

Facial Injuries: Treatment and Prevention

Maxillofacial injuries, also referred to as facial trauma, encompass any injury to the mouth, face and jaw. Maxillofacial injuries are most commonly caused by motor vehicle accidents, on-the-job accident, act of violence or sporting mishap. Injuries can vary from a dislodged (bumped out) tooth/teeth to complex combination of fractures of the bones of the face ie. Lower jaw (aka Mandible), Upper jaw (Maxilla), Cheek-bones, eye-sockets and the nose and forehead.

Facial Injuries: Emergency management

If a person is unconscious, disoriented, nauseated, dizzy or have other injuries, call for assistance immediately. It is wise not to move a seriously injured patient until professional emergency medical help has arrived. Do not attempt to move the individual yourself. If the patient does not show any serious symptoms, but the facial injury is severe or you are uncertain about its severity, take the person to the nearest hospital emergency room as quickly as possible.

Maxillofacial and Oral Surgeons and Facial Injuries:

Oral and maxillofacial surgeons, the surgical specialists of the dental profession, are specifically trained to repair injuries to the mouth, face and jaws. After dental school training, oral and maxillofacial surgeons complete 5-7 more years of hospital-based surgical residency training that may include rotations in amongst others internal medicine, general surgery, neurosurgery, paediatric surgery, emergency medicine and other medical specialty areas.

At the conclusion of this demanding program, oral and maxillofacial surgeons are well-prepared to care for injuries to the teeth, mouth, jaws, and associated facial structures.

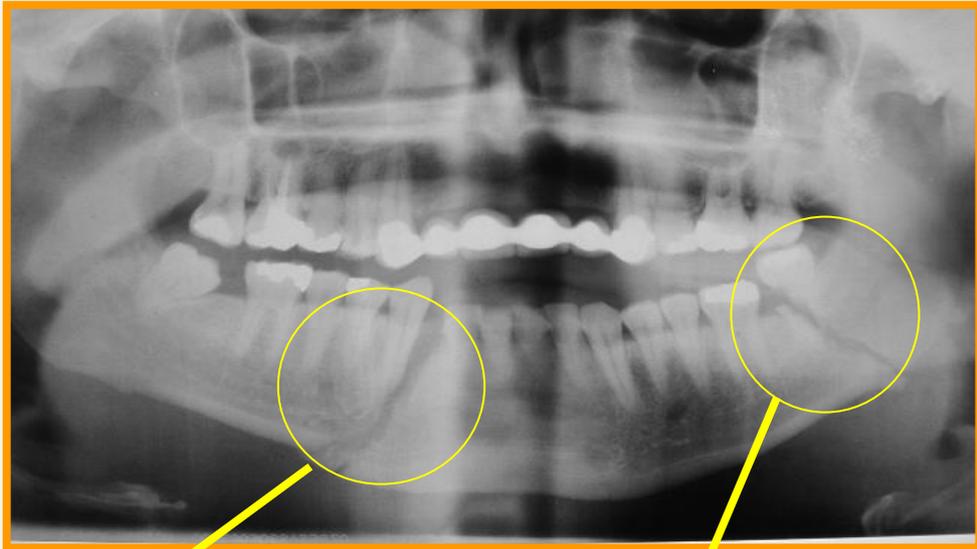
Treating Facial Injuries:

One of the most common types of serious injury to the face occurs when bones are broken. Fractures can involve the lower jaw, upper

jaw, palate, cheekbones, eye sockets and combinations of these bones. These injuries can affect sight and the ability to breathe, speak and swallow. Treatment often requires hospitalization.

th sides.
gap between the bone fragments

Jaw Fracture (Lower Jaw)



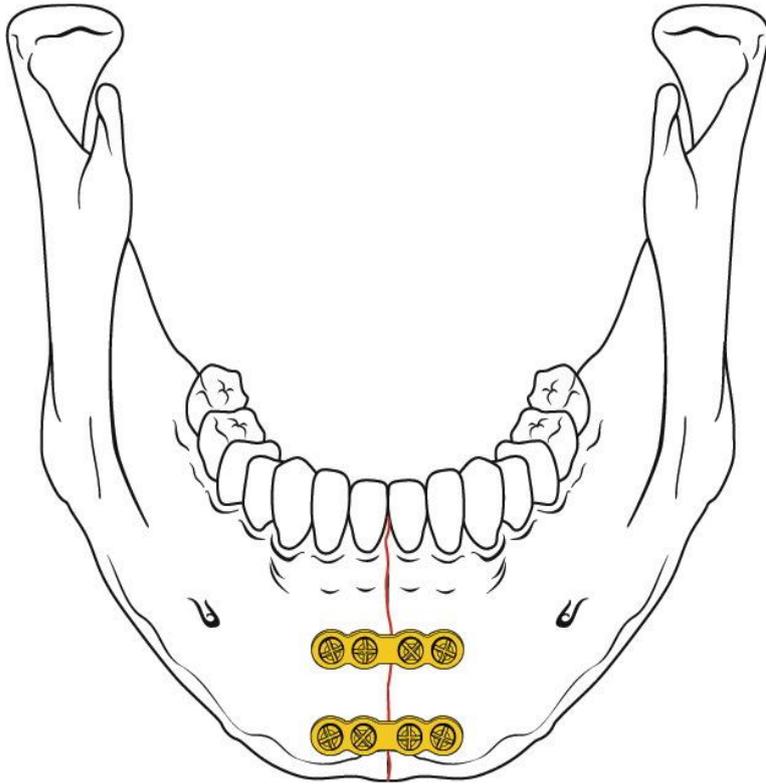
Depending on the severity

The principles for treating jaw fractures are the same as for a broken arm or leg. The parts of the bone must be lined up (reduced) and held in position long enough to permit them time to heal. This may require six or more weeks depending on the patient's age and the fracture's complexity. The parts can be held in position by either splinting the teeth together with wires (Jaw wiring) or by using special designed plates and screws. The plates are manufactured from quality surgical Titanium which is considered to be extremely safe for use in humans



The teeth can be tied together to bring broken parts together and to immobilise the jaw and broken bones Fragments.



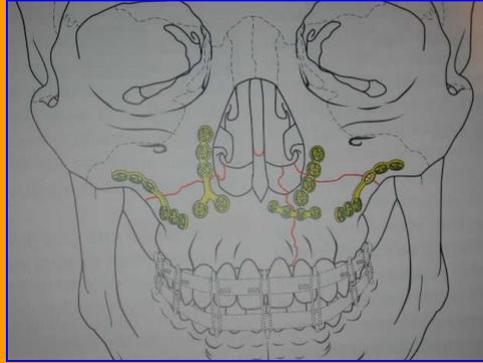


Specially designed Titanium Plate(s) and screws can be used to keep the fractured bone fragments-parts together.

Midface / Upper-Jaw Fracture

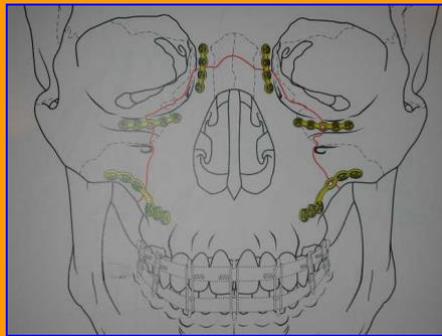
**Fracture just above the level of the teeth roots:
Level I, also known as**

Le Forte I fracture



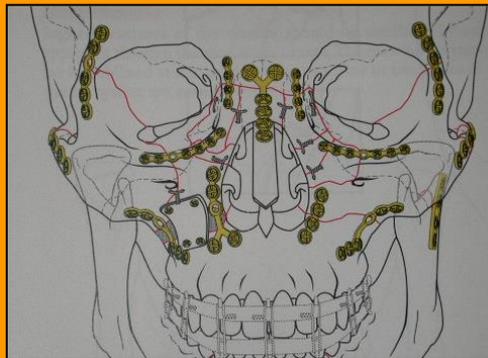
**Fracture above the level of the teeth including the nose:
Level II, also known as**

Le Forte II fracture



**Fracture above the level cheek bones including the nose and base of the skull:
Level III also known as**

Le Forte III fracture



The principles for treating Midface fractures are the same as for the mandible. Again the parts of the bone fragments must be lined up (reduced) and held in position long enough to permit them time to heal.

This may require six or more weeks depending on the patient's age and the fracture's complexity. These fragments are usually smaller and smaller plates with thinner screws are used , together with wires on the teeth. The Midface fractures includes different combinations of fracture patterns that can involve the nose, the eye sockets and cheek bones, or even the bone of the forehead and skull.

The face has structural pillars that is designed to absorb the forces of trauma in order to protect the brain. In repairing a fractured face these pillars are reconstructed.

These X-Rays show the plates in place after the bone fragments were aligned and immobilised.

These plates are placed on specific pillars of the facial framework.

Graphics:

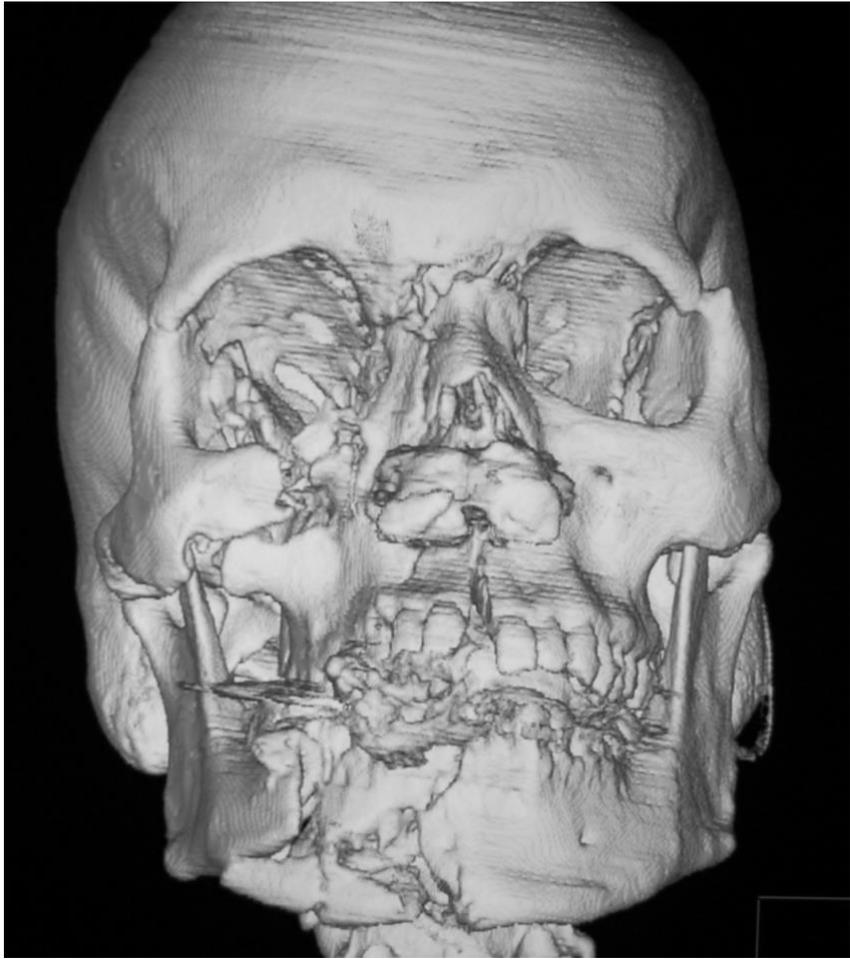
The Manual of Internal fixation in the Craniofacial Skeleton

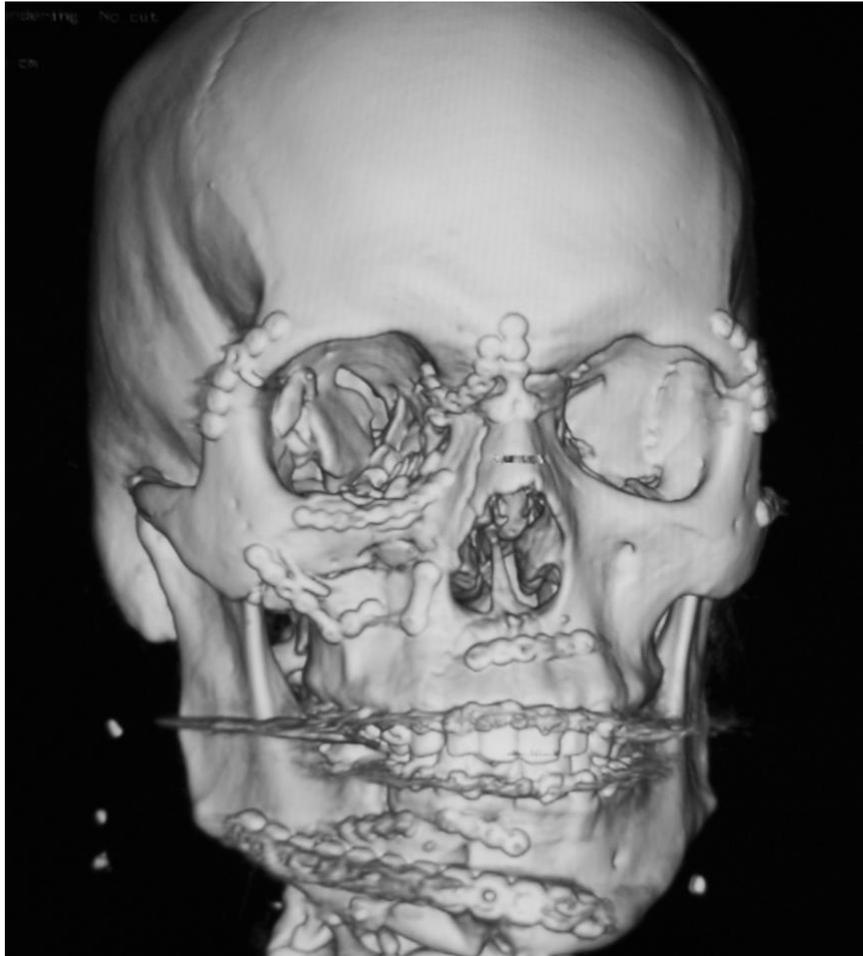
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When maxillofacial fractures are complex or extensive, multiple incisions to expose the bones and a combination of wiring or plating techniques may be needed. The repositioning technique used by the Maxillofacial and Oral surgeon depends upon the location and

severity of the fracture. In the case of a break in the upper or lower jaw, for example, metal braces may be fastened to the teeth and rubber bands or wires used to hold the jaws together. Patients with few or no teeth may need dentures or specially constructed splints to align and secure the fracture. Often, patients who sustain facial fractures have other medical problems as well. The Maxillofacial and Oral surgeon is trained to coordinate his or her treatment with that of other doctors.





Facial Injuries Aftercare:

After the fractures have been repaired, a healing time of between 4 and 6 weeks (often longer in more extensive cases) should be allowed. During this time the patient will need to follow a diet that is adapted to his/her own special circumstances and can differ from a strict fluid diet to a diet of semi-solid foods. Special attention to oral hygiene is essential. Physio-therapy is also valuable in the rehabilitation, especially in injuries of the jaw-joint or extensive skin and muscle injuries.

Don't Treat Any Facial Injury Lightly

While not all facial injuries are extensive, they are all complex since they affect an area of the body that is critical to breathing, eating, speaking and seeing. Even in the case of a moderately cut lip, the expertise of the oral and maxillofacial surgeon is indispensable. If

sutures are needed, placement must be precise to bring about the desired cosmetic result. So a good rule of thumb is not to take any facial injury lightly.

Prevention – The Best Policy

Because avoiding injury is always best, oral and maxillofacial surgeons advocate the use of automobile seat belts, protective mouth guards, and appropriate masks and helmets for everyone who participates in athletic pursuits at any level. You don't have to play at the professional level to sustain a serious head injury. New innovations in helmet and mouth and face guard technology have made these devices comfortable to wear and very effective in protecting the vulnerable maxillofacial area. Make sure your family is well-protected. If you play the sport, make the following safety gear part of your standard athletic equipment.

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Rugby: Rugby, especially at school level, contributes significantly to the number of facial injuries treated in South Africa. This is due to numerous factors e.g. relative softness of the bone of children, loose developing permanent teeth, as well as the number of young children participating in this contact sport without proper protective mouth-guards. Custom-made mouth-guards, made on cast stone models of the players mouth, offers the best and most comfortable protection against serious head injuries, tooth- and even Jaw fractures.

Wrestling: More and more high school athletic associations require wrestlers to wear head gear. A strap with a chin cup holds the gear in place and helps steady the jaw. Recently, face masks have been developed for wrestlers, who should also wear mouth guards.

Boxing: Mouth guards are mandatory in this sport. A new pacifier-like mouth guard for boxers has been designed with a thicker front, including air holes to aid breathing.

Hockey: Oral and maxillofacial surgeons recommend that athletes participating in this sport wear mouth guards. Goalies can receive extra protection by wearing Lacrosse helmets.



Soccer: Soccer players should wear mouth guards for protection. Oral and maxillofacial surgeons advise goalies to also wear helmets.

Biking: All riders should wear lightweight bike helmets to protect their heads. Scooters and Skateboarders: Bike helmets are also recommended for those who ride two-wheeled scooters and skateboards.

Horseback Riding: A helmet and mouth guard are recommended for horseback riding, particularly if the rider is traveling cross-country or plans to jump the horse.

Basketball, Water Polo, Handball, Karate, Judo, and Gymnastics: Participants in these sports should be fitted with mouth guards.

A Word about Mouth Guards

New synthetic materials and advances in engineering and design have produced mouth guards that are sturdier yet lightweight enough to allow the wearer to breathe easily. Mouth guards can vary from the inexpensive "boil and bite" models to custom-fabricated guards made by dentists, which can be adapted to the sport and are generally more comfortable.

A mouth protector should be evaluated from the standpoint of retention, comfort, ability to speak and breathe, tear resistance and protection provided to the teeth, gums and lips.

There are five criteria to consider when being fitted for a mouth protector. The device should be:

1. fitted so that it does not misalign the jaw and throw off the bite;
2. lightweight;

3. strong;
4. easy to clean; and
5. should cover the upper and/or lower teeth and gums.

By encouraging sports enthusiasts at every level of play to wear mouth guards and other protective equipment, oral and maxillofacial surgeons hope to help change the "face" of sports.

In the event a facial or mouth injury occurs that requires a trip to the emergency room, the injured athlete, his parent or coach should be sure to ask that an oral and maxillofacial surgeon is called for consultation. With their background and training, oral and maxillofacial surgeons are the specialists most qualified to deal with these types of injuries. In some cases, they may even detect a "hidden" injury that might otherwise go unnoticed.

ORAL AND MAXILLOFACIAL SURGEONS: AN IMPORTANT LINK

Oral and maxillofacial surgery is the specialty of dentistry that includes the diagnosis, surgical and adjunctive treatment of diseases, injuries and defects involving both the functional and aesthetic aspects of the hard and soft tissues of the oral and maxillofacial region.

An oral and maxillofacial surgeon is a graduate of an accredited dental school who has completed an additional four or more years of training in an accredited, hospital-based oral and maxillofacial surgery residency program.

Oral and maxillofacial surgeons are an important link in the referral network for primary care providers. Through appropriate referrals, patients can be provided with expedient and cost-effective health care for conditions relating to the specialty of oral and maxillofacial surgery.

To find an oral and maxillofacial surgeon in your community, visit <http://www.sasmfos.org/clinicians.php>