

Glue Ear

What is Glue Ear?

Glue ear is a condition in which fluid accumulates in the middle ear behind the ear drum. It is the commonest cause of loss of hearing in children, with approximately 25 to 30% of children having glue ear at some stage in their lives. It is most common between the ages of 3 and 7, with a reducing change of suffering glue ear as you progress into adolescence. However adults can also suffer with glue ear too.

Why does glue ear happen?

The build up of fluid within the middle ear is thought to be due to a problem of blockage of the Eustachian tube, which connects the middle ear to the back of the nose. The Eustachian tube plays an important role in equalising the air pressure between the nose (which represents normal air pressure) and inside the middle ear. When the tube becomes obstructed, the air in the middle ear becomes absorbed and the resulting negative pressure causes fluid build up into the middle ear cavity due to increased production from the mucosal lining of the ear.

The fluid can be of different types. Often it is watery thin and this is how it usually starts off, although subsequently it may develop into a thicker, more tenacious mucoid-like consistency, appearances which give rise to the term 'glue ear'. Because the middle ear is now filled with fluid rather than air, the hearing is muffled as the fluid stops the tiny bones in the middle ear from transmitting sound into the inner ear and brain.

How is the nose related to the development of glue ear?

Obstruction of the Eustachian tubes may contribute to the development of glue ear as described above. The tubes may become blocked due to repeated bacterial and/or viral upper respiratory tract infections, enlarged adenoids or nasal allergy.

It is important to note that in children, the Eustachian tube is more horizontal, smaller and narrower than in adults. This is particularly the case in young children. In addition, younger children are exposed to more nasal and respiratory infections due to nursery attendance. These facts may explain why glue ear tends to be more common in children.

As you get older, the Eustachian tube changes in size and shape. In addition you will tend to become less prone to infections as you get older, which results in a reduced change of developing glue ear as children grow. It can, however, take many years, although it usually resolves by the age of 12.

What symptoms do glue ear cause?

The most common symptoms arising from glue ear is partial deafness. This can lead to educational difficulties if the glue ear persists. There may also be delayed speech development as the child will not be able to hear sounds as well. Many children find it quite frustrating that they cannot hear as well as children around them, sometimes leading to behavioural problems. The fluid in the ear is also prone to getting infected. On occasions, children experience a sense of imbalance or increased clumsiness, although it is important to note that there are other causes of these symptoms which may need to be considered.

Does glue ear get better by itself?

There is good evidence that glue ear often gets better by itself, without any specific treatment being required. It is thought that up to 90% of cases will have improved within 3 months of diagnosis. This means that if your child is diagnosed with glue ear, there is a good chance that it will get better. If, after this time period, the glue ear persists and your child continues to suffer with hearing loss and/or other related symptoms, you may be referred to an ENT specialist by your GP for consideration of other treatments.

What is the treatment for glue ear?

There are many medical treatments which have been tried over the years, including antihistamine medication for allergy, steroid nasal sprays and drops, steroid medication by mouth and antibiotics. The vast majority of these have not been shown to be effective in the long term treatment of glue ear. One of the few non-surgical treatments which have been shown to be helpful in selected cases is a balloon inflation device such as the OtoventTM balloon. This is used by placing one end of the device into one of the nostrils and inflating the balloon. This sends a jet of air into the nose, which in turn opens up the Eustachian tube and allows better ventilation of the middle ear. Once air reaches the middle ear, this encourages displacement of the glue ear out of the middle ear. The procedure needs to be repeated often several times a day for many days or even weeks. It is suitable for both children and adults and many patients find this effective.

Another option is for your child to be fitted with a hearing aid. Although this does not cure the underlying glue ear, it does allow your child to hear normally without the need for any other treatments or surgery. This then allow sufficient time for the glue ear to disappear by itself.

However the gold standard method of treating persistent glue ear is to insert a grommet into the ear drum.

What is a grommet?

A grommet is a small plastic tube with a tiny hole through the middle. It sits in the ear drum itself, and works by allowing air into the middle ear. In so doing, it is performing the function of the Eustachian tube, which means that as air can pass into the middle ear, the fluid can be displaced out. Air in the middle ear means that the tiny bones of hearing (the ossicles) can then transmit sounds efficiently into the inner ear and brain, allowing the person to hear again.

Why might my child need to have grommets?

If your child has glue ear and the condition has persisted for at least 3 months, grommets may be recommended by your specialist. The decision as to whether to insert grommets does depend on many other factors, including the degree of speech delay, behavioural issues and whether there are recurrent middle ear infections.

Also, if the eardrum is particularly thin or scarred (such as from recurrent infections or previous grommet insertions), it may be difficult or impossible to insert a grommet into the eardrum.

Young children with poor language development, pain or recurrent ear infections should have grommets inserted as soon as possible. In older children, in whom there are fewer symptoms, grommets do not need to be inserted quite so urgently and such children can be treated conservatively with regular follow-up visits in the outpatient clinic in order to monitor their hearing and the appearance of the ear drum.

Once inserted, grommets do not stay in the eardrum forever. They usually stay in place for between six and 12 months after which time they tend to fall out as the healing eardrum pushes the grommet out into the ear canal.

The operation to insert a grommet is usually performed as day-case surgery under general anaesthesia and it is the most common ear nose and throat procedure.

Can anything go wrong after grommets?

The main complication associated with grommets is infection which can be treated with oral antibiotics or ear drops. Children with grommets are therefore usually advised to keep their ears scrupulously dry by the use of ear plugs and a bathing cap when going swimming or having a bath/shower at home, and also to avoid diving, although opinions among surgeons do vary. Many surgeons prefer the child not to swim for a few weeks after the surgery, others do not mind so much. Avoiding water contact is particularly important in children with sinusitis or rhinitis.

Please refer to the separate information sheet on Grommet surgery for further advice about this treatment.

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