

Dr. David Sarver received his Bachelor of Science degree in 1973 from Auburn University. He then graduated from the University of Alabama School of Dentistry in 1977 and was named by ODK as the Outstanding Professional Student in the Medical Center. He obtained his post-doctoral master's degree and completed his certification in orthodontics at the University of North Carolina in 1979. He then opened his practice in Birmingham in 1979.

Dr. Sarver is a Diplomate of the American Board of Orthodontics, a member of the Angle Society of Orthodontists and currently serves as an adjunct professor at the University of North Carolina. In addition to his commitment to his private practice, Dr. Sarver has been very active in research and academic writing. He has authored the orthodontic text, "Esthetic Orthodontics and Orthognathic Surgery" and co-authored "Contemporary Treatment of Dentofacial Deformity." Additionally, Dr. Sarver Is a co-author of the text "Contemporary Orthodontics", the most widely used orthodontic text in the world. Dr. Sarver's work was recently featured on the Today Show in a segment by Dr. Christine Dumas and Katie Couric. Dr. Sarver's award-winning research was also recently highlighted on The View in a segment with medical reporter Dr. Christine Dumas. He and his wife, Valerie, have three children - Dave, Leigh and Suzanne.





SARVER
ORTHODONTICS





PATIENT SURGERY GUIDE



Preface

Orthognathic surgery (jaw surgery) is a term and a process unfamiliar to most people. When orthognathic surgery is recommended to you or your child, you want as much information as you can possibly get. We have been leaders in this field of dentistry for 30 years, and in that time have encountered many myths and misconceptions patients gather through conversations with friends and neighbors and exploring the Internet. This booklet is designed to give you a clear picture about the purpose of the recommended procedures, and present a clear description of the procedures in orthognathic surgery. It is our goal for you to feel completely informed and comfortable with your treatment, so we have designed this booklet to take you step-by-step, from start to finish.

The purpose of orthognathic surgery is to correct functional and esthetic problems that are due to underlying skeletal deformities. Why is it important to correct a bad bite? Severe malocclusion (bad bite) may cause many functional problems. You may have already experienced some of the following: inability to chew food properly which compromises digestion; speech problems; facial dysfunction characterized by headaches, joint pain, and periodontal trauma. Orthognathic surgery is also an important part of the treatment of obstructive sleep apnea.

Before we talk about orthognathic surgery there is something important for parents to understand!

Orthognathic surgery if often the treatment solution in cases where the bite problem is so severe that orthodontic treatment alone isn't enough to correct the problem, or where orthodontics alone would compromise your facial appearance. An important note-it is important that we see children earlier than our generation of parents was accustomed to. When we as parents were children, the patient did not go to the orthodontist until all the permanent teeth were in. Modern orthodontic treatment is more than just straightening teeth. We now evaluate the dental relationships much as we did in the past, but now evaluate facial growth issues as well. Here is the important point-the eruption timing of the teeth does not correlate to skeletal growth. We often see 10-year olds with all their permanent teeth, and 14-year olds who have only the permanent incisors in. This means that a child with a jaw growth problem (an undergrowth of the lower jaw, for example) get's treatment for the growth problem at the right time, and this may need to be timed separately from how the teeth are developing.

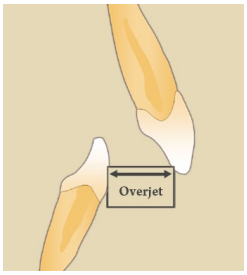
This means three things to parents:

- It is important to see the orthodontist early. (age 7 is recommended by the American Association of Orthodontists)
- The overall orthodontic treatment outcome can be functionally and esthetically better than 30 years ago.
- Jaw surgery itself may be avoided in many adolescents through contemporary orthodontic treatment, appropriately timed, by correcting the growth pattern during the patient's growth period.

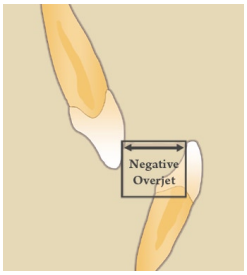
Let's illustrate this with two patients, but first, some simple orthodontic terminology:

Overjet- This term means the lower teeth are horizontally behind the upper teeth. Most people refer to this as a bad overbite, but orthodontists refer to this as overjet and classify it as a Class II malocclusion. Overbite is the vertical depth of the bite.

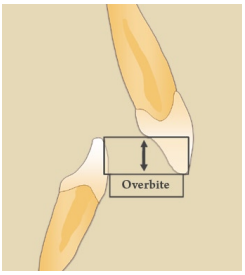
Underbites or Negative Overjet- This problem can also be successfully intercepted with appropriate timing of treatment. An underbite is the opposite of Class II malocclusion with the upper teeth actually hitting behind the lower incisors and is referred to as a Class III malocclusion.



***Overjet** is a horizontal distance, of the upper incisor ahead of the lower incisors.*



***Negative overjet** is where the upper incisors are behind the lower incisors.*

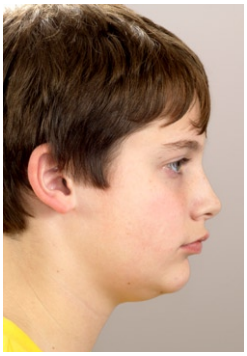


***Overbite** is a vertical distance, the upper incisors overlap the lower incisors.*

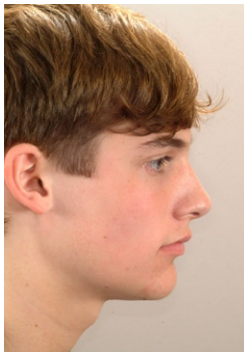
OVERJET

This adolescent male has a **Class II malocclusion**. The cause is an undergrowth of the lower jaw and is a reflection of his inherited genetic pattern. The growth problem is the reason he has a malocclusion and this is reflected in his facial profile. His lower jaw is also underdeveloped vertically causing a short facial height. Orthodontic treatment is directed towards correction of his bite with growth modification utilizing orthodontic appliances and night-time wear of a headgear. In this case, treatment resulted in bite correction and facial improvement.

Before



After







UNDERBITE

This adolescent female was followed until the appropriate time to treat her skeletal problem-underdevelopment of the upper jaw. Using a palatal expander and reverse headgear in her early years, followed by braces later, she was treated successfully to a good bite and balanced face with another form of growth modification-mid facial protraction.

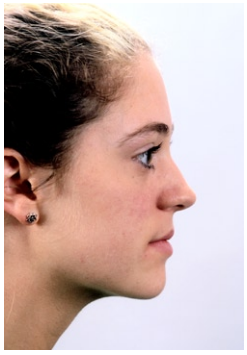
Patient cooperation is absolutely essential to successful treatment, whether in adolescent or adult treatment.

Orthognathic surgery provides us with the opportunity to improve both functional and cosmetic problems at the same time. Most aren't familiar with the procedure and are uncomfortable in considering it as a treatment option. Again, the information in this booklet is designed to take you step by step through the process involved with orthognathic surgery so you can fully understand the entire orthodontic and surgical experience.

Before



After





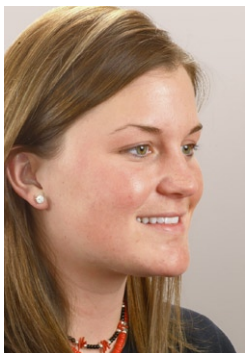


General Information & Sequence of Treatment

THE INITIAL VISIT

On your first visit we will discuss your chief complaint- what brought you to us in the first place. We would like to emphasize that we believe that we have several responsibilities to you as a patient. First, we want to talk with you as to what you are looking for in treatment. Relief of pain, restoration of dental function, esthetics-all may be parts of what you are looking for. Next, we want to be sure we educate you as to all your treatment option. Finally, we want to guide you to the treatment plan that is tailored for you. But we believe that part of our professional responsibility is to not only help you decide what is best, but exercise our professional judgment as to what might be inappropriate for you. In other words, we must help you decide on what is best for you, and what might be a bad decision too!

To accomplish this we have the latest technology. Through the use of digital imaging and radiography, we can assimilate your diagnostic information very rapidly. We can outline treatment at the initial visit in a visual package that is in language you can understand.





*One of the most rewarding aspects of orthognathic surgery is **improved self-esteem***

DIAGNOSTIC RECORDS

At the first visit, a set of diagnostic records will be taken to determine the nature of your problem and what can be done to correct that problem. After processing and analyzing those records, we will meet with you for a consultation appointment to discuss your treatment options. The following explains the individual records that may be taken and what their purpose is:

Contemporary Imaging- We use digital photography rather than film, which gives us instant documentation of your dental and facial relationships. We utilize contemporary digital imaging software which allows us to illustrate changes you might anticipate and want to occur- or not.

Digital Radiography- Digital radiography has several advantages over film. It is virtually instant, requires significantly less radiation, and can be forwarded to your dentist or any other professionals via digital transmission in its original high quality state-not a reduced quality copy. Digital radiography also allows us to enhance the images for better recognition of the anatomy, a real diagnostic advantage.

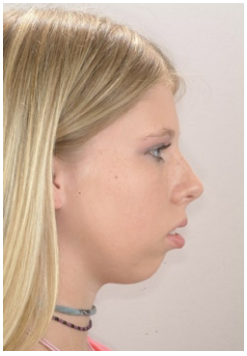
We have also just recently installed state-of- the-art, three-dimensional "regional" digital radiography that allows us to visualize areas of interest in 3-D, without the radiation exposure and cumulative radiation of a full CT scan.

Photographs- Frontal, oblique, and side facial photographs are part of the overall work-up of the case. These facial pictures serve as visual aids for bony and soft tissue analysis so that the facial aspects of treatment can be thoroughly evaluated. Photographs of the teeth will also be taken to provide an accurate record of the mouth at the time treatment begins.

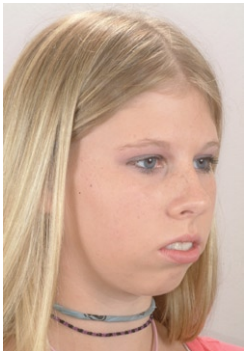
Frontal



Side



Oblique



Teeth



Cephalopmetric (Lateral Skull) Radiograph- This side view radiograph of the face allows us to compare your tooth and jaw relationships to normal or ideal measurements. Computerized analysis permits prediction of planned bony movements and subsequent soft tissue response though the merger of the facial pictures with the cephalometric radiograph. This permits us to show you the facial changes which you might expect with treatment.

Panoramic Radiograph- The panoramic radiograph is a composite radiograph of the teeth as well as both jaws. In one film, it shows us if you have the normal number of teeth, wisdom teeth, missing teeth, impacted teeth or extra teeth.

Study Models- Dental models will be used to study the dental problems as they exist at the beginning of treatment and are used for reference during pre-treatment planning. In many cases, the models are placed on an articulator, a device that closely simulates jaw movement.

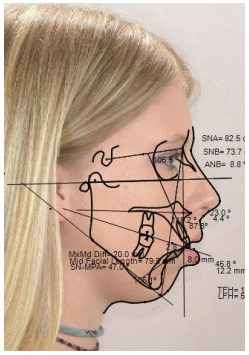
3-Dimensional Radiography- Frequently your orthodontic and surgical planning requires much more than a radiograph of the profile. The utilization of 3d "Focused Field" radiographic technology allows us to assess dental and skeletal structures in three dimensions with minimal radiographic exposure. As illustrated, we can see the parts of the teeth and jaws we want a more specific view of, which makes our recognition, diagnosis and planning as complete as possible.

Digital Movies- Also as part of our analysis, we capture digital movies. We use software to break the smile action into elements for smile design, which gives us more complete information than a single photograph.

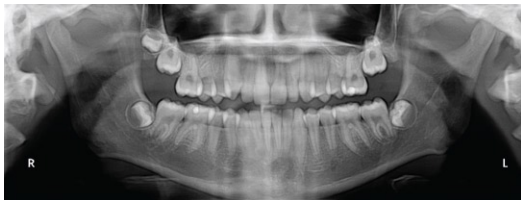
Lateral Skull Radiograph



Computer Analysis



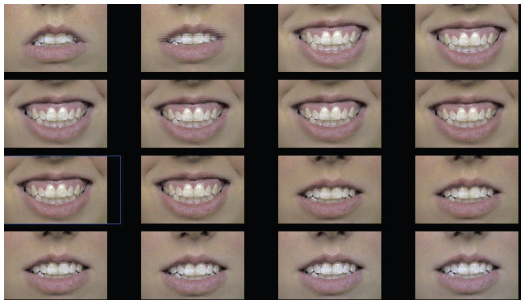
Panoramic Radiograph



3-Dimensional Radiography



Digital Move Captures



3-Dimensional Facial Map- This non-radiographic image of the face allows for 3-D analysis through rotating the image to investigate the patient from all angles. A great research tool as well, this technology gives us unparalleled insight into the soft tissue responses to our orthodontic and surgical movements.

Computerized Digital Imaging- At the time of your consultation visit, we will utilize digital imaging in the discussion and planning of esthetic changes. In this process, a digital picture is modified to illustrate approximate profile changes, which may occur in your proposed treatment plan. Also, other options of treatment may be illustrated at this time.

This is an excellent way for you, Drs. Sarver, and your surgeon to discuss and understand mutual treatment goals. Imaging will be used again in the evolution of the final treatment plan, and will be discussed further in this booklet.

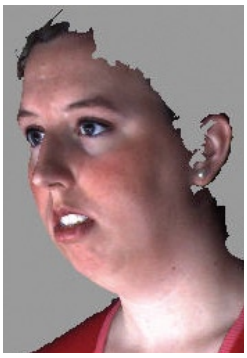
CONSULTATION APPOINTMENT

While surgery may be the best option to achieve desirable functional and cosmetic results, it is always an elective procedure. Other treatment options will be presented to you in the consultation appointment. In this visit, we will discuss:

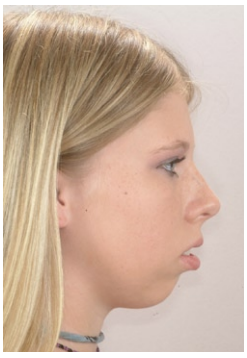
- The overall analysis and problem list
- Treatment objectives
- The anticipated treatment sequence
- Optional treatment plans and their strengths and weaknesses relative to your overall treatment objectives

Because treatment in adults often involves more complex problems, referrals to other specialists may be necessary. Also, if we find that tooth removal is required for orthodontic purposes, a referral will be made to your dentist or oral surgeon at that time.

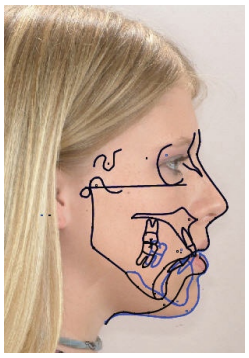
3-D Facial Map



Before Profile

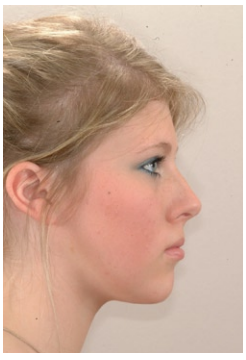


Prediction of orthodontic/ surgical outcome



Computerized Digital Imaging *allows the patient to see the projected changes anticipated with the proposed treatment.*

After



After



WHEN DO YOU DO SURGICAL-ORTHODONTIC TREATMENT?

Prior to adolescence, surgery is almost exclusively for children who have congenital deformities or problems related to trauma. For children with severe growth distortions, guiding growth is better than surgery, if it is possible. So surgical-orthodontics rarely is indicated before the adolescent growth spurt ends. That doesn't always mean surgery has to wait until all growth has ended. Jaw surgery has surprisingly little effect on growth. So if the problem is deficient growth of the mandible (Class II) or maxilla (Class III) surgery prior to completion of growth may be possible. In other words, when deficient growth is the problem, it isn't necessary to wait until age 18 or 20 for jaw surgery.

INSURANCE AUTHORIZATION/ PREDETERMINATION

We will be happy to help you with insurance processing and will discuss flexible financial arrangements for uncovered procedures. Also, a copy of your radiographs will be provided for the oral and maxillofacial surgeon to submit to your insurance company for pre-authorization of available benefits. This determines the extent of your insurance coverage in orthognathic surgery. In the majority of cases, your insurance carrier should cover hospitalization, anesthesia and surgical fees, but may not cover the orthodontics required for successful treatment.

We will be glad to assist you in filing your insurance, but we cannot guarantee it will cover your orthodontic care. What is the biggest problem at present with surgical-orthodontic treatment? It's financial, not related to the treatment itself. Until recently, medical insurance typically covered the surgery and the associated hospitalizations. Under standard medical insurance plans it still does, which is reasonable enough, given that the underlying problem is a jaw deformity, not unlike a congenital deformity of any other part of the body. But with benefit reductions and HMO contracts, in many areas jaw surgery now is denied, admittedly as a cost-reducing measure. As a result, most surgeons offer outpatient services and payment plans in an effort to make these procedures affordable even without insurance coverage. You will need to consult with the surgeon's office as to how you and your insurance company can communicate you needs clearly.



*Your treatment options will be presented to you at your **consultation appointment.** Our surgical coordinator is Tricia. She will help you with guiding you through the whole process.*

SEQUENCE OF TREATMENT EVENTS

Diagnostic records and analysis

↓

Insurance predetermination and treatment plan confirmation

↓

Consultation with an oral and maxillofacial surgeon

↓

Consultation with a dentist, or other specialists if needed

↓

Placement of orthodontic appliances

↓

Presurgical phase of orthodontics

↓

Presurgical work-up and analysis

↓

Appointment with surgeons, to select surgical date

↓

Surgery and postoperative rehabilitation

↓

Finishing orthodontics

↓

Removal of braces, placement of retainers

↓

Final dental equilibration, restoration, and cosmetic finishing

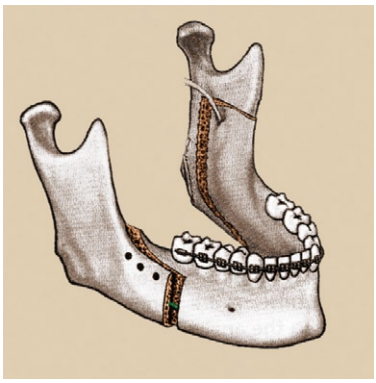
Surgical Procedures

There are three general types of orthognathic surgical procedures utilized, in our surgical cases:

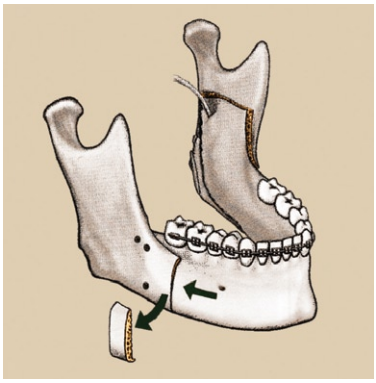
- Sagittal Split Osteotomy of the Mandible
- Lefort I Osteotomy of the Maxilla
- Genioplasty or inferior border osteotomy of the mandible (chin advancement).

This section will describe all three procedures to facilitate your understanding.

Advancement of Lower Jaw



Reduction of Lower Jaw



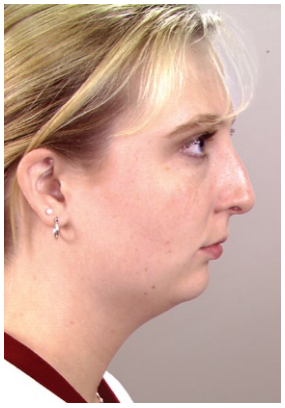
SAGITTAL SPLIT OSTEOTOMY

This operation is performed on the lower jaw (mandible) in order to move it forward (in the case of a deficient lower jaw), or backward (in the case of a large lower jaw). It is performed behind the back teeth (not in the joint) and the jaw is sectioned in such a way that bony contact is always maintained. There are no gaps in the bone that have to be filled in, and it is not necessary to wire your teeth together during the postoperative healing period. Our surgeons have routinely utilized Rigid Internal Fixation (RIF) since 1985 for the stabilization of osteotomies. ***This technique eliminates the need for wiring the teeth together during the healing phase.***

Rigid Internal Fixation *utilizes compression screws or plates which allow the surgical team to avoid wiring the teeth together.*

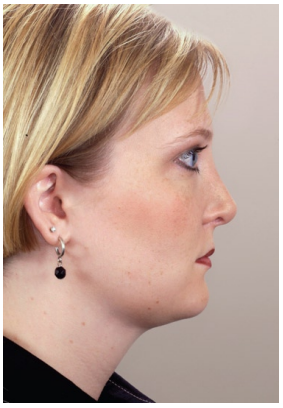
ADVANCEMENT OF LOWER JAW

Before





After

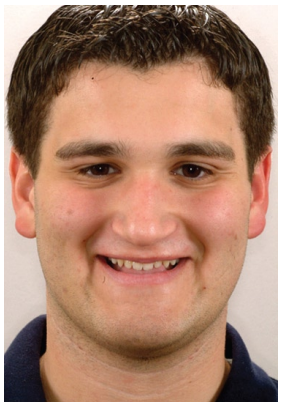


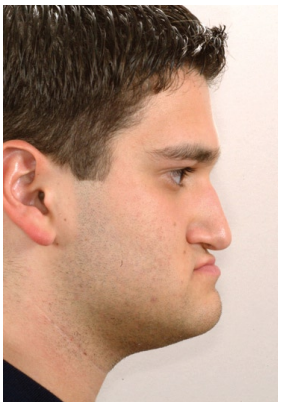


The lower jaw can be lengthened through a **Bilateral Sagittal Split Osteotomy**, which allows bony contact throughout the procedure and permits placement of direct rigid fixation-which means the teeth are not wired together and you can open your mouth after surgery.

REDUCTION OF LOWER JAW

Before







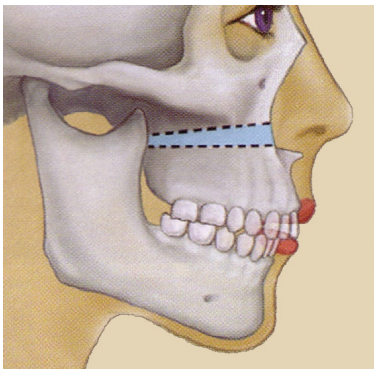
The lower jaw can be shortened through the use of the **Bilateral Sagittal Split Osteotomy**, which allows bony contact throughout the procedure and permits placement of direct fixation. As illustrated before, a small segment of bone is removed so that as the lower jaw moves back, the bony contact in the surgical site is maintained for a rapid healing and ultimate control of the bony segments.

After









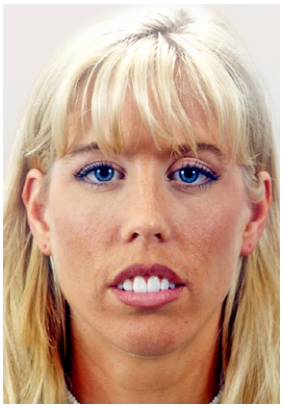
LEFORTE I OSTEOTOMY

This operation involves the upper jaw (maxilla) and the movement of it in various directions. This procedure is used in the treatment of:

- Long-face problems
- Short-face problems
- Open bite
- Horizontal maxillary deficiency (under bite)
- Horizontal maxillary protrusion (overbite)

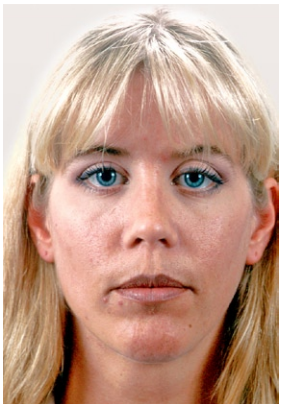
TREATMENT OF LONG-FACE AND GUMMY SMILE

Before





After





Many **gummy smiles** can be a result of short teeth, a short upper lip, upright maxillary incisors, an excessive mobility to smile, and vertical overgrowth of the upper jaw. The vertical overgrowth of the upper jaw is often referred to as the **"long face syndrome"** and is characterized by a long lower facial third, an inability to get lips together at rest, and a gummy smile. The long face syndrome or vertical overgrowth of the top jaw is very often accompanied by an open bite malocclusion, and surgical correction of the bite is performed through the **Lefort I Osteotomy** where the upper jaw is moved upward to close the bite, which in turn diminishes the amount of gumminess of the smile.

TREATMENT OF A SHORT FACE

Before



After



Just as an upper jaw may grow too far vertically, in many cases, it may not grow vertically enough. This is in turn characterized as the "short face syndrome" and is characterized by a short lower facial third and incomplete incisor display on smile. The short lower facial height is well illustrated by this case, where lengthening of the face provides a better proportionality as well as improving the curl to the lower lip (referred to as the labiomental sulcus). In the case illustrated below, this patient had a **Class II Malocclusion** with severe overjet, and lower jaw advancement was needed to fix his bite and upper jaw surgery was required to bring the upper jaw down to increase his lower facial height and improve his smile.

OPEN BITE

Before





After



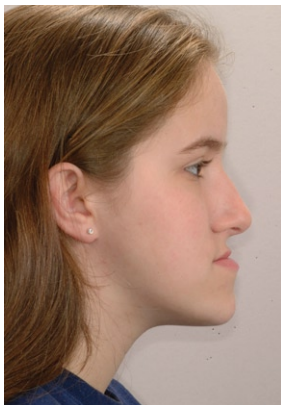


Open bites are among the most difficult dentoskeletal patterns for orthodontists to treat.a The surgery to correct an open bite in the adult involves a **Maxillary Osteotomy**, usually impaction of the back part of the upper jaw, allowing the lower jaw to rotate closed.

HORIZONTAL MAXILLARY DEFICIENCY (UNDERBITE)

Before







Most **underbites** are a result of underdevelopment of the upper jaw. In this case, the maxilla was moved forward surgically, and a rhinoplasty performed at the same time since moving the upper jaw forward sometimes results in an excessive widening of the nose.

After







Before







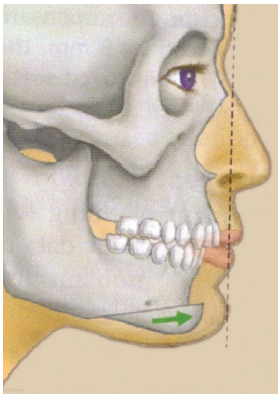
An **underbite** can give the appearance from the front as a "bulldog" appearance, and in this case the upper jaw was surgically moved forward to fix the malocclusion and brought down some to dramatically improve the smile.

After





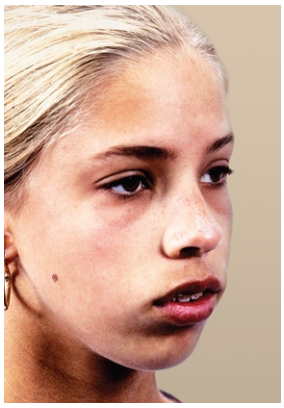


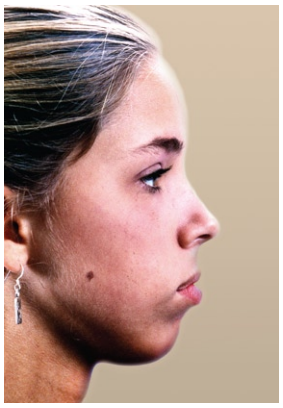


GENIOPLASTY

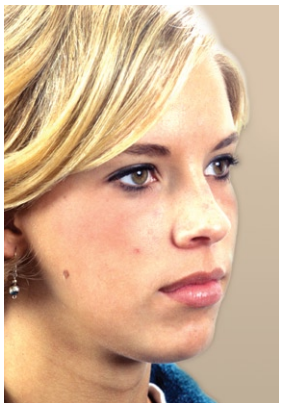
This operation involves the movement of the chin, which may be moved forward, back, or upward to shorten it, or downward to lengthen it. The choice depends almost entirely on how it might affect your ability to let your lips relax together and on how it affects your facial appearance. Because it involves the bottom portion of the lower jaw, this procedure may also be referred to as an inferior border osteotomy. This procedure is **not** a chin implant. It is part of the lower jaw that is repositioned and is not a foreign body. Sometimes the genioplasty is confused with actual jaw surgery. It is a much less complicated procedure and can be done at any time. Orthodontic treatment is not necessary for this procedure.

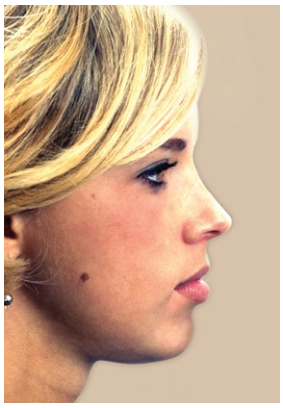
Before





After





Before





After





This is a case in which a genioplasty was used to treat obstructive sleep apnea. The recognition and diagnosis of **obstructive sleep apnea** (OSAS) has been an important recent development in medicine. Obstructive sleep apnea results in episodes of hypopnea-when the person periodically stops breathing for long periods of time. The net result is a reduction in the oxygen supply to the brain, resulting in very small increments of damage to the brain. Severe cases may require jaw surgery to advance the jaws, addressing the basic underlying problem-obstruction of the airway. Orthodontic treatment plays an integral role in the treatment in order to maximize the benefits of the procedure. Please visit our website to download a paper by Dr Sarver on the topic, or more easily, the online site

http://www.oc-j.com/dec99/OSAS.htm

The Team Approach

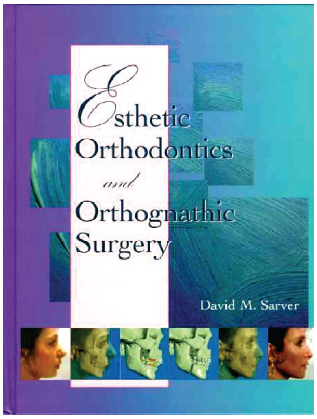
The level of sophistication in dentistry, orthodontics, and oral maxillary surgery has increased dramatically in the past decade. This is partially because of improved techniques and technology, but is due primarily to the increased cross-fertilization of knowledge between the specialties of dentistry and medicine and excellent communication between these groups.

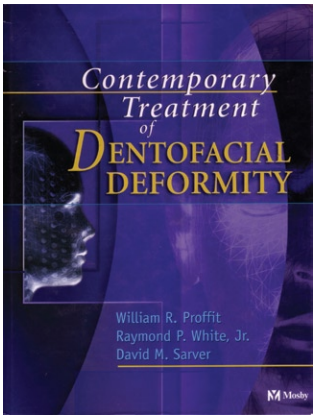
To achieve maximum results, collaboration between Drs. Sarver, your dentist, oral and maxillofacial surgeon, and plastic surgeon can be facilitated through graphic imaging and interdisciplinary planning. Dr. Sarver and colleagues have pioneered this approach to treatment here in Birmingham. Dr. Sarver's books, Esthetic Orthodontics and Orthognathic Surgery and Contemporary Treatment of Dentofacial Deformity are used by the various medical and dental disciplines in teaching as well as clinical practice.

This approach is more than "just teeth". It is a comprehensive approach to treatment to capture the result most desirable to the patient. The use of digital imaging and computers provides excellent interaction with you, the patient, to design just the right type and amount of treatment you might desire.

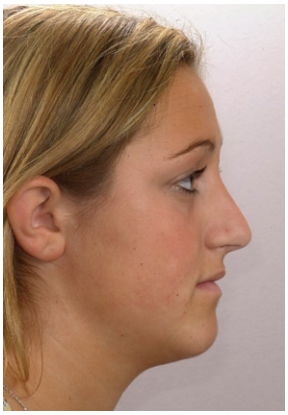
The case pictured on the opposite page is an excellent example of this teamwork concept. This patient had a Class III malocclusion (underbite), and to correct her malocclusion, orthodontic treatment and orthognathic surgery was needed. She also had malformations of her tooth enamel and porcelain veneers were planned as the finishing procedure. The sequence of treatment was to start with orthodontic preparation and tooth alignment, and when ready for surgery, the interdisciplinary team communicates as to the overall surgical plan. Once her postoperative orthodontic treatment was completed, her braces were removed and she then saw her dentist to bleach her teeth to attain the most ideal and natural shade for final planning of her cosmetic dental phase of treatment. In our finishing evaluation, we felt she would benefit from periodontal crown lengthening for better tissue health and a better smile with better tooth dimension. Once healed, the final phase of treatment was porcelain veneers to restore the malformed teeth.

From this case, you can see the importance of coordination of care, and careful communication was essential to this beautiful outcome. Drs. Sarver work closely with their team members to achieve these life-changing results.





Before





After







Final Smile



This patient's treatment required **collaboration of many doctors**. Because of the complexity of her problem, we prepared her orthodontically for advancement of the upper jaw to correct her underbite by the oral and maxillofacial surgeon. At the time of her operation, her chin was advanced and her nose improved by the facial plastic surgeon. When we finished the orthodontic treatment, her teeth were lengthened by a periodontist, and her dentist completed the treatment with porcelain veneers because of the congenital dental malformations she had.

Presurgery/Surgery

The following is a general sequence of events that occurs once your treatment begins. Please remember that each treatment plan and case may vary from

PRESURGICAL ORTHODONTICS

Orthodontic appliances (braces)- In order to prepare your teeth for your orthognathic procedure, we will place braces on your teeth to begin their alignment. The purpose of the presurgical phase of orthodontics is generally to:

- Align crowded teeth
- Decompensate incisors (align them properly within the jawbone)
- Coordinate the teeth so they will fit when the surgery is performed

Presurgical orthodontics may take as few as 6 months or as many as 18 months, depending on your needs. During your treatment, impressions will be taken in order to check the progress of the orthodontic alignment. These impressions are referred to as "surgical check models." Once we feel your presurgical goals have been accomplished and have placed an arch wire heavy enough for surgery, we will then make an appointment for your surgical work-up.

The Surgical Work-Up- When the presurgical phase of orthodontics is complete, radiographs, photos and models will once again be made. We will also contact your surgeon's office to find out approximate dates available and to initiate final insurance approval, if it is required. Our final surgical plans will be determined from the work-up records. Drs. Sarver and your surgeon will consult to decide on the recommendations they will make to you to achieve the best results. Superimposition of your profile video image and X-rays will serve as a valuable guide for achieving your desired esthetic goals. From the surgical check models, a plastic splint, called the occlusal wafer, will be fabricated for the surgeon as a guide for the desired tooth relationship.



Orthodontic Appliances *-The purpose of the presurgical phase of orthodontics is to align the teeth so the bite is correct when the surgery is complete. At the time of the surgery, we will place surgical pins, which are threaded, through a special slot in you orthodontic bracket. These serve as an attachment during the surgery for the surgeon to be able to secure the teeth.* ***The braces are NOT removed before your surgery.***

THE SURGERY

Day of Surgery- Generally, you will be admitted to the hospital the morning of your scheduled surgery. The length of your surgery depends on the procedure being performed. The length of your hospital stay also varies according to your procedure. Some procedures may be done on a 23-hour outpatient basis. Your surgeon should discuss with you all these necessary details prior to your surgery.

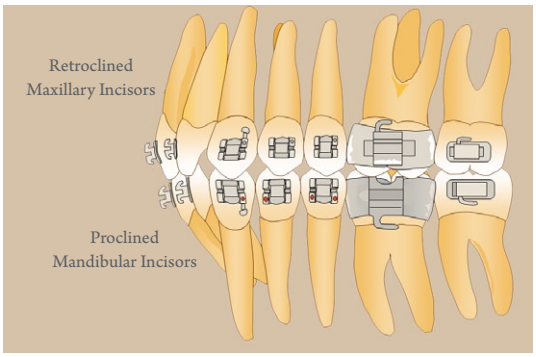
Anesthesia General- There are many side effects to general anesthesia that you may possibly experience after surgery. These include some weakness, dizziness, and nausea. Drugs are generally administered during and after your surgery to prevent nausea. We would like to emphasize that this side effect is rare, and is generally controlled with medicine. We would also like to point out that after general anesthesia, there might be a feeling of depression several weeks later. Be aware that this may happen and do not be alarmed. Make sure your family is aware also.

Intubation- Anesthesia will be administered through nasal intubation. A tube is passed through your nose to the lungs to administer the anesthetic agent. A tube is also passed to the stomach in order to keep the stomach empty before, during, and after surgery to help control nausea. You should expect to have a sore throat for 1-2 days following your procedure due to the intubation.

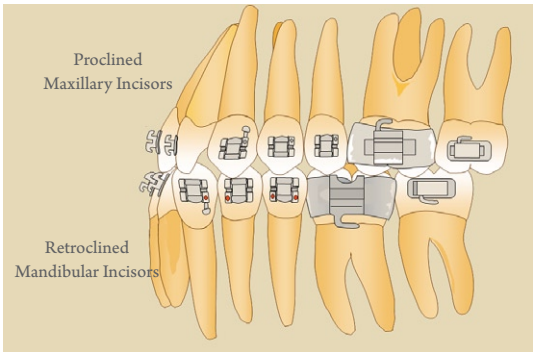
Intraoral Incision- Incisions are made on the inside of your mouth for access during the surgical procedure. As a result, there is no external scarring. These incisions are typically located in the folds of tissue and are not usually visible after your surgery. The sutures used on the incisions either dissolve or are removed after 5-7 days.

Intravenous Fluids- Intravenous fluids are administered at the time of surgery. The I.V. is used during surgery to maintain adequate fluid levels and after surgery to administer pain medication, antibiotics, etc. It is generally removed the day after surgery.

Dental Compensation in Class II Skeletal Patterns



Dental Compensation in Class III Skeletal Patterns



After Your Surgery

We strive to make your surgical experience as comfortable as possible. There are things to expect and, several things you can do to help.

SWELLING

The amount of postoperative swelling varies from person to person. It appears to be greater in the second or third day after surgery and tends to decrease thereafter. Swelling may be present up to 6 months after your surgery, but generally is only noticeable up to 6 weeks. To minimize swelling, we suggest:

- **Ice Compresses**- It is most important that ice compresses be in place the first 12 hours after surgery. Place ice around the operative site several times a day to reduce the amount of swelling. Your surgeon can arrange for a nurse to be available for this.
- **Elevation of the Head**- The head should be placed at a 30-45 degree angle while sleeping for the first two weeks after surgery. This will reduce the amount of fluid accumulation in the jaws at night.
- **Steroids**- Your surgeon may recommend steroids to reduce the amount of swelling, which also reduces discomfort
- **Increasing Activities**- Walking increases blood flow, which helps to disperse swelling. We encourage all patients to begin normal walking and other activities to increase blood flow. However, do not resume vigorous activities such as jogging, working out, or other sports until your surgeon gives you approval.

EMOTIONAL WELL-BEING

It is not uncommon for you to experience a brief period of the blues in the weeks after your procedure. This mild depression may be due to the general anesthesia or the response from your friends and relatives. They should be aware of the change in your appearance, and the gradual adaptation to the surgery. Please caution your friends and family that final judgments of the end result should not be made for months. You should inform them, in advance, of what should be expected with your procedure.

RESUMING NORMAL ACTIVITIES

Most patients return to work or school one week after their procedure. Obviously, the more extensive the surgical procedures, the more recuperation time needed. Physical activities such as jogging or working out should not be resumed for approximately 3 months. Walking and other more moderate activities are encouraged in order to increase blood flow, reduce swelling, and improve mental wellbeing.

ORAL HYGIENE

Strict oral hygiene maintenance is essential. If you do not keep your mouth clean, you greatly increase the chance of a post-operative infection. Use a soft bristle brush with a very small head, and clean above the brackets and around the orthodontic archwires as effectively as possible. Please take care not to hit the incisions, since this could disrupt blood flow to the surgical site. We do not recommend the use of a Water Pik-type device since it may be difficult to control the water pressure and can injure your incision sites. Utilizing the prescribed fluoride rinse on a daily basis is also strongly recommended.

DIET AND NUTRITION

Guidelines will be provided by your surgeon. We provide you with enough foods for your first postoperative day. This will also serve as a guideline to what types of foods you might need.



***Good oral hygiene** is important throughout treatment and should be especially maintained immediately following surgery.*



***A fixed retainer** will be bonded to the inside of the lower front teeth before removing braces.*

POSTOPERATIVE VISITS

We will want to see you one week after your surgery to check the position of your bite. We will also take post-operative panoramic and cephalometric radiographs to check the position of the bones. We like to see you one week after surgery because studies show that the teeth move much more rapidly during the healing phase than normal and, teeth move much more rapidly during the healing phase of treatment and we often utilize this period to start elastic wear or make other tooth movements if necessary.

POSTOPERATIVE ORTHODONTIC TREATMENT

Orthodontic treatment after surgery usually takes between 6-12 months. Studies show that many surgery patients can experience a mild depression at the 6-month postoperative period if the braces have not yet been removed. This depression is a normal psychological response to treatment and should be anticipated. Please let us know if you are experiencing some feelings of depression.

THE DAY YOU HAVE BEEN WAITING FOR-YOUR BRACES ARE REMOVED!

At the completion of treatment the normal sequence is to make retainer impressions the appointment prior to removal so that our in-house lab can have your retainers ready immediately after your braces are removed. Often, a fixed retainer is bonded to the inside of the lower front teeth before removing the braces. The upper retainer is usually removable. Instructions for care and use of the retainer are given at the removal appointment.

FINAL RECORDS

Once your treatment is complete, a set of final records will be taken. These records consist of the same records taken at the time of your initial visit. This appointment is generally 1-2 weeks after your braces are removed.

RETENTION & RECALL VISITS

Further appointments with Drs. Sarver are necessary after your braces have been removed. These periodic visits will be every 3-6 months and are necessary to adjust your retainer and check your bite. Because of the special nature of orthognathic treatment, Drs. Sarver, prefer to follow their surgical patients for many years after treatment.

Retention is the crucial part of your orthodontic treatment. Retainer are to be worn at all times during the first few months to one year following treatment. Once you have reached a point where your teeth and bones have stabilized, you will be able to limit the wearing of your retainer to only while sleeping. Keep in mind, however, that the more the retainers are worn, the less chance there is of anything moving out of place.

EQUILIBRATION AND FINAL RESTORATIVE DENTISTRY

In some cases, occlusal equilibration may be needed. Equilibration is simply the fine-tuning of your bite and is done by your dentist. Any bridges, replacement crowns, etc. should also be done at this time.

COORDINATION WITH YOUR DENTIST

Many patients requiring orthodontic/surgical treatment of their malocclusion also require sophisticated dental care to be closely coordinated with the treatment. Your dentist will be consulted and called upon to help shape the goals of your treatment, and in many cases provide treatment from major dental reconstruction to the finishing touches that make a big difference in both your functional and esthetic outcomes.

Frequently Asked Questions

HOW MUCH PAIN WILL I EXPERIENCE?

Pain varies from individual to individual. Some patients describe the pain to be more of a soreness, but most patients term the experience as more of a discomfort.

HOW LONG WILL I EXPERIENCE THIS DISCOMFORT?

Discomfort is to be expected and generally lasts 2-3 weeks. It is more noticeable the first few days after your surgery, but you will feel an improvement every day. Your surgeon may prescribe some medication, which will help minimize this uncomfortable feeling.

WILL THERE BE ANY SCARS?

The major incisions are done inside your mouth and are approximately one centimeter long, so no outside scars should be expected.

WILL MY TEETH BE WIRED TOGETHER?

No. Many years ago, it was necessary to wire patients' teeth together during the postoperative healing phase. In 1984, we began the use of rigid internal fixation (described on page), which eliminates the need to wire the jaws together. You may begin to open and close your mouth, fairly normally, right after your surgery.



*The day you have been waiting for–**Your new smile!***

WHEN WILL I BE ABLE TO EAT SOLID FOODS?

Immediately following surgery your diet is limited to soft foods. With a creative imagination, you will not be as limited as you might think. Your surgeon's office should provide you with more guidance on such a diet. Examples of soft foods:

- Baked potato with melted cheese
- Most cooked pastas with mild tomato or cheese sauces
- Cream soups with very soft vegetables

Because the muscles in your mouth are not very strong immediately after the surgery, and your new bite feels different, it may be more difficult to chew. Foods such as breads and most meat will be difficult to eat. About 4 weeks after surgery, however, your surgeon will recommend trying more normal foods.

HOW LONG BEFORE I WILL FEEL COMFORTABLE GOING OUT IN PUBLIC?

As far as your appearance is concerned, any bruising that may occur will be gone after a few days. Swelling, however, takes longer to dissipate, but most will be gone after approximately 2 weeks. You will be much more conscious of your appearance than will the people around you. Although your family and close friends will notice a change and their reactions my vary, remember that the swelling will decrease every day, and after 2 weeks the majority of swelling should be completely gone.

HOW LONG WILL I MISS WORK OR SCHOOL?

The length of time you are out of your normal everyday activities varies based on several factors:

- **Youth** is an advantage, as with any surgery; however, attitude plays a very large part in the recovery process.
- **A positive attitude** increases your ability to snap back from the procedure. Be active and follow with a healthy diet.
- **The type of surgical procedure** performed and the length of the procedure also influence recovery time.
- **Your occupation:** A physically demanding occupation will require more recovery time before returning to work, as will an occupation which requires constant talking. The average patient is able to resume daily activities after approximately 1-2 weeks, in moderation.

WHEN CAN I RESUME EXERCISING?

It is necessary to gradually build back up to your exercise routine. If you do aerobics or jog (high impact), you will need to start out with walking in moderation. It is recommended that you walk very soon after surgery to aid in the recovery process. This activity increases circulation and muscle strength.

WILL IT BE DIFFICULT TO TALK AFTER THE SURGERY?

You should expect some soreness in lengthy conversations; however, the more you talk, the more you exercise your weakened muscles and aid your recovery. You may be sore but try not to depend on writing notes to communicate. Go ahead and say it!

HOW SOON AFTER SURGERY WILL I GET MY BRACES OFF?

This depends on the complexity of the procedure and type of problem you have. Studies show that people grow very impatient with the braces at 6 months postoperatively and can become depressed if the braces are not off by then. You can insure that your braces come off as soon as they can by keeping appointments and wearing elastics as prescribed.

WHAT IS LEFT TO BE DONE ORTHODONTICALLY AFTER SURGERY?

With the use of elastics and different arch wires, we will complete final bite detailing. There is often some space closure and final root positioning left to be done the last few months as well. Cooperation from the patient during this time will play a large part in the completion of treatment. Please remember we want your results to be as excellent as possible. So please be patient. We want to do a good job!



***Exercise**- We encourage you to start walking as soon as possible, to be followed by more vigorous exercise.*

Contacts

PERSONAL CONTACTS

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tricia@SarverOrtho.com

Oral and Maxillofacial surgeon

OFFICE CONTACTS

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Fax (205) 979-7140





Location and Hours

OFFICE HOURS

Monday - Thursday

8:30 a.m. - 12 p.m. and 1:30 p.m. - 5 p.m.

Friday appointments available on a limited basis.

Saturday - Sunday Closed

