



Deafness Foundation

Teacher Resource Kit:
Conductive Deafness

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OTITIS MEDIA IN CHILDREN

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What Is OTITIS MEDIA?

The term Otitis Media covers several disease processes that can happen in the middle ear, and there are various names used for similar conditions, which can be confusing. There are three main forms of Otitis Media.

1. Acute Otitis Media...is a middle ear effusion (fluid) associated with symptoms of pain, fever and irritability. Some children may also suffer from a loss of appetite and even vomiting.

2. Recurrent Otitis Media...is when there are three or more separate episodes of Acute Otitis Media in a six-month period.

3. Otitis Media with Effusion...often referred to as glue ear, describes fluid in the middle ear with no sign of fever or inflammation of the eardrum.

In all these conditions there is fluid in the middle ear, and there may be a hearing loss as well depending on the amount and stickiness of the fluid. This type of hearing loss is called a conductive hearing loss.

It is common to see fluid after an acute ear infection but fluid can occur with a cold or even in children with no recent history of infection. There is considerable overlap in the appearance of the ear and in the symptoms of these conditions. A child who has recently had an ear infection may have fluid for some weeks, which can then clear up without treatment. The term chronic middle ear effusion is used when the fluid has been present for at least two months.

How common is OTITIS MEDIA?

Otitis Media is very common in young children. By the first birthday, 50% of children have had Acute Otitis Media. By their third birthday 70% of children have suffered. About 30% of children will have multiple infections. There are many reasons for this high incidence in children and there are several predisposing factors that combine to cause ear infections: Eustachian tube blockage. One of the major reasons for children suffering more ear infections than adults is the immaturity of their Eustachian tube. This tube opens between the middle ear and the back of the nose. It allows ventilation of their middle ear as well as protection from changes in air pressure. In infants and young children the eustachian tube is shorter, more horizontal and the opening and closing mechanism is less efficient than in adults. Also babies spend more time lying down and this causes more swelling and therefore more obstruction of the tube.

More colds. Another significant factor is that young children have less mature immune systems and hence have frequent colds and ear infections.

How does the disease progress?

With Otitis Media, the most common story is that the child has had a cold for two or three days and then develops ear pain. 80% of these infections will improve over the next week without treatment, although there may be some fluid remaining in the middle ear for weeks before the ear returns to normal. The reason for the spontaneous improvement which may occur is that the body's immune system fights the infection, and as the cold improves the eustachian tube opens to allow drainage of the infection and the fluid.

In Acute Otitis Media the child may have a cold for a couple of days with nasal blockage, runny nose and fever. The child then becomes increasingly irritable and may pull at the ear. An older child may complain of ear ache, but it is surprising how many children have difficulty localizing where their pain is.

The problem is that the symptoms of Acute Otitis Media may not be very obvious. An irritable feverish child could have any one of a number of conditions, from a simple cold to a life-threatening condition such as pneumonia or meningitis. For these reasons it is best for a sick child to be seen by their doctor or the casualty department of a hospital, even when a child has had frequent ear infections before.

What about fluid in the ear?

In children with Chronic Otitis Media with Effusion (fluid) there is a hearing loss with no other symptoms of pain. This hearing loss can cause delays in speech and language development and difficulties at school. These children may be inattentive, behave badly and perform poorly in class. Parents or teachers are concerned about these sorts of problems should arrange for an audiologist to test the child's hearing.

Are antibiotics needed?

It is now realized that 80% of children will get better from Otitis Media needing only some pain relief. However, if the child is very young - two years of age or less - it is wise to treat ear infection with antibiotics. There are several reasons for this. Children have immature immune systems and may not fight infection as quickly, and they may develop serious complications quickly. A baby cannot say if the pain is better or worse, so parents and doctors can only guess if there appears to be an improvement. Older children will improve more quickly if treated with antibiotics as well as pain relief.

When antibiotics are frequently used bacteria can become resistant to them. However, since antibiotics have been used to treat Otitis Media there has been a significant decline in serious complications, such as Mastoiditis and brain abscesses and significant hearing impairment. Antibiotics should be given to the younger child who appears ill or for a child who is not improving quickly. Each child should be monitored to check there is no complication from their ear disease, whether they have been treated with antibiotics or not.

Are other medications useful?

There is no scientific evidence from properly performed trials that supports the use of decongestants and antihistamines for either Otitis Media or Chronic Middle Ear Effusion. What about surgery?

The insertion of ventilation tubes by surgery should be considered if:

- there hearing loss and fluid in the middle ear for more than three months
- there is frequent ear pain
- there are changes in the appearance of the ear drum which indicates that there could be permanent damage to the ear drum or the little bones in the middle ear if the condition is left untreated
- there are associated speech and language problems
- there is an intolerance to antibiotics in a child with frequent ear infections.

Can Otitis Media be prevented?

There are several risk factors that make a child more likely to get an ear infection. There are some things parents can do to minimize the risk of Otitis Media:

- Breast feeding for at least six months helps protect the baby from ear infections.
- Passive smoking is a cause of OM and adults should avoid smoking in the house.
- Dummies or pacifiers do not improve the function of the eustachian tube and children who use these have been found to be more prone to ear infection.
- Children in big day care settings will pick up more infections.
- Children in a day care centre may have some protection from ear infections if given the influenza vaccine and for children older than two years the pneumococcal vaccine may also provide protection.

Where can a child's hearing be tested?

Hearing Australia can test children and young people up to the age of 26. Community Health Centres, Hospital Audiology Departments, and some audiologists in private practice offer services for children. Contact the Audiology Australia (Victorian branch: Ph: 03 9940 3900 or visit their website: www.audiology.asn.au to view the Audiology service directory or email info@audiology.asn.au

Conductive Hearing Loss in the classroom

At any given time 1 in 3 early primary school age children will have a conductive hearing loss no-one knows about. This hearing loss may prevent them from hearing you properly and make it harder for them to learn. You may not always know which children in your class cannot hear adequately, but you should know that they ARE there!

Common behaviours associated with fluctuating conductive hearing loss:

- Often asks for repeats
- Seems to hear sometimes but not others
- Responds inappropriately to questions
- Has trouble following instructions
- Does not respond when spoken to
- Daydreams
- Copies other children's work
- Has a short concentration span
- Dislikes loud noises or voices
- Performs poorly in background noise
- Has language or literacy problems
- Performs below expectations

When you have concerns about a child's learning, listening or behaviour, discuss their hearing and history of ear infection with their parents, and recommend a hearing test.

To improve hearing & listening in the classroom:

- Reduce background noise (or move away from it)
- Face the class when speaking
- Speak slowly & clearly
- Seat children with poor hearing close to you and away from background noise
- Repeat and rephrase instructions for clarity
- Use handouts and other visual aids

Other resources:

[Do you hear what I hear?](#) [kit]: living and learning with conductive hearing loss/otitis media / Western Australian Department of Education, Aboriginal Education Directorate.

<https://www.hearing.com.au/Hearing-loss/Children-young-adults/Hands-up!-Managing-hearing-loss-in-the-classroom>

<http://www.eartroubles.com>

Classroom activities to help develop listening skills

Listening Artist

Students work in pairs, sitting back to back. You'll need a coloured picture for each pair of students. You could use photos or draw your own pictures with lots of different coloured shapes or stickers. One student in the pair has the picture and the other has a blank page and some pencils or crayons. The student with the picture describes it to their partner, who has to draw it. No peeking! Everyone can have a turn at drawing and the pair with the most similar picture wins.

Up down up down

This is a great way to practise listening for certain sounds and to use up some energy. Nominate a sound to listen for. Explain to your students that they need to listen for this sound, and when they hear it, they stand up and keep listening until they hear it again and then sit down, and so on. You can read any story, a little more slowly than usual so they have time to hear the target sounds and stand up (or sit down).

Tell a group story

The first person begins with a sentence to start the story, then everyone in the group takes a turn to add their sentence to a story. Everyone has a turn, but depending on the size of the group you should decide (before you start) how many turns everyone will have. Students need to listen to what has already been said and think about how to add to the story, and in the last turn, think about how to bring the story to a close.

Secret whispers (from [“Do you hear what I hear?”](#))

You will need a collection of messages of varying lengths written on cards. Use a group of 4 children to model whispering a secret message. Teacher whispers a message to one of the group members who then whispers the message to the next person. The message is passed to the next group member who tells the class the message. The teacher reads and shows the class the original message. Discuss the difference between a message that has word for word accuracy and a message that delivers the same meaning. In groups of 4 the children continue with the activity.

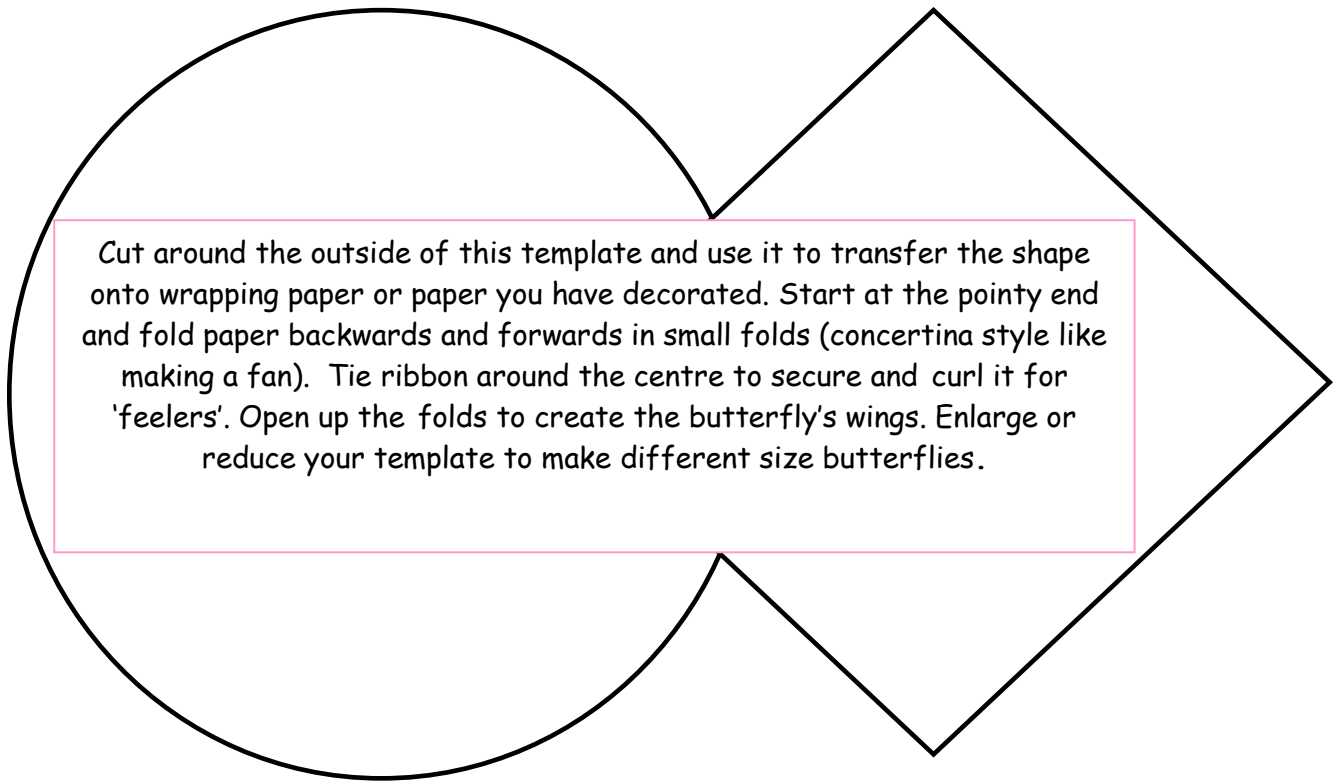
Blind man's Simon says ([from “Eartroubles”](#))

A game to help identify children who may have trouble hearing.

Butterfly art activities

Why butterflies? Butterflies are beautiful creatures and the symbol of the Deafness Foundation. We used to think butterflies were deaf but we now know that many kinds of butterflies have ears (very different from human ears) and scientists believe they can hear.

This simple template will help you make a lovely butterfly:



Other butterfly craft ideas:

<https://www.easypeasyandfun.com/wp-content/uploads/2017/03/Butterfly-Pop-Up-Card.pdf>

<https://www.easypeasyandfun.com/wp-content/uploads/2017/07/Butterfly-Hand-Puppet.pdf>

Did you know?

We have two ears so we can work out whether a sound is coming from the right or the left. Barn owls have two ears, but one is higher than the other so that they can work out whether a sound is coming from up or down as well as right or left. They have very accurate hearing and use it to hunt very effectively at night

Frogs have no 'outer ear' like we have. This makes their body more streamlined so that they can swim through the water well. You can see their eardrums on each side of their head. Our outer ears, called a 'pinna' (singular) or 'pinnae' (plural), help funnel sound down our ear canals and protect our ear drums which are at the end of our ear canals.

Elephants' ears are like air conditioners. Their ears are thinner than the rest of their body and contain blood vessels. They flap their ears like a fan and this cools down the blood in their ears, and the rest of their body.

The ears of crickets are not in their heads. They are in their legs.

Web Resources

Middle ear infections and glue ear

<https://www.aussiedeafkids.org.au/glue-ear-a-guide-for-parents.html>

http://www.kidshealth.org/parent/infections/ear/otitis_media.html

http://www.kidshealth.org/parent/medical/ears/ear_infections.html

https://www.earandhearinghealth.org.au/what_is_otitis_media

<https://www.childrens.health.qld.gov.au/chq/our-services/community-health-services/deadly-ears/middle-ear-disease/>

Children's Books that feature characters with hearing loss

| Title & Author | ISBN 10 | ISBN 13 |
|--|------------|---------------|
| "The Race" by Christobel Mattingly | 1863882014 | 9781863882019 |
| "Freddie and the Fairy" by Julia Donaldson | 0330511181 | 9780330511186 |
| "I Have a Sister--My Sister Is Deaf" by Jeanne Whitehouse-Peterson | 0064430596 | 9780064430593 |
| "A Birthday for Ben" by Kate T. Gaynor | 0956175139 | 9780956175137 |
| "Dad and Me in the Morning" by Patricia Lakin | 0807514195 | 9780807514207 |
| "Addy's Race" by Debbie Waldman | 1554699258 | 9781554699247 |
| "Moses Goes to a Concert" by Isaac Millman | 0374453667 | 9780374453664 |
| "Can You Hear a Rainbow?" by Jamie Riggio Heelan | 1561452688 | 9781561452682 |
| "Ranvir Cannot Hear" by Genevieve Yusuf | 0956941168 | 9780956941169 |
| "I Can't Hear Like You," by Althea | 1903285062 | 9781903285060 |
| "The Smart Princess and Other Deaf Tales" by Keelin Carey | 1896764908 | 9781896764900 |
| "Leo the Lion's Birthday Party" by Mark Mitchell | 1787104885 | 9781787104884 |
| "Max and the Millions" by Ross Montgomery | 0571333486 | 9780571333486 |
| "A Place for Grace" by Jean Davies Okimoto | 0912365730 | 9780912365732 |
| "Going with the Flow" by Claire H. Blatchford | 1575050692 | 9781575050690 |
| "Jessi's Secret Language" by Ann M. Martin | 0590415867 | 9780590415866 |
| "Let's Hear it For Almigal" by Wendy Kupfer | 0983829403 | 9780983829409 |