Scripps

Orthognathic Jaw Surgery

Pre/Post Patient Education

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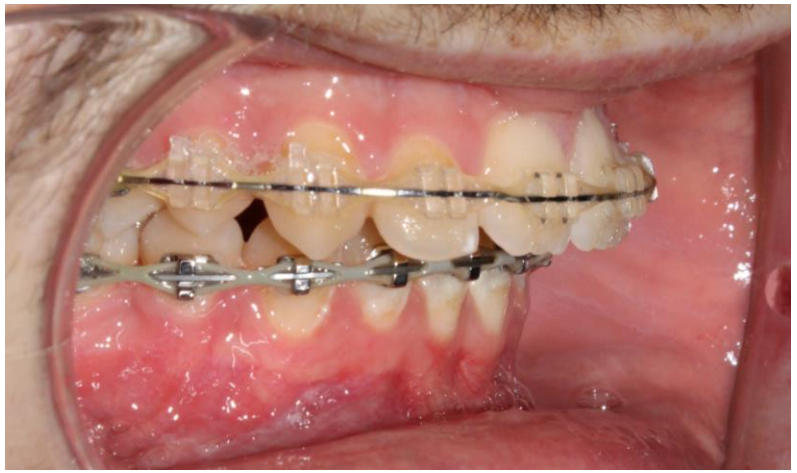
Disclaimer

- The information provided in these slides, including all pre-operative and post-operative care instructions, is for educational and informational purposes only. It is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

- Consult Your Surgeon
  Always seek the direct advice of your surgeon or another qualified healthcare provider with any questions you may have regarding a medical condition, surgical procedure, or recovery plan. Never disregard professional medical advice or delay seeking it because of something you have read in these slides or on this website.

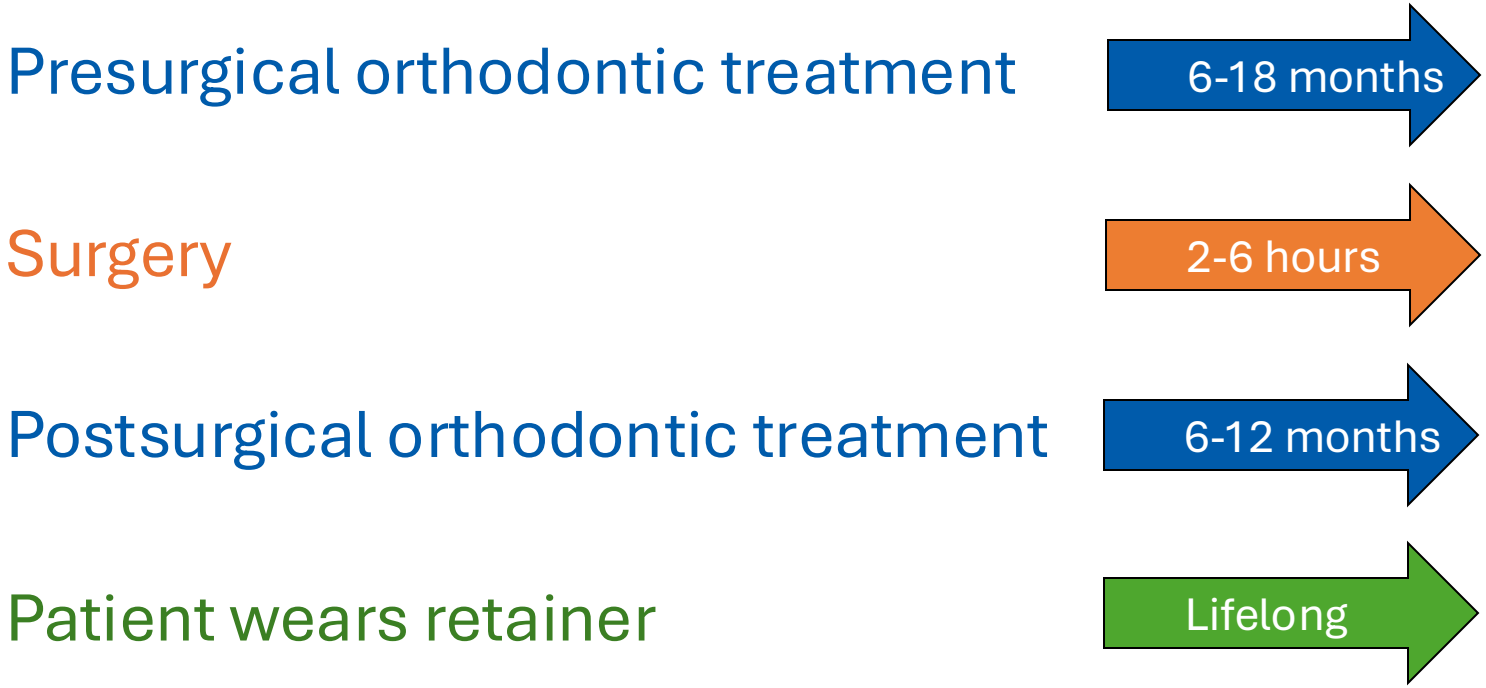
- Emergency Situations
  If you are a patient experiencing a medical emergency, severe pain, heavy bleeding, or sudden complications, do not rely on these slides or on this website. Please call 911, or go to the nearest emergency room immediately.

Orthognathic Jaw Surgery: Treatment of Jaw Differences



- Malocclusion: Teeth do not meet properly and cannot be sufficiently corrected by orthodontics alone. This may occur in the context of developmental growth disturbances, congenital differences, and/or trauma.
- Obstructive Sleep Apnea: Small or retruded upper and/or lower jaw limit space for airflow and contribute to upper airway obstruction during sleep.
- Facial Profile: Patient desires to improve both their bite and their facial balance.

Timeline for Conventional Treatment Approach



Presurgical Orthodontic Treatment

- Presurgical orthodontics, 6-18 months
- The teeth are decompensated. This may temporarily worsen your bite as you prepare for surgical correction.
- The dental arches are leveled, aligned, and coordinated to prepare for surgery
- This can be accomplished with brackets and wires or with clear aligners

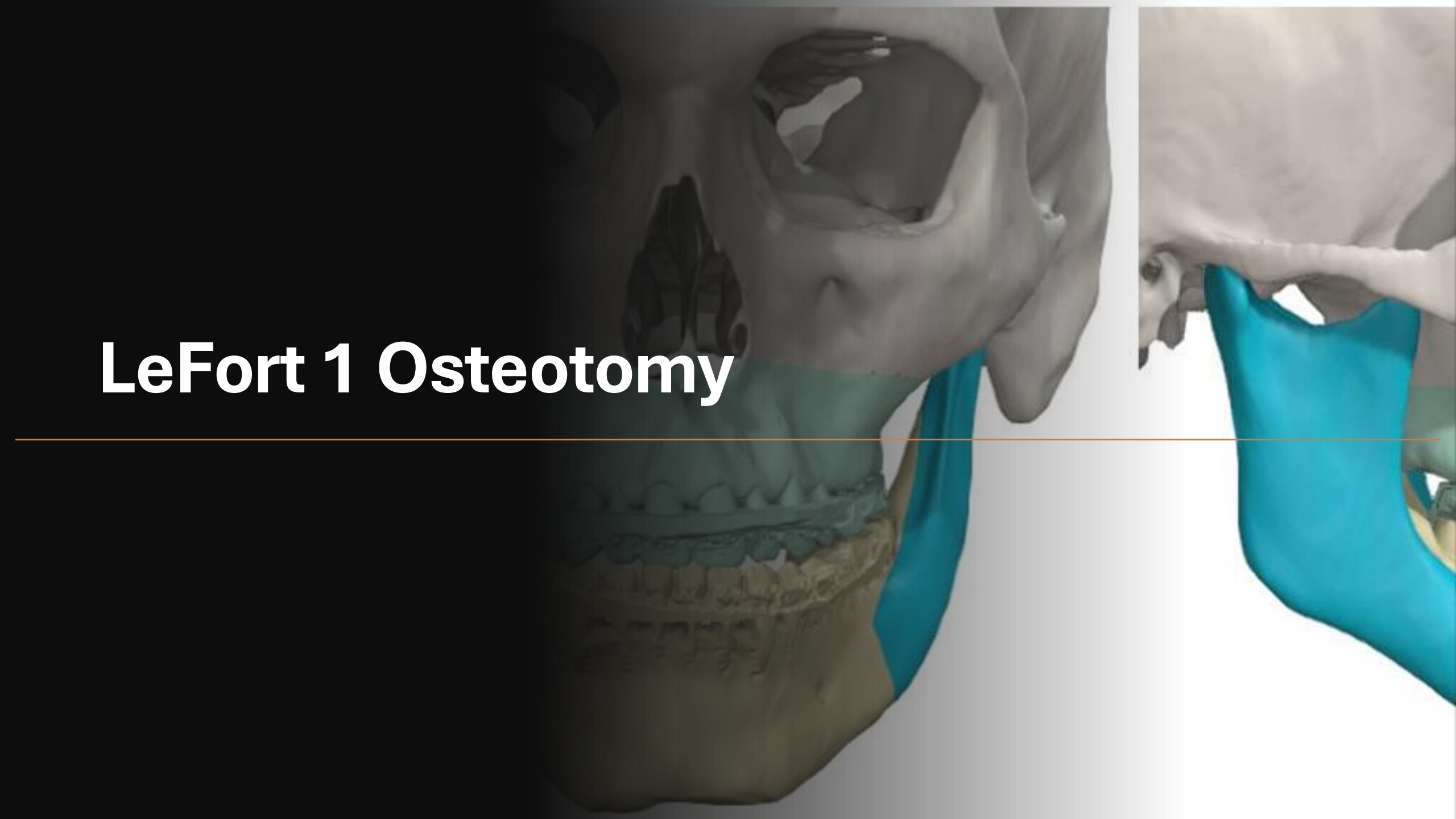
Surgical Preoperative Visit, 2-4 weeks before surgery

- Please bring family/friend/caregiver to this appointment or have them on the phone so they can have their questions answered and support you through surgical recovery.
- Repeat oral/facial exam
- Obtain dental models
- Obtain facial bone CT scan for virtual planning
- Discuss patient goals and surgical plan
- Sign surgical consent
- Obtain labs and any necessary medical clearance

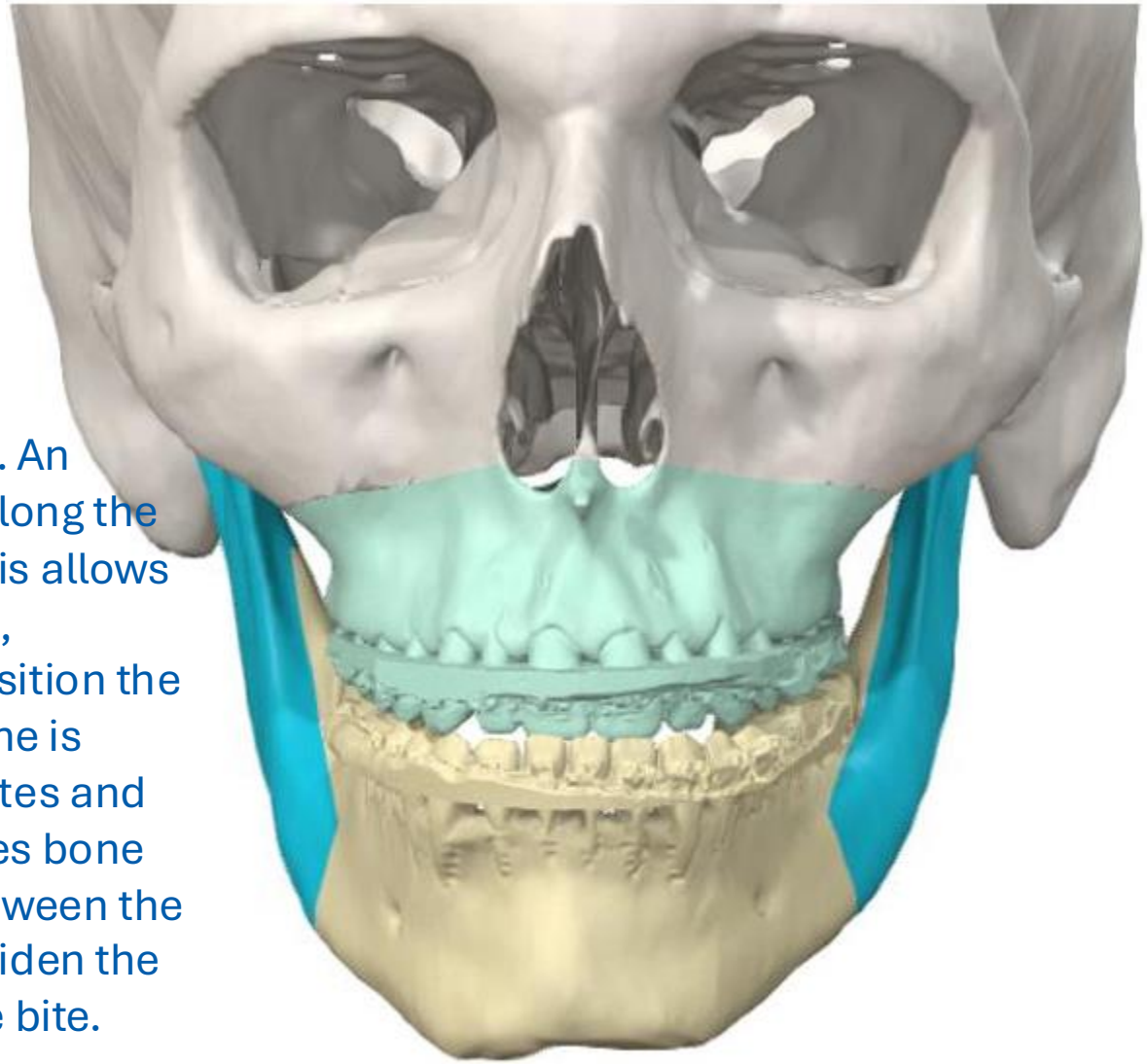
Day of Surgery

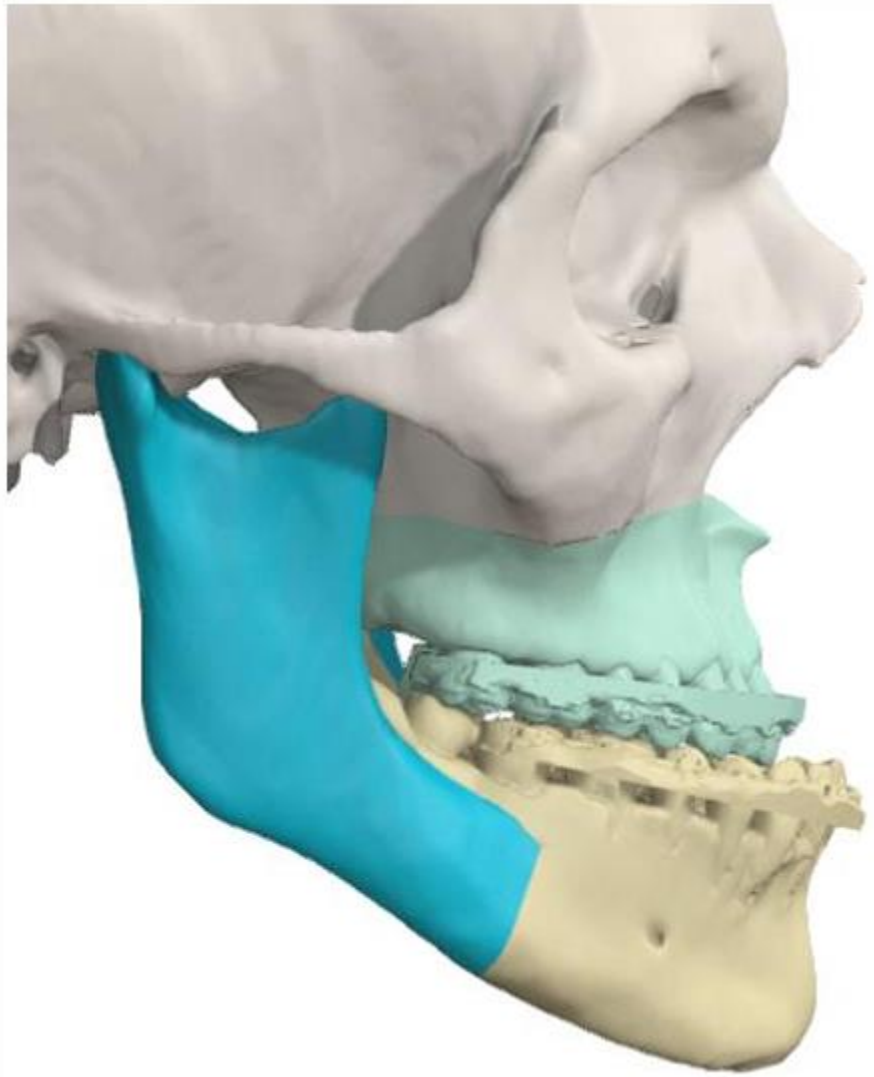
- Arrive at hospital 2 hours before scheduled surgery
- Procedure time: average 2-6 hours depending on the surgical plan
- General anesthesia
- Recovery unit for average 1-2 hours
- Transfer to hospital room
- 1-2 nights in the hospital (average)

LeFort 1 Osteotomy



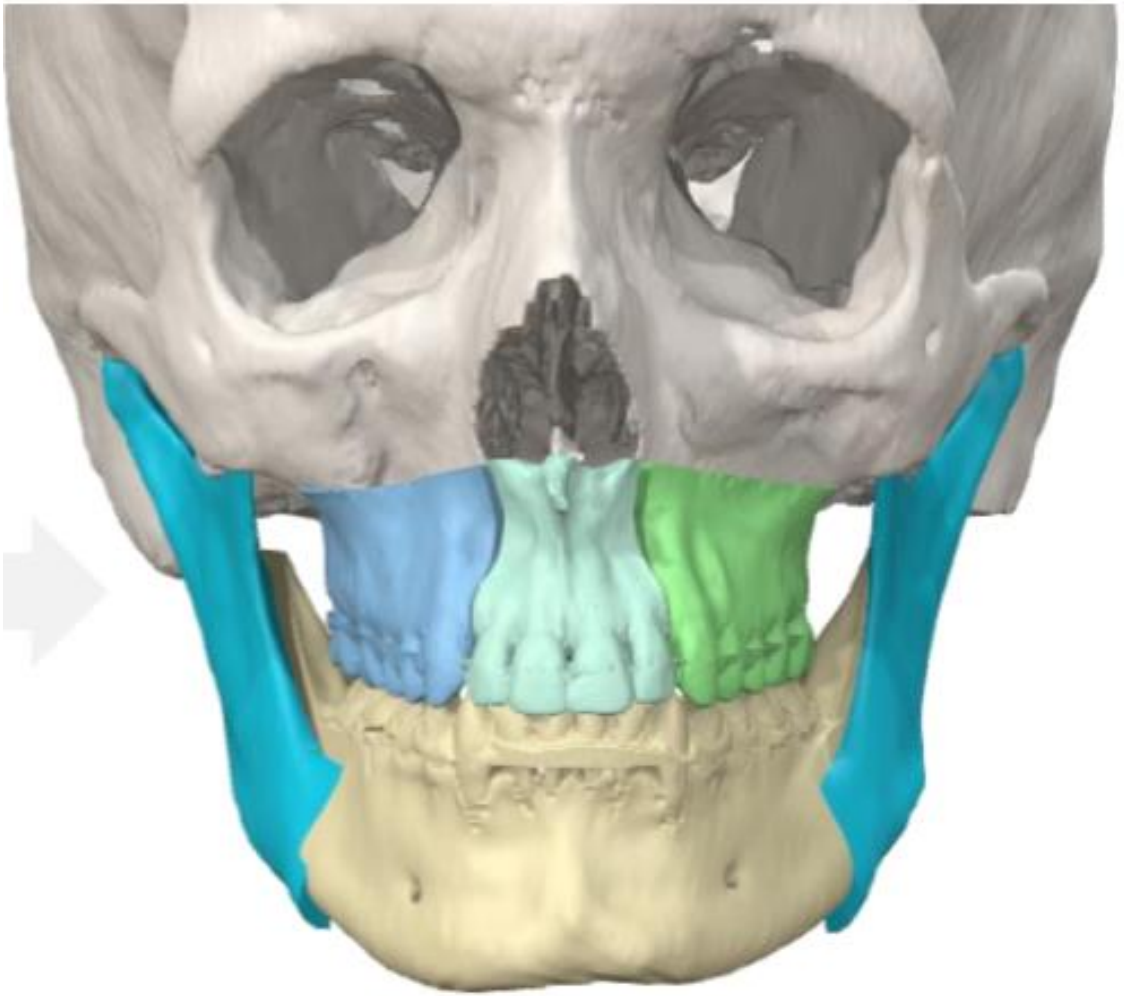
LeFort 1 Osteotomy





Upper jaw surgery. An incision is made along the upper gumline. This allows the surgeon to cut, mobilize and reposition the upper jaw. The bone is stabilized with plates and screws. Sometimes bone cuts are made between the teeth in order to widen the jaw or improve the bite.

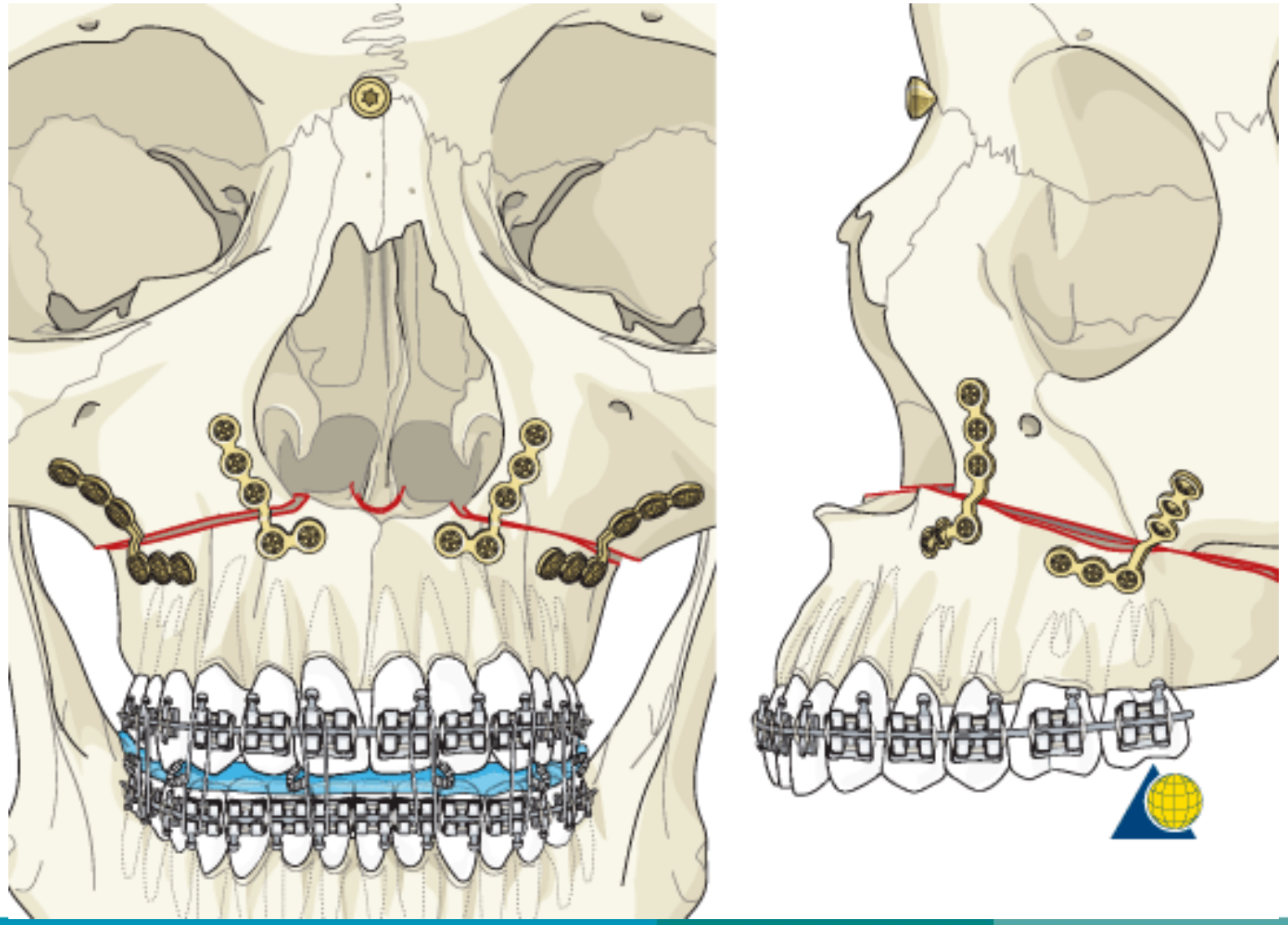
LeFort 1 with Interdental Osteotomies



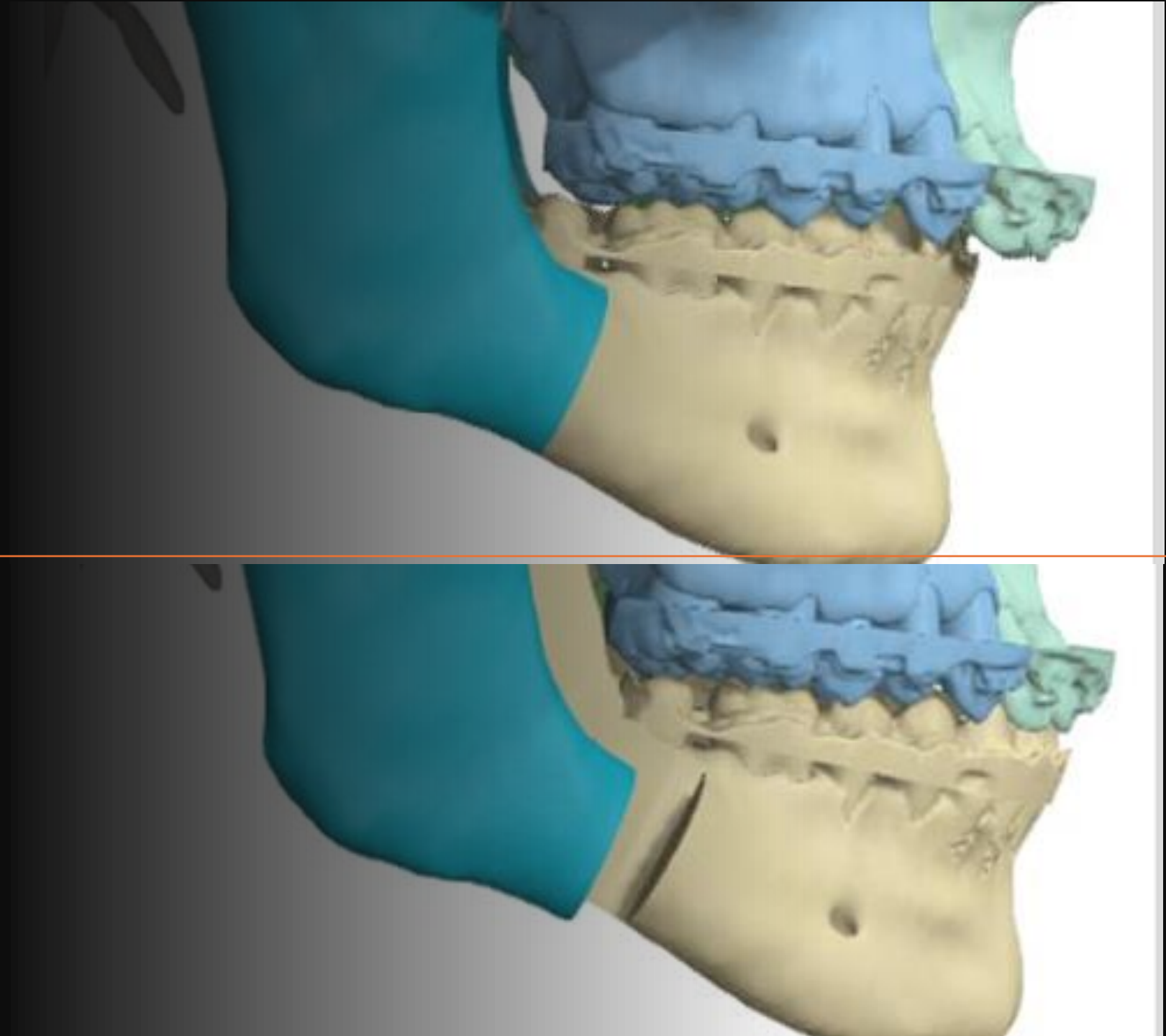
Occlusal Splint

TADs for Clear Aligner Cases or MMA Skeletal Anchorage

Titanium Plate and Screw Fixation

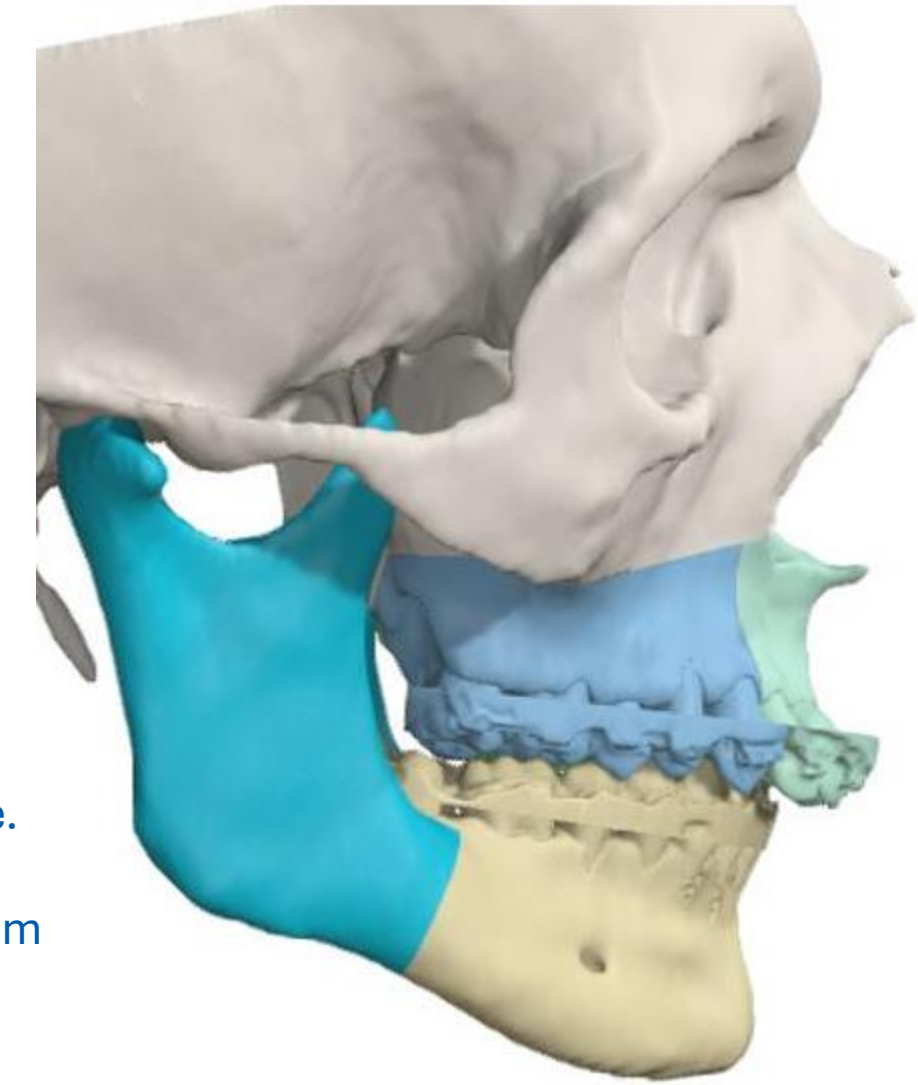


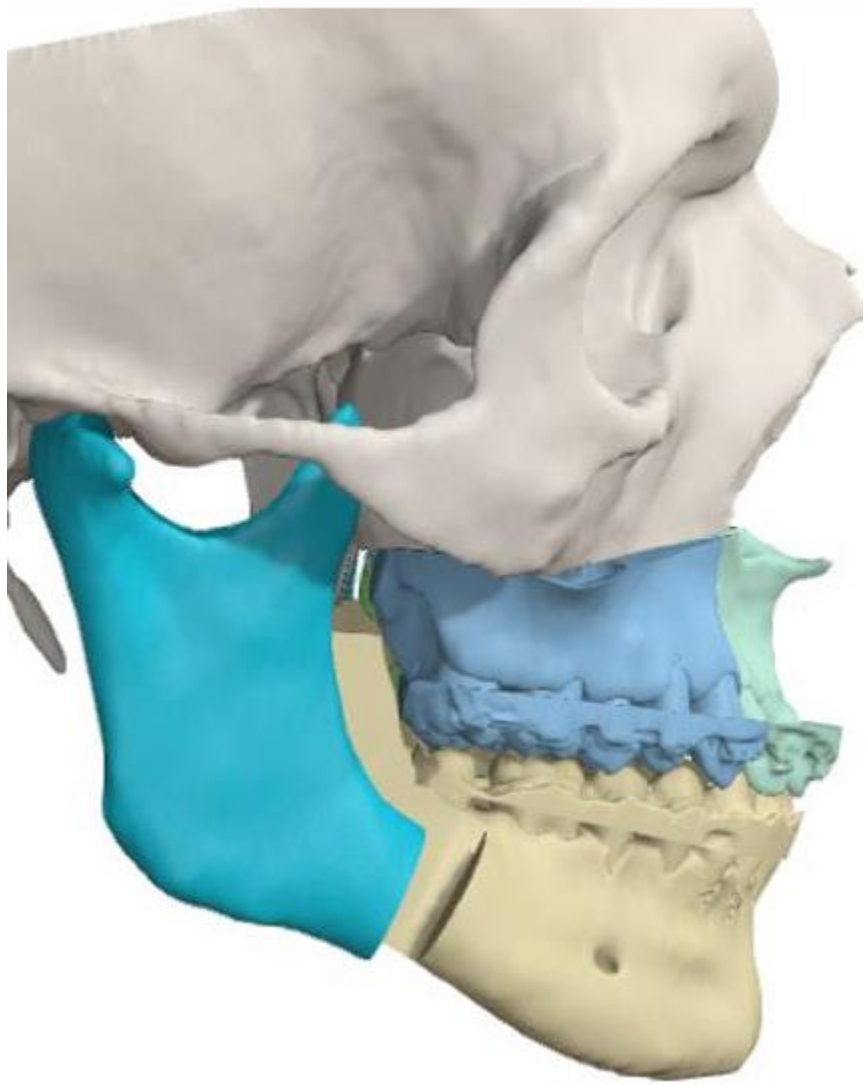
Sagittal Split Mandibular Osteotomies



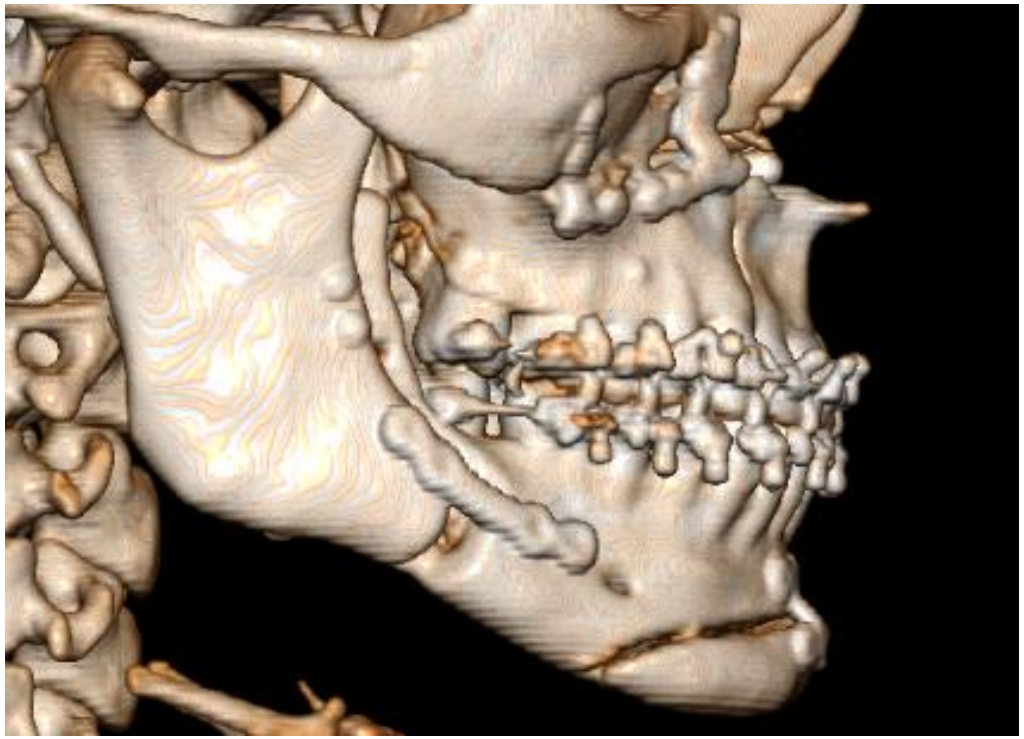
Sagittal Split Mandibular Osteotomies

Lower jaw surgery. Incisions are made in the back of the mouth, and the lower jaw is cut, allowing the dental segment of the jaw to be repositioned to optimize the bite, airway and/or facial profile. Plates and/or screws are used to stabilize the bone. Occasionally screws are placed through a small, ~4 mm incision in the cheek.

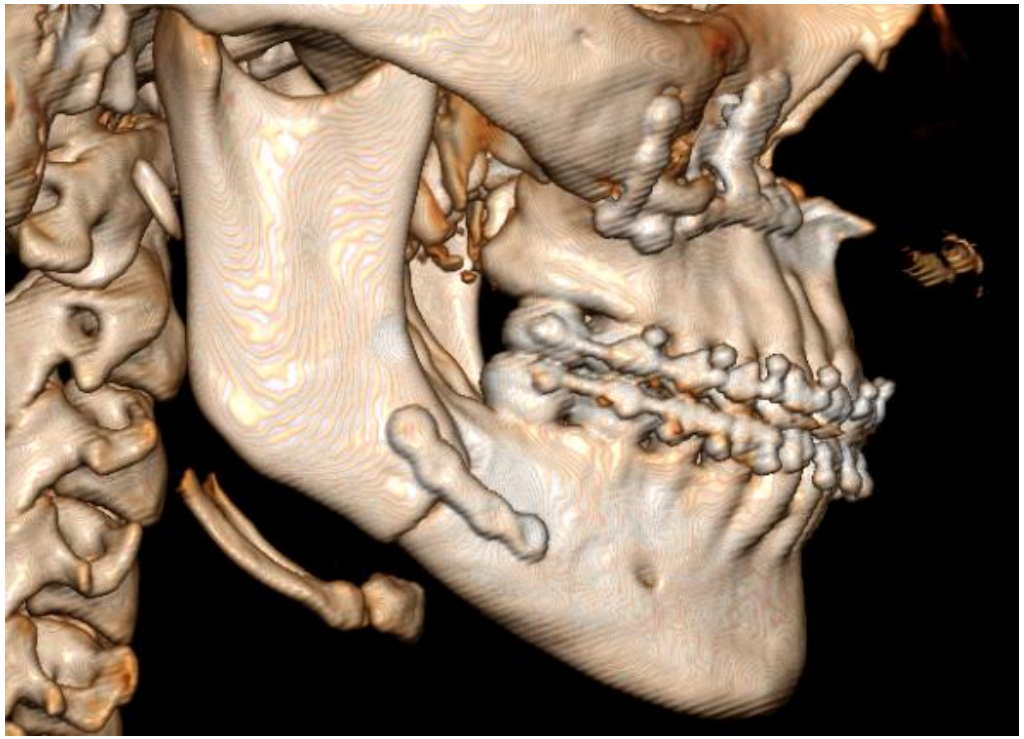




Sagittal Split Osteotomy Plate and Screw Fixation

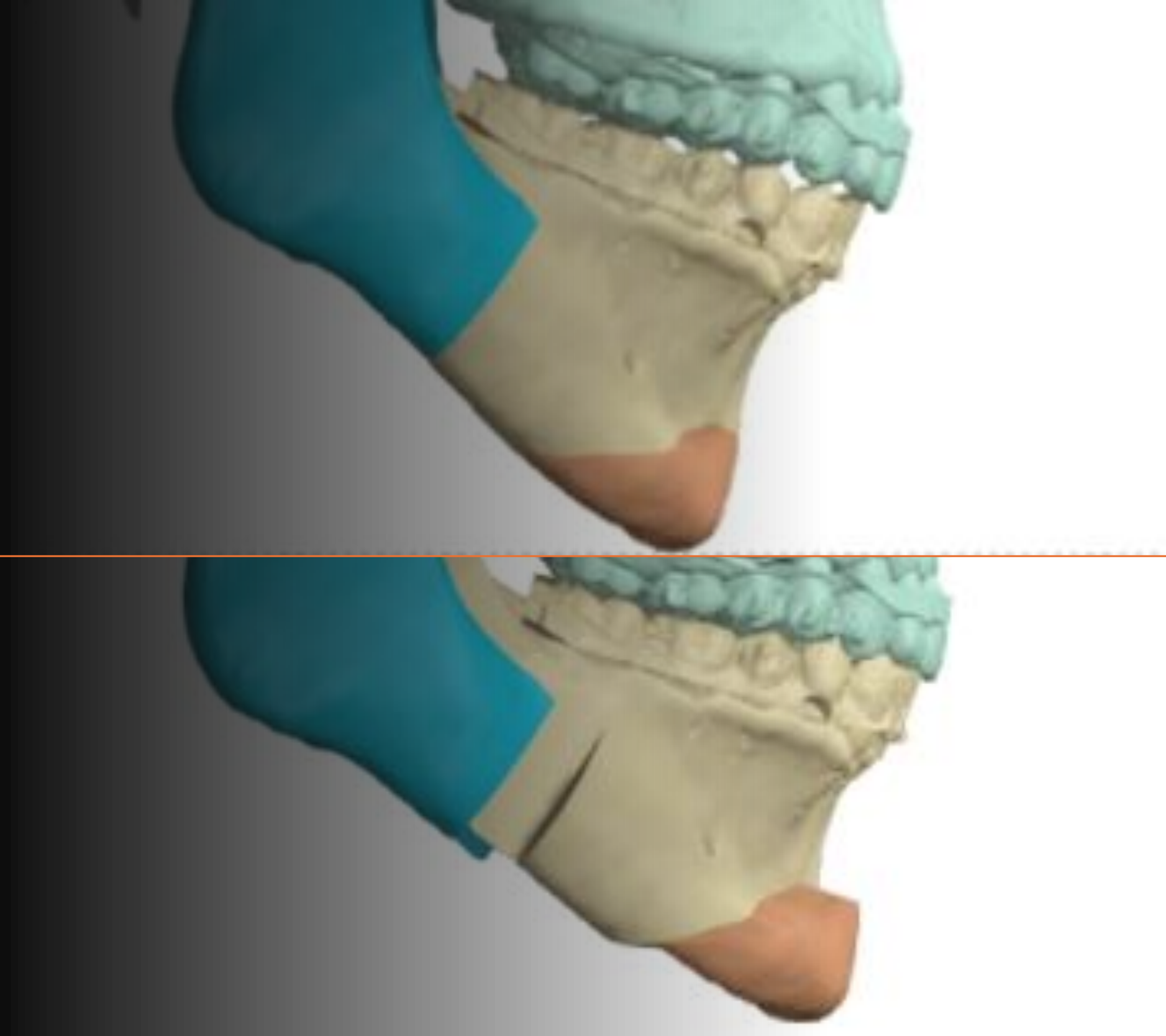


Mandibular Advancement



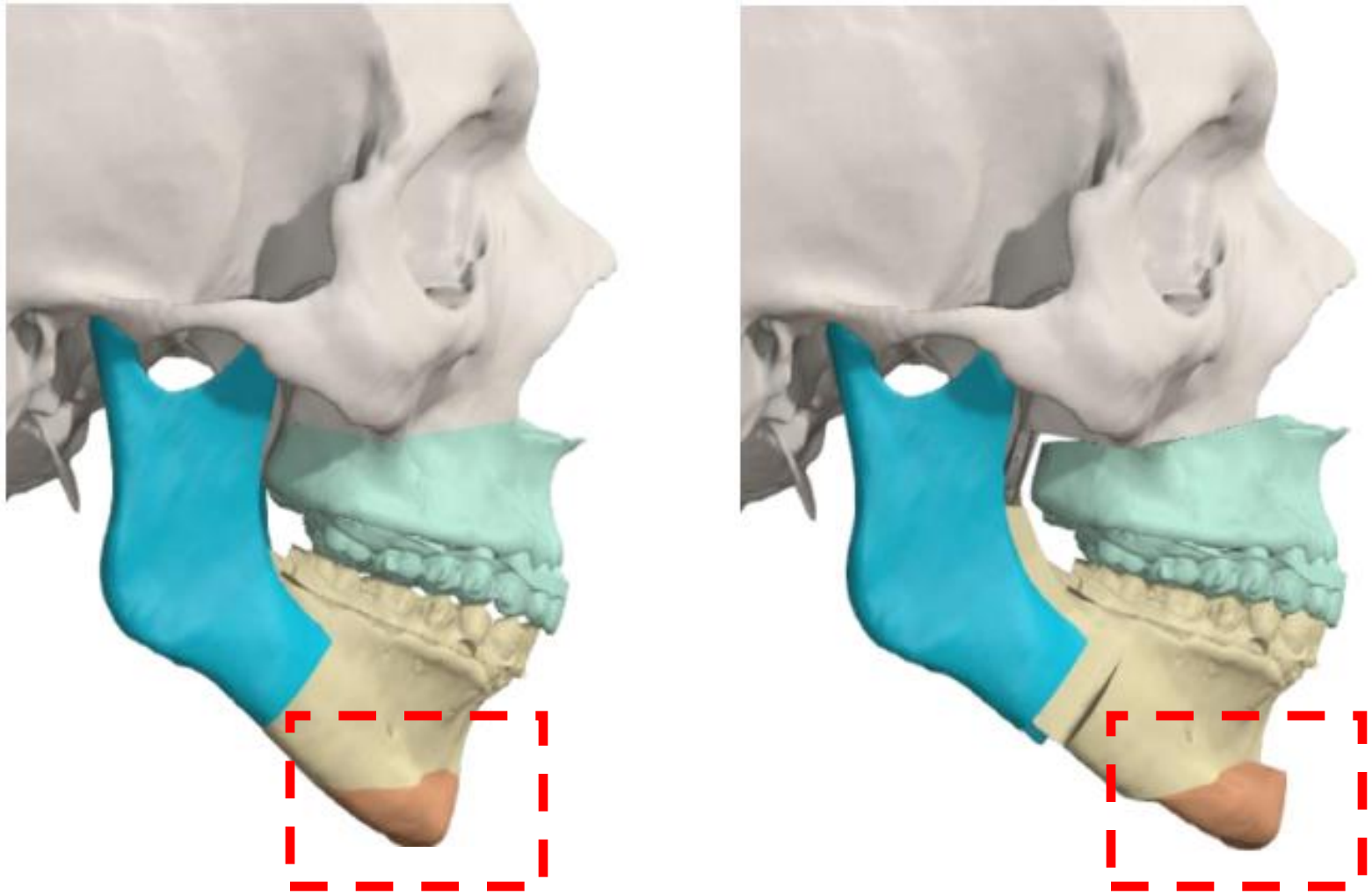
Mandibular Setback

Genioplasty

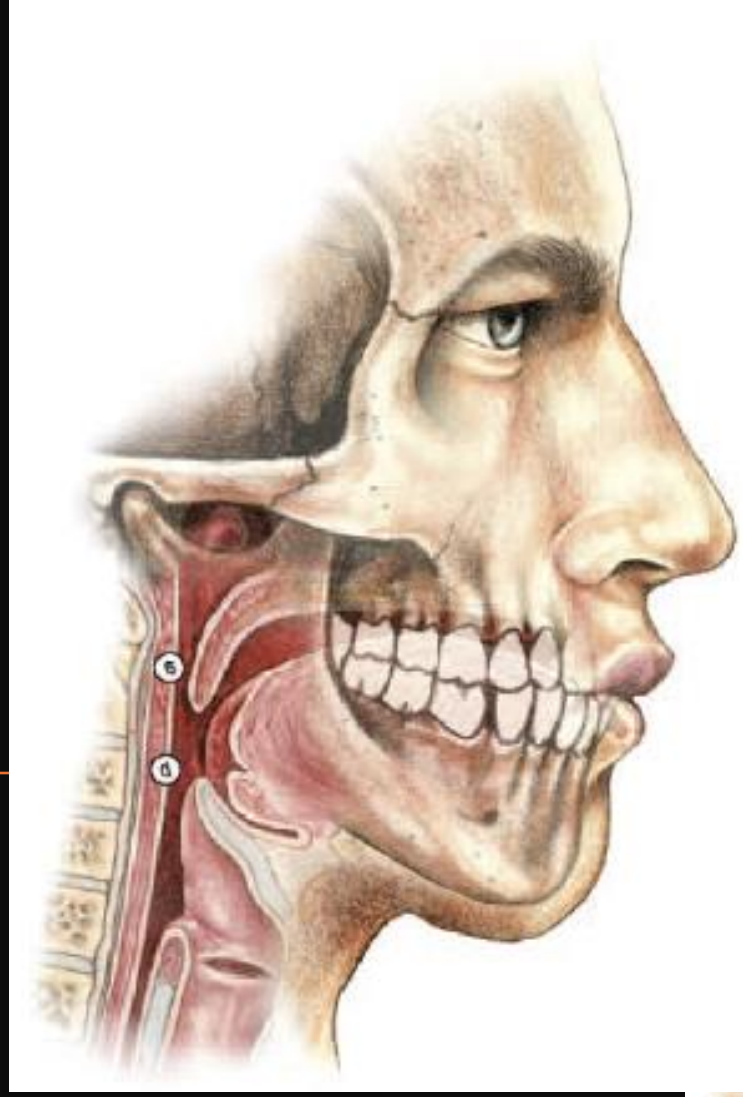


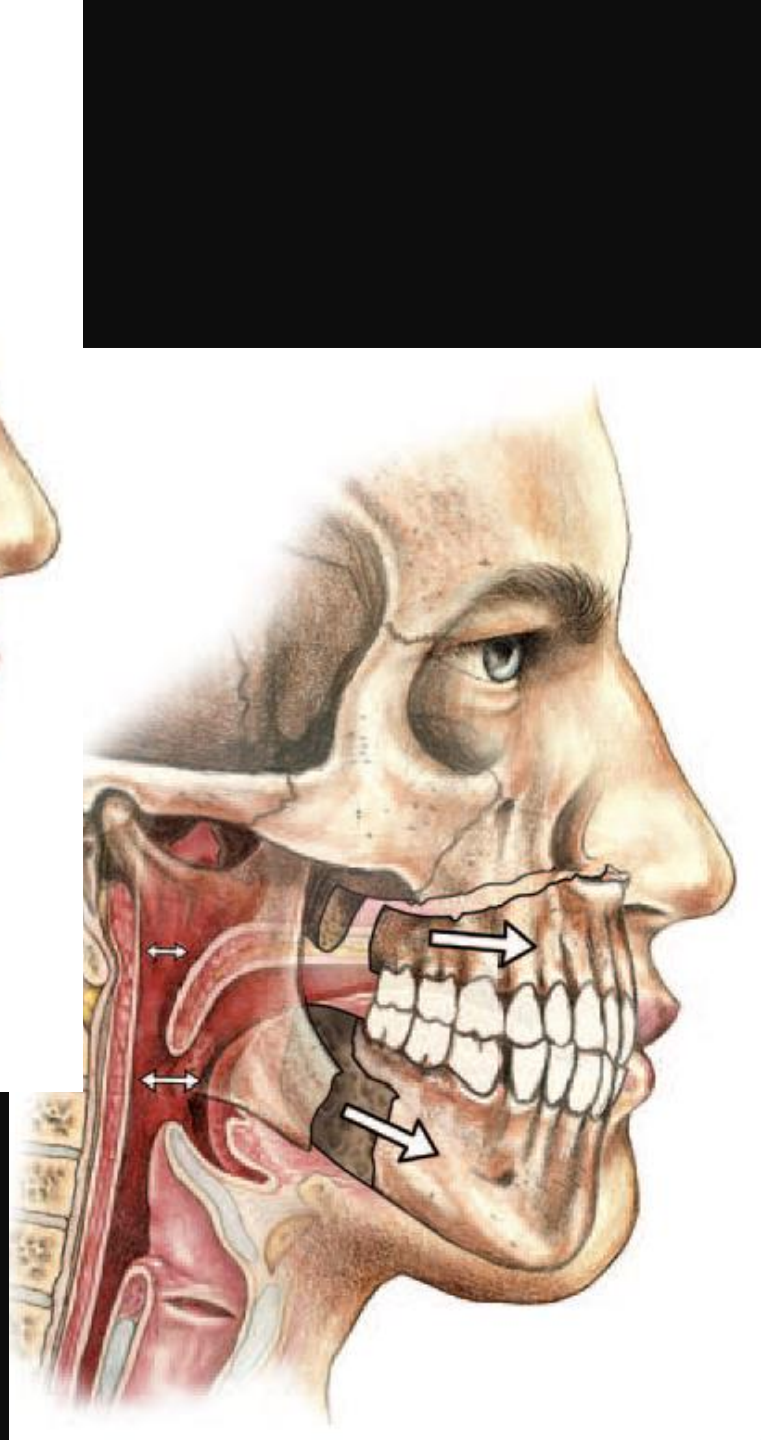
Genioplasty

Chin surgery. The chin is accessed through an incision on the inside of the lower lip. The bone is cut and repositioned to optimize the patient's profile and/or airway.



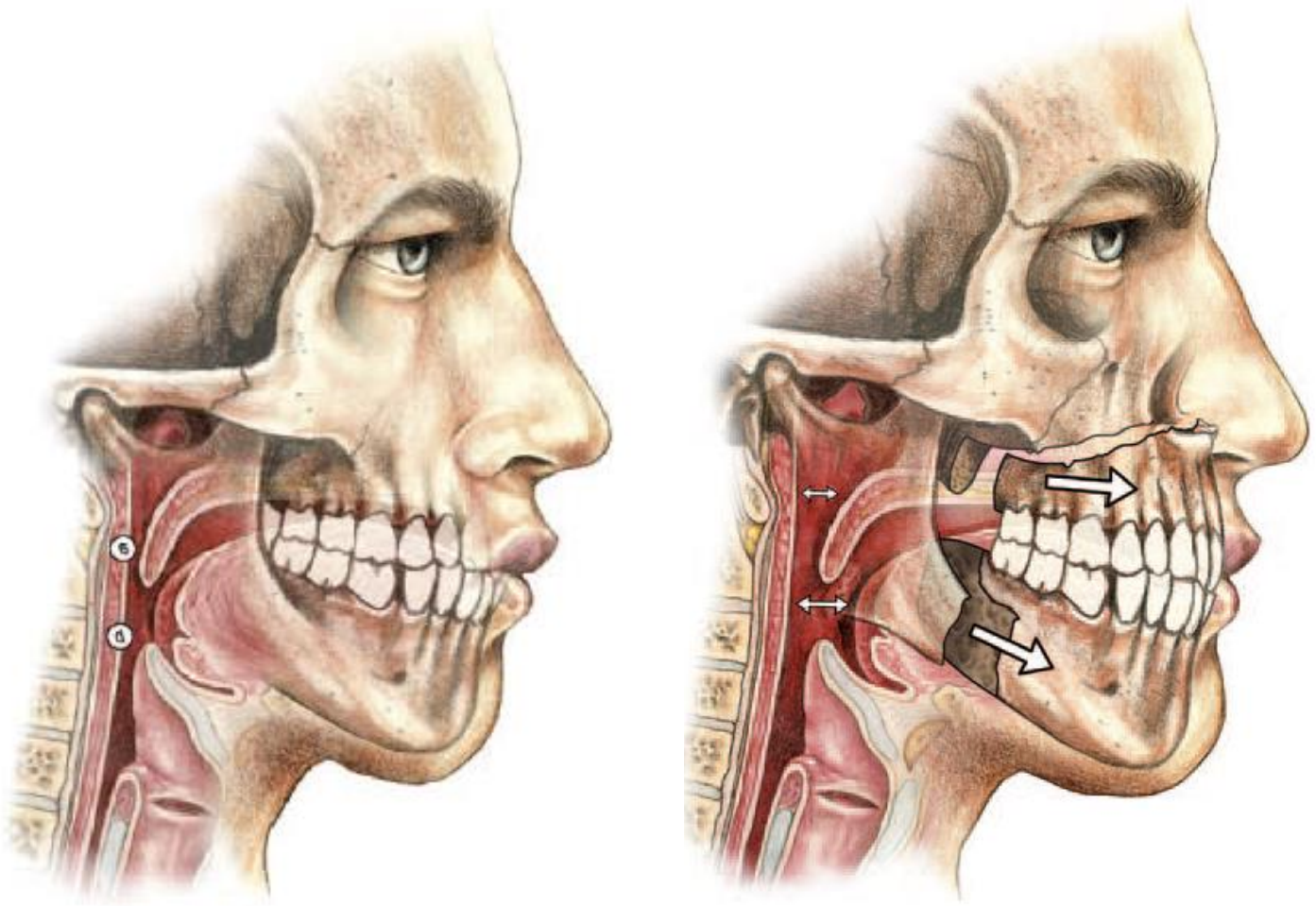
Jaw Surgery and the Airway





Impact of Jaw Surgery on the Airway

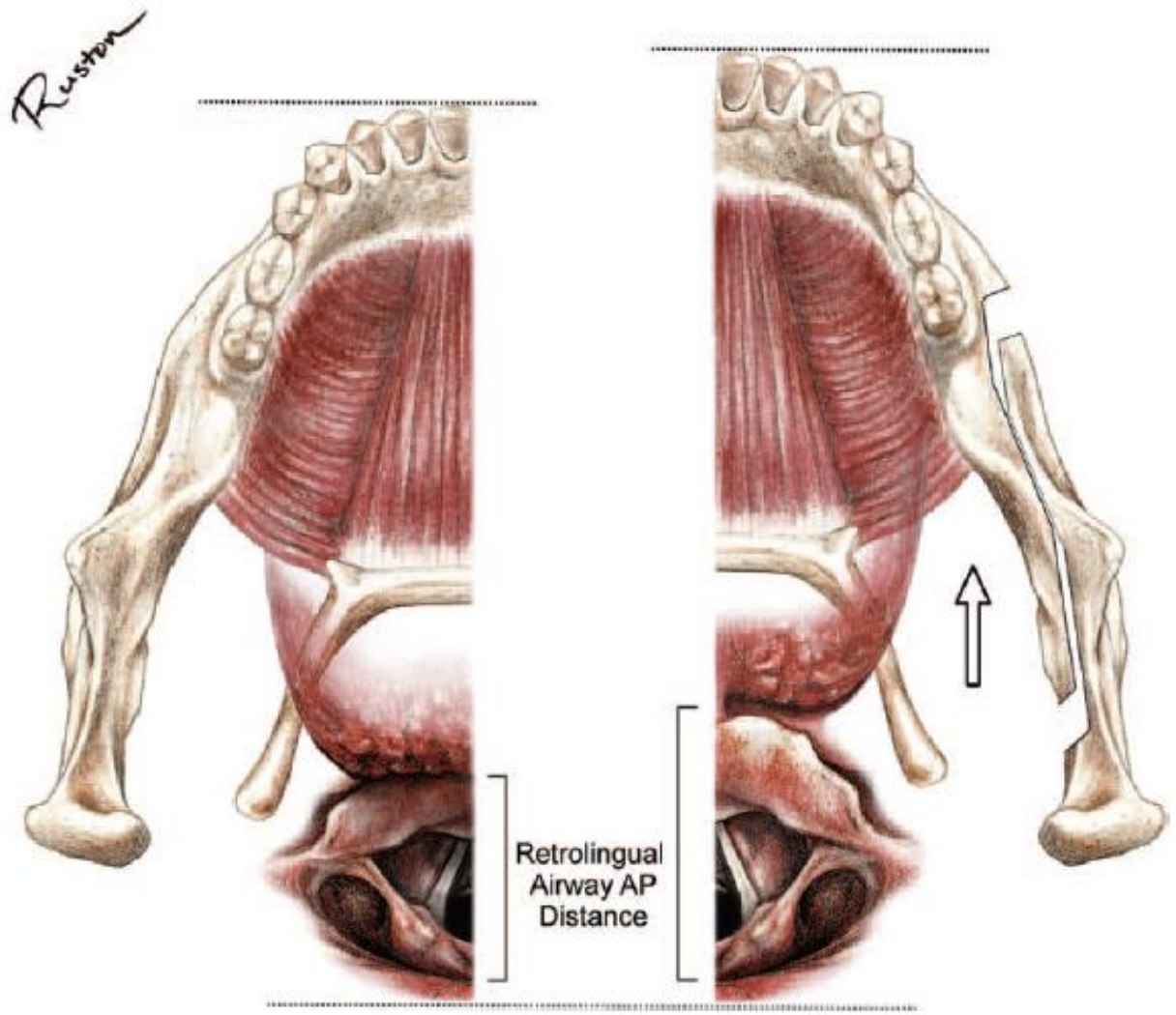
- Maxillary advancement surgery advances the soft palate.
- Mandibular advancement surgery advances the tongue and floor of mouth musculature.
- Combined maxillary and mandibular advancement results in multilevel airway expansion.



Garg RK et al. Obstructive Sleep Apnea in Adults. Plast Reconstr Surg. 138:889, 2016.

Mandibular Advancement and the Airway

- A cross-sectional view of the mandible demonstrates how mandibular advancement carries forward the genioglossus muscle (tongue) and floor of mouth musculature.
- This increases the airway space behind the tongue.



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Surgical Risks

RELAPSE

LIP/FACIAL/ORAL/GUM NUMBNESS

RESIDUAL ASYMMETRY

Additional, Less Common Surgical Risks:

Major bleeding	Infection	Tooth injury or loss	Bone loss
Palatal fistula	Hardware failure	Tongue numbness	Nasal obstruction, sinus obstruction, septal perforation
Facial weakness	Jaw stiffness	Chronic facial pain	Eye injury
TMJ derangement/condylar resorption	Wound Healing problems: bone, soft tissue	Prolonged jaw wiring	Medical complications (ex. DVT, MI, stroke)

Postoperative Phase of Treatment

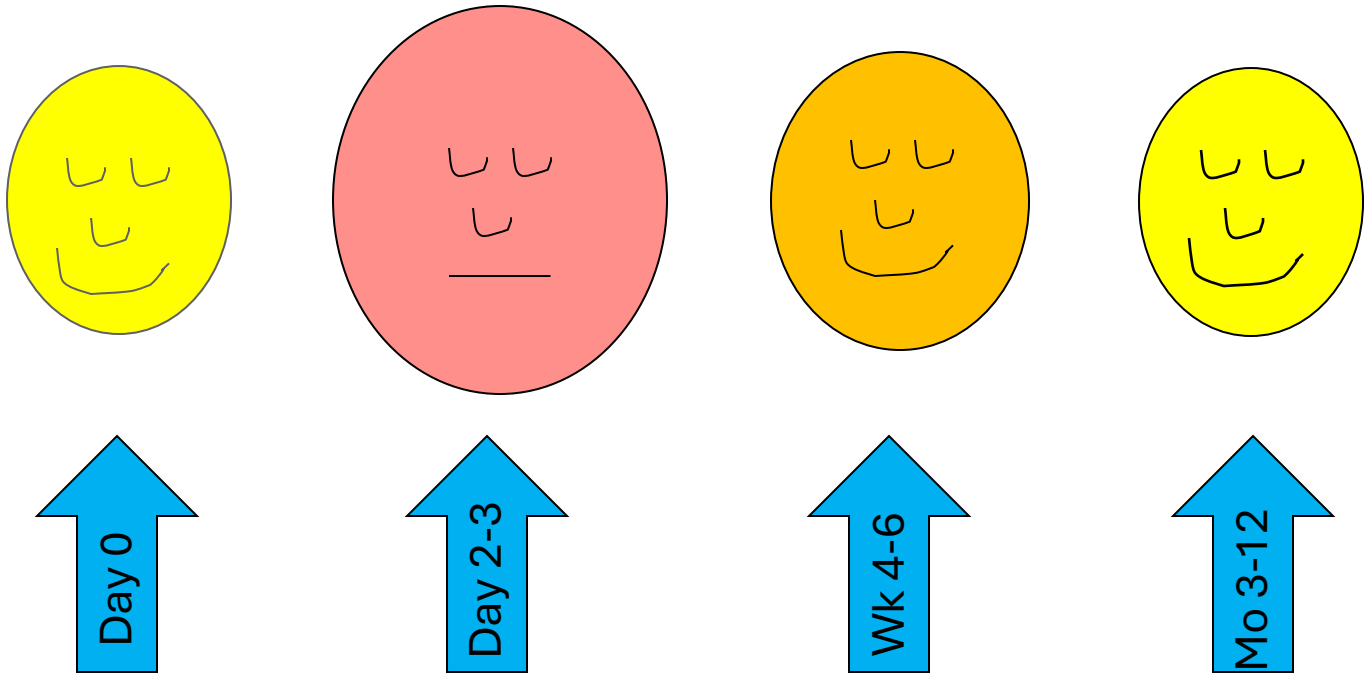
- Postoperative follow-up every 1-2 weeks for the first 6 weeks
  - Initial healing takes 6 weeks
  - Complete healing takes 9 to 12 months

- Postsurgical orthodontics, 6-12 months

Surgical Recovery

Swelling

- Ice 20 minutes on, 20 minutes off for the first 48-72 hours after surgery.
- Sleep with head of bed elevated to 30 degrees or sleep on two pillows.
- Swelling peaks 2-3 days after surgery and then slowly improves over time:



Nasal Congestion

Avoid blowing your nose for the first two weeks after jaw surgery.

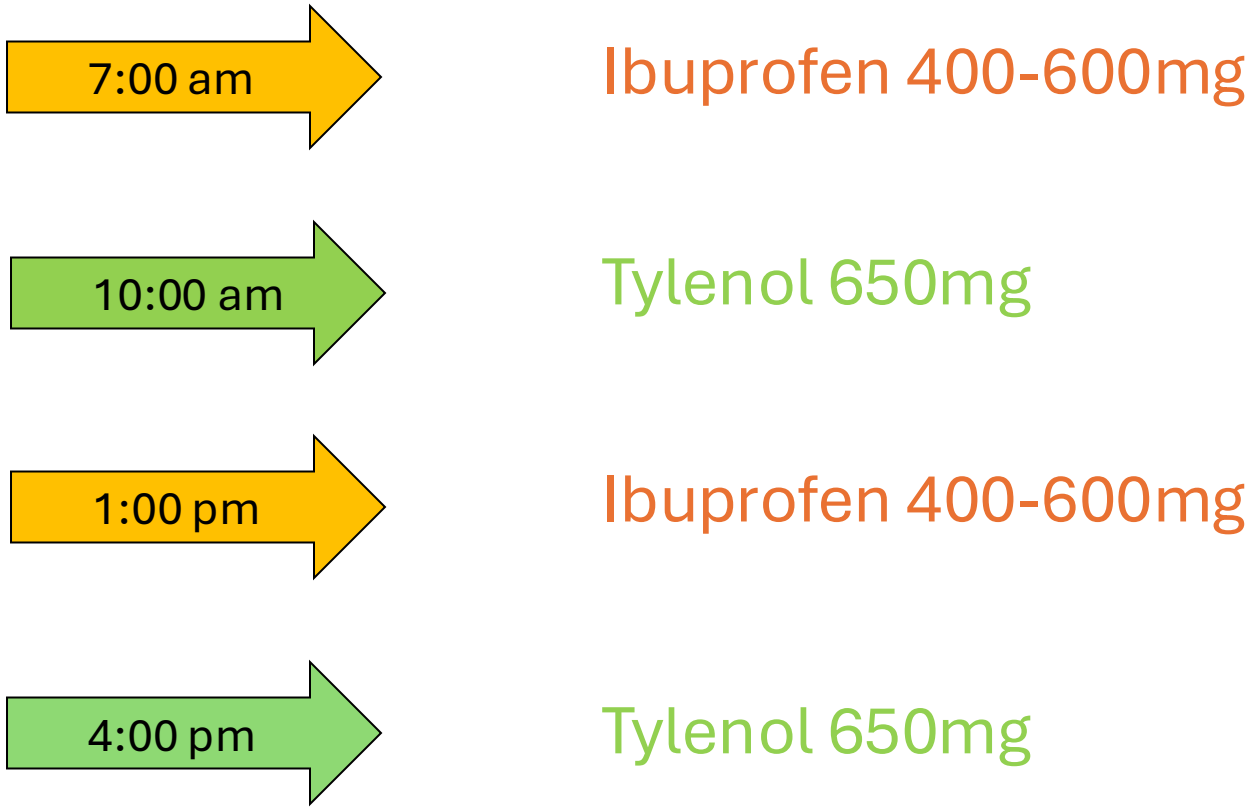
Nasal saline spray. Administer every 2-3 hours and as needed.

Mucinex® (guaifenesin). May be used to clear throat mucus.

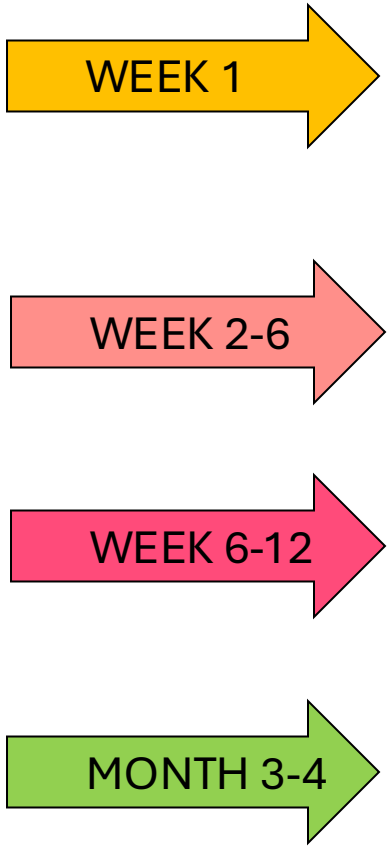
Afrin® (oxymetazoline). Use if there is bright red nasal bleeding, or if recommended by your surgeon. Administer 2 sprays in each nostril every 12 hours for 2-3 days. Do not administer beyond 3 days as this may cause rebound congestion.

Pain Management

- Tylenol and ibuprofen are taken every 6 hours and alternated every 3 hours as shown in the example to the right.
- Take ibuprofen with food. Follow dosing instructions.
- Oxycodone/narcotic pain medication for severe pain.
- After the first 72 hours, warm compresses and gentle massage over the angle of the jaw may be helpful for muscle spasm.



Dietary Progression



Clear/Full liquids (ex. juice, milk, soups, shakes), Pureed

Pureed, soft/nonchew

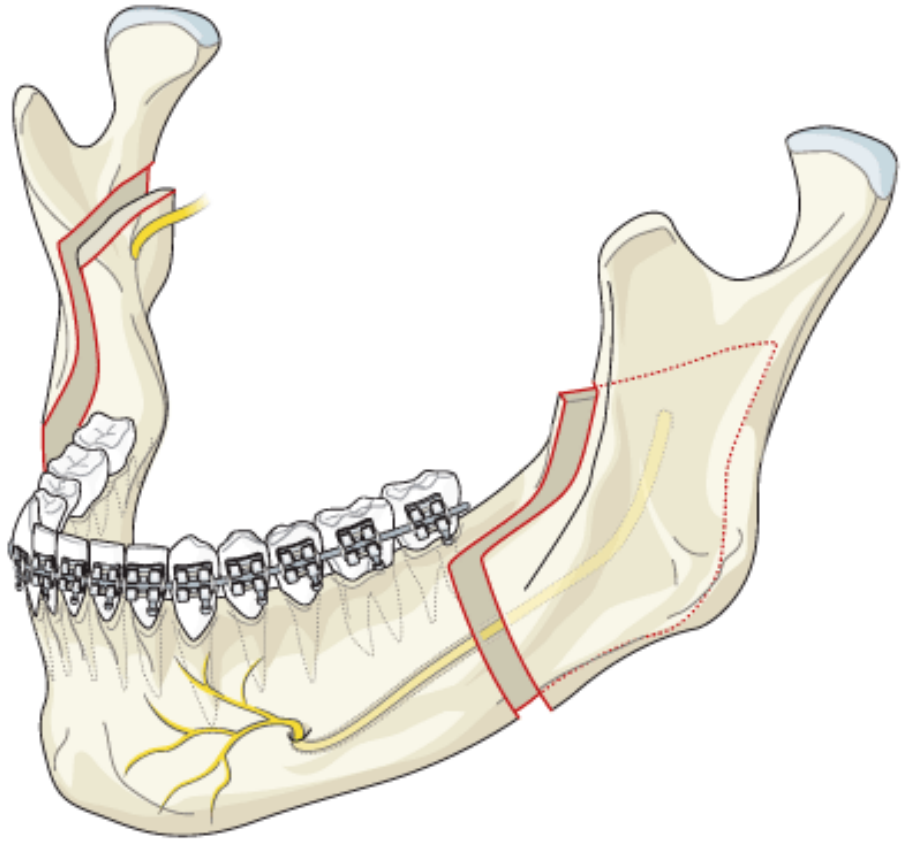
Soft food consistency chewing

Regular diet

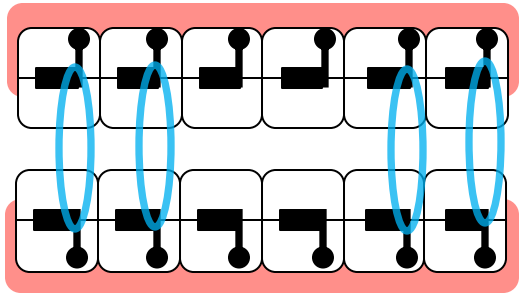
- Keep up with nutrition shakes through your recovery. Your progression may vary from this.

Numbness

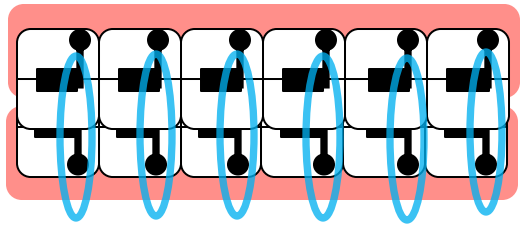
- It is very common to have numbness in the cheeks, lower lip, gums, palate, teeth, and chin after surgery.
- This may take many months to recover. In some instances, there may be areas of numbness that do not recover.
  - The lower lip/chin is the most common area for residual numbness.
- There is a small risk of numbness in the tongue as well.



How long will I be wired or banded shut?



- In most cases, your surgeon will lighten your elastics after 0-4 days so that you can begin gentle jaw range of motion



- About 1% of the time, rubber bands or wires may be used to hold your jaws shut for 6-8 weeks, particularly if the mandible experiences a “bad split.”

- **Patients are seen every 1-2 weeks for the first 6 weeks after surgery**
- **The specific protocol for managing rubber bands and/or jaw wires will be customized to you and guided by your surgeon and/or orthodontist**

Postoperative Orthodontic Treatment

- The goal of surgery is to make the big movements to your jaws to get them into a corrected position.
- After surgery, your orthodontist will make the fine movements to your teeth to detail and optimize your bite.
- Wearing a retainer will be important in the long term to help minimize relapse.

How long does it take to heal?

Initial bone healing takes 6-12 weeks.

Complete bone healing takes 9-12 months.

How much time do I need off school or work?

For school or desk jobs, most patients can return at 2-4 weeks, although some patients may need more time.

For physically demanding jobs, patients may need 4-8 weeks off work, although some patients may need more time.

Next Steps:

- Obtain insurance preauthorization
  - This may expire before surgery. There is no guarantee that surgery will be reauthorized after authorization has expired.
  - If and once the surgery is authorized, please call your insurance plan if you have questions about your financial responsibility.

Thank you!
Questions?

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