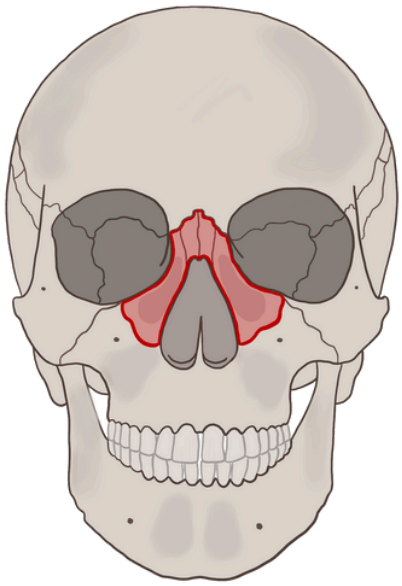
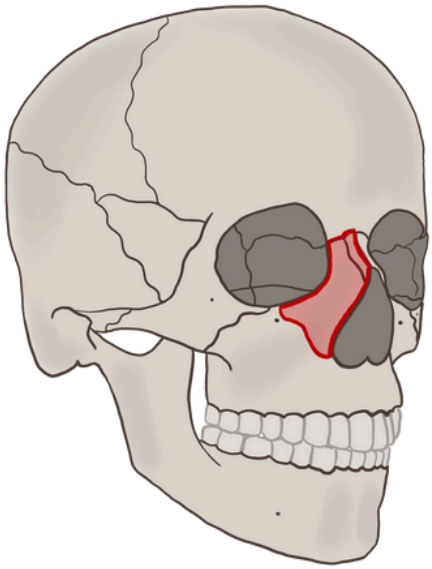
ONTARIO ASSOCIATION OF CRANIOFACIAL TRAUMA SURGEONS

(OACTS)

NASO-ORBITAL-ETHMOID (NOE) FRACTURE





What is it?
The NOE complex is a segment include the frontal bone, bones of the ethmoid and frontal sinuses, nasal bones, and orbits (bridge of nose and bone surrounding inner eye)

How does it happen?
A high impact force (e.g., vehicle collision, sports, fall, trauma)

Signs of an NOE fracture:

- Increased distance between inner corners of eyes (telecanthus)
- Swelling/bruising around eyes
- Palpable step-off of bone around eyes (orbital rim step-off)
- Blood in conjunctiva
- Clear fluid dripping from nose

How is it diagnosed?
CT of facial bones

Indications for Surgery:
1. To restore normal positioning of eyes as eye of affected side may migrate (telecanthus)
2. To restore normal contour of midface
3. To restore normal breathing

Risks of Surgery:

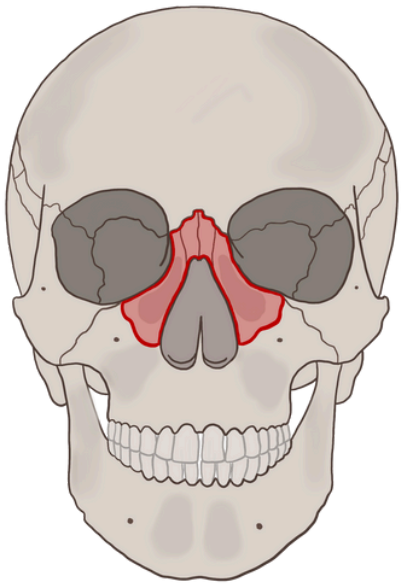
- Facial asymmetry, poor cosmetic result
- Vision loss, corneal abrasion
- Infection, abscess
- Bleeding
- Scarring
- Increased distance between eyes (telecanthus)
- Injury to tear duct (nasolacrimal duct)
- Tear overflow (epiphora)

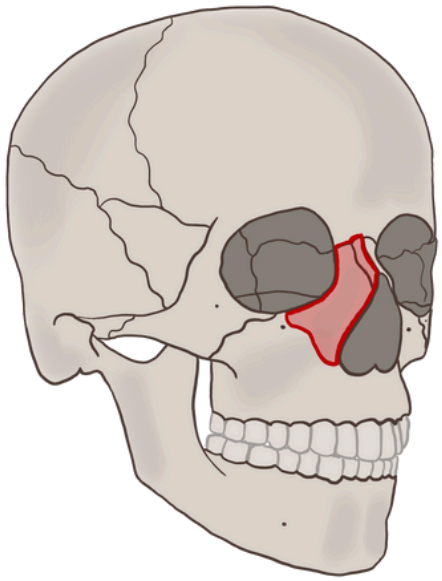
*Smoking and alcohol use are associated with a higher rate of complications.

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Surgical Incisions to Expect

Every fracture and incision is different, surgical type and exposure will depend on each unique patient fracture.

Please speak to your surgeon to gain a better understanding of what to expect.

Typical incisions include:

- lower eyelid
- upper buccal sulcus (inside mouth)
- bicoronal (hidden in hairline)

If your injury involved a cut on your face, it may be used to surgically expose the fracture. If you have sustained other fractures at the same time, incisions may differ.

Tips Before Surgery

Surgery is typically done within 1-2 weeks if there is no indication for emergent surgery. You'll be placed on sinus precautions.

Sinus precautions include:

- Avoid blowing your nose: this can cause your fracture to increase in size and can cause worsening swelling
- Sneeze only with your mouth open and avoid pinching your nostrils
- Do not use a straw to drink, drink directly from a cup
- Keep the head of your bed elevated at 30°: this will help reduce swelling

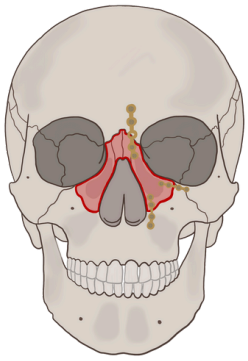
Present to the emergency room if you experience vision loss, inability to move your eye, new bulging of the eye, uncontrolled bleeding, or fever over 38°C.

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POST-OPERATIVE CARE



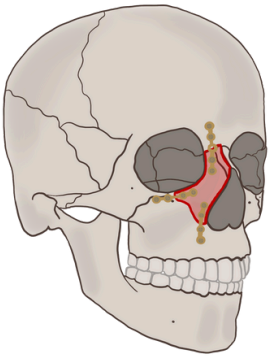
Treatment

Surgical Management

- No displacement/minimal displacement: observation without surgery may be possible
- Significantly displaced fracture: open reduction and internal fixation with possible bone grafting is required
- Nasal reconstruction may be required and is performed as for nasal fracture

Non-Surgical Management

- Nasal splint will be applied after surgery
- You will be kept upright after surgery to decrease pain and swelling
- Regular ophthalmology examinations while in hospital for any complications or increased distance between eyes (telecanthus)



Medications

- Pain management: acetaminophen, NSAIDs, and/or opioids as prescribed
- Antibiotics: usually given during surgery
- Sore throat/nasal congestion: over-the-counter nasal decongestant (e.g., Benadryl)

Diet

- Typically the diet is normal immediately post-operatively
- Depending on patient condition and extent of injury, a soft diet may decrease face pain while chewing

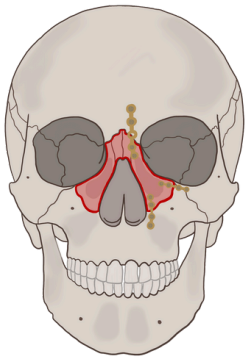
If you have sustained other fractures at the same time as your naso-orbital-ethmoid fractures, you should consult the corresponding handout for any diet restrictions.

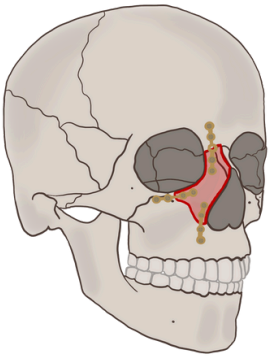
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POST-OPERATIVE CARE





Activity

- Physical activity should be kept to a minimum for at least 6–8 weeks after surgery
- Contact or other sports should be avoided for up to 3 months to minimize the risk of another fracture
- Be cautious with kids and animals for 6-8 weeks (avoid rough play, risk of re-injury)
- Do not go scuba diving for at least 6 weeks

Wound Care

- For the first 48 hours after surgery, use ice packs to help minimize swelling
- Sutures likely absorbable, but in event that they are not, they will be removed 5 days after surgery
- Surgical tapes will be removed within 5-7 days
- Surgical tape that is applied to the eyelid incision should be left alone until removed by the surgeon
- Shower normally, if surgical tapes are used, you can shower but pat them dry
- You may start showering after your surgery unless if instructed by your surgeon to do otherwise

Seek care if you experience:

- Fever over 38°C, new redness/swelling pus or foul odour discharge
- Worsening vision, double vision, or vision loss
- Inability to move eye
- Protrusion or sinking of eye in socket, increased distance between eyes
- Clear fluid or blood running from eyes/nose

Please contact your surgeon or present to nearest emergency department.