one surgical option, their pros and cons will be outlined, as well as a simulation of each choice.

This appointment generally lasts about an hour, but in complex cases more time may be allocated. A quote will be given to you by our ancillary staff once you have chosen the most appropriate orthodontic and surgical treatment plan.

## Step 3: Customised Plate Design

Patient specific surgical guides and plates are the latest innovation in jaw surgery. They are designed to only fit your jaws in one position, and enable your surgeon to precisely replicate your digital surgical plan.

This has greatly increased the success, predictability, and comfort of jaw surgery procedures. Our patients experience with these customised plates is far more positive than traditional jaw surgery systems.

The process involves our team liaising with maxillofacial digital technicians in France and Belgium. After uploading your CT scan to them, they will exactly reproduce the surgical plan you have already approved.

Once completed, your surgeon sits down via teleconferencing with an international team of technicians, connecting Australia, Belgium and France.

Once everyone confirms the proposed surgical planning, the surgical guide and plate design begins.

The final designs for the surgical plates are later sent to your surgeon to assess. Once approved, the bespoke plates and guides are “3D-printed” using state-of-the art titanium sintering technology. Titanium is the most biologically compatible material available.

## Step 4: Surgery

Your surgery will be performed in a private hospital setting, with support staff that have assisted us for over ten years. Your stay in hospital as an inpatient will be for 1-3 nights, and longer stays can be arranged if required.

Your surgeon will visit you in hospital daily to ensure that everything is progressing as it should following surgery. The excellent hospital staff will also be there to make your stay as comfortable as possible for the time that you're there.

## Step 5: Post-Op Monitoring

The use of patient-specific plates demand at most, for your jaws to be stabilised with elastics. The days of wiring your jaws together are a distant memory since our introduction of bespoke plating systems.

There will be regular monitoring of you in our rooms after your surgery. How often is determined by the procedure and by you. We may also monitor you via Skype, SMS, photos, or review with your orthodontist.

We interact with each person on an individual basis and take into account whether they are local residents, interstate, or international based patients.



# TYPES OF JAW IMBALANCE

## The Small Lower Jaw | Mandibular Advancement



Mandibular advancement is another way of saying “a small lower jaw”. A small lower jaw makes facial features such as the nose and ears appear overly big. The chin may appear receded, there may be ‘bucky’ front teeth, and varying degrees of teeth crowding.

The upper jaw and nasal airway are also often very narrow. This can be due to a lack of a moulding influence of a small tongue. A tongue of normal size naturally sits to fill and help develop the breadth of the palate and arch of the upper teeth.

The small lower jaw significantly increases the risk of upper airway obstruction behind the back of the tongue. This can lead to chronic open mouth breathing, snoring and obstructive sleep apnea.

Advancing the lower jaw with either the BSSO enhances the aesthetics of your chin, jawline and profile, while also providing significant pull on the back of your tongue to open your airway further.



## The Small Upper Jaw | Maxillary Advancement



The small upper jaw leads to upper dental crowding, impacted teeth (usually the canines), a narrow smile, and in particular, a narrow nasal airway. The most significant influence on upper jaw development through childhood is normal nasal breathing.

Natural nasal airflow provides the stimulus for upper jaw growth. Any form of airway obstruction leads to open mouth breathing, which prevents natural nasal airflow, especially during sleep.

In profile, the under-developed midface can appear sunken or set back. There may be a sense of thinning, collapse, or lack of fullness of the upper lip. It can also give the appearance that the lower jaw is too big, or that the chin is too prominent.

Effective treatment aims at making the small upper jaw bigger, and by restoring nasal airflow. Widening and advancing the upper jaw improves the flow of air through the nasal airway and behind the soft palate.

## The Front Teeth not Touching | Anterior Open Bite



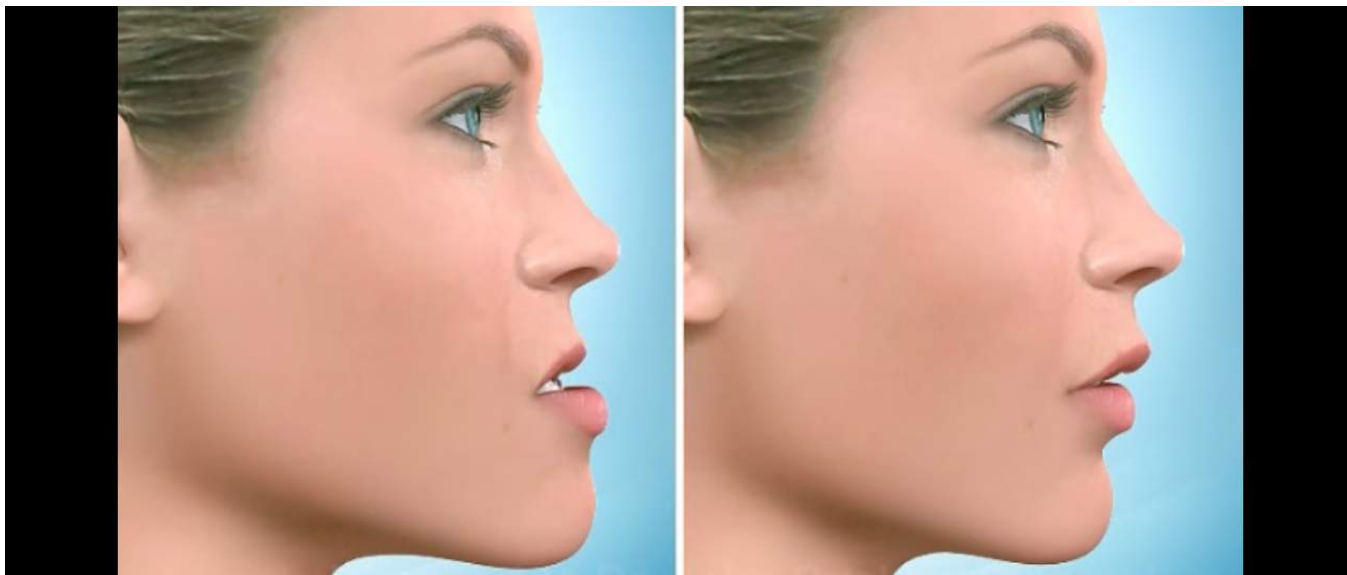
The anterior open bite is where the front teeth do not meet, making normal chewing and biting almost impossible. The way the back teeth meet makes the face appear “propped open.” The chipping and wear of these teeth increases the risk of losing them permanently during adulthood.

This is probably the most complicated treatment challenge for facial correction specialists. An anterior open bite forms by a complex interplay of abnormal growth patterns. It will have started in early infancy because of a genetically small lower jaw.

The lower jaw and tongue are almost always small, and this is currently viewed as the main cause of airway obstruction and breathing difficulties.

This leads to open mouth breathing, abnormal growth of the upper jaw and development of the anterior open bite.

## The Big Lower Jaw | Mandibular Hyperplasia



The most common cause is an upper jaw that is small relative to a normally sized lower jaw. A small upper jaw gives the illusion of a big lower jaw, and is almost always due to nasal obstruction leading to open mouth breathing.

A symmetrically big lower jaw is exceedingly rare, and occurs due to an excess of growth hormones during facial development. If treated early, through surgery, many long term bite and developmental problems can be minimised or avoided.

## The Long Face & Gummy Smile | Vertical Maxillary Excess



This condition arises due to extensive vertical growth of the upper jaw. The lower jaw often grows in downward fashion as a response to the long upper jaw, resulting in what can be extreme vertical heights of the face.

The most notable features of maxillary excess are a long face, a gummy smile, a narrow upper arch of teeth, and front teeth that don't meet. Often the lips are unable to meet due to the jaws being "propped" open by the increased vertical jaw growth.

The lower jaw and tongue are almost always small, and leads to significant airway obstruction and breathing difficulties. The open mouth breathing that follows is the primary cause of the uncontrolled vertical growth of the upper jaw.

## **The Small Upper & Lower Jaws | Bimaxillary Retrusion**



Bimaxillary retrusion is a common facial condition where both the upper and lower jaw are small. The lower third of the face appears receded, and creates the sense of small chin. The bite appears to be in a normal orthodontic relationship.

When both the upper and lower jaws are small, there is the false appearance of the nose being too large. This may inadvertently lead to a person seeking a cosmetic nose reduction (cosmetic rhinoplasty).



The causes for these skeletal jaw discrepancies vary. Some will be genetic, and some will be due to early childhood trauma. The major cause of bimaxillary retrusion is an inherited small lower jaw, often camouflaged by extraction-based orthodontic treatment.

Bimaxillary retrusion is the major cause for adults seeking remedial jaw surgery, to correct the many detrimental effects that can arise following camouflage orthodontics as a teenager.

## The Asymmetrical Face | Facial Imbalance



Marked facial asymmetry can result from genetically inherited, traumatic, or developmental disorders. These are often complicated treatment challenges, and additional surgical procedures may be required to achieve ideal facial symmetry.

There are usually severe bite disturbances in people affected by such conditions. Jaw joint issues are also a common complaint in patients with such extreme jaw and facial asymmetry.

Thorough investigation of the underlying cause is essential for precise treatment planning, with the use of detailed medical imaging being helpful for making an objective diagnosis.

# JAW SURGERY PROCEDURES

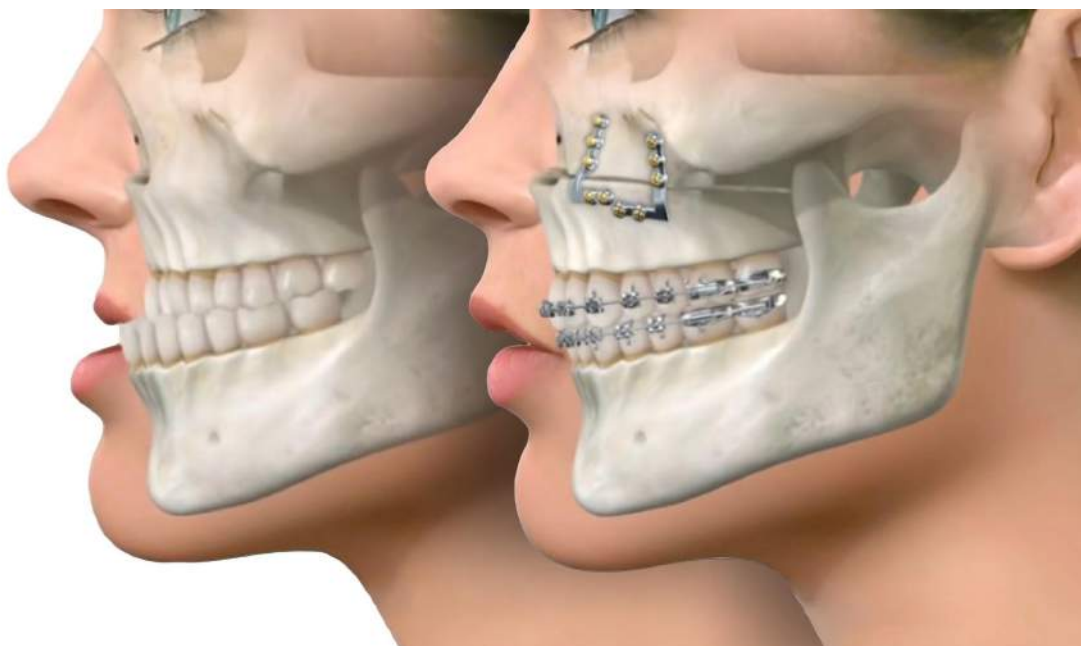
There are a number of different jaw surgery procedures. Which ones you may need and their sequence is best determined by 3D analysis of your CT scan. Your CT is used for diagnosis and surgical planning, so we can show you your available treatment options

## Le Fort I

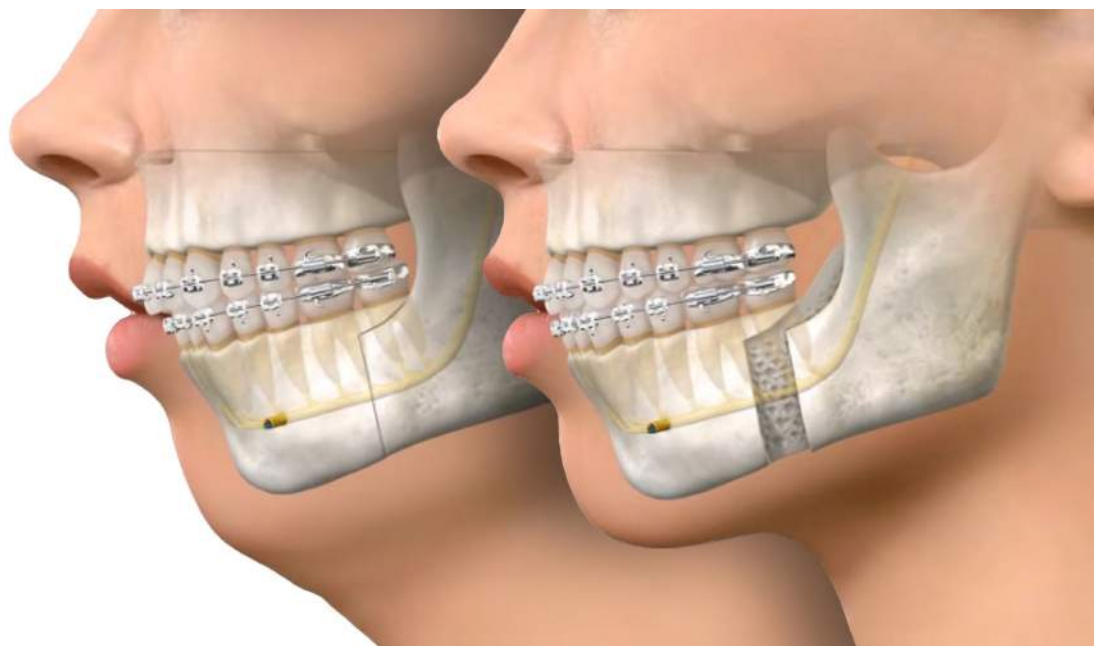
Le Fort I is used to correct midface abnormalities. Aesthetically, a Le Fort advancement harmonises facial balance by correcting the sunken or setback appearance of a small upper jaw, and also improving the fullness of the upper lip.

The upper jaw can be moved forward to correct an underbite, or lifted up to correct an open bite or gummy smile. Balance to your facial profile is provided through increased projection of your cheekbones and upper lip.

Advancing the upper jaw improves the flow of air through your nasal airway and behind your soft palate. If planned and treated in a precise fashion, the surgery is capable of completely eliminating nasal airway obstruction.



## Bilateral Sagittal Split Osteotomy

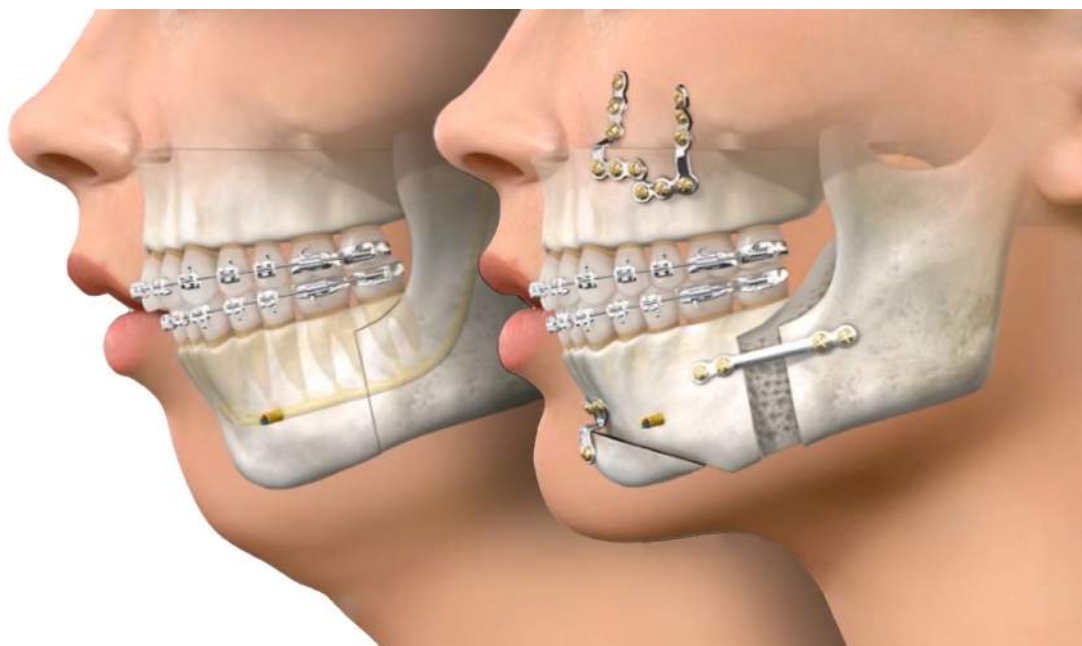


Bilateral Sagittal Split Osteotomy (BSSO) corrects the length and position of the lower jaw. Your lower jaw is moved forward to correct an overbite, improving how your teeth come together when chewing, as well as opening up the airway behind the tongue.

The BSSO usually requires a lengthy period of orthodontics, both leading up to surgery as well as after the procedure. There are limits to a successful BSSO advancement of around 6-8mm.

Too great a movement, and the pull-back forces from the tongue and skin lead to an unstable bite and the potential for “relapse”. Pulling back your lower jaw with a “BSSO setback” obstructs your airway, and should never be considered as a treatment option.

## BiMax



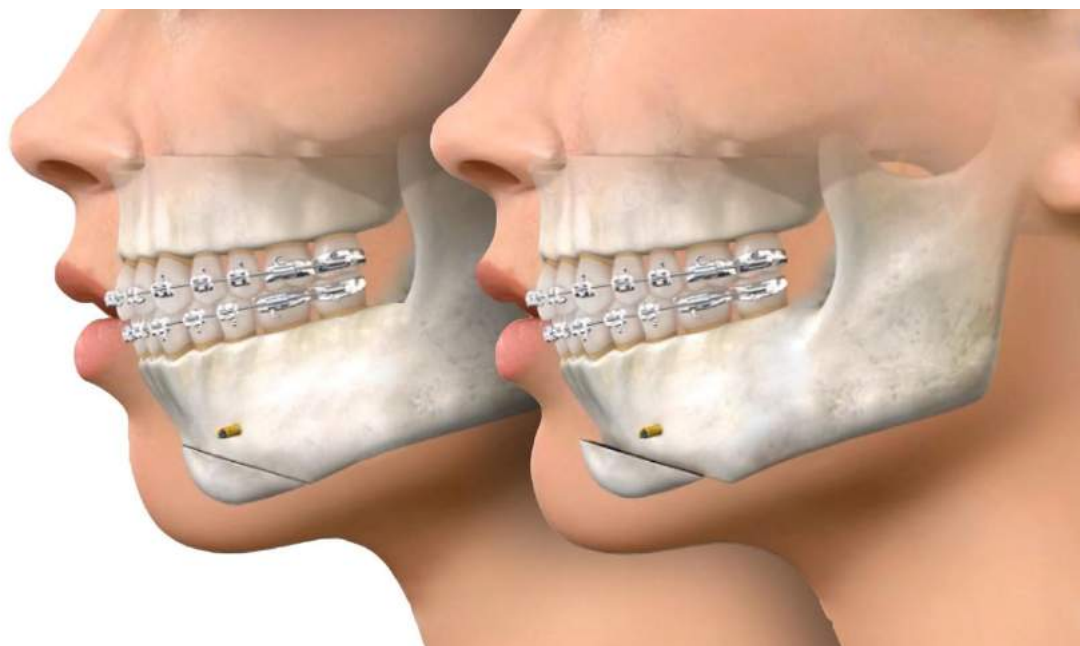
BiMax surgery advances and corrects the position of both jaws, combining the BSSO and Le Fort I in one operation. Correcting your jaw relationship balances how your teeth meet when eating, and minimises the risk of tooth wear and jaw joint issues.

BiMax surgery is often used to alleviate airway obstructions that lead to snoring, sleep apnea, and poor exercise tolerance. Advancing both jaws together opens your airway substantially, improving the natural flow of air when breathing.

Your smile and facial appearance will be enhanced, through idealising the amount of teeth you show when talking and smiling, and by accentuating the definition of your cheekbones, jawline and facial profile.



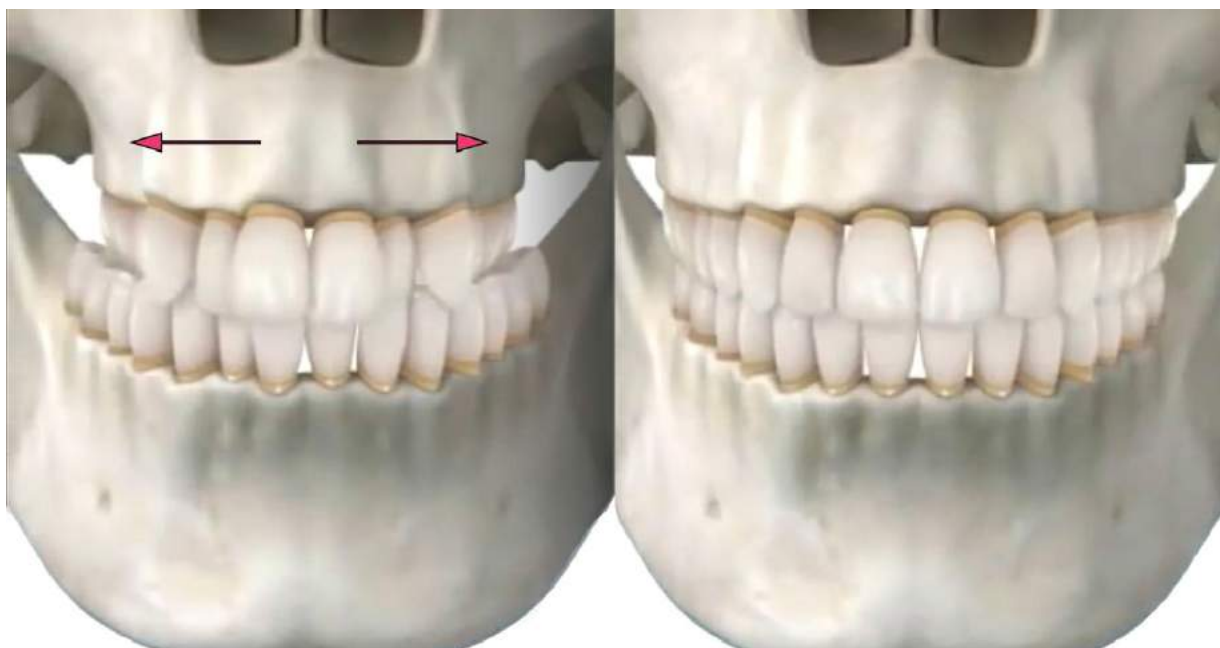
## Genioplasty and GenioPauilly



Genioplasty is a procedure used to correct how far forward the chin projects. It is used to correct the symmetry of the chin point, and the contour and shape of the chin. A Genioplasty is often performed as part of a sequence of surgical jaw procedures.

GenioPauilly is an enhanced variation of the Genioplasty. Used together with the advancement BSSO, it maximises chin, jawline and profile aesthetics while providing significant pull on the back of your tongue to open your airway further.

## Surgically Assisted Rapid Maxillary Expansion (SARME)



SARME is used to widen a narrow upper jaw in adults, or late teenagers for whom facial growth has ceased. It is usually performed prior to BiMax surgery in adult jaw surgery patients.

SARME creates the room in the upper jaw to allow your teeth to be straightened without the need for tooth removal. It also opens your nasal airway to your breathing and reduces the severity of possible snoring or sleep apnea.

## Counter Clockwise Rotation (CCW)

CCW is a variation of the Bimax surgical procedure. CCW stands for “Counter Clockwise rotation” and refers to the effect of moving the upper and lower jaws forward while also rotating them upwards.

“Camouflage orthodontics” relies on pulling the upper teeth back and dental extractions. This steepens the lower jaw angle, often producing a “gummy smile” from the increase in facial height. Airways are usually restricted from the downward growth of the mandible.

CCW reverses the effect of the original orthodontics used to disguise a small lower jaw. The CCW is the most commonly requested remedial jaw surgery procedure by adults, seeking to reverse the negative effects of camouflage orthodontic treatment.

The CCW is a form of Bimax. The amount of CCW and advancement required is determined during the surgical planning. The CCW is often combined with an advancement genioplasty, and the effects on both profile and airway opening can be substantial.

**‘Any surgical or invasive procedure carries risks. Before proceeding, you should seek a second opinion from an appropriately qualified health practitioner.’**



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