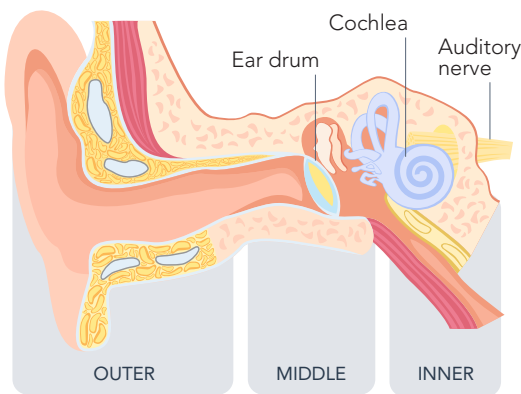


Hearing loss

Health information after cancer treatment as a child or teenager

The purpose of this factsheet is to tell you about long-term side effects (called 'late effects') that can happen after having cancer treatment. They can happen soon after treatment has finished or later in life. The medical team at the hospital where you received your treatment or your long-term follow-up team will be able to help you with specific information about which late effects are relevant to you.

Your ears are made up of three parts – the outer, middle and inner ear.



The inner ear is made up of the cochlea and the auditory nerve. The cochlea contains fluid and thousands of microscopic hair fibres (sensory hair cells) which are connected to the auditory (hearing) nerve. The auditory nerve carries information from the inner ear to the brain. Certain types of cancer treatment can cause hearing loss by damaging the sensory hair cells or the auditory nerve. This is called sensorineural hearing loss. This type of hearing loss usually affects higher pitch sounds and is permanent.

Hearing loss in the outer or middle ear occurs when sound cannot be transmitted from the air into the inner ear. This may be due to fluid in the middle ear, poor movement of the eardrum or middle ear bones which can occur following radiotherapy. This is called conductive hearing loss and may improve over time.

Who is at risk?

The following treatments may affect the health of your hearing:

- platinum chemotherapy drugs such as cisplatin and carboplatin
- high-dose radiotherapy to the brain, especially if the area includes the ear
- surgery involving the brain, ear or auditory nerve

Your risk may be increased by:

- other drugs known to damage hearing (aminoglycoside antibiotics such as gentamicin, and loop diuretics such as furosemide)
- having treatment at a young age
- pre-existing hearing problems
- tumours involving any part of the hearing pathway

What are the symptoms and long-term consequences of hearing loss?

Commonly, there are no symptoms at all, and it may be detected only after a hearing test (audiogram). People who develop symptoms may experience:

- tinnitus (ringing noises in the ear)
- difficulty hearing in noisy environments
- attention difficulties at school

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- difficulty with speech and language development
- difficulty with learning

Hearing loss may affect your ability to take up certain occupations. Your long-term follow-up team will discuss this with you, as you may be entitled to additional support within your working environment.

How do we monitor hearing issues?

If you have received treatment that may affect your hearing, your doctor will arrange for a hearing test to be done by an audiologist (a professional trained in hearing disorders). This is called an audiogram and involves listening to sounds of different pitches and loudness. This may already have been done when you finished treatment.

How can hearing loss be managed?

If hearing loss is severe, it can interfere with day-to-day living. Your audiologist will advise you on the help you may need, depending on the type and degree of hearing loss. This may include using hearing aids, alternative communication methods, additional educational resources, and workplace adjustments.

What can I do?

To protect your hearing from further damage you should:

- **inform any healthcare professional** about your previous treatment so they can avoid drugs that affect hearing wherever possible
- **protect your ears** from loud noises (eg. loud music in clubs or concerts, noisy work environment) by standing away from the speakers, limiting exposure by going out for short breaks, and wearing ear plugs, muffs or defenders
- **see your GP** if you have any signs of an ear infection, like pain or discharge from the ear

Where can I find more information?

RNID

www.actiononhearingloss.org.uk

Hearing Link Services

www.hearinglink.org

The NHS has a range of information about hearing loss

www.nhs.uk/conditions/hearing-loss

www.england.nhs.uk/wp-content/uploads/2017/09/hearing-loss-what-works-guide-employment.pdf



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Written by CCLG Late Effects Group, a national network of experts who specialise in looking after young cancer survivors, in conjunction with the CCLG Information Advisory Group, comprising multiprofessional experts in the field of children's cancer. If you have any comments on this factsheet, please contact us. CCLG publications on a variety of topics related to children's cancer are available to order or download free of charge from our website.

Children's Cancer and Leukaemia Group (CCLG) is a leading national charity and expert voice for all childhood cancers.

Each week in the UK and Ireland, more than 30 children are diagnosed with cancer. Our network of dedicated professional members work together in treatment, care and research to help shape a future where all children with cancer survive and live happy, healthy and independent lives.

We fund and support innovative world-class research and collaborate, both nationally and internationally, to drive forward improvements in childhood cancer. Our award-winning information resources help lessen the anxiety, stress and loneliness commonly felt by families, giving support throughout the cancer journey.

Our work is funded by donations. If you would like to help, text 'CCLG' to 70300 to donate £3. You may be charged for one text message at your network's standard or charity rate. CCLG (registered charity numbers 1182637 and SC049948) will receive 100% of your donation.