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Managing hearing difficulties for those with normal hearing levels

Information for patients, relatives and carers

This information is intended for patients under the care of the Audiology Service at the Royal Berkshire NHS Foundation Trust, who have normal hearing levels but who are experiencing hearing difficulties. The booklet aims to provide you with further information about your hearing difficulties, why these difficulties can occur, and what can be done to help.

Hearing tests

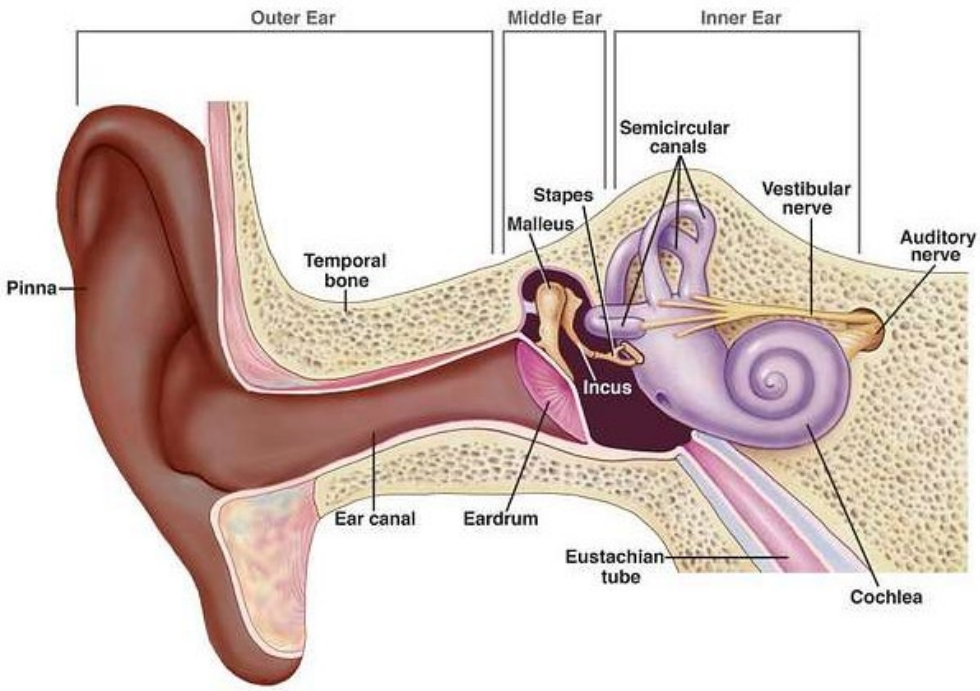
Hearing tests are often referred to as Pure Tone Audiometry (PTA) or Audiometry. Hearing tests measure the quietest sound that you can hear in silence.

If you have had these tests and have been told that your hearing levels are ‘normal’, this means that your ears are functioning normally and can detect very quiet sounds.

The hearing pathway

The human ear consists of three sections: the outer, middle, and inner ear. The job of the ear is to convert a sound into an electrical signal. The electrical signal then travels through several relay stations within the brain, where it is decoded and meaning attached to it.

Sound entering the ear canal (the outer ear) causes the eardrum to vibrate. The vibration then travels across a bridge made of small bones in the middle ear. These bones are called the malleus, incus and stapes. The vibration then travels into the cochlea (the inner ear). The vibration stimulates microscopic cells within the cochlea. These microscopic cells convert the vibration into an electrical signal. This electrical signal travels up to the brain through the auditory nerve.



Normal hearing test results

When a hearing test result is ‘normal’ it tells us that your brain is receiving sound from your ears normally. However, your ears are just one small part of the human hearing pathway and are not the only thing involved in hearing.

Once the electrical signal reaches your brain it has to be converted into words. Your brain has to not only work out what a sound or word is, but where it is coming from and what it means. Your brain then has to work out a response. When lots of different sounds are sent to your brain all at once, your brain has to work incredibly hard to process and filter those sounds in real time.

This ‘processing’ of sound can be made harder in environments like restaurants, because your brain also has to try to filter out the other sounds and focus on what you are trying to hear.

Your brain also has to decide how to react to the information that it has received. Is someone calling your name? Or is the phone ringing? This is a very complex process and allows us to understand sounds around us. This process is often referred to as ‘auditory processing’.

What is a normal level of auditory processing ability?

There is no clear answer to this as there is no real definition of ‘normal’. Just because one person struggles to hear more than another doesn’t mean that they are ‘not normal’.

Often, when we have started to notice something like a hearing difficulty, we then focus on it and notice it more and more. Family and friends can sometimes inadvertently reinforce this as well by assuming that mishearing is always ‘your’ problem and not that they have asked a question from another room or when the kettle is on. It can be easy to forget that not everybody hears perfectly all of the time.

What can effect processing of sound?

Processing sound is very complex and many things can affect auditory processing. Concentration, tiredness, having busy lives, being under stress, and having physical or mental health problems can all impact how well we hear. The stress and anxiety of worrying about hearing can also make things worse.

Anything that makes sound more difficult to understand will have a negative impact on our hearing ability. Listening to a language that is not your first language or listening when there is a lot of background noise will have a significant impact on your hearing ability.

It is important to remember that everyone, even those who don’t report any difficulty hearing, will mishear things occasionally and will find certain situations more difficult to hear in than others.

Hearing as we age

The normal aging process of the human brain can affect how quickly or easily our brain can process sound. As we age, it is normal for the speed at which sound is processed to slow down. This means that you will rely on other information (like lip-reading and the context of a conversation) to help your brain understand what has been said. Hearing when there is a lot of background noise may also become more challenging.

If you have a known condition that affects your brain (such as previous brain injury, stroke or other condition affecting the brain), this may also have an effect on your hearing. This can make listening in poor acoustic environments (like restaurants or crowds), or when someone has an accent, much more difficult. It can also make listening on the telephone more difficult, as you cannot see the person who is speaking.

Auditory Processing Disorder (APD)

The symptoms of APD overlap with a range of other disorders (such as Autism Spectrum Disorder, Attention Deficit Disorder, Dyslexia and other working memory problems). This makes it very difficult to determine if the symptoms experienced by an individual are due to APD alone, or if they are a symptom of another condition. Although there are tests available to assess auditory processing ability, there is no agreed ‘gold standard’ test(s) which can categorically say that someone has APD. However, if an individual does have symptoms of APD or hearing difficulties despite having normal audiometry, we can provide information to try and help.

What can I do if I have difficulties processing or understanding sounds?

Experiencing hearing difficulties can be very challenging and frustrating. The information and advice in this booklet is both for people who think they have difficulties processing or understanding sound, as well as anyone experiencing day to day hearing difficulties, even if audiometry shows that you have ‘normal’ hearing.

There are no treatments that are specifically funded by the NHS for hearing difficulties when a hearing test is normal. Every person will have different situations that they find difficult, and so we recommend that you start by asking yourself what it is specifically that you have difficulty with, and what you would most like to improve. For example, if hearing on the phone is a particular problem in an open plan office, then looking at solutions for this first may help.

Will a hearing aid help?

Hearing aids work by making sounds louder. The amount of amplification needed is based on the hearing test results. If there is no hearing loss, then making sounds louder (prescribed amplification) would not help you. Because of this, hearing aids are not fitted to individuals with normal audiometry results.

Practical suggestions to help you hear

- Try to be within 1 to 2 metres of the person speaking and concentrate on their words.
- Tell people when you cannot hear them.
- Ask for things to be said slower, or ask specifically for what you missed, e.g. “What time did you say we are going out?”
- Ask people to ‘rephrase’ something rather than repeat it. Hearing the same concept with different words may help fill in the gaps
- Re-educate friends, family and try not to take their frustration personally.
- Reduce background noise, e.g. turn the TV off to have a conversation.
- Use headphones to listen to the TV or music.
- Be aware of situations which will make hearing more challenging. You may find that changing positions or location can help, i.e. moving away from a noise. Being in a corner, or towards the edge of a room with a wall behind you can help, particularly in open plan spaces such as restaurants. Ask if you can move desks if you work in an open plan office.
- Some soft furnishings can help with background noise, i.e. rooms with carpet and curtains can provide a better acoustic environment and be easier to hear in. Choosing restaurants or meeting places with soft furnishings or alcoves can be helpful.
- In meetings or lectures, sit at the front, or near the main speaker.
- Sit away from other sounds, such as traffic outside (or away from an open window if it is open and noisy), or away from equipment such as printers at work

How other people can help you to hear

Family, friends and work colleagues can help you hear by:

- Avoiding speaking from another room and gain your attention or establish eye contact before talking.
- Ensuring that their full face is clearly visible to you and reduce background noise.
- Speak clearly and not too fast. Raising their voice is unlikely to help.
- Make the subject of the conversation as clear as possible, e.g. “we’re talking about.....”
- Rephrase the sentence, if not understood. If still not understood, write it down.
- Let you have ‘switch-off times’ during the day, for relaxation, as listening is very tiring.
- Be patient, positive and relaxed.

Can equipment help?

There are some devices that some individuals find helpful. These are not available from the NHS but can be purchased by individuals. Consider the following technological solutions:

- **Telephones** with more volume control range may be helpful. A headset which allows you to listen to phone calls with both ears while cutting out noise around you may also help.
- **Headphones** may help for TV and phone as they can help to cut out background noise.
- **Subtitles** on the TV may help you to follow a programme.
- **Assistive Listening Systems** consist of a wireless microphone and an earpiece that you wear in one or both ears. The microphone is worn by the person that you want to hear (e.g. a teacher, friend or family member) and their voice is wirelessly transmitted to the

earpiece(s). These devices can help to reduce the effect of distracting noise, allowing the wearer of the earpiece to better hear when the person wearing the microphone is speaking.

- **Apps:** These include voice amplifier apps such as those provided by some smartphone companies. Speech to text apps can also help by providing real time subtitles in lectures or meetings, or when out with friends.

Further information about assistive technology is available from www.hearinglink.org/technology/ or www.rnid.org.uk

Listening practice

A number of auditory training programs are available. These are typically computer or App based programs that allow the user to practise listening in a variety of environments (e.g. like in a noisy restaurant). Currently these training programs are not offered by the NHS as there is not enough evidence to show that they are effective. However, some individuals who had lost confidence in their listening ability have reported that they felt that the programs improved confidence in their listening ability.

You may find the Apps listed below helpful – but please note that some require a subscription fee or may include in-app purchases, so please consult the 'About this app' information before downloading any program(s) to your smart device or computer:

- **Hearoes** (www.hearoes.com)
  Vowel and consonant recognition, auditory memory and hearing in background noise.
- **TheEarGym** (www.eargym.world)
  Practising intervals, pitch, chords and rhythm recognition.

Wellbeing

Factors such as fatigue (tiredness), physical and mental health problems (including stress) all play a role in our ability to hear. Identifying and resolving these issues can also benefit your hearing ability.

Anyone wanting support for sleep problems, mental health concerns or stress can access help through their GP or their local Talking Therapies service. Individuals are able to 'self-refer' to Talking Therapies. This means that you do not need a referral from a GP or other health care professional to access help.

- **Talking Therapies Berkshire:** https://talkingtherapies.berkshirehealthcare.nhs.uk
- **Talking Therapies Buckinghamshire:** www.oxfordhealth.nhs.uk/bucks-talking-therapies/
- **Talking Therapies Oxfordshire:** www.oxfordhealth.nhs.uk/oxon-talking-therapies/

Additional resources

In some cases, you may be eligible for additional equipment to support your hearing at work. For more information about eligibility and this process, please visit www.gov.uk/access-to-work

Further information

This leaflet is intended for patients under the care of the Audiology Service at the Royal Berkshire NHS Foundation Trust. If you have any concerns or questions about your care, please contact a member of our team on 0118 322 7238 (Monday-Friday 9am-5pm excluding bank holidays) or email audiology.royalberkshire@nhs.net

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

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