

Insertion of Grommets (Middle Ear Ventilation Tubes)

What are grommets?

Grommets are also called ventilation or tympanostomy tubes. They are tiny cylinders made of an inert plastic that are around 2mm in diameter. They are placed in the eardrum to try to stop recurrent middle ear infections or hearing loss from glue ear. They are used in patients of all ages, but the majority are placed in children.

Why do we insert grommets?

Common reasons for grommet insertion include recurrent acute otitis media (middle ear infections) hearing loss from glue ear or problems with ear pressure when flying.

Grommets will often be considered when infection of the middle ear occurs three or more times in a six month period. Occasionally there are other problems with the ear that mandate grommet insertion with less frequent infection (eg recurrent perforation).

Glue ear is also called otitis media with effusion. Thick fluid becomes stuck in the middle ear and it leads to hearing loss. This is often when there is a problem of the Eustachian Tube (the tube linking the middle ear to the back of one's nose). Most patients with glue ear recover without treatment but if it is present for over 3 months or associated with speech delay and/or behavioural problems in children, grommets may be indicated.

Persistent glue ears can lead to complications such as damage to the eardrum or severe retraction of the ear drum. A benign skin growth (cholesteatoma) can occasionally develop in ears with longstanding retraction. This generally requires surgery.

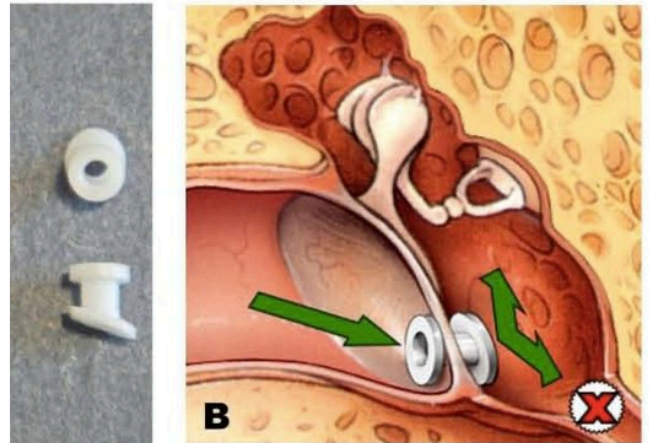
Sometimes grommets are also inserted for reasons such as Eustachian tube dysfunction, as a part of other ear procedures or as part of hyperbaric oxygen treatment.

What happens before surgery?

The surgeon will have made a plan for the procedure based on the ear or hearing problem and will have obtained a hearing test. Grommets come in different shapes and sizes and this will be explained before the procedure.

Once the procedure is planned, it is important that you convey to both your surgeon and anaesthetist about any medical conditions and medications you or your child take. Some medications, in particular blood thinners and diabetes medications will need to be adjusted or stopped prior to your scheduled surgery. It is also important to let us know about any significant anaesthetics problem you or your family member might have prior to surgery. This is to ensure the utmost safety for your procedure and care. You may also be contacted by your anaesthetist prior to your surgery if they need to discuss with you about any of these conditions.

Two grommets are shown on the left. On the right, a grommet has been placed across the ear drum allowing ventilation into the middle ear (green arrows). The grommet has taken over the function of the dysfunctional Eustachian tube that connects the middle ear to the nose (red X)



You will also be advised about fasting procedures prior to your surgery. This will depend on the time of your surgery and the age of the patient.

How are grommets inserted?

Grommets are inserted under general anaesthesia in children and most adults. This is sometimes done together with other surgeries such as adenoidectomy or tonsillectomy. Grommet placement involves a short general anaesthetic and will be done as day surgery.

In selected adults, this may be done under local anaesthetics with or without sedation. General anaesthetics do carry some risks but are very safe. You will be able to discuss any concerns with the anaesthetist before the surgery.

An operating microscope is used to check the state of the ear drum. A small cut is then made in the ear drum and the fluid in the middle ear is suctioned out. The grommet is then placed through the cut on the ear drum and is secured on it by its flange. This will form a channel to allow ventilation of air through into the middle ear and prevent middle ear infections and drain any residual fluid. Ear drops are often placed before the patient wakes up.

What happens after surgery?

Most patients will go home on the day of surgery if grommets are inserted as an isolated procedure.

Some may stay overnight if it is done in conjunction with other procedures.

A clear or blood-stained discharge from the ear may occur for a few days. Sometimes ear drops are prescribed for a few days after grommets insertion. If there is any significant discharge or pus like discharge, please inform your surgeon to gain advice about management.

Ear pain is usually mild after grommets insertion alone. Simple pain killers such as paracetamol or ibuprofen are often adequate. DO NOT USE ASPIRIN in children under 18 years of age. Your anaesthetist will have made a plan for your pain relief.

Patients can return to school or work generally the day after grommets insertion if done as isolated procedure. Hearing aids can be worn immediately after grommet placement if needed.

Care for the grommets (see separate post operative instructions for Grommets)

Once grommets are inserted, it is important to keep the ears dry. It is believed that when unsterile water gets in through the grommet into the middle ear, infection can occur. It often presents with ear discharge.

There are various techniques to avoid accidental water exposure:

- Specialised ear plugs designed for swimming with grommets, often used in conjunction with a headband or swimming cap. You can discuss these with your surgeon and our friendly staff in the office can assist you with sizing.
- Soft silicone ear plugs, ear putty, foam ear plugs can be purchased at chemist
- Cotton wool with Vaseline placed on the outer surface can be used for showers and baths

Follow-up

Patients often has a post-operative appointment 2-6 weeks after their surgery when your surgeon will inspect the state of the grommets.

A follow-up hearing test may sometimes be arranged to check the hearing if there are any ongoing concerns.

Follow-up with your surgeon is often done periodically (every 6-9 months) until the grommets extrude (falls out) and the hole in the ear drum heals up. This is to ensure the problem does not recur after the grommets come out. This usually happens 12-18 months after grommet insertion but can sometimes be longer.

Occasionally, the grommet extrudes into the ear canal and can be caught up in wax. Your surgeon can often remove that at the follow-up visit in the office. The majority of patients will not notice the grommet coming out due to its small size.

Be careful to avoid over the counter ear drops from the chemist as some are not suitable in the presence of a grommet and can be extremely painful.

Possible complications of surgery

Grommet placement is a relatively safe procedure with a low risk of serious complications.

Possible risks include:

Early extrusion – sometimes grommets can come out early or become blocked soon after surgery. This does not always mean another procedure for reinsertion. Your surgeon will guide you on any further plan of action should this occur. In some cases, replacement grommets are necessary.

Infection can happen especially if pus is present at time of surgery. This often presents as purulent discharge for more than 2 days. Drops are usually given by the surgeon to correct this.

Ear discharge can sometimes happen with a cold or water exposure, this often clears up promptly with treatment. Very rarely, your surgeon may have to remove the grommet if discharge does not respond to medical treatment.

Perforation of the ear drum – the hole on the ear drum made during grommet insertion can persist after the grommet falls out in around 2% of patients.

Depending on the size of the hole, this may or may not impact on the hearing. In children, this often acts as a grommet and may be watched until the child gets older. Sometimes the hole may require surgery to patch up at a later stage.

Recurrence of glue ear or middle ear infection – this can happen in about 15% of patients when the grommets come out. Further sets of grommets can sometimes be needed until children grow out of the problem with their Eustachian Tube.

Polyp formation and bleeding can happen around the grommet from infection. This may require antibiotic drops or occasionally removal of the grommet.

Retained grommet – 95% of grommets will gradually extrude from the ear drum spontaneously. In a small number of patients the grommet can last several years beyond the desired period and may require removal.

Scarring or thinning of the ear drum at the site of grommet can sometimes occur. This will not cause problems with hearing or infection. Rarely these thin areas can be a weak spot for perforation when under stress such as diving.

Very rarely, the grommet can fall into the middle ear instead of coming out. In the majority of cases this causes no problem and does not need treatment.

Risk of not having treatment

It is best to speak to your surgeon if anything worries you about going ahead with surgery. This will give you the best information about your individual situation.

Persistence of fluid in the middle ear can lead to ongoing hearing loss. This can impact speech and language development in children. In severe cases, this can lead to permanent damage to the ear drum or the ossicles (hearing bones). Rarely more serious ear conditions such as cholesteatoma (benign skin growth in ear drum) can result.

Your surgeon may choose to observe your child if middle ear infections are not frequent or if effusions have been of short duration as some of them will resolve.

Surgical costs

It is important to have a clear idea about costs involved with your surgery in advance. The cost will include those related to your surgery, your anaesthesia and your hospital stay (even in cases for day surgery). Your surgeon's secretary is well placed to explain about your surgical costs and how the process works with your insurance. You will be advised about who your anaesthetists will be and they will be able to discuss the anaesthetics cost with you directly.

We understand that surgery for you or your loved one can be a stressful experience and our staff at Ear, Nose, Throat Victoria are here to help guide you through the process.

Whilst every care has been taken to make this information sheet as accurate as possible, individual experiences and outcomes may differ. It is important to discuss any concerns with your surgeon prior to considering surgery.

This information sheet was written for patients of Ear, Nose and Throat Victoria only. They are not to be copied or distributed in any way without written permission from ENT Victoria.

March 2021

Grommets (Ventilation Tubes)

Advice for early post operative period

Keep Ears Dry

Please keep the ear canals dry especially for the first 2 weeks. To prevent water getting inside the ears during bathing or showering, a small piece of cotton wool with Vaseline over the outer surface can be used. Try to keep your child's head above water at all times in the bath. There is more advice about water below.

Ear Drops

If ear drops have been prescribed, place 3 drops 3 times a day for 3 days unless otherwise specified. Do not discard the bottle - store it in a cupboard in case they are needed again. They are good for a few months after opening.

Ear Discharge

It is normal for there to be a small amount of discharge from the ears for a few days. This may even be blood stained. If there is any continued bloody, watery or sticky discharge beyond a week, there may be an infection. You should contact our office for advice. Additional medication may be required.

Pain Relief

Paracetamol or Nurofen at the prescribed dose is usually sufficient for a few days following grommet insertion. Young children will often play with their ears for a week or so after grommet placement. This is not a sign of any problems.

School/Creche

After grommet surgery only, a child can usually go back to school after 1-2 days.

Swimming

It is best to avoid swimming until your first post-operative visit with your surgeon. Further advice about water and grommets is found overleaf.

Flying

Most children or adults can fly the day after grommet insertion.

Fever

This is not uncommon in children below the age of 3 after a general anaesthetic. If the fever is very high (>38.5C) or associated with generalised unwellness it is best you seek advice from your GP or your surgeon.

GROMMETS AND WATER - A guide for patients and parents

One of the greatest concerns amongst parents and patients with grommets relates to water exposure.

Grommets contain a hole that is about 1mm in diameter. For water to cause problems it needs to travel down the ear canal, through the tiny hole in the grommet and settle in the middle ear. Soapy water can usually travel through small holes easier. Water in the middle ear can lead to mild discomfort, pain or rarely infections.

Whilst it is important to be sensible around water when one has grommets in place, the risks of serious problems or damage to the ears is **very uncommon**.

Please follow the following guidelines in order to minimise the risk of ear problems around water.

Showering – Usually no ear protection or covers are needed. Avoid direct jets of water into the ear canal. If using shampoo, some cotton-wool in the ear canal with some Vaseline on the outside of the wool is useful.

Bathing – Bath water is usually soapy and far from sterile. Shallow baths for youngsters are recommended. If kids are going to put their head under the water, we recommend firm fitting ear plugs (see below) or encouraging them to shower instead. Hair washing is best done with running water from the tap or with a wet facecloth.

Pool swimming – Kids with grommets should be encouraged to swim. Firm fitting ear plugs and a swimming cap or band are recommended to keep chlorinated water out of the ears. Blutak can also be used instead of plugs but it can be hard for kids to hear instructions. Some kids seem to swim perfectly well without ear protection. It is reasonable to swim without plugs if it causes no pain or discharge.

Beach swimming – This is usually fine without protection though if snorkelling or going a little deeper than the surface, firm fitting earplugs are recommended.

Diving – This cannot be done with grommets in the ears as the high water pressure at depth will push water through the grommets and cause dizziness, which is very dangerous.

Do NOT use Aqua-earTM or any wax softening drops in ears with grommets. These are toxic in the middle ear and will be extremely painful.

We recommend (and stock) Docs™ proplugs as well as a variety of headbands. You or your child can be fitted with the appropriate size at your appointment.

Advice for patients with grommets – from the first post operative appointment onwards

Grommets are placed to prevent ear infections and allow you or your child to hear better. With some simple precautions and regular review, you or your child should be free of any ear related issues.

Some common questions at the first post-operative visit are:

How long will the grommets last, and how will I know if they are out?

Grommets usually last 12-18 months and once they are out, the ear usually returns to normal. Your child will be followed up by your ENT Surgeon every 6-9 months while the grommets are in.

Will my child need more grommets once these ones have fallen out?

It depends on the age of the child and the reasons behind the procedure but generally 20% of children will need further management with grommets.

How long do I have to keep water out of my child's ears?

For the duration the grommets are in. This is usually 12-18 months. Significant issues with water and grommets are rare and prevention is covered on the **Grommets and Water** page.

Does my child need another hearing test?

In most cases, parents or school teachers will be happy with how the child is hearing. If there is any concern about the hearing, or slow speech and language development after the grommets are placed, hearing tests can easily be arranged.

My GP has told me the grommets are "out" or "blocked" – what do I do?

Grommets are very small and children's ears in particular can be difficult to examine properly. If the child is having problems with pain, discharge or if their hearing seems affected it is worthwhile to book an appointment with us to see what is going on. If the child has no symptoms it is OK to see your ENT Surgeon at the next planned visit which is generally every 6-9 months after grommet insertion.

My child's ear is discharging – what do I do?

The first thing is to clean the ear with clean cotton wool and ensure the ear is kept dry. It is often useful to place ear drops (Ciprofloxacin 0.3%, 3 drops, 3 times a day for 5 days) into the ear that is discharging. Our office is happy to provide a script. Your GP may also be able to prescribe these drops.

Oral antibiotics for a discharging grommet are generally NOT useful.

If the discharge persists for more than a week despite the above measures it is worth making an appointment to see your ENT Surgeon.