

Glue ear

This factsheet is for parents of children who have glue ear (also known as ‘otitis media with effusion’). We explain what glue ear is, what causes the condition and how it can be treated. Adults can also develop glue ear, but this is less common.

Contents

- What is glue ear? **2**
- What causes glue ear? **2**
- What can glue ear be linked to? **2**
- Why does glue ear mainly affect children? **3**
- What are the symptoms of glue ear? **3**
- What should I do if I think my child has glue ear? **3**
- What will happen when I take my child to the GP? **3**
- What will happen if we have to see a specialist? **4**
- What treatments are offered for glue ear? **4**
- What special care do I need to take if my child gets grommets? **6**
- How can I help my child? **6**
- What research into glue ear is Action on Hearing Loss funding? **7**
- Where can I find out more about glue ear? **7**
- Where can I get more information and support from Action on Hearing Loss? **8**

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Medical disclaimer

The information given in this factsheet is not medical advice, and by providing it Action on Hearing Loss does not undertake any responsibility for your medical care, or accept you as a patient. Before acting on the information contained in this factsheet, or deciding on a course of treatment, you should discuss the matter with your GP or other medical professional.

What is glue ear?

Glue ear (or otitis media with effusion) is a condition where the middle part of the ear becomes filled with a sticky, glue-like fluid. It is a common condition in young children, particularly those aged 1–6, and is the biggest cause of hearing problems in childhood. It can affect one or both ears.

The middle ear is directly behind the eardrum. It is an air-filled space containing three tiny bones that carry sound vibrations from the eardrum to the cochlea (the hearing organ in the inner ear). The build-up of fluid associated with glue ear stops these bones from moving freely, which means they can't pass sound vibrations to the cochlea. This causes hearing loss.

In most children, glue ear clears up naturally within 6–10 weeks, and 50–90% of children are clear within three months. However, some children have glue ear for longer than three months and may need treatment ([see page 4](#)).

What causes glue ear?

This is a complex question, and it's likely that several different factors are involved.

The **Eustachian tube**, which connects the middle ear to the back of the nose, plays a big part in glue ear. This small tube supplies the middle ear with air, which it needs to function properly. If the tube doesn't work properly, the middle ear can't get enough air and this creates the conditions for glue ear to develop.

Bacterial infection also plays a big part in glue ear. The child won't be particularly unwell, but the bacteria nevertheless irritate the ear and lead to a build-up of fluid.

There is also a **genetic link** – children in some families are more likely to get it than others because of their genes.

What can glue ear be linked to?

Experts think that more than half of cases of glue ear follow an infection of the middle ear, especially in children under three years old. An infection, such as a cold or flu virus, can irritate the ear, leading to the development of excess fluid and glue ear.

Other factors may increase the chance of children developing glue ear, including:

- household smoking
- frequent infections of the nose and sinuses
- bottle feeding (non-breast milk)
- the season (glue ear is more common in winter months)
- allergies leading to upper respiratory tract infections.

Children with palate problems, such as a cleft palate, are more likely to get glue ear, as are children who have Down's syndrome.

Getting water in the ear, when bathing, showering or swimming, will not cause glue ear.

Why does glue ear mainly affect children?

The Eustachian tubes of young children are not fully developed – they are shorter and more horizontal than they are in adults, so it's easier for bacteria to travel from the nose into the ear and cause glue ear.

What are the symptoms of glue ear?

The main symptom of glue ear is hearing loss, which can come and go. Sometimes it's hard to recognise hearing loss in children, and young children might not be able to explain the hearing problems they are having.

If your child is struggling to hear, they may:

- not respond when spoken to
- speak quietly
- ask for things to be repeated
- become tired quickly and lose concentration during conversations
- have problems communicating in a group
- struggle to hear when there is a lot of background noise
- prefer to play alone
- have delayed speech and language development, if they are young.

Older children may be able to tell you if they can't hear very well. You may notice that they say 'pardon?' or 'what?' a lot. Other symptoms include occasional balance problems or clumsiness, and mild occasional ear pain with ear fullness or 'popping'.

What should I do if I think my child has glue ear?

If you are worried about your child's hearing and think they may have glue ear, take your child to see your GP.

What will happen when I take my child to the GP?

The GP will look in your child's ears using an otoscope – a small, hand-held device that has a magnifying glass and a light at the end. Using the otoscope, the GP can

study the inside of your child's ear and check for signs that usually indicate fluid inside the middle ear.

Your GP will also carry out a basic test to check your child's hearing, and ask questions to find out if, and how, your child's hearing has been affected. They may examine your child's nose and throat for signs of infection.

As most children recover naturally from glue ear within three months, it's likely that your child won't need any treatment. However, the GP will monitor your child for 6-12 weeks, during which time they will re-check your child's symptoms and look for any complications. This is known as 'active observation'. How often these check-ups happen will depend upon your child's symptoms.

If, during this time, glue ear doesn't clear up naturally or your child's symptoms worsen, the GP will refer your child to an audiologist (hearing and balance specialist) or an ear, nose, and throat (ENT) specialist, depending on the symptoms.

If your child has severe hearing loss caused by glue ear, or if they have Down's syndrome or cleft palate, they will be referred to a specialist straight away for treatment.

What will happen if we have to see a specialist?

The specialist will examine your child's ears. An audiologist will carry out hearing tests and a test called tympanometry, which uses a small probe to check the

workings of the eardrum and the bones in the middle ear to see if there is a build-up of fluid. Neither of these tests cause any discomfort. Tympanometry can be carried out on all children, including babies – the test takes less than a minute for each ear.

Depending on the results of the tests, the specialist may either decide to monitor your child over a period of time, to see if glue ear clears up naturally, or offer treatment.

What treatments are offered for glue ear?

As mentioned earlier in the factsheet, most children don't need any treatment for glue ear – it usually clears up naturally within three months. Even if your child still has fluid in their ear(s) after three months, active observation may continue if your child is not severely affected.

However, treatment is likely to be needed if your child has severe hearing loss, or a hearing loss that's affecting their learning, development or behaviour.

The two main treatment options for glue ear are **hearing aids** and **grommets** (very small ventilation tubes that are inserted into the eardrum), which we explain on [page 5](#). Most families will choose grommets, but a hearing specialist will discuss the best treatment option for your child.

Hearing aids

Hearing aids may be recommended if surgery isn't suitable for your child because of other health problems, or if there is another reason to avoid inserting

grommets – for example, because your child has had numerous grommets already and glue ear keeps coming back. Some parents also prefer hearing aids because they don't like the idea of surgery and possible complications.

Grommets

A grommet is a very small ventilation tube that's put into your child's ear during surgery. The procedure is known as a myringotomy and grommet insertion. A small hole is made in the eardrum, and the grommet is inserted into this hole. The grommet keeps the hole in the eardrum open for several months, lets air into the middle ear and lets fluid in the middle ear drain away. Your child's hearing should then return to how it was before they had glue ear.

The procedure is carried out under a short general anaesthetic (your child will be unconscious and won't feel anything) and takes about 15 minutes. Your child should be allowed to go home the same day.

What happens to the grommet?

As the eardrum heals, the grommet will slowly be pushed out of the eardrum and will eventually fall out of the ear, often unnoticed. About half of grommets inserted fall out within six months. If the grommet is loose in the ear canal, it can usually be removed at an ENT clinic if it is causing irritation.

Glue ear might come back after the grommet comes out, and at least a quarter of children need to have grommets more than once. Although the eardrum is tough, repeated grommet insertions may

eventually damage and scar it, so having grommets time and time again is usually best avoided. Once the grommet comes out, the eardrum usually heals, but there is a small risk of being left with a permanent hole in the eardrum – this may need further surgery if it causes problems.

Other treatment options

There are a number of less commonly used treatments for glue ear.

Autoinflation

Autoinflation is a non-surgical treatment option that may be helpful for older children during the 'active observation' period or while they are waiting for grommets or hearing aids. There are different autoinflation techniques, but they all aim to increase pressure in the nose, which opens up the Eustachian tube – this helps to drain the fluid from the middle ear naturally and restore hearing.

One technique involves you holding your child's nose (they can hold their own nose if they're old enough) and getting them to shut their mouth and forcibly exhale. The technique should not be carried out if your child has an upper respiratory infection and should be stopped if it causes pain.

Another technique involves your child using a device called an otovent, which is made up of a balloon and a nose piece. The nose piece is held against one nostril and your child inflates the balloon using their nose. Your child will need to use an otovent three times a day, until the fluid has drained.

We have recently funded research that showed that autoinflation with the otovent is an effective treatment.

Other surgical treatment

Another type of surgical treatment for glue ear is an adenoidectomy. This involves taking out your child's adenoids, which are tissues (similar to tonsils) at the back of the nose. This might be recommended if it is thought that the adenoids are enlarged and contributing to your child's glue ear.

Adenoids are lymph gland tissue; they won't be missed if removed. Adenoids are removed through the mouth under general anaesthetic. The child is usually allowed to go home the same day. The risks of surgery include bleeding and infection, voice change, and, rarely, fluid may come out of the nose when your child drinks.

What special care do I need to take if my child gets grommets?

Grommets usually cause few problems and work their way out of the ear in time. You should encourage your child to take part in normal school and holiday activities.

For most children with grommets, swimming causes no problems and doesn't increase the risk of infection. However, some children can get ear pain or discharge when they get water into their ears – if this happens, it's wise to keep their ears dry (using cotton wool covered in Vaseline, swimming plugs or a swimming cap).

Flying with grommets

Flying is actually easier for a child with a grommet in their ear. The grommet allows air in and out of the ear and reduces the stress on the eardrum that is caused by changes in air pressure in the aircraft. However, children who have a history of frequent ear infections or who have had grommets in the past (but no longer have them) are occasionally at risk of perforation (a tear) of the eardrum when flying. If you are worried about this, speak to your GP.

A perforated eardrum is usually not serious and heals on its own, but it's important to keep your child's ears clean and to consult your GP as soon as possible. Your GP will usually prescribe antibiotics or eardrops if there is infection.

Discharge from the ear

If your child gets a lot of discharge from their ear, gently clean the ear using clean cotton wool or a very soft cloth. Never use a cotton bud as you may go too far into the ear and cause damage. For most children, if infections are treated quickly, their ears will get back to normal with the grommets in place.

How can I help my child?

If your child has glue ear, you can do a number of things to help:

- Make sure your child has been assessed by a GP, who may refer them to an ENT consultant or audiologist.
- Avoid smoking near your child.

- If your child is at school, talk to the teachers if you think their hearing is affected. The school needs to know so they can make sure your child doesn't miss out. Your child should sit near the front of the class.
- Allergies may contribute to glue ear, so tell the specialist about any possible allergies that your child has.

Glue ear usually stops being a problem well before adolescence. But you should bear in mind that while waiting to see if glue ear clears up on its own, or waiting for grommet surgery, children sometimes have reduced hearing for quite some time and will need help with communication. They may need to use hearing aids and have support at home and school.

Here are some ways you can make communication with your child easier:

- Reduce background noise when talking to your child – for example, by turning down the TV.
- Attract your child's attention before you start speaking to them.
- Face your child while you are talking and put your head at their level.
- Don't shout.
- Speak clearly, but don't exaggerate your mouth movements.
- Let your family and teachers know about the problem.

What research into glue ear is Action on Hearing Loss funding?

We have funded a range of research projects that focus on glue ear. Some of the projects have identified and studied potential new treatments to clear the bacterial infection that causes glue ear (normal antibiotics don't always work) – these are now being developed further.

Other research projects have investigated the genetics of glue ear and identified genes that are linked to the condition. This could lead to the development of better tests to identify children who are most at risk of glue ear, and to the development of appropriate treatment and prevention strategies.



To find out more about these research projects and others, visit actiononhearingloss.org.uk/biomedicalresearch

Where can I find out more about glue ear?

You can find out more about glue ear and hearing loss in children from the following organisations.

ENT-UK

Provides information for people who have conditions of the ear, nose, throat, head and neck, including information leaflets about grommets and adenoid surgery.

ENT-UK at the Royal College of Surgeons
35-43 Lincoln's Inn Fields
London WC2A 3PE

Telephone: **020 7404 8373**

Fax: **020 7404 4200**

Email: entuk@entuk.org

National Deaf Children's Society (NDCS)

A national charity that supports deaf children, young people and their families to overcome the challenges of childhood deafness.

Ground Floor South
Castle House
37-45 Paul Street
London EC2A 4LS

Helpline (tel/texphone): **0808 800 8880**

Fax: **020 7251 5020**

Email: ndcs@ndcs.org.uk

Website: ndcs.org.uk

Information you can trust

The Information Standard certifies us as producers of high-quality, evidence-based information.

Thank you to **Mr Mat Daniel, Consultant Otorhinolaryngologist with specialist interest in Paediatric ENT, University of Nottingham**, who reviewed this factsheet for us, to make sure it is accurate and based on the most up-to-date research and evidence.

For a list of references for this factsheet, please email us at references@hearingloss.org.uk

Did you find this factsheet helpful?

We'd love to know what you think of this factsheet – please email us at reviewpanel@hearingloss.org.uk

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Further information from Action on Hearing Loss

Our expert information covers everything you need to know about:

- hearing loss and deafness
- tinnitus
- ear problems and treatments
- hearing aids and cochlear implants
- useful products and technology
- communication tactics and support
- benefits and grants
- your rights.

Visit our website actiononhearingloss.org.uk or call our Information Line ([see last page](#)) for information, support and publications. You can also find out about services in your area, our hearing research, and how you can get involved.

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To find out more about what we do and how you can support us, go to **actiononhearingloss.org.uk**

Action on Hearing Loss Information Line

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(standard text message rates apply)

Email **information@hearingloss.org.uk**

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