

Education

Hearing and learning

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Hearing loss is common in children who have Down's syndrome, due to increased incidence of chronic ear diseases, differences in the structure of the ear and weaker immune systems. We know hearing plays a vital part in any child's development; if undiagnosed and treated, hearing loss can have a big impact on language development, learning, social skills and behaviour.

Children and young people who have Down's syndrome will be less able to recognise they have hearing difficulties. If they are able to, it is less likely that they can explain what is happening to them. It is vital that professionals, and indeed all those in a child's life, are aware that many children who have Down's syndrome will experience some hearing loss.

Children who have Down's syndrome typically have a speech and language impairment, although the type and degree of impairment will be different from person to person. We know from research published in 2014 that early episodes of severe, ongoing hearing difficulties have a more serious impact on the development of speech and language in children who have Down's syndrome than for other children. The authors of this important piece of research highlight the need for speech and language therapy services to be involved as soon as a child is diagnosed with severe, ongoing hearing difficulties. They also suggest that joint working between audiology and speech and language services is a good way to ensure children receive the support they need.

Types of hearing loss

Conductive hearing loss is usually a temporary hearing difficulty where sounds cannot pass freely into the inner ear and it is by far the most common form of hearing loss in children who have Down's syndrome. It often happens because they have a build-up of fluid in the space behind the eardrum (glue ear, sometimes referred to as Otitis Media with Effusion or OME). This can lead to a fluctuating ability to hear on a daily basis. Studies show that as many as 35 per cent of children who have Down's syndrome have OME at birth; by the age of one this rises to 93 per cent and by the age of five years it has dropped to 68 per cent. In recognition of the high occurrence of OME in this population the National Institute for Health and Care Excellence (NICE) has included a section about children who have Down's syndrome in their guidance about the management of OME in children. Conductive hearing loss can also occur as a result of a build-up of ear wax or an ear infection.

Sensorineural hearing loss is a permanent hearing difficulty that happens where there is damage in the inner ear. The hearing nerve can sometimes also be affected. Studies show that approximately six per cent of babies born who have Down's syndrome have sensorineural hearing loss. This increases to approximately 20 per cent in adolescence and early adulthood.

It is possible to have both conductive and sensorineural hearing loss.

Hearing tests

All children who have Down's syndrome should have their hearing tested regularly. The UK Down Syndrome Medical Interest Group recommendations are that:

- all new babies have universal newborn hearing screening
- there is a full audiological review at ten months including a hearing test and impedance check, followed by yearly audiological reviews until a child starts school
- when a child starts school, there is an audiological review every two years or more frequently if recommended.

Hearing aids

It is important to be aware that some children who have Down's syndrome will wear hearing aids. They may need ongoing help to realise that a hearing aid is helpful. A specialist teacher of the deaf can help children learn to use their hearing aids.

Signs to look out for

It is possible that teachers may have a child in their class who has Down's syndrome with hearing loss that has not been picked up. Although the behaviours listed here may be because of a child's learning disability or personality, they may also be indicative that the child has hearing loss. If you have any concerns, talk with the child's parents and suggest they ask their GP to arrange for the child to have a hearing assessment.

Possible signs of hearing loss in children who have Down's syndrome are:

- difficulties with balance
- poking and rubbing ears frequently
- lack of response when their name is called
- discharge from ears and/or ears that smell
- looks at faces intently
- may appear to hear some voices better than others because they are pitched differently
- finds it hard to follow a conversation in a group
- background noise makes it harder for a child to hear conversation
- gets upset by loud noises
- jumps if someone whom they haven't seen or heard comes up to them from behind
- sits close to a TV or other screen and turns the volume up
- mouth breathes and has a blocked nose a lot of the time
- difficulty modulating the volume at which they speak (for example, speaks very quietly or very loudly).

Strategies

The suggestions here are not exclusive to children who have Down's syndrome and may help lessen the effects of hearing loss for any child:

- place the child near front of class
- to gain the child's attention, use his/her name before giving an instruction or asking a question
- speak clearly and directly to the child
- face the child and maintain eye contact
- reinforce speech with facial expression, sign or gesture
- reinforce speech with visual backup – print, pictures, concrete materials (as well as highlighting key messages, visual prompts can be used to alert the child to a change in topic or activity)
- make sure the child is focused on what you are talking about
- check the child has understood
- write new and key vocabulary on the board
- when other children answer questions, repeat these answers aloud
- rephrase or repeat words and phrases that may have been misheard
- keep background noise to a minimum, work in a quiet environment and encourage the children to speak one at a time
- speak clearly at a normal pace; avoid shouting or whispering
- give the child lots of time to respond to what you say
- keep the light on your face and don't sit with your back to a window
- your face should not be obscured, for example with a book or by moving around
- consider installing a sound field system; this will benefit all children in the classroom not just the child who has Down's syndrome and hearing loss
- remember a child with hearing loss may not be able to listen and carry out another task, such as writing notes or drawing, at the same time
- seek advice from the specialist teacher of the deaf.

Other things that can affect hearing

Some children who have Down's syndrome can be particularly sensitive to everyday sounds; this is known as hyperacusis. It may cause distress for a child in certain situations, particularly where there is a lot of background noise.

Working with parents

Teachers will already be working with the parents of a pupil who has Down's syndrome to support their learning and development. Parents' input will be invaluable as they know their child better than anyone. A home/school communication book is a great way of sharing information. Many children who have Down's syndrome will have one book for staff to communicate with parents and one which is a personal diary for the child to show their parents what they have been doing at school on any given day.

Where a child also has hearing difficulties, parents can be a good source of information around how these difficulties affect their child; their child's communication abilities/preferences and what works best; any difficulties they have had in supporting their child to use hearing equipment and what has helped; and whether their child is over sensitive to any particular sounds.

Contact us

t. 0333 1212 300

Down's Syndrome Association
Langdon Down Centre
2a Langdon Park
Teddington
Middlesex
TW11 9PS

e. info@downs-syndrome.org.uk

w. downs-syndrome.org.uk

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