

# Treatment of Jaw Fractures

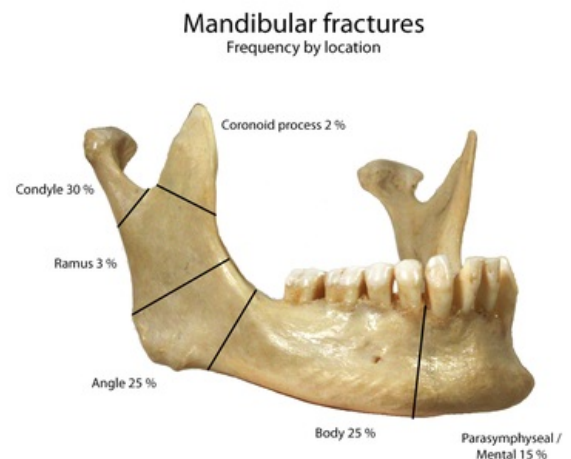
The treatment consists of several consecutive steps:

- **Reposition** – returning the fragments to their original position, striving for as close contact of fracture surfaces as possible without the interposition of soft tissues.
- **Fixation** – prevention of displacement of fragments from the correct position throughout the healing period.
- **Immobilization** - by immobilizing the entire bone, we prevent the formation of a joint and achieve the formation of a solid bone muscle.
- **Prevention of infectious complications** - administration of ATB.
- **Functional rehabilitation** – gradual loading, exercise, transition to the original diet.

## Reposition

### Reposition manual

Under local anesthesia, we reposition the fragments with finger pressure. Manual reduction is particularly suitable for fresh fractures.



Location of mandibular fractures and their frequency

### Orthodontic reposition

Reduction using orthodontic devices such as: resin palate plate with Tischler screw, sliding roof, bite block, pelots, split splint with elastic pulls, monoblock,...

Orthodontic reduction is a gentle, gradual method. It is used especially for older fractures, often in cases where manual and surgical reductions have failed.

### Orthopedic reduction

We use so-called weight extensions, where a 2 kg weight suspended over a pulley on a nylon fiber slowly pushes the fragment ventrally. Another option is to use an elastic traction to the Kramer splint, which is fixed on the plaster headband. We choose this method for outdated displaced fractures.

### Reposition instrumental (surgical, bloody)

It is performed under visual control, usually after exposing the fracture site through a skin or mucosal incision. Reposition is followed by fixation by osteosynthesis. This method is suitable for unsuccessful manual reduction, for outdated fractures or fractures that are incorrectly fused. Instrumentation: bone, hooks, elevators, forceps,...

## Fixation

### Temporary fixation

It is carried out if it is not possible to immediately transport the patient to a specialist department, the state of health makes definitive fixation impossible. It can be used long-term for simple tooth or jaw fractures.

- **External bandages** - plaster fixation bandages, sling bandage (for the chin and nose), a scapula covered with a mule and fixed to the back of the head with a bandage, a chin pad.
- **Wire ties:**
  - Interdental:
    - figure eight,
    - ranking,
    - Risdonova,
    - Stout's.
  - Intermaxillary:
    - Gilmar's or Winter's,
    - Ivy's eye ligature,
    - Halmosh bond.

### Definitive fixation

We permanently fix the fragments immediately after reduction or replace them with temporary fixation. It is desirable that the splint:

- She fixed the fragments in the correct position long enough.
- She did not bother the patient.
- It did not damage or irritate the surrounding tissues.
- It was cleanable.
- She was financially available.
- It was easy to make, put on and take off.

### Options for definitive fixation

- **Intraoral wire splint:** Sauer, Hauptmayer, Tiegerstedt splint, Angle's orthodontic arch, laboratory-made resin or cast splints,...
- **Intraoral alveolar splints** (toothless or sparsely toothed jaws):
  - sensing,
  - fixed.
- **Extraoral splints** - special nails introduced transcutaneously into the fragments.
- **Osteosynthesis** - surgical joining of fragments using:
  - wire stitch,
  - sockets,
  - medullary nail,
  - metal plates,
  - chemical substances - e.g. bone sealant, polyurethane sponge, epoxy resin,...,
  - hanging fixation,
  - intermaxillary fixation screw,
  - tension screw

## Links

### Reference

[1]

1. JIRÍ, Mazánek. *Traumatology of the orofacial region: 2nd, revised and supplemented edition*. - issue. Grada Publishing as, 2006. 200 pp. pp. 100. ISBN 9788024763590 .