

## Undiagnosed Glue Ear and Learning Difficulties.

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**“Ninety percent of hyperactive children studied gave a history of three or more ear infections...”, according to a study published in *Clinical Pediatrics*. In the article in *Parents Pediatric Report*, researchers stated, “Ear infections and their effect on language development are prominent topics in pediatric literature. Hyperactivity is another item of great interest... On the surface they seem to be two unrelated entities. But could there be a connection between these two conditions? Very much so, says a study from the University of Colorado in Denver, and Yeshiva University in New York.”**

Some children have even been misdiagnosed with Autism, Dyslexia and Moderate learning difficulties whereas the actual diagnosis was Otitis Media with Effusion or, more commonly, “glue ear”.

When sounds enter the ear they cause the eardrum to vibrate. This in turn causes the three tiny bones in the middle ear to move backwards and forwards, making the vibrations bigger and passing them through to the inner ear (or cochlea). In the inner ear the vibrations ripple through fluid and move tiny hair-like strands on the end of special cells that convert the sound waves into electrical signals. These are sent through the hearing nerve to the brain which interprets the sound we hear. The Eustachian tube connects the ear to the back of the throat and lets air into the middle ear, keeping it aired and healthy and balancing the pressure across the eardrum. The condition of an obstructed eustachian tube is more common than problems with adenoids but both can suffer from repeated infections as well. This results in blockage of the drainage of the middle ear. Air cannot enter the middle ear and the cells lining the middle ear begin to produce fluid, which can become thick and glue-like.

Glue ear occurs when fluid produced by the body to fight infection, collects and becomes trapped in the middle ear space of one or both ears, often following ear infections or repeated colds. As a result, the eardrum and tiny bones in the middle ear cannot move properly and sound cannot so easily pass through to the inner ear.

Young children are susceptible to glue ear because their immune systems are not fully developed and their eustachian tubes more easily become blocked.

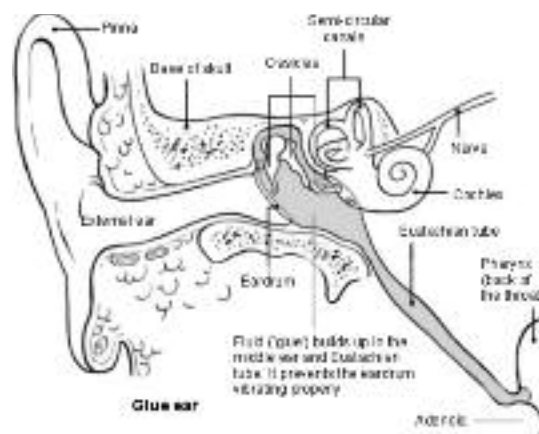
Glue ear is most common in children particularly between the ages of two and six.

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 temporarily losing some of their maternally conferred immunity, but have not yet built up their own. Children are at particular risk of infections again as they start primary school.

Fortunately, for many children the condition will be mild and will clear up quickly without causing any long term effects. For some children it is a hearing loss that can be cured and the child should not be treated as a deaf one. Treatment is quite easy by performing a myringotomy and inserting grommets. In other cases removal of adenoids may be necessary. Around 200,000 children suffer from repeated ear infections or glue ear each year in the UK and symptoms are most likely to be experienced in the winter months.

Because of the time spent with reduced hearing and/or the time spent away from school as a result of associated ear infections, children with more persistent or recurrent bouts of glue ear are at risk of social and developmental problems. These include delayed language, difficulties learning to read, gaps in general knowledge and reasoning ability as well as social and behavioural problems.

A child with a mild hearing loss will hear some things, for example, when he or she is spoken to loudly or face to face so, at first, it may not be obvious that they have a problem. Parents and teachers can help by being alert to any of the following signs common in children with glue ear.



Does the child:

- Often say “what?” or “pardon?”
- Give inappropriate replies to questions?
- Misunderstand instructions or appear lost when asked to do something?
- Ask for things to be repeated?
- Stare intently at your face, or strain to hear you?
- Have difficulty following what you say in noisy environments or large rooms? The effort of concentrating can make a child very tired by the end of the day and they may be grumpy.
- Have difficulty with reading?
- Have a limited vocabulary and difficulty learning new words?

Children with glue ear have particular difficulty hearing against the noisy background that is typical of a school environment, and so you may identify the signs of a hearing loss ahead of the parent. If you suspect a child may have glue ear, tell the parent and suggest that (s)he contacts their doctor or a specialist who will be able to carry out some basic checks and explore symptoms further.

It is important to look out for signs that glue ear may be affecting a child in these ways. Arranging extra support may also be appropriate, such as speech therapy or help in the classroom.

If you think a child may have a hearing problem:

- Seat them where (s)he has an unobstructed view of your face and can hear you most clearly.
- Avoid speaking when facing the black/whiteboard or with your back to the child.
- Ensure the child is watching you when you begin to speak, and try to give visual or oral clues if you are changing to a new topic.
- Avoid walking around the classroom when speaking. A child with hearing difficulties will have to twist in their chair to keep you in clear sight.
- Be aware that the child will have problems outside the classroom. Hearing impaired children sitting at the back of assembly halls are unlikely to follow announcements and notices, so take steps to ensure that the proceedings can be followed.
- Sound travels less well outdoors, so PE and games teachers, or teachers accompanying children on an outing, should take this into account and check that children understand any special instructions that have been given.

Parents’ observations about their child’s symptoms can be of critical importance in helping a doctor to make an accurate diagnosis and in their subsequent medical care. They can also communicate better with their child by using the same kind of tactics as listed above.

Finally, it’s important to remember that children with glue ear often feel frustrated and left out and this may, understandably, lead to behaviour that seems naughty. It is important that both parents and teachers understand the root of the problem. For example, if a child does not obey an instruction, is it because (s)he has not heard it?

It is important to visit an Ear, Nose and Throat specialist as soon as possible, so that a diagnosis by tympanometry can be made and treatment or a minor operation performed if necessary.