Lancashire Teaching Hospitals NHS
NHS Foundation Trust

Choosing between Hearing Aids and Grommets in Glue Ear

This leaflet is a general guide to help you make an informed choice.

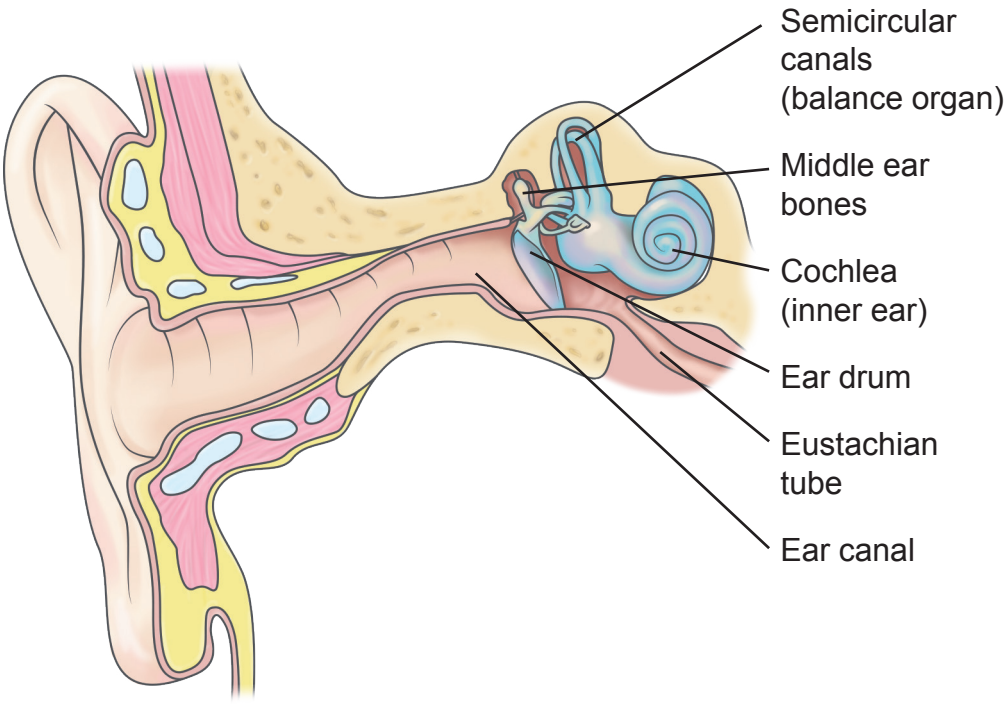
The exact management may vary according to clinical needs.

Excellent care with compassion

What is glue ear?

Glue ear is one of the most common childhood conditions. Also called otitis media with effusion, the condition causes fluid to build up in the middle part of the ear. Normally the air in the middle ear helps the ear drum to move the three little bones to pass sounds to the inner ear to make us hear. The eustachian tube lets air into the middle ear from the back of the nose.

In young children the eustachian tube is immature and horizontal in position meaning air cannot flow easily into the middle ear, especially when the eustachian tube and the lining of the middle ear are inflamed and swollen due to frequent colds and coughs in young children. This causes fluid to build up temporarily in the middle ear. As children get older, the eustachian tube gradually assumes a more upright position and the body's defence mechanism matures causing glue ear to resolve naturally, usually by 10-12 years of age.



What is the natural history of glue ear?

Glue ear occurs in 4 out of 5 children. It is more common when children start attending playgroup and school, and during the winter months. Glue ear can affect one or both ears and the fluid in about 50% of affected children clears by itself within approximately 3 to 4 months. Within a year the figure increases to 90%. However, glue ear can come back later. In children exposed to passive smoking glue ear can persist longer.

How can glue ear affect your child?

The fluid that builds up (glue) can interfere with sound reaching the inner ear and hearing becomes muffled as a result. This can temporarily affect children's behaviour, communication and school work.

This fluid does not cause any damage to the ear and it is not essential to drain the fluid. Some researchers think that the fluid actually protects the ear from infection.

What are the management options?

The National Institute of Clinical Excellence (NICE) recommends three options, to support the hearing until glue ear resolves.

1. Active observation

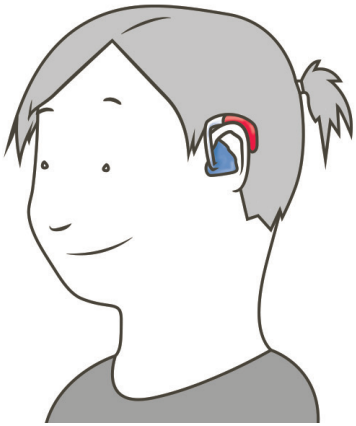
After the initial detection of glue ear affected children are observed for 3 months. If hearing levels are 25 to 30 decibels (dB) or worse after the active observation period, options of either hearing aids or surgical insertion of grommet are considered. None of these options cure glue ear but they help to improve hearing in 2 different ways.

The advantage of active observation is that unnecessary intervention(s) can be avoided if hearing improves naturally. Any listening difficulties during this period could be avoided by encouraging children to talk face to face. It is advised that parents, carers and teachers get the attention of the affected children before giving any instructions.

2. Hearing aids

Hearing aids make sounds louder to overcome the obstruction caused by the fluid that builds up in the middle ear. This allows adequate amount of sound to reach the inner ear for the child to hear normally. Hearing aids are withdrawn when the hearing returns to normal with natural resolution of the glue ear. Either conventional Behind the Ear (BTE) or Bone Conduction (BC) aids can be used.

BC aid on a band



BTE aid

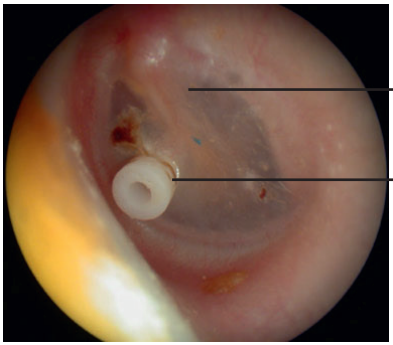
The advantage of using hearing aids is that there are no requirements for anaesthetic and surgery. Children can participate in their care by picking the colour of the hearing aids and patterns for the hearing aid mould.

There are disadvantages to having a hearing aid in that the aid is visible and some parents may feel uncomfortable. There is a view that some children may be self-conscious about wearing a hearing aid, however, experience shows that most children accept the aid well once they find that it helps them to hear better. Parents/carers need to take some responsibility with the hearing aid care, such as changing the batteries. The aids need removing during baths, showers and swimming. Also, regular audiology follow-up is important due to fluctuation in hearing levels so the hearing aids can be re-tuned to match the needs of the individual child.

3. Grommets (also called ventilation tubes)

Grommets are small hollow tubes that are surgically inserted in the eardrum to allow air into the middle ear, to by-pass the affected Eustachian tube.

An advantage of having surgical insertion of grommets is that it is out of sight, and there are no maintenance issues.



There are disadvantages with surgical insertion of grommets. General anaesthesia is needed and the benefits of grommets are short lived. Grommets naturally fall out within 6-9 months following which glue ear reappears in many children. Long term grommets, called T tubes, stay in longer but may cause more harm compared to short stay grommets. Precautions also need to be taken to ensure that soapy water does not enter the ears during showering or bathing.

Complications with grommet use

Grommet use can cause infection (seen as a discharge from the ear in 10% of children), weakness of the eardrum at the site of insertion (25% of children) and a permanent hole in the eardrum (2 to17% of children depending on the type of grommet).

Due to the low middle ear air pressure in glue ear the weakened part of the eardrum is sucked towards the middle ear (retraction packet) in 3% of children who have grommet surgery. This retraction interferes with the movement of skin that is naturally shed from the

ear drum leading to a more serious but rare complication called cholesteatoma in 1% of children who have grommet surgery. Generally, children who have grommet surgery have 5-10 dB poorer hearing in adult life compared to children who do not have grommet.

Some special groups

In children with certain medical conditions such as allergy, cleft palate, Downs syndrome and others glue ear can persist longer, and hearing aids may be more beneficial in these conditions.

Notes

Contact details

If you require any further advice or information please contact the paediatric audiology service
Telephone: 01772 401310
Email: paediatric.audiology@lthtr.nhs.uk

Sources of further information

www.lancsteachinghospitals.nhs.uk
www.nhsdirect.nhs.uk
www.patient.co.uk
http://sdm.rightcare.nhs.uk/pda/glue-ear

References

Ahmmed A.U., Curley J.W.A., Newton V.E. & Mukherjee D (2001). Hearing aids versus ventilation tubes in persistent otitis media with effusion: a survey of clinical practice, The Journal of Laryngology and Otology, 115, 274-279

Browning G.G. (2008), Otitis media with effusion, In Scott-Brown's Otorhinolaryngology: Head and Neck Surgery, volume 1, seventh edition, Chapter 72, pages 894-906

De Ru J. A., Grote J. J (2004) Otitis Media with Effusion: Disease or defence? A review of the literature, International Journal of Paediatric Otorhinolaryngology, 68, 331-339

Effective Health Care Bulletin (1992), No 4, The treatment of persistent glue ear in children.

NICE CG 60 (2008) Surgical Management of otitis media with effusion in children.

Lancashire Teaching Hospitals NHS Foundation Trust is not responsible for the content of external internet sites.
Please ask if you would like help in understanding this information. This information can be made available in large print and in other languages.

Department: Children's Hearing Services
Division: Surgical
Production date: January 2016
Review date: January 2019

LTHTR/Tr/2016january/208

Health & care information you can trust
The Information Standard Certified Member

Excellent care with compassion