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# Canaloplasty and meatoplasty

*Information for patients — please read before your consent appointment*

**About this information sheet**

This sheet explains why your ear canal has narrowed, what the operation involves, what it can and cannot achieve, and what the risks are. Please read it before your consent appointment and bring any questions with you.

## Why the ear canal narrows

The ear canal is a tube about 25 mm long, lined with very thin skin that sits directly on bone for its inner two-thirds. That skin has a remarkable self-cleaning mechanism: it grows outward from the eardrum, carrying wax and dead skin to the opening. A canal that is too narrow defeats this system. Debris is trapped, water cannot escape, and infection follows.

| CAUSE | WHAT IT IS |
|---|---|
| **Exostoses ("surfer's ear")** | Smooth bony swellings that grow from the canal wall in response to repeated cold water and wind. They are common in surfers, divers, kayakers, open-water swimmers and anyone in the Atlantic regularly. They grow slowly over years and do not shrink or disappear once formed. This is the commonest reason for the operation in Cape Town. |
| **Osteoma** | A single benign bony lump, unrelated to cold water exposure. |
| **Canal stenosis** | Narrowing from scar tissue, following long-standing infection, injury, previous surgery, or occasionally present from birth. |
| **Chronic otitis externa** | Repeated or persistent infection thickens the canal skin, which narrows the canal, which traps more debris — a cycle that medication alone often cannot break. |
| **Mastoid cavity access** | If you have had previous mastoid surgery, the opening may need widening so the cavity can be cleaned and kept healthy. |

**Meatoplasty** refers to widening the outer, soft part of the canal — the skin and cartilage. **Canaloplasty** refers to widening the deeper bony canal. The two are often done together, and the terms are frequently used interchangeably.

## Why surgery is being recommended, and when

Surgery is offered when the narrowing is causing real problems — repeated infections, trapped wax that needs frequent clearing, hearing loss, or water that will not drain — rather than simply because narrowing is present on examination. A narrow but symptom-free canal can reasonably be watched.

**If you are still surfing or diving regularly, timing matters**

Exostoses regrow if cold water exposure continues without protection. Operating early, while you are still in the water most weeks, means you may face the same operation again years later.

Consistent earplug use has been shown to reduce the risk of exostosis formation by around two-thirds, and to lengthen the recurrence-free period roughly fivefold after surgery. For some people, disciplined ear protection postpones surgery for years or avoids it altogether.

This is worth discussing openly at your consultation. There is no single right answer — it depends on how troublesome your symptoms are now and how much time you spend in cold water.

## Alternatives

- **Regular professional ear cleaning.** Microsuction every few months keeps many narrow canals clear and infection-free. Reasonable if the narrowing is moderate and you are willing to attend regularly. It does not stop the bone growing.
- **Ear protection and drying.** Well-fitted earplugs, a neoprene hood in cold conditions, and acetic-acid or alcohol drying drops after water exposure. This slows progression and reduces infection, but will not reverse narrowing already present.
- **Medical treatment of infection.** Drops and, where needed, canal cleaning. Effective for episodes, but if infections keep recurring because the canal is too narrow to clear itself, treatment addresses the symptom rather than the cause.
- **No treatment.** Reasonable if symptoms are mild. The likely consequences are continued wax build-up, recurrent infections, and gradually worsening hearing as the canal closes further. Bone growth does not regress on its own.

## The operation

The operation is done under general anaesthetic — you will be asleep throughout — and takes about an hour per ear. The anaesthetist will see you beforehand to discuss your medical history.

Depending on the anatomy, I work either through the ear canal itself or through a small incision hidden behind the ear, where the scar sits in the natural crease and is not visible from the front. The canal skin is carefully lifted and preserved, the excess bone is removed with a fine drill or chisel under the microscope, and the skin is laid back over the widened canal. Preserving that skin is the key to smooth healing — this is why the technique is slow and meticulous rather than simply drilling bone away.

Where a canal has to be widened at the outer end, the cartilage is trimmed and the opening enlarged. Dissolving or removable stitches are used, and you will be told which.

**At the end of the operation your canal is packed** with a yellow antiseptic-impregnated dressing that holds the skin against the bone while it heals. This stays in for about a week and is removed at your first follow-up. It will make the ear feel blocked and your hearing muffled on that side — that is expected and temporary.

## What to expect, and how long healing takes

| WHEN | WHAT TO EXPECT |
|---|---|
| **Day of surgery** | Home the same day in most cases, occasionally the following morning. A dressing over the ear, and a headache or dull ache around the ear. |
| **Week 1** | Muffled hearing on the operated side. Blood-stained discharge onto the cotton wool, changing from red to brown, often smelling of antiseptic. Discomfort is usually mild to moderate. |

| WHEN | WHAT TO EXPECT |
|---|---|
| **Pack removal, about day 7** | Done in the rooms. Hearing improves immediately afterwards, though not to its final level — the canal skin is still swollen. Drops are usually started at this point. |
| **Weeks 2–6** | Gradual improvement. Some crusting and occasional discharge is normal while the canal skin heals over the bone. You may need one or two further cleaning visits. |
| **6 weeks and beyond** | Most canals are fully healed by six weeks; the published average is just over six weeks, with a range of four to sixteen. Hearing and canal size are assessed once healing is complete. |
| **Water sports** | Not until I have confirmed the canal skin has healed completely — usually two to three months. Returning to cold water earlier risks infection and delayed healing. |

## Risks

Canaloplasty is a safe operation in experienced hands, but it is more demanding than its short description suggests — the eardrum, the facial nerve and the jaw joint all lie close to the area being drilled. Reported complication rates across published series range from about 4% to 14% depending on technique.

| COMPLICATION | APPROXIMATE RISK | DETAIL |
|---|---|---|
| **Discomfort, blocked feeling, muffled hearing while packed** | Everyone | Expected for the first week or so, and resolves once the pack is removed. |
| **Discharge and crusting during healing** | Common | Often blood-stained and antiseptic-smelling early on. It is not automatically an infection. |
| **Reaction to the ear dressing** | Uncommon | The outer ear may become red, itchy and swollen. Settles once the dressing is removed. |
| **Wound infection** | Uncommon | Causes increasing pain, redness and tightness around the stitch line, sometimes with discharge. Treated with antibiotics. |
| **Small hole in the eardrum** | About 2–5 in 100 | Usually recognised and repaired during the operation. A small number heal on their own; occasionally a further procedure is needed. |
| **Prolonged healing or re-narrowing of the canal** | About 4 in 100 | The canal skin fails to heal smoothly and scar tissue narrows it again. Managed with drops and cleaning; roughly 3 in 100 need revision surgery. |
| **Change in hearing or new tinnitus** | Small but real | Averaged across published series the measured change in inner-ear hearing is negligible — around 0.3 dB — but a small number of patients report new or altered tinnitus, or a high-frequency loss, attributed to drill noise and vibration close to the inner ear. Most tinnitus of this kind settles. |

| COMPLICATION | APPROXIMATE RISK | DETAIL |
|---|---|---|
| **Exposure of mastoid air cells or the jaw joint** | About 1 in 100 | Recognised and dealt with during surgery. Occasionally causes a sensation of movement near the ear when chewing, which settles. |
| **Numbness or altered shape of the outer ear** | Common early, rarely lasting | Due to swelling and to the incision. Almost always settles over weeks to months. |
| **Facial nerve injury** | Very rare | The nerve that moves the face runs close to the deep canal. Injury is rare in canal surgery but cannot be reduced to zero. |
| **Recurrence of exostoses** | Depends almost entirely on you | See below. Reported recurrence exceeds 50% in those who return to unprotected cold water, and is far lower with consistent ear protection. |

## Keeping the result — ear protection afterwards

This is the part patients most often underestimate. Surgery resets the size of the canal; it does not change your susceptibility to bone growth. If you return to cold water without protection, exostoses will regrow over the following years and you may need the operation again.

- **Well-fitted earplugs, worn every time.** They must form a watertight seal to work. Custom-moulded plugs fit best and stay in through a wipeout; off-the-shelf vented surf plugs are a reasonable alternative. In one study of surfers, consistent earplug use reduced the risk of exostoses by around two-thirds.
- **A neoprene hood or headband in cold conditions.** Useful additional protection, but not a substitute — hoods alone have not been shown to give significant protection.
- **Dry the ears after every session.** Tilt the head to drain, then use acetic-acid or alcohol-based drying drops.
- **Never use cotton buds.** They push debris inward, abrade the thin canal skin and are a common cause of infection.

Come back for review if the ear starts feeling blocked again, or if infections return. Regrowth caught early is easier to manage.

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This sheet does not replace your consultation. Please bring your questions to your consent appointment.