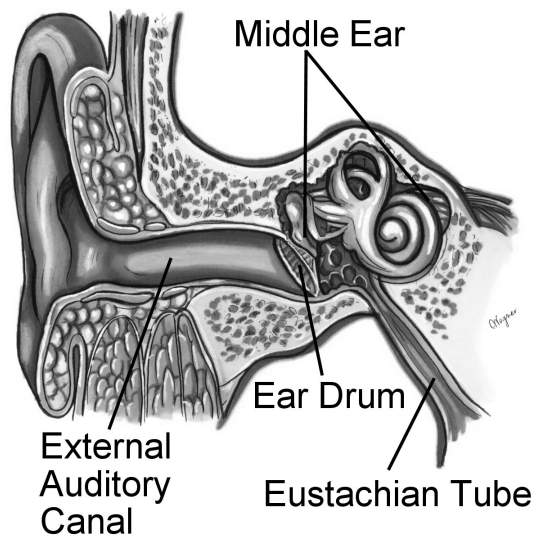


Eardrum Perforation



The eardrum (*tympanic membrane*) is a thin; round tissue inside the ear that separates the ear canal from the middle ear. This is the tissue that detects sound and helps you to hear. The eardrum can be *perforated* (punctured or torn) by infection, sudden pressure changes, intrusion of foreign objects, and accidental injury from cleaning. This may result in hearing loss and place you at risk of infections.

Eardrums generally heal without help and with little or no permanent hearing loss. If the hole has not healed

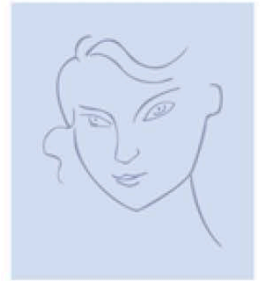
within 3 months, surgery may be required to repair the hole. A hearing test is recommended initially and after healing to check that no inner ear (nerve) hearing has been lost with the injury.

WHAT TO DO WHEN YOU HAVE A PERFORATION.

- Keep your ear dry as this improves healing. While swimming protect the ear by using ear plugs and a head band. If the ear discharges, it is infected and you will require antibiotic drops (ciprofloxacin 0.3% 3 drops three times/ day for 7-10 days) and should avoid all swimming. When showering or bathing, placing a piece of cotton covered with petroleum jelly or Vaseline or a piece of Blu tack in the outer ear canal.
- For pain relief, paracetamol (Panadol[®]) or ibuprofen may be used in recommended dosages. A warm pack or heating pad may also be used for pain relief. Use this for twenty minutes three to four times per day, or as needed. **Do not sleep with a heating pad. They can cause severe burns.**
- Blow your nose *gently*, preferably without blocking your nostrils. Forceful blowing increases the pressure in the middle ear and may cause further injury or delay healing.
- Resume normal activities when the perforation has healed. Dr Iseli or your GP can let you know when this has occurred.
- Air travel is allowable with a perforated eardrum. It generally will not cause any pain or problems.
- Diving is not allowable while the drum is perforated.

SEEK MEDICAL ATTENTION IF:

- There is bleeding or *purulent* (pus-like) material coming from your ear (you may have an infection)
- You have problems with balance, feel dizzy, or develop *nausea* (feeling sick to your stomach) and vomiting.
- You develop increased pain and/or an oral temperature above 38.5 degrees celcius that is not controlled by medications.



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WHEN IS SURGERY REQUIRED?

If the ear drum does not heal on its own (>3 months) and/ or it is causing problems with infections (discharge/ pain) or progressive hearing loss. A perforation that is not causing trouble (ie discharge, hearing loss) may be left but will generally result in ongoing infection and the potential for progressive hearing loss due to infections. Rarely, skin from the ear canal can travel through the perforation into the middle ear and form a cyst (cholesteotoma). This must be removed as it can cause more serious problems if left (permanent hearing loss, dizziness, facial nerve weakness, meningitis or brain abscess). If you decide not to have your perforation operated on it is important to get it checked by an ENT surgeon every 6-12 months to watch for skin cyst formation.

RISKS OF SURGERY

Usually myringoplasty is safe and cause no trouble. Possible risks of ear surgery are:

1. Recurrence of the perforation can occur in 5-15% of cases even despite the best surgery.
2. Failure to improve hearing. Repairing the ear drum will not restore sensorineural (nerve) hearing that is lost through age, noise exposure or infections. If a cyst is present, the first surgery will NOT restore hearing but aim to remove the cyst and a second surgery may be required to restore hearing 6-9 months later. If hearing bones are missing, the chance of having good hearing (<10dB conductive hearing loss) returning is 50% (if there is no stapes- the inner most bone) to 70% (if the stapes is intact). If the hearing bones are present but scarred the hearing may not improve with surgery, even in the setting of perfect repair of the perforation itself.
3. Scarring on the ear drum afterwards (15%) usually does not affect hearing
4. Unattractive scarring behind the ear (keloid)
5. Temporary taste changes, due to the effect of surgery on the chorda tympani (taste) nerve that runs through the middle ear where surgery is performed.
6. When the perforation is large or the remaining ear drum is very scarred, the surgery will require reshaping of the ear canal to allow a complete replacement of the drum. As the front wall of the ear canal is the back wall of the jaw joint, this can cause some temporary jaw joint pain and discomfort with chewing. If this occurs, eat only soft food until it resolves.
7. Serious complications are fortunately rare and include such problems as hearing loss, ringing in the ears (tinnitus), facial nerve injury, skin cyst formation (cholesteotoma), bleeding, infections or reactions to general anesthetic agents.

PREPARING FOR SURGERY

Report any ear discharge to Dr Iseli as soon as possible, particularly if it occurs in the month before surgery. Active infection can reduce the chance of successful surgery so it is worth treating such infections with appropriate antibiotics well before the day of the operation.

Do not eat or drink after midnight before the surgery.

You can usually return to work/ school the 1-2 days after surgery.

After surgery, you or your child will usually be given antibiotics to take by mouth for the first week

A small amount of red or brown drainage from the ears is normal for up to 4 weeks after surgery. If it persists, contact Dr Iseli's office.



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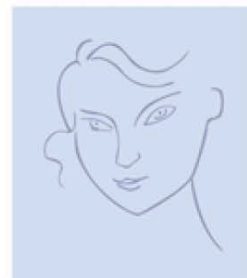
DETAILS OF THE SURGERY

The surgery takes approximately 1-3 hours and you may go home the same day or stay 1 night if you feel nauseated after the anesthetic. The surgery may be performed entirely down the ear canal, you may require a small incision above your ear canal or a slightly longer incision behind your ear. If your perforation is small and at the back of your ear then the edges of the perforation are freshened to allow healing and a scaffold for your new ear drum created out of the lining (fascia) of muscle above your ear. Alternatively, if the perforation is larger or closer to the front of your ear then the whole drum will be replaced with fascia and the ear canal will be widened, by drilling away a small amount of the bone, to allow the new ear drum to sit in a good position for hearing. If there is a problem in your middle ear eg a skin cyst found, you may require some bone to be drilled away behind your ear. This does not cause much change in external appearance but increases the risk of hearing loss, dizziness, tinnitus or injury to the facial nerve. Occasionally you may require enlargement of your ear canal to remove a cyst if large. If a skin cyst is found, you may require a “second look” surgery 6-9 months after the first surgery to check that the cyst does not return and to recreate the conductive apparatus (ie the bones of the middle ear). If no cyst is found but the bones of the middle ear are eroded or missing due to infections, a synthetic “bone” will be placed to try to restore hearing.

When you awake after surgery, you will have a bandage around your head, which will be removed by Dr Iseli on the first day after surgery or you can remove yourself 3 days after surgery.

AFTER YOUR SURGERY

- Keep your ear canal completely dry for 4 weeks, as this improves healing. Ideally do not swim during the healing phase (2-3 months or longer in some cases). If the ear discharges, it is infected and you will require antibiotic drops (ciprofloxacin 0.3% 3 drops three times/ day for 7-10 days). When showering or bathing, placing a piece of cotton covered with petroleum jelly/Vaseline or a large piece of Blu-tack in the outer ear canal.
- The cut behind the ear should be kept dry for 7 days after the operation day. You will have steristrips over the wound that may be removed when they start lifting (or no later than the 7th day after surgery).
- For pain relief, paracetamol (Panadol[®]), panadeine or panadeine forte may be used in recommended dosages. Do NOT use aspirin, ibuprofen or other such pain killers which may increase the risk of bleeding.
- Avoid blowing your nose for 4 weeks after surgery. If you must, blow your nose *gently*, preferably without blocking your nostrils. Forceful blowing increases the pressure in the middle ear and may cause further injury or delay healing.
- Resume normal activities when the perforation has healed. Dr Iseli or your GP can let you know when this has occurred.
- Air travel is should be delayed if possible while the graft is healing (ideally 2-3 months). Diving is not allowable while the drum is perforated.
- Ideally do not smoke cigarettes for 3 months after surgery as these have been shown to delay/ prevent healing.



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