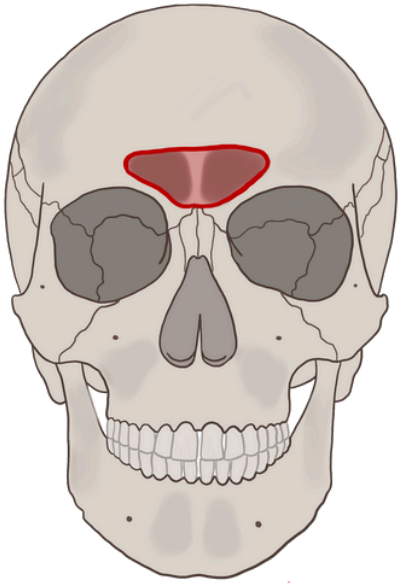
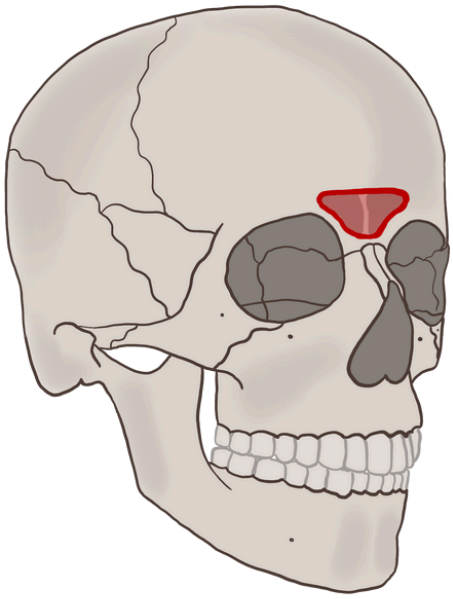
ONTARIO ASSOCIATION OF CRANIOFACIAL TRAUMA SURGEONS

(OACTS)

FRONTAL SINUS FRACTURES





What is it?
Fracture of the frontal sinus either in isolation or as part of more complex facial fractures

How does it happen?
Significant high-force trauma, the frontal bone requires the greatest force to fracture

Signs of a frontal sinus fracture:

- swelling and bruising of upper face
- palpable deformity of frontal bone
- visible deformity of frontal bone
- loss of forehead sensation
- clear fluid running from nose (CSF rhinorrhea)
- eyes not level (globe displacement)
- eye bulging (proptosis)

How is it diagnosed?
High resolution CT facial bones

Indications for surgery

- Surgical reduction and fixation: If displaced >2mm and not involving nasofrontal duct
- Obliteration of sinus: complex fracture involving nasofrontal duct
- Significant cosmetic deformity of forehead
- Interruption of mucosal function in sinus

Risks of surgery

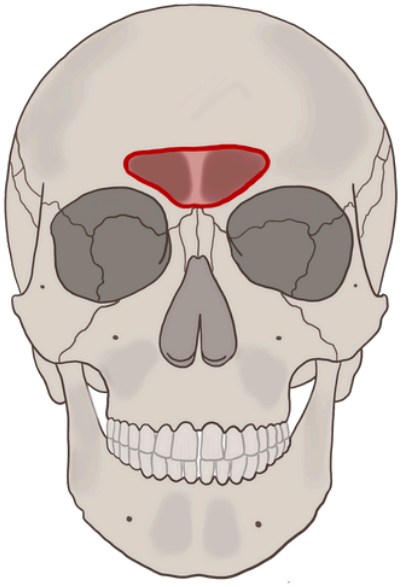
- Diplopia, vision loss
- Eyelid malposition
- Infection, abscess
- Bleeding
- Scarring
- Alopecia
- Headaches
- Anosmia (loss of smell)
- Meningitis or mucocele (years later)
- Sensory deficits

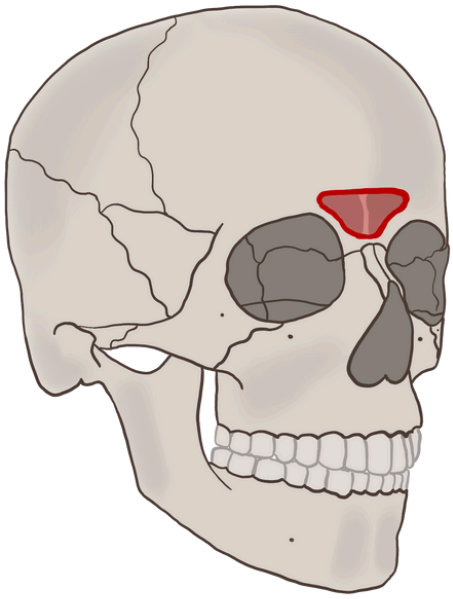
*Smoking and alcohol use are associated with a higher rate of complications.

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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:

- bicoronal (hidden in hairline)
- if required, small cuts to forehead

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

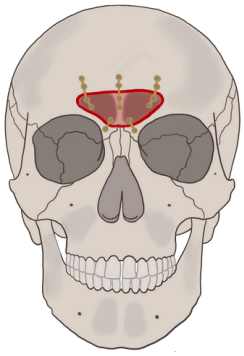
Present to the emergency room if you have clear fluid leaking from nose/eyes, uncontrolled bleeding, or fever over 38°C.

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FRONTAL SINUS FRACTURES

POST-OPERATIVE CARE



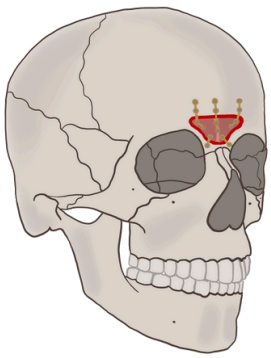
Treatment

Surgical Management

- If uncomplicated/stable: may be managed with observation
- If complicated/unstable (>2 mm displacement): open reduction and internal fixation (ORIF) or obliteration of the sinus with abdominal fat or harvested bone

Non-Surgical Management

- You will be kept upright after surgery to decrease pain and swelling
- An ophthalmologic exam will be done to evaluate your vision and eye movement post-operatively



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)
- Swelling around eyes: 5-7 day course of steroids may be used to reduce swelling
- Eye irritation after surgery: eye drops to moisturize

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

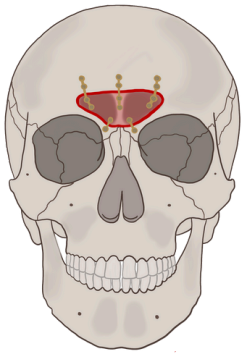
If you have sustained other fractures at the same time as your frontal bone fractures, you should consult the corresponding handout for any diet restrictions.

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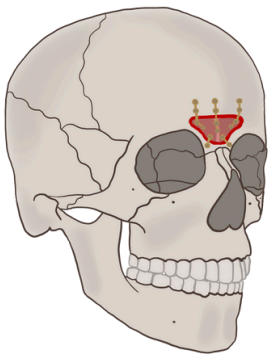
FRONTAL SINUS FRACTURES

POST-OPERATIVE CARE



Activity

- Physical activity should be kept to a minimum for at least 2 weeks after surgery
- Contact or other sports should be avoided for 2–3 months to minimize the risk of another fracture
- No nose blowing for at least 2 weeks following surgery
- Avoid travel by commercial airplane for 4-6 weeks, avoid travel by military airplane for 12 weeks
- Avoid scuba diving for 12 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
- If applicable, surgical tapes will be removed within 5-7 days
- 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
- Avoid sun as much as possible to prevent darkening of the scar (e.g., hat, sunscreen, sunglasses when in sunlight) for at least 1 year

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 or nose

Please contact your surgeon or present to nearest emergency department.