



# Glue Ear- Facts for Parents

## WHAT IS GLUE EAR?

Glue ear is a build up of sticky fluid in the middle ear space of one or both ears. The fluid is often quite thin and runny but it may become thicker, like glue. Because the fluid stops the eardrum moving freely, it can lead to a more serious hearing problem.

About four in every five children have at least one mild bout of glue ear in early childhood and it often clears up without treatment. Although it is extremely rare for the condition to cause lasting damage to the ear, glue ear can influence educational, behavioural and general development, sometimes with longer-term effects lasting several years. It is therefore important that parents and teachers of children affected understand the condition and the steps that they can take to minimise its impact.

## WHEN ARE CHILDREN MOST LIKELY TO GET GLUE EAR?

Glue ear occurs when fluid collects in the middle ear space of one or both ears, often following ear infections or repeated colds. Although adults can occasionally be affected, glue ear is much more common in children, particularly between the ages of two and five. This is because, in the second half of the first year of life many children begin attending day-care and mothers often stop breast-feeding. As a result, children are more exposed to infection at a time when they are losing some of their maternally conferred immunity but have not yet built up their own. At age five, children once again are more exposed to infections as they start school.

## WHAT ARE THE SIGNS OF GLUE EAR?

Children with glue ear experience differing degrees of hearing loss. There may be no loss of hearing at all, or it may be quite severe. The level of hearing may also change from day to day. Parents should watch out for the following signs (but remember that not every child affected will display all the signs)

- Children with glue ear may appear inattentive or prone to daydreaming. They may seem to be “hearing only when they want to”.
- Children may turn up the TV or say “pardon”, “eh?” or “what?” more than usual. They may mishear words when not looking at the speaker and fail to hear sounds from outside their field of vision.
- Some children talk too loudly - others talk less. They may mispronounce words or speak less clearly than normal.
- Ear infections, which often come before and sometimes follow glue ear, can cause discomfort and pain, making children fretful.
- Some children become quiet and withdrawn or anxious as a result of their difficulty hearing when with a group of people.
- Having to concentrate hard to hear what people are saying is very tiring, so children may be particularly grumpy and tired by the end of the day.
- Not hearing properly can frustrate children and they may become over-active or have temper tantrums, especially when they are tired.
- Children may become unsettled at school or nursery and feel left out of some activities.
- Children may have difficulty following what is being said in noisy environments or large rooms.
- Some children may appear to have a hearing ability that changes from month to month, especially in winter.

## **HOW CAN I REDUCE THE CHANCES OF MY CHILD GETTING GLUE EAR?**

### **Glue Ear and Smoking**

‘Environmental Tobacco Smoke’ or ETS, is the tobacco smoke that we breathe from others smoking nearby. It is known to be a health risk for many diseases. This means that even non-smokers are at risk from tobacco-related diseases if they spend a lot of time in smoke-filled rooms. Several research studies have shown that glue ear is one of the conditions to which children are susceptible if they spend a lot of time in smoky conditions.

If you are a smoker and unable to give up, you can help your child by not smoking in any room where your child will be. If you are not a smoker but know that your child is often in a smoke-filled environment (for example at the grandparents’), then think about any suggestions you could make to others to prevent this.

As with all risk factors, not every child who breathes in ETS will suffer from glue ear, and not all those who have glue ear will breathe in a lot of ETS. All we know is that children are more likely to get glue ear if they do breathe in a lot of ETS.

### **Glue Ear and Day Care**

Children attending groups such as nursery or play-school with a large number of other children are more prone to acute infections and glue ear.

### **Glue Ear and Breast Feeding**

Breast milk is nature's way of providing infants with a lot of the nutrients they need to fight off infections in the first few months of life. It also helps prevent the development of allergies. Some studies show that children who are breast-fed are less likely to get early attacks of glue ear. This is probably because some of the mother's immunity to infection is passed on to the child.

If you are not able to breast-feed, don't worry. This is unlikely to be the reason why your child has glue ear. You might be able to help by reducing other risks.

### **Glue Ear and Allergies**

In a few children, food allergies or allergy-related conditions such as hay fever and asthma may also make the child more susceptible to glue ear. If you suspect that your child is allergy-prone, you should seek medical advice. You may be advised to reduce the intake of any foods to which your child might be allergic, or reduce exposure to household pets if they are a problem.

## **WHAT SHOULD I DO IF I SUSPECT MY CHILD HAS GLUE EAR?**

If you are a parent and you suspect your child has a hearing difficulty or glue ear, trust your judgement and consult your family doctor – if possible, get an appointment close to a time when you are fairly sure that your child's hearing is affected.

## **WHAT WILL HAPPEN AT THE DOCTORS?**

If your family doctor suspects that your child has glue ear, (s)he will want to check first of all whether the eardrums show an acute infection. The doctor may then ask questions about your child's general health as well as about how the condition is affecting your child's hearing and the duration of the infection. (S)he may suggest a hearing test.

If the fluid does not seem to be clearing, the doctor may refer your child to a trained practice nurse, an audiologist or to an Ear, Nose and Throat (ENT) specialist, usually at a hospital, for further tests. You will be asked more detailed questions about your child's ears, hearing and development.

These are some of the tests your child might have:

### **Otoscopy**

The doctor will look in your child's ears to see if any fluid can be seen behind the eardrums. It is not always easy to get a good look at the eardrum but if there are signs of acute infection, past or present, the level of suspicion will be raised.

### **Tympanometry**

This is a test which shows how flexible the eardrum is. For good hearing it needs to be flexible so as to let sound pass through it into the middle ear space, and from there into the inner ear. If the eardrum is too rigid (e.g. if there is middle ear fluid ('glue') behind it), the sounds bounce back off the eardrum instead of passing through it. The amount of sound bounced back shows whether your child has glue ear.

To perform tympanometry, the tester places a small tube with a soft rubber tip at the entrance to the ear. This allows gentle air pressure changes to be applied. If the instrument shows that most sound is bounced back, the tester will know that your child has glue ear.

### **Audiometry**

Audiometry tests for the quietest sounds a child can hear – usually the sounds are high and low pitched tones (or whistles). Sometimes children are asked to listen to names of toys and to point out the toy they think they have heard. A school-aged child will usually be asked to press a button when they hear a sound presented through earphones. Younger children respond by playing a game, such as putting a peg in a board when they hear the sound. Infants generally won't wear earphones but the tester can tell if they can hear sounds by watching the child turn towards a loudspeaker, or towards a sound-making toy. By decreasing the level of the sound the tester can work out the quietest sounds that the child can hear.

## **WHAT ARE THE TREATMENTS FOR GLUE EAR?**

### **Antibiotics**

Sometimes antibiotics are prescribed for particularly troublesome ear infections. However, they are not prescribed for every ear infection and are rarely used in the treatment of glue ear. Recent research has shown that it is important not to over-prescribe antibiotics, as this would lead to the bacteria becoming resistant to them and the medicines losing their effectiveness. Consequently, nowadays antibiotics might not be given at all, even in a confirmed case of glue ear, unless there has also been recent acute infection. If antibiotics are prescribed, it is important that your child completes the course.

There are other ways of helping children with ear infections and glue ear which are usually more appropriate. A pain-killing medicine may help your child through the worst stage of an ear infection. Parent and teacher awareness will help lessen the consequences of glue ear. A doctor will advise on whether any particular medical or surgical option might be appropriate.

## **Autoinflation**

This is a technique in which a child blows up a special balloon using their nose rather than their mouth. The purpose is to force open the Eustachian tube (the tube that connects the middle ear to the throat) and allow pressure in the middle ear to return to normal. One widely available product is called Otovent®. Continued use of autoinflation over several weeks has been shown to help some children with glue ear, though it is a preventative aid and not a cure. Autoinflation is a 'low-tech' way of helping some children. It can be made into a game, but it needs adult supervision and it can require quite a bit of practice and it is important to persevere.

## **Operations**

A small proportion of children, those who experience repeated or long episodes of glue ear, eventually need to have grommets put in. However, this is a very simple procedure and is one of the most common operations for children.

Under a light general anaesthetic, a tiny cut is made to the eardrum. The fluid is drained away and a miniature tube known as a grommet or ventilation tube is inserted through the small hole. The grommet keeps the middle ear aired and healthy. This operation does not usually involve an overnight stay in hospital.

Grommets improve hearing immediately and usually stay in place for between 6 months and a year. They fall out naturally and, when they do, the small hole in the eardrum should heal quickly. For some, the glue ear may return and another set of grommets may be needed.

The ENT specialist will advise on what to do while the grommets are in place. In most cases, children who have grommets can continue to go swimming but diving is usually discouraged. It is important to check with the specialist first. Hair washing advice may also be given.

The specialist may recommend removing your child's adenoid at the same time as putting in grommets. In children prone to respiratory infections, this can help prevent the return of glue ear, and it helps with the other infections too. Sometimes the child stays in hospital overnight.

## **HOW WILL GLUE EAR AFFECT MY CHILD?**

Glue ear can affect children in different ways. Although it starts off as a physical problem, glue ear can affect your child in other ways. For example, as well as causing painful ears and dulled hearing, glue ear can also affect a child's balance and speech, their emotional well-being and behaviour. Looking at all these elements is known as "the whole-child approach".

Older children with glue ear have described experiencing a 'shut-in' feeling, resulting from a combination of the dulled hearing and the physical sensations from the middle ear (e.g. a sense that the ear is blocked up). Younger children may have problems with their language development or speech. Particularly when the glue ear lasts a long time, children can develop difficulties communicating or socialising.

It is important to look out for signs that glue ear might be affecting your child in these ways. It will help your child feel less frustrated or misunderstood, and if you can describe the problems with convincing examples, it may help your child to get extra support, e.g. speech therapy or help at school. Putting special effort into involving your child in family conversations, for example at mealtimes, may make you more aware if your child does have these problems, and it will also help your child to improve his/her communication skills.

## **HOW SHOULD I COMMUNICATE WITH MY CHILD?**

Remind yourself (and others) that your child may be missing out on many of the little things in life because of a hearing problem. If your child seems to be having difficulty hearing, try using the following tactics:

- When speaking to your child, first attract his/her attention by calling his/her name or by touch.
- If you can, choose a room with soft furnishings and carpet to talk to your child in. For example, a sitting room will usually be better than a room with hard surfaces, like a kitchen.
- Cut down background noise – turn down the television and have it on less.
- Talk face to face, sitting or bending to the same level as your child, if possible.
- Check that your child is listening and watching. As you go along, check that they have understood.
- Speak up and speak clearly, but don't shout.
- Be direct. Keep requests short and simple.
- If your child has a special friend, tell his/her parents about the glue ear. Why not give them a copy of this factsheet?

Children with more severe hearing loss may have some problems speaking clearly. Those with poor hearing or speech may find it difficult to pick up information at nursery or school. You can help by spending extra time with your child at home talking together, or going over some of their lessons to check they have understood what they did in class. Playing word games like I-Spy is fun for the family and may help your child's speech, language or reading.

Finally, it is important to remember that children with glue ear often feel frustrated and left out. This may, understandably, lead to behaviour that seems naughty. Try to deal with the cause of the problem first. For example, if your child has not done something (s)he was asked to do, check that (s)he has heard your initial instruction.

## **WHAT CAN MY CHILD'S TEACHER DO TO HELP?**

If your child has glue ear it is important to let his/her teacher know. Particularly, let the teacher know when your child is in a good phase or a bad phase. The teacher can help by moving the child to the front of the class and as far away as possible from background noise. Let the teacher know that your child may not always hear instructions. But beware – sometimes children can take advantage of this. Your child's teacher should, in turn, be able to help you by letting you know if your child needs any extra help at home. It may sometimes be possible for your child to receive some more individual attention at school. Deafness Research UK produces a special factsheet for teachers called Glue Ear – Guidelines for Teachers.

## **CAN ADULTS GET GLUE EAR?**

Glue ear is most common in children, but it can occur in adults. As with children, glue ear in adults may follow on from a cold or from an ear infection. Children are more prone to glue ear because they have a lower resistance to infection. It is unusual for adults to have glue ear for more than a few days. Anyone doing so usually needs specialist advice.

## **WHAT RESEARCH IS BEING CONDUCTED INTO GLUE EAR?**

Many studies have tried to find out what factors make a child more at risk of getting glue ear and some of these have been discussed above. Researchers have been trying to identify those risk factors most likely to result in more persistent glue ear, and to use that information, in conjunction with new biological discoveries, to develop new treatment methods.

Deafness Research UK is supporting research which is investigating the link between gastric reflux and glue ear. The Eustachian tube connects the middle ear to the throat. In children this tube is angled differently than it is in adults, which means that when stomach juices come up into the throat (gastric reflux), they can reach the middle ear more easily, where they can cause damage. It is therefore possible that in cases where glue ear is persistent, it may be due to an allergic inflammation in response to the damage caused by gastric reflux. This research should increase our understanding of the causes of glue ear and enable the development of new diagnostic tests, as well as new treatments, which in the future may reduce the need for surgical intervention (grommets).

Deafness Research UK is also aiming to ensure that children receive the most effective treatment for glue ear. At present, there is uncertainty amongst health professionals about what kind of treatment is most effective. Some studies have shown that hearing improves in children with glue ear when grommets are fitted and that many children experience further benefit if their adenoids are removed. However, the size and range of these benefits may not be worth the cost and the small degree of risk in a child who is mildly affected. Research at the MRC

Cognition and Brain Sciences Unit, some of it funded by Deafness Research UK, is helping specialists to decide what treatment is best for each child. As part of this research, a study showed that children who received grommet insertion and underwent an adenoidectomy were less likely to return for further ENT care. This suggests that a combined approach may be a more effective way of preventing recurrences of glue ear.

## **FURTHER INFORMATION**

If any of your questions concerning glue ear have not been answered by reading this factsheet, contact the Deafness Research UK Information Service for further assistance. Our Information team will either answer your enquiry directly or refer it to one of our scientific or medical advisers.

Open: 9.00 a.m. to 5.00 p.m., Monday to Friday (a message can be left at other times).

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or click the 'ask question' option from our website homepage:

[www.deafnessresearch.org.uk](http://www.deafnessresearch.org.uk)

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