



## SINUS SURGERY

**Dr Zenia Chow MBBS(hons), FRACS**

Facial Plastic & Reconstructive Surgeon

Otolaryngology, Head and Neck Surgeon

### ENDOSCOPIC SINUS SURGERY/FESS

#### **What are sinuses**

The sinuses are a connected system of hollow air filled spaces in the skull. The largest sinus cavities are a few centimetres across. Others are much smaller.

- Your cheekbones hold your maxillary sinuses (the largest).
- The low-center of your forehead is where your frontal sinuses are located.
- Between your eyes are your ethmoid sinuses.
- In bones behind your nose are your sphenoid sinuses.

They are lined with soft, pink tissue called mucosa. Normally, the sinuses are empty except for a thin layer of mucus.

The inside of the nose has ridges called turbinates. Normally these structures help humidify and filter air. A cartilage/bone wall, called the septum, divides the nose. Most of the sinuses drain into the nose through a small channel or drainage pathway called the “middle meatus.”

We do not know why we have sinuses. One theory is they help humidify the air we breathe.

**Acute sinusitis (sinus infection) - <4 weeks:** Viruses, bacteria, or fungi infect the sinus cavity, causing inflammation. More mucus, fever, nasal congestion, pain in the cheeks, forehead, or around the eyes, and headaches are common symptoms.

**Chronic sinusitis (or chronic rhinosinusitis) >12 weeks:** persistent inflammation of the sinuses causing facial pain, nasal congestion, mucus discharge, post nasal drip and lack of smell.

**Hay fever ( allergic rhinitis ):** Allergens like pollen, dust mites, and pet dander cause the defenses in the nose and sinuses to overreact. Mucus, nasal stuffiness, sneezing, and itching result.

**Nasal polyps** are small growths in the nasal cavity. They can happen due to inflammation from asthma, chronic sinus infections, and nasal allergies (such as hayfever).

**Turbinate hypertrophy:** The ridges on the nasal septum are enlarged, which can block airflow.

## **Indications for sinus surgery**

The most common reason for doing endoscopic sinus surgery is “chronic rhinosinusitis”, or more commonly “chronic sinusitis”. Chronic rhinosinusitis is a general term for inflammation (swelling) of the nose and sinuses that does not improve sufficiently with medical treatment. Chronic means that the inflammation remains in the nose and sinuses and does not go away over time (usually for at least 3 months). Infection, nasal polyps (non-cancerous swelling of the nasal/sinus lining), allergies or irritants, and other things may cause this inflammation of the nose and sinuses. Often, we do not know exactly why patients have chronic rhinosinusitis or chronic sinusitis.

Less common reasons to have sinus surgery may include: recurrent infections (meaning the infections go away with medicines but return very quickly), sinus infections that spread to the eye, face or brain, nasal polyps, tumours of the nasal and sinus cavities (cancerous or non-cancerous growths), leaking brain fluid into the nose, tear duct blockage and others. Additionally, recent advances in endoscopic sinus surgery allow the surgeon to reach areas of the brain and pituitary gland for neurosurgeons, or to the orbits (eye sockets) for certain ophthalmology procedures. Each individual case is different. Dr. Chow will determine if endoscopic sinus surgery is the best choice for your nasal/sinus problem

## **Procedure**

Sinus surgery means removing all or part of the blocked sinuses which are opened or removed to improve airflow/drainage and ventilation. These blockages can cause sinusitis, in which the sinus mucous membranes swell and become blocked, causing pain, infection and impaired breathing.

Endoscopic sinus surgery goals include:

- Reduction of the number and severity of sinus infections
- Improvement in symptoms associated with sinusitis
- Improvement of airflow through the nose

Usually under general anaesthesia, a surgeon will use an endoscope, a thin camera rod with a light at the end, to provide visualisation and magnification of the sinus tissues. Specialised instruments can be used to safely and effectively remove causes of sinus blockage like natural blockages, nasal polyps and scar tissue.

Specialised instruments are also used to reduce the size of the turbinates (scroll like bone in the nasal cavity) if required. Endoscopic sinus surgery does not involve cutting through the skin, as it is performed entirely through the nostrils. Therefore, most people can go home the next day.

Chronic sinusitis is a chronic condition. The aim of surgery is to open the natural drainage pathway of the sinuses to reduce the risk of recurrent infections and blockage. There is no guarantee smell or post nasal drip will improve. Despite undergoing sinus surgery, patients may still need to use nasal sprays and rinses to keep their symptoms under control, especially if they suffer from allergic rhinitis.

## **RISKS**

The following are the most common risks. There may be other unusual risks that have not been listed here.

### **General risks for all sinus surgery**

- No cure, relief only by operation - due to the severity of underlying sinus disease (fungal, sinonasal polyposis, hypoplastic) and associated medical conditions (severe allergy, diabetes and immunodeficiency)
- Prolonged medical treatment - medications, irrigation (buffered saline)
- Revision surgery
- Bleeding - may be acute or delayed for up to 3 weeks, may necessitate return to theatre
- Infection
- Loss of sense of smell
- Adhesion - prevents sinus drainage
- Septal surgery complications - septal haematoma, abscess, perforation which may cause crusting, bleeding and whistling noise, nasal deformity (depression of the nasal dorsum and height), numbness upper front teeth, persistent nasal obstruction

**Specific: Although rare:**

**Ethmoidectomy** (sinus between the eyes)-

- Intracranial complications: base of skull perforation, Cerebral Spinal Fluid leak, meningitis, brain abscess
- Eye Complications: eyelid swelling, bruising, lacrimal duct, muscular damage, diplopia, intraorbital bleeding (may require decompression), optic nerve damage, blindness
- Frontal recess scarring, frontal sinus congestion/sinusitis

**Maxillary Antrostomy** (cheek sinus)

- Eye Complications: as above
- Numbness upper front teeth (usually temporary)

**Sphenoid sinus surgery** (sinus back of the nasal cavity)

- Optic nerve injury - visual loss
- Internal carotid artery - life threatening haemorrhage and Cerebral Vascular Accident (stroke)
- Cerebral Spinal Fluid leak - meningitis

**Frontal sinus surgery** (in the forehead)

- Cerebral Spinal Fluid leak
- Eye Complications: as above
- Recurrent frontal disease - scarred frontal recess
- Numbness of scalp, forehead

**Caldwell Luc** (radical antrostomy)

Specific: Sublabial incision, teeth numbness, oral-antral fistula, V2 / Maxillary nerve numbness / paraesthesia, anterior maxillary defect, facial / cheek defect, intranasal antrostomy (middle meatal or inferior meatal), revision surgery.

**External Sinus Surgery:** (Frontal sinus Trephine / External Ethmoidectomy / External Fronto-ethmoidectomy +/- sinus STENT / External Sphenoidectomy)

This involves an external incision under the eyebrow and inner aspect of the nose and is used when the sinus cannot be treated with endoscopic approach as mentioned above. The risks are similar with the addition of a scar, possible numbness of the forehead, inner nose, prolonged swelling and bruising around the eye and nose, prolonged visual disturbance and double vision.

Please note that NOT ALL SINUSES need surgery

**WHAT TO EXPECT AFTER ENDOSCOPIC SINUS SURGERY ('ESS')**

It is essential that you keep the internal mucosa of the nose clean and moist by regularly irrigating the nose with salt water 4- 6 times / day. You can buy the solution FESS at the chemist or use Dr. Chow's formula.

After 1 week you can gently blow your nose. If you sneeze, then sneeze with your mouth open to reduce the risk of bleeding.

You can be more vigorous after 2 weeks and by 3 weeks you can resume your normal activity.

#### 1. Nasal Drainage

Immediately after surgery, you will bleed from your nose. You may notice a small amount of bright red bleeding which is normal and may continue through the first week. Do not be alarmed, because this is normal. A gauze dressing will be placed on your upper lip to absorb this drainage. It may be necessary to change the dressing several times on the day of your surgery. Any bright red bleeding lasting more than ten minutes (or which is heavy) should be reported to your doctor immediately. Old blood, which accumulated during surgery, is dark reddish-brown. It will drain for a week or more and is of no concern. Drainage may continue for several weeks. The drainage may become thicker and yellow-green in colour. This is also normal.

#### 2. Nasal Congestion

The stuffiness in your head during the first week after surgery is caused by swollen mucous membranes in your nose and is to be expected. This stuffiness will gradually decrease over the next few weeks, so, please be patient. After several weeks, you should notice an improvement in your nasal breathing. Nasal packing may or may not be left in place after surgery. If you do have non-dissolvable packing, you will need to return to the office to have it removed by your doctor.

#### 3. Discomfort After Surgery

There will be some pain after surgery. You may notice an increase of pressure during the first week which is due to increased swelling and the accumulation of sinus secretions. Prescribed pain medication should be taken as directed. Do not take aspirin or medications which contain aspirin, because they may increase bleeding. For additional pain relief, place ice packs on your face for periods of 15 to 20 minutes. It may take five (5) to six (6) weeks for full recovery. Please be patient during this time.

#### 4. Medications

Usually, an antibiotic will be ordered to prevent an infection. Decongestants, nasal sprays, and sometimes, a mild steroid are ordered to aid with healing and comfort. Please take all of the prescribed medications as directed by your doctor.

REMINDER: We can only refill narcotic prescriptions during normal business hours. Please make sure that you have a sufficient supply of medication to last throughout the night, the weekends and holidays.

#### 5. Nosebleeds

Depending on your specific situation, Dr. Chow may or may not place packs in your nose. If no packs were placed, or if they were placed and have been removed, you may experience some bleeding. It is helpful to have a decongestant spray (an over-the-counter product) available in case this happens. If bleeding occurs, spray the nose with 2 to 3 sprays of decongestant. Try to sit or lie down with your head elevated, and pinch your nose to apply pressure. Placing an ice pack over your nose may help slow bleeding. If bleeding persists, please go to the Austin emergency department.

#### 6. Postoperative Visits

It is very important to keep all appointments after surgery. During these visits, Dr. Chow will examine and clean the surgery site. This cleaning will prevent scarring. The frequency of your post-operative visits depends on your individual rate of healing.

If you have any questions or concerns, please call Dr. Chow's office.