BSHAA
British Society of Hearing Aid Audiologists

British Society of Hearing Aid Audiologists

Consumer Guide to **Better Hearing**

CARE • SUPPORT • ADVOCATE

BSHAA gratefully acknowledges the support of hearing aid manufacturers who have supplied photographs of different hearing instruments for use in this guide. Their inclusion in no way reflects either preference or endorsement of any individual manufacturer by BSHAA.

www.bshaa.com

Contents

Foreword

The **British Society of Hearing Aid Audiologists** (BSHAA) is delighted to present this guide to better hearing, which will help you to understand more about one of our most important senses.

Hearing plays an essential role in every aspect of our lives but we often take it for granted – until, that is, we start to experience difficulties. However, with modern technology and the care of a **qualified audiologist**, most people who start to struggle with their hearing can be helped.

As the **professional body** responsible for those who provide hearing care privately, we want you to know how to look after your hearing and to seek help as soon as it is needed.

We hope you will find this guide helpful, whether you are simply curious, want to know how to help a friend or relative, or are concerned about your own hearing.

Sarah Vokes
BSHAA President

1.0 Introduction

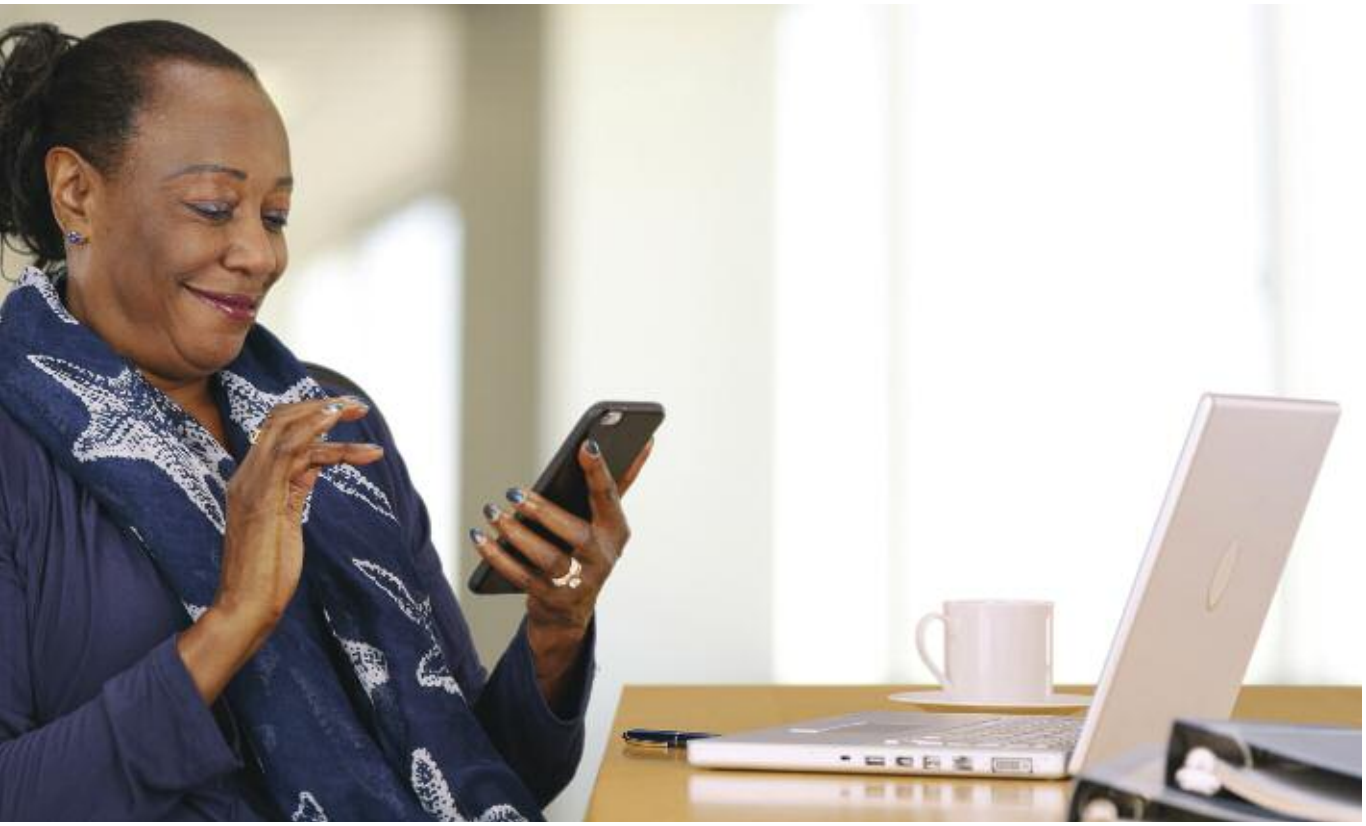
Most people take their hearing for granted. That is, until something affects their hearing and they begin to find it difficult to keep up with the conversations going on around them.

Hearing plays an enormously important part of family, social and work life.

Roughly, 1 in 6 people in the UK do not hear as well as they could, but the majority don't realise this. Few think about getting help until their difficulty in hearing has started to affect their lives. Without noticing at first, they may start to avoid participating in many of the activities they had previously enjoyed.

This doesn't have to happen. Protecting your hearing, taking action early if you notice change and getting the right support is the way to keep active, healthy and fulfilled.

We care about the important role that hearing plays in all aspects of life. We have prepared this guide to help you make the right decisions about your own hearing. Hearing well makes an important contribution to living well.



2.0 What to do next

Many people suffer the emotional pain and stress caused when their level of hearing starts to decline.

Your next steps will be different depending on your own individual circumstances. The following lists some of the reasons why you may be looking for advice, and although it is unlikely that they will all apply to you, you may relate closely to some of these situations:

- Either you have noticed or (more often) others have pointed out to you that you are not coping so well in conversation, especially in noisy situations and you have not had a hearing test before.
- You had a hearing test some time ago and whilst the advice at that time was no action, you suspect it may be getting worse.
- You were fitted with a hearing aid system and you are not happy with how much it helps, the look or the feel of it (or a combination of all of these).
- You have hearing aids that you were fitted with some time ago and whilst happy with the overall performance, you may have learned that there may be better hearing systems appropriate for your needs.
- You were offered hearing aids and decided against them, or have been fitted and don't wear them as often as you ought, because you are worried that others will notice.
- You may have worked in a noisy environment and or have a noisy hobby and are worried that your hearing has been damaged.
- You have a family history of hearing issues.

If you recognise any of the above then the advice from BSHAA is simple; speak to your local or existing hearing healthcare provider and if you are not happy with the response, we recommend that you search for a local BSHAA member whose details you can find using our **Find an Audiologist** service on our website **www.bshaa.com**.

Or you could contact us direct using the details on page 27. Audiologists are there to help you today with their best advice and BSHAA members will always assure you of all possible options.

3.0 BSHAA

3.1 Who are BSHAA?

The British Society of Hearing Aid Audiologists represents the profession of Independent Audiologists – the highly qualified people who know how to help you get the best from your hearing and will be able to advise you on what technology support is available.

In the UK, all audiologists are regulated and must be registered with the Health and Care Professions Council. BSHAA is the professional society recognised by the regulator who support and encourage audiologists to grow and excel in their clinical practice.

The society was founded over sixty years ago and is one of the oldest audiological professional societies. For sixty years, we have been active in raising the standard and quality of care provided by audiologists and we continue that tradition of raising the standards you can expect from the profession.

The Society and its purpose are guided by the words below.

'We believe in delivering the highest level of care and we are passionate in supporting our members to do this. We are the voice of our community and will always be an advocate for the future of our profession.'

3.2 What we do

BSHAA provides guidance and sets standards for members practising in a variety of clinical settings, whether in their own small business or as part of a national chain. The society also organises training and education programmes to ensure that our members are constantly refreshing their clinical knowledge and skills as understanding of hearing science and the technology to support it continues to develop.

All the surveys about hearing care continue to show that the relationship someone has with their audiologist has a big impact on the benefit they get. BSHAA operates a successful Customer Care Scheme that encourages audiologists to give the best possible care, and aims to give consumers confidence when they make a purchase of hearing aids. In the few cases where the audiologist and consumer have not been able to resolve their differences consumers have back up from BSHAA. We will independently look into the facts and try to help to sort out any problems.

You may be tempted to buy hearing aids on-line, rather than from your local audiologist. All hearing aids available today are designed to be prescribed by a qualified professional who will assess your hearing, help you choose from the range of solutions, programme your chosen instrument and provide the right follow-up to adjust the settings and make sure you are able to get the most benefit. Independent academic research shows categorically, that the support of an audiology professional plays a big part in your ability to get the most benefit from hearing aids. Your hearing is too important to risk by buying on-line, and missing out on the skill and experience of an audiologist.

3.3 Our members

Membership of BSHAA is voluntary. Audiologists choosing to be a member demonstrate how seriously they take their profession. Members must commit to continuing professional development and must follow codes of conduct stretching beyond that required by the statutory regulations. BSHAA members can use the letters MSHAA after their name as a sign of this commitment. We also have a Fellowship scheme and Fellows use the letters FSHAA.

3.4 Why choose a BSHAA member?

When you go to see a BSHAA member about something as important as your hearing, you will know that they have your best interests at heart. You also will have the security of choosing to buy a quality hearing system from a professional who must work within the society's guidance and within the rules of BSHAA's Customer Care Scheme and its code of conduct.

3.5 How to contact us

If you need to contact the society, you can do so by writing or by phone using the contact details on page 27. You can also reach us via the BSHAA website www.bshaa.com.

4.0 Getting help with hearing?

If you want to get help or advice about your hearing, where should you turn? Difficulties with hearing affect people in all aspect of their lives, causing much more of a social concern, than one about healthcare. Only a small number of problems with hearing are caused by conditions that need medical intervention. That does not mean that the consequences of hearing loss are unimportant – they can have a major impact on wellbeing and life fulfilment.

Roughly eight million people in the UK could benefit from support with their hearing, and only about two million of those currently look for and receive help. We encourage everyone to recognise how important their hearing is, and to have it checked regularly, although the facts show that few do.

Hearing checks and hearing care are available from audiologists based in the community or in some hospitals. Some private audiologists even offer a service of home visits. Help is available from the NHS, particularly related to children's hearing, and in some places (though not all) this may be via local private audiologists.

The provision of NHS hearing care varies significantly between the UK's four nations and in England there is also considerable variation in what services are provided and how they are accessed, depending on your local arrangements. Access to NHS hearing care normally requires referral from your GP and surveys show that many GPs may be reluctant to refer and you may need to be persistent to avoid unhelpful delays. In some areas, the NHS has made arrangements for you to be able to self-refer for the initial screening.

All audiologists are clinically qualified professionals and those who practise outside the NHS are subject to regulation by law and must demonstrate that they are maintaining their clinical practice through appropriate professional development. Part of their training, is to ensure that they can recognise those few cases where hearing problems are caused by serious medical conditions needing urgent attention. You can therefore be assured that it is as safe to have your hearing checked by private audiologists who practice in the community or are willing to visit you at home, as it is at a hospital clinic.

You can be assured that all BSHAA members are not only qualified and regulated healthcare professionals, but that they have demonstrated an additional level of commitment to their professionalism by joining their professional society. Most importantly, they are ready to talk to you about any issues that you may have with your hearing and you can trust that they will at all times work with you to achieve the best outcome.

5.0 How your ear works

To understand how and why difficulties with hearing may arise, it is important to be aware of some basics about how hearing works.

When people speak, they send out a range of sound waves, which are caught by your ear. These sound waves reach your eardrum and after striking the eardrum, the vibrations travel across the middle ear space through the smallest bones in your body to your cochlea. Here, the sound vibrations are converted into signals that pass to the various parts of the brain's hearing centres to be interpreted as the sounds you hear. This conversion process involves a membrane being activated by the sound waves as they pass through different viscosity liquids, with thousands of tiny hair cells, each "tuned" to respond to specific frequencies, sending their own unique signal to the brain when that frequency is received.

If these hair cells become less sensitive (e.g. becoming less flexible with age), are damaged or dead, then the brain will be receiving fewer signals. As a consequence, you will struggle to hear. Everything may seem quieter, but it is more likely you will just miss selected sounds, as only some parts of your auditory system are affected. If only some of the hair cells are damaged, you may hear some sounds well; whilst completely missing others. As the sound waves spread out from the speaker, they lose some loudness so they can be quite diminished by the time they reach your eardrum.

Your ability to hear well can also be affected temporarily by a build-up of ear wax which acts as a barrier to the sound. If this is the main cause, your hearing can be restored simply by removing the wax, and your audiologist will discover this when inspecting your ears.

For a more detailed technical explanation and diagram of how your hearing works and more information about earwax please see *Appendix 1* on page 28.

5.1 Importance of action

Whether it is simply having your ears cleared of wax or arranging a hearing test because of difficulty hearing in some situations – do it now. If it is just a canal blockage with wax, your audiologist may have facilities to remove the wax, or introduce you to a wax removal service. If your audiologist discovers an infection or is concerned about a possible medical cause, he/she will refer you to the correct place for treatment or further investigation. In a few rare cases, the results of your hearing assessment may also lead to referral to a specialist.

If analysis of your hearing test suggests you would benefit from having hearing aids, please do not delay any longer, as even with a mild hearing loss, any form of help will be more successful if it is provided as early as possible. It is known that it often takes 7-10 years before people recognise that their hearing has changed and they often wait the same again before taking action. This long period of living with reduced hearing makes it far more difficult for you to adapt to and benefit from hearing aids. It is also likely that you may abandon some of the activities you previously enjoyed, simply because struggling to hear is both frustrating and exhausting. Struggling to hear in a group is a common cause of people withdrawing from an active and engaged lifestyle.

6.0 Consulting an expert in hearing

Your expert in hearing may describe themselves as an audiologist or a hearing aid dispenser. You should satisfy yourself that the person you consult is either employed directly by the NHS, or is registered with the Healthcare Professions Council (HCPC) as a Hearing Aid Dispenser (an audiologist with a specific qualification).

Your audiologist will conduct a hearing assessment and then discuss the findings and your options with you.

6.1 Hearing assessment

There is nothing to fear about a hearing assessment. We are encouraging people to check out their hearing as part of a general health and wellness review, the same way they do for their eyes and teeth.

The audiologist will ask you some questions to record a case history. They will then conduct a hearing test with headphones. Further tests may be necessary but do not worry this will vary from person to person.

A fuller and more technical explanation is provided in *Appendix 2* on page 31.

Perhaps the most important guidance we can offer is that the assessment is for your benefit, so you should feel comfortable asking questions at any time in the process. The more you know about the assessment, and why certain things are important, the more the audiologist will be able to help you achieve the most benefit.

6.2 Discussing your options

Once your assessment is completed, make sure you discuss the findings so that you are clear, and don't be afraid to ask as many questions as you need to. You may wish to make a note of the answers to any questions as details can sometimes be forgotten in the midst of all the information you will receive.

If you decide in consultation with your audiologist that you could benefit from hearing aids, they will explain all the choices to you. All modern hearing aids can be adjusted within a range, so that they can be reprogrammed to match any changes in your hearing, but you should check that the instruments you are being offered have plenty of range left after they have been programmed to meet your needs.

You are likely to take some time to adapt to the new richer sounds you can hear again, once you have been fitted with hearing aids. You may need to visit the audiologist a few times in the first few weeks to tune the aids perfectly to your needs – if you require a lot of amplification, the audiologist may slowly increase this to help you feel comfortable as you adapt.

You will be offered a trial period, after which you may decide that the hearing aids are not working for you, or you may decide to try a different model. Do make sure you are clear about this trial period, and make sure you keep the appointments during this time to discuss how well they are working for you. This will allow your audiologist to adjust the fitting and/or the programme. Getting used to hearing aids and being able to benefit fully from them can take a little while, just as it might take time to feel comfortable wearing spectacles for the first time. Once you have adapted to them, you are likely to find them indispensable, because you can once again engage with others more easily.

Your audiologist will also discuss with you how to look after your hearing aids by cleaning them regularly, and changing batteries and filters. Section 11 explains more about the importance of maintaining your hearing aids properly.

7.0 Styles of hearing aid

Hearing aids come in many shapes and sizes. A professional audiologist is trained to help you choose the type and style of hearing aid most likely to suit your needs. You will be able to choose from a wider range if you decide to purchase hearing aids privately.

Not all hearing aids are suitable for everyone. The level of help you need with your hearing can affect your choice. If you regularly need help in noisy crowded places, some aids will be much better than others. The physical shape of your ear canal will also affect which styles you are most likely to be comfortable with. Many people will take into account the cosmetic appearance of the aid.

Have a conversation with your audiologist about the range.

You will find a confusing variety of labels describing different hearing aids, but most fall into one of two main categories, in the ear (ITE) or behind the ear (BTE).

7.1 In the ear hearing aids (ITEs)

As the name suggests, these aids fit completely in the ear, but still vary considerably in their size and how visible they are to others. This style of aid is usually only available from private sector audiologists. They may not be suitable for everyone, depending on the nature of the hearing correction to be achieved. In order of size with the smallest first, they are:

- **IIC** (Invisible In the Canal): this is the smallest, invisible hearing aid that fits deep within the ear canal but may not be suitable for everyone.
- **CIC** (Completely In the Canal): slightly larger than an IIC but almost invisible.
- **ITC** (In The Canal): slightly larger than a CIC and usually visible at the entrance to the ear canal.
- **Full Shell**: takes up the bowl of the ear.

Photo courtesy of Sivantos Limited

In the ear hearing aids (ITEs)

IIC (Invisible In the Canal)

The smallest hearing aid that fits deep within the ear canal. May not be suitable for everyone.

CIC (Completely In the Canal)

Slightly larger than an IIC but almost invisible in use.

ITC (In The Canal)

Slightly larger than a CIC and usually visible at the entrance to the ear canal.

Full Shell

Takes up the bowl of the ear.

Hearing aid photos courtesy of Starkey Hearing Technologies

7.2 Behind the ear hearing aids (BTEs)

The main part of these hearing aids sits behind the ear making them easier to fit, but they can be physically larger. This enables them to be more powerful for those who need them.

- **RIC** (Receiver In the Canal) or sometimes **RITE** (Receiver In The Ear). These are small instruments and are generally felt to have a more acceptable cosmetic appearance than many other types. The working part of RICs that produces the sound actually sits in the ear, and is connected to the instrument by a wire. This style of hearing aid is very popular as it combines good sound quality together with a good appearance.
- **Mini BTE**. As the name suggests these are also small and likely to be unobtrusive when worn. Unlike the RIC style of aid, all other BTE instruments produce the sound in the main body and rely on a very thin tube to guide the sound into the ear. They may be fitted with or without a mould. The term "open fitting" is often used to describe these when they are fitted without an ear mould. A "closed fitting" involves fitting a tailor-made mould to the shape of your ear.
- **Standard BTE**. These are larger and more powerful than a mini BTE, and work for all but those with the most severe loss of hearing. Ear moulds are usually needed to hold the hearing aid in place and to deliver the sound into the ear.
- **Power BTE**. These are the largest of the BTE hearing aids and are designed to provide a lot of amplification for people who have a more severe or profound level of hearing loss. They are likely to be visible when worn, though improved technology continues to allow the size to be reduced. People with limited hand mobility (e.g. arthritis) are likely to manage changing the battery in these type hearing aids easier than in others. Power BTE aids will use ear moulds to hold them in place and to deliver the sound into the ear.

7.3 Other types of hearing aid

Other types of specialist hearing aid are also available, such as:

- **Bone anchored hearing aid** (BAHA)
- **Body worn hearing aids**
- **CROS** (Contralateral Routing Of Signal) or **BICROS** (Bilateral CROS)
- **Spectacle-aids**
- **Cochlear implants**

Your audiologist will advise if any of these might be more appropriate to meet your particular needs.

Photo courtesy of Sivantos Limited

Behind the ear hearing aids (BTEs)

RIC (Receiver In the Canal) or **RITE (Receiver In The Ear)**

The working part that produces the sound sits in the ear, and is connected to the instrument by a wire.

Mini BTE

Produces the sound in the main body with a very thin tube to guide the sound into the ear. May be fitted with or without an ear mould.

Standard BTE

Larger and more powerful for all but the most severe hearing loss.

Power BTE

The largest BTE hearing aids provide a lot of amplification for more severe or profound hearing loss.

Hearing aid photos courtesy of Starkey Hearing Technologies

8.0 Different technologies

Modern hearing aids are tiny computers performing millions of calculations per second to process the sounds in a way that is tuned to your needs by your audiologist. Some instruments that you can buy on-line look similar to hearing aids, but simply amplify the sounds, and cannot be programmed in the same way.

A professionally fitted hearing aid is not simply an amplifier of sounds. Your audiologist will use the results of your hearing assessment to tune the aid to make up for your individual level of hearing. Should your hearing change, the aid can be reprogrammed within its fitting range. On more advanced aids, you may be able to choose different programmes that are tuned for different situations. You may have different settings for listening to music, raised for high levels of background noise, or to reduce the effect of wind noise.

The whole list of features available today cannot be covered in this guide alone. Some of the most common features that you may wish to consider when choosing which instruments may best suit your needs are explained here.

8.1 Channels

Generally, hearing aids with more channels are better at telling apart important sounds (e.g. a single spoken voice near at hand), from other noises (e.g. the background hubbub from the crowd). A basic hearing aid may only have 3 or 4 of these channels acting on low (bass), mid and high (treble) frequency sounds whereas a more advanced hearing aid may have 20 or more channels, each acting on a narrow range of frequencies.

8.2 Twin or directional microphones

These focus the amplification in the direction the person is facing. Sounds coming from other directions are reduced. This helps you to hear a person more clearly when you are facing them, even in a relatively noisy environment. More advanced instruments are becoming cleverer at sensing important sound patterns and have the ability to "zoom" in different directions. This is known as "adaptive directionality".

8.3 Noise reduction

The hearing aid has the ability to detect a desirable sound such as speech and a possibly unwanted sound such as a noise. It can then actively reduce background noises to give you a more comfortable sound. This feature may be activated all of the time or may automatically switch on as and when the situation changes. There is no perfect way to reduce noise and aids from different manufacturers behave differently to reduce noise. It may take some time working closely with your audiologist to get the very best results in reducing noise and you should aim to listen to instruments from different manufacturers if getting the best noise reduction for your own circumstances is important to you.

8.4 Wireless technology

Some hearing aids can communicate with such items of equipment like televisions, telephones, mobile phones and music players. Instead of the hearing aid picking up the sounds produced from these devices, it works straight from the signal they are sending to their loudspeakers. With wireless technology, you can watch television or listen to radio or music without having too much volume for others in the same room. Your hearing aids can also act as if they were a hands free headset for your phone.

9.0 One or two hearing aids?

For the majority of people seeking help with their hearing, a pair of hearing aids is the right clinical solution for many reasons.

For humans, hearing is meant to occur when the brain receives and processes similar sounds received from both ears.

- **Balanced stereo hearing.** The sound quality of hearing through two ears is much better, as you will know if you have ever listened to music through one headphone rather than two then you'll know the difference.
- **Localisation.** The brain is designed to detect where a sound is coming from by comparing the sound from both your ears, and this helps you to turn towards the direction of sound, for example when someone is trying to talk to you, or to see where traffic is coming from if you are trying to cross the road.
- **Less amplification required.** The effect of hearing through both ears requires less amplification because the sounds heard through both ears are added together.
- **Auditory deprivation.** Hearing takes place in the brain when it interprets the sounds, rather than in the ears which simply receive sounds! If one side is deprived of sound signals, then it can lose its ability to understand certain sounds and this is particularly the case in the complex process of interpreting speech. If a person has an identical hearing reduction in both ears and wears only one hearing aid then the side without the hearing aid loses some of its ability to process and interpret sounds – it gets out of practice. In later years, if that ear is then fitted with a hearing aid it can take a long time for that side of the brain to re-learn and in some cases may never match the ability of the side which has previously been helped with the hearing aid.
- **Background noise reduction.** The brain is able to recognise sounds that it perceives to be important and separate them from unimportant noise. To do this well, it relies on receiving sounds from both ears. This is a highly complex function of our brain and nervous system but in effect, the sounds from each ear are added together, compared and the perceived background noise level is reduced, so that the important signals stand out more easily.
- **Protect your cognitive ability.** In 1984, research was published showing that a few people who had similar levels of loss in both their ears, but had worn only one hearing aid for some time (perhaps 4-5 years), were found to suffer increased perception problems, in which their ability to understand speech had reduced much more than those who had been fitted with two aids. For these people, fitting a second hearing aid when the condition was discovered helped overcome some of the problem.

There are some exceptions where only one hearing aid is prescribed. This tends to be where there is:

- Normal hearing in one ear and the hearing aid is used to restore the hearing in the other, and the single aid provides all the benefits outlined above, because it simply restores balance with the good ear; or
- Where there is little or no hearing in one ear and a hearing reduction in the other and no amount of amplification will be able to restore balance between the ears.

10.0 Accessories and other assistive devices

Not only have there been major advances in hearing aids themselves, but also there are many other devices that can help you by working with, or independently of your hearing aid system. Like all technologies, the trends are towards greater and easier integration with other devices.

The latest generation of wireless hearing aids can connect to a number of peripheral devices that can help with streaming sound directly into your hearing aids. This can be enormously helpful when listening to TV or using the telephone. The very latest hearing aids can now connect directly to smart-phones allowing them to be the accessory of choice through the use of dedicated apps.

Even if you do not own an appropriate wireless hearing aid system, your hearing aid audiologist can advise you of other assistive listening devices that can improve speech intelligibly or alerting in specific situations. These will include products designed specifically for those with reduced hearing and even different types or levels of hearing reduction. Landline telephones, mobile phones, TV listeners, door bells and alarm clocks are amongst the many products that your hearing aid audiologist can advise on the use of and possibly even supply.

11.0 Living with hearing aids

Getting used to your hearing aids may be the most under-rated and misunderstood aspect of improving your hearing.

11.1 Getting used to hearing aids

Hearing aids come in many shapes, sizes, styles and colours but they all have one thing in common, that if you are to get the most benefit from them, you will need to acclimatise to many different aspects of using them.

No matter what you paid or the type you bought, all hearing aids will immediately enable you to hear more, but hearing better takes considerably longer! At first, you may find that hearing more can be somewhat overwhelming, but you will soon become comfortable with sounds being louder, and richer. Your brain actually does the hearing and certain parts of it will have been denied signals for far longer than you imagine, so when you use a hearing aid for the first time these "hearing centres of the brain" get a bit of an overload. This is where you start to learn to listen again.

Listening to what you want to hear takes practice, just like any other task we ask our bodies to achieve. We need to accept that the level of improved hearing takes quite a considerable time and this is why you need to work with your audiologist who will help you through these first stages.

It is also important to understand that whenever you have been advised of changes to your hearing in both ears and consequently to have an aid in both ears, it will help considerably. It is equally important to be aware that being able to handle the aids is a major part of the process. If you can't clean them daily, insert them easily and correctly, use the controls or change the batteries, then you are going to have a much harder time in adapting to and benefitting from your improved hearing.

Practising conversations, especially at the beginning, is very important but don't be surprised if, at first, you miss some parts of the discussion. It is very beneficial if you can do this with people other than just family members and ask them to help by not repeating immediately and/or more loudly if you occasionally "miss" something – pause a moment, you may surprise yourself that, in fact, you did hear it but you are probably used to saying: "Pardon?".

Naturally, the more advanced the aid the smoother this process can be, but that doesn't mean you necessarily have to buy the most expensive ones; your BSHAA member audiologist is there to help and guide you through all of the situations listed above.

11.2 Maintaining your hearing aid

Part of the conversation you will have with your audiologist as you choose your hearing aids will include details of the steps you will need to take to look after them to make sure they continue to work at their best.

Unless you have chosen hearing aids with rechargeable batteries, the most obvious task is to know when and how to replace the batteries, and to be aware of how frequently this will be required.

Other steps you will need to take will vary according to the manufacturer and model you have chosen. They will include a daily cleaning regime to make sure that you remove any wax and know how to clean and/or change the filters. You will also need to allow them to dry if any moisture has collected.

If you are at all unsure, make sure you ask your audiologist. It is always helpful to take notes, or ask for them to put their guidance in writing, in case you forget. You might like to take someone with you when you visit the audiologist, so that they can listen to the advice and guidance as well.

11.3 Hearing aid batteries

There are 4 main types of hearing aid battery. These are colour coded for easy identification (yellow, brown, orange and blue in increasing power). Usually larger batteries last longer than smaller ones, so you may wish to consider this when deciding on the type of aid. More powerful hearing aids require larger batteries as they require more current.

A hearing aid battery can last anywhere between four days and two weeks depending upon its size and how much amplification it is providing. Some hearing aids are now available with rechargeable batteries.

When you choose a hearing aid, you should make sure that you can manage to change the battery, or can rely on someone to help do this for you. The smaller the hearing aid, the more fiddly it can be to change the battery.

12.0 Tinnitus

Tinnitus is the perception of sound in a situation where no external sound source exists.

The sound perceived by the individual varies from person to person and has been described as banging, whistling, music playing, rushing, or pulsing – with many other descriptions having been reported.

The most common description is of a high-pitched ringing in one ear or both. Irrespective of how the sound is perceived, it may be persistent or transient, steady or pulsatile – for example, it is common to experience temporary tinnitus after exposure to loud noise.

To see how your audiologist can help you and the treatments available please refer to *Appendix 3* on page 33.

13.0 FAQs

Q Should I visit my GP if I'm worried about my hearing?

A You will need to visit an audiologist to have your hearing properly assessed, and you do not need a GP referral before the audiologist can see you. If you are relying on the NHS to cover any costs of the assessment or to provide any hearing aids you may need, you may need to see a GP first to be referred – this will depend on where you live. However, surveys show that in more than one third of cases, GPs do not refer their patients on for their hearing to be checked.

Q My GP says that some hearing loss is expected at my age so I can't be helped.

A The vast majority of people can be helped to hear better and you should seek advice from an audiologist who is clinically trained to understand how best to help. If your GP does not want to refer you, you should keep pressing, or visit an audiologist directly.

Q What benefits are there in using a private audiologist?

A As identified in the latest review by Which? private audiologists are able to devote more time to understand your personal needs and tailor their advice and support. Time spent helping you to acclimatise is vital to ensure you maximise the benefit in everyday life. On average, those who buy privately report higher levels of satisfaction with their hearing as a result.

Q How often should I see my audiologist?

A Your audiologist should see you as often as you need. After first fitting of hearing aids you will need to see them again within 4-6 weeks, and you should agree your ongoing review plan at the time of purchase. This is likely to vary between 6 and 12 months unless a specific need arises.

Q Are hearing tests free?

A Some tests may be free, but your audiologist is under no obligation to offer this free, so you will need to check. Should you decide to purchase hearing aids, the testing and follow-up is likely to be included in the overall package.

Q If I pay for hearing aids and I don't find they help me, do I lose my money?

A Most audiologist offer a trial period for you to get used to your hearing aids. Find out what this is before you agree to purchase. The period varies and some do not offer any trial period – they don't have to if you visit their premises. If you are not happy with the aids and want a refund you must tell the audiologist in writing before the end of the trial period. If the audiologist extends this period, ask him/her to confirm this in writing so there is no confusion on either side.

Q If the audiologist visits my home do I have to agree to purchase hearing aids at the time of the visit?

A No you have time to think about the purchase, and any contract you enter into in your home is covered by legislation* which gives you a minimum 14 days within which to change your mind. Your audiologist is legally obliged to provide you with details about these rights.

* The Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013

Q Should I buy hearing aids over the internet?

A Best professional practice demands that hearing aids are only provided as part of a face to face assessment and consultation. BSHAA does not recommend that you purchase hearing aids unless you have been assessed in a face-to-face consultation with an audiologist and had the right hearing aids prescribed for you. Some audiologists work with companies who sell hearing aids via the internet, and if you choose to buy from internet sales, we advise you not to buy any instruments that differ from the prescription you have discussed with your audiologist. Your audiologist will be entitled to charge you a fee for your consultation and support arrangements, and you should make sure you understand the full fees for the hearing aids with support.

Q Do all audiologists offer a range of manufacturers?

A Not all companies offer every manufacturer. We suggest you ask what manufacturers they use prior to making an appointment if this is important to you. All audiologists are under a duty to offer best advice in the selection of aids.

Q What happens if my hearing aids break or need adjustment?

A You need to find out before you agree to purchase what is included in the price. All hearing aids have a 1 year manufacturer's guarantee (this will not cover any damaged caused by you). A number of audiologist offer ongoing aftercare and visits as part of the purchase price, others charge for the test, the aids and then you pay for each visit you need after a certain period.

Q What will I need to do to look after my hearing aids?

A You should follow the advice of your audiologist, which will include cleaning your aids as part of your daily routine, and knowing when to replace filters and batteries. Hearing aids are very delicate pieces of equipment and have small holes which, if they become blocked with wax will in time cause the receiver not to function properly.

Q How long will hearing aids last?

A You should expect to replace hearing aids at least every 5 years, though like mobile phones, you may want to take advantage of new technology more frequently. Both Action on Hearing Loss and the NHS expect that hearing aids should be replaced between 3 and 5 years. You may retain them for longer until they become obsolete and can no longer be repaired. Beyond the service contract and warranty period you may be asked to pay for ongoing care.

Q If my hearing aids stop working, will I have to pay for repair?

A Like all technology products, if any failure arises because you have not looked after it or you have damaged it, then you will be expected to pay. Any defects arising from manufacture or component failure should be covered within the warranty period.

Q Who should I contact if I am not happy about the service I receive?

A If you are not satisfied after discussing your concerns with your audiologist, you should set out your concerns in writing to them. They should be able to deal with all your problems, but try to get the problem resolved quickly. In the unlikely event that you are still unhappy, BSHAA's Customer Care Scheme is designed to give you added reassurance to ensure that you receive the high quality service you should expect from a professional. Contact the Customer Care Scheme administrator on customercare@bshaa.com.

14.0 Glossary

Audiogram	A chart mapping out how well you hear compared with the average adult.
Audiologist	An expert in the science of hearing.
BSHAA	British Society of Hearing Aid Audiologists – the professional body overseeing the standards of care expected from audiologists and providing guidance and professional development for the profession.
BTE	Behind the ear – a style of hearing aid, see section 7.
Cochlear	Part of the ear involved in detecting sounds and sending signals to the brain.
Cochlear implant	A surgically implanted medical device to help restore some hearing for those with profound loss.
Cognition	The brain function involved in perception and understanding – an important step converting the sound of speech (what the ear receives) into meaning.
Eardrum	The delicate membrane in the ear which detects the vibration caused by sound.
Earwax or cerumen	A natural secretion that generally protects the ear, but can occasionally build up and create temporary hearing loss until removed.
FAA	Find an audiologist – a service on the BSHAA website helping you to locate audiologists near you.
HAD	Hearing aid dispenser – a protected title that can only be used by audiologists who are suitably qualified and who must be registered by the Health and Care Professions Council.
HCPC	Health and Care Professions Council – an organisation responsible for regulating several clinical professions including hearing aid dispensers.
ITE	In the ear – a style of hearing aid, see section 7.
Otoscope	An instrument to look into the ear.
PTA	Pure-tone audiogram – the basic test of your ability to detect sounds.
REM	Real ear measurement – one of the assessment techniques to measure the sensitivity of your hearing.
RIC	Receiver in the canal – a style of hearing aid, see section 7.
SIN	Speech in noise – a test designed to measure how well you can understand speech in a noisy environment.
Tinnitus	A condition in which people hear various sounds (noise) continually, which in extreme cases can be highly debilitating.
Tympanometry	A test used to assess the working of the eardrum.

15.0 Useful contacts

British Society of Hearing Aid Audiologists
City Wharf, Davidson Road, Lichfield, Staffordshire, WS14 9DZ

BSHAA website – www.bshaa.com

BSHAA Customer care scheme customercare@bshaa.com

Find an audiologist service – www.bshaa.com/Find-an-Audiologist

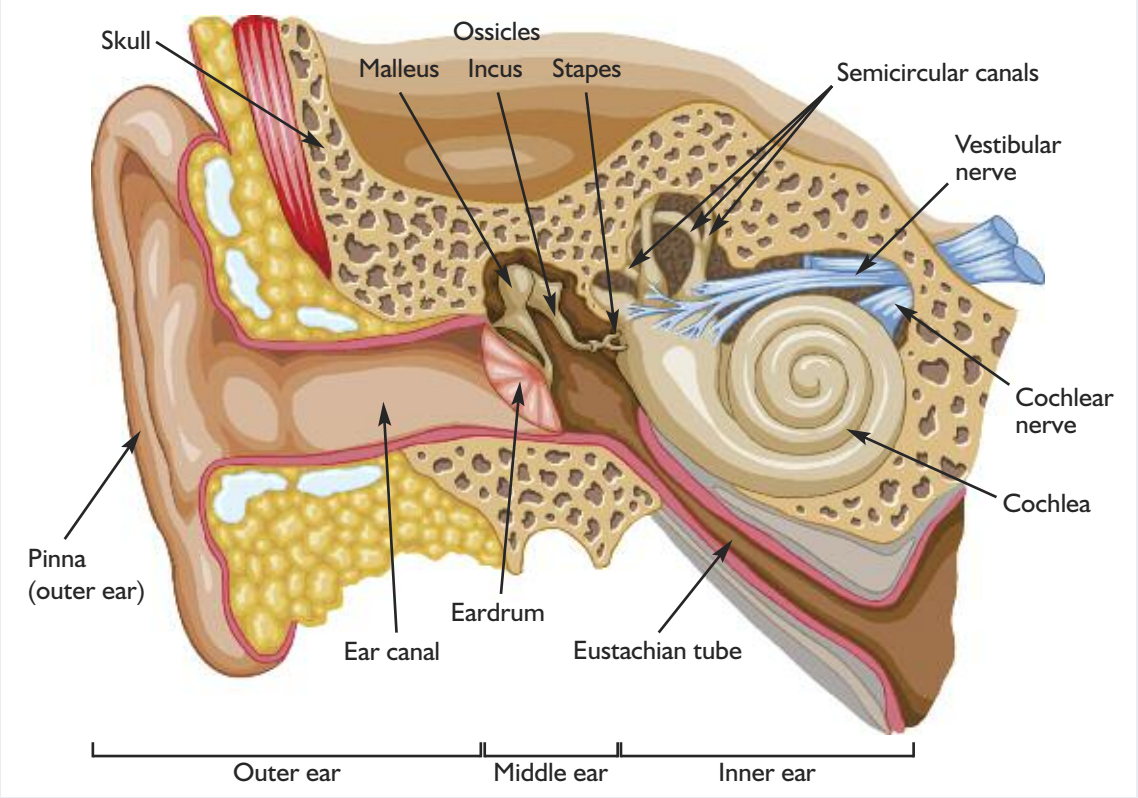
Health and Care Professions Council to check out that an audiologist is registered – www.hcpc-uk.co.uk

16.0 APPENDIX 1: Hearing Loss

16.1 How your ear works

To understand how and why difficulties with hearing may arise, it is important to be aware of some basics about how hearing works. When people speak, they emit a range of sound pressure waves (or vibrations) travelling in the direction the speaker was facing. These waves are caught by what you would know as your ear (we call it the pinna) and directed along your ear canal towards the eardrum. Near the pinna, the ear canal is just skin on cartilage becoming skin on bone near the eardrum. The ear is divided into three parts known as the outer ear, the middle ear and the inner ear, as shown in the diagram.

As the sound waves spread out from the speaker, they lose some loudness so they can be quite diminished by the time they reach your eardrum, especially if the speaker is not facing you directly, or you are a long way away. The construction of the outer portion of the ear (up to the eardrum) does help to boost the signal but usually not enough, if your hearing test suggests you need some amplification.



After striking the eardrum (tympanic membrane), the vibrations travel across the middle ear chasm through the smallest bones in your body commonly called, hammer, anvil and stirrup (malleus, incus and stapes) and through a tiny oval window in your cochlea (the snail-like structure you can see in the diagram). Here, the sound vibrations are converted into signals that pass along the auditory nerve to the various parts of the brain's hearing centres to be interpreted as the sounds you hear. This conversion process involves a membrane being activated by the sound waves as they pass through different viscosity liquids, with thousands of tiny hair cells, each "tuned" to respond to specific frequencies, sending their own unique signal to the brain when that frequency is received. Each part of speech contains distinctive sounds at different frequencies, and these hair cells begin the process of helping you make sense of the sounds you are hearing. Typically, vowel sounds are at low frequency, and consonants tend to be at a higher frequency.

If these hair cells become less sensitive (e.g. becoming less flexible with age), are damaged or dead, then the brain will be receiving fewer signals. As a consequence, you will struggle to hear. Everything may seem quieter, but it is more likely you will just miss selected sounds, as only some parts of your auditory system are affected. If only some of the hair cells are damaged, you may hear some sounds well, whilst completely missing others.

Your brain plays a crucial part in interpreting meaning from the sounds and it has to work harder when it is not receiving information about all parts of the speech. Quite often, you will interpret what you think you heard a little differently from what left the speaker's mouth – this can lead to both amusing and embarrassing moments. When your brain has to work harder to make sense of the sounds it is likely that you will become tired more easily and find it difficult to concentrate for long. These are common side effects associated with hearing difficulties, though you may not realise why they happen, or that seeking help with your hearing can contribute to a better life balance.

16.2 Types of hearing loss

There are several different types of hearing loss. They are described as conductive (COND) if the physical part of the sound path is affected, or sensori-neural (SNHL) when the problem is occurring in the way the sounds are converted and interpreted, or (MIXED) if there is a combination of effects. This not an exhaustive list, but the most common ones for adults include:

- Ageing effects called presbycusis (SNHL)
- Various autoimmune inner ear diseases (SNHL)
- Exposure to loud noise or noise induced hearing loss – NIHL (SNHL)
- Glue ear – a temporary condition that is reversible (COND)
- Head trauma such as a blow to the head (COND) and/or (SNHL)
- Hereditary conditions running in the family that affect hearing (SNHL)
- Malformation of any part of the ear (COND) and/or (SNHL)
- Meniere's disease (SNHL)
- Otosclerosis (COND)
- The result of a virus or disease, including for example, mumps, measles, stroke, and Parkinson's, (SNHL)
- A side-effect of drugs such as chemotherapy, used to treat cancer or other conditions (SNHL)
- Wax – a temporary condition that is reversible (COND)

16.3 Earwax and its removal

Earwax (cerumen) is a perfectly normal deposit of the human body. It is formed by natural processes in the ear canal as the skin layer (which is constantly being renewed as with every other part of the body) flakes off as the old skin dies and mixes with oils naturally secreted in the ear canal. Normally it will make its own journey out of your ear (as the canal slopes naturally outwards) and tiny bits drop out – usually without you being aware.

However, a variety of factors can conspire to impede this process, including:

- The shape and size of your ear canal
- Abundance of hair in the ear
- Other objects in the ear (e.g. cottonwool buds, or insects)
- Predisposition to produce more wax than average

Wax is natural and should be present, though an excess can cause problems leading to blockages and a temporary reduction in hearing ability. Some blockages are not wax; they can be caused by the residue of an ear infection (Otitis Externa) and need to be treated by your GP. However, there are various methods to remove wax, including some highly dubious products that should be avoided! Your ears are important and easily damaged physically, so you should always seek professional help for your own safety.

Many NHS GP practices will provide a form of syringing, using water to clean the ear, but as pressure grows on GP workloads, fewer practices continue to offer help. Many BSHAA members are trained and qualified to remove wax by a variety of methods. These include:

- Gentle irrigation
- Use of a special tool called a curette (such as Jobson Horne probes)
- Suction using a fine instrument inserted into the ear canal
- A new endoscopic process using a specially designed tool – similar to “key-hole” surgery

An important element for safe wax removal is the need for a very clear view into the ear to avoid accidental damage to the eardrum. Procedures will either be carried out with a large operating microscope (in some large practices) or using “loupes” – a magnifying headset with a strong light. Some techniques may allow projection of a large image on a screen for simultaneous viewing. It may not always be possible for the whole amount to be removed in one session if the wax is particularly impacted. You may be asked to help soften the wax before attendance. Various methods might be suggested with drops of olive oil being amongst the most common. Do not attempt self-removal using things such as hair grips, cotton buds or Hopi candles, as you may cause the wax to become more impacted, or, worse still, cause permanent damage to your hearing.

To be able to perform any of these tasks, the practitioner has to be properly trained, certificated and insured, and you should always ask for evidence that this is the case.

Assessing your hearing is an important step in making sure that you are looking after your health and wellbeing. There is nothing to fear about a hearing assessment, and an increasing number of campaigns are seeking to encourage people to check out their hearing with a similar attitude as they have at the opticians.

17.0 APPENDIX 2: Hearing Assessment

This section describes what is involved in assessing your hearing. Perhaps the most important guidance we can give, is that this is for your benefit, so you should feel comfortable asking questions at any time in the process. The more you know about the assessment, and why certain things are important, the more the audiologist will be able to help you achieve the most benefit. At the end of the assessment, your audiologist should provide you with written details of all that you have discussed together.

17.1 Taking a case history

When you have a hearing assessment, the audiologist will start by asking a number of questions about your hearing and your general health including details of any medication you are taking. This is referred to as your case history and anything you say will always be treated confidentially. It is important to tell the audiologist about any medical issues as they may have a bearing on your hearing and may influence the advice from your audiologist. Remember to mention any medical device, such as a pacemaker, you may have fitted.

Once you have answered these questions, your ears will be examined (outside and in) with an otoscope that allows them to see right down to your eardrum and might prompt a few more questions. If your audiologist uses a digital otoscope, they may be able to show you inside your ear canal and describe what you are seeing. Your hearing thresholds will be checked using an audiometer.

17.2 Audiometry – the Pure Tone Audiogram (PTA)

These come in various shapes and sizes including ones that are part of the computer, but all entail putting headphones on your ears or insert-phones using a squidgy tip. Your assessment will need to be conducted in a quiet setting with little other noise. If your assessment is at the audiologists, it is likely that it will be in a quiet room, soundproof booth or even soundproof room in their practice. If it is being conducted in your home, the test should be conducted where it is very quiet, and they will begin by testing the ambient noise levels, to make sure that the measurement results will not be compromised by other noises.

During the assessment, you will be asked to respond – usually by pressing a button – every time you think you hear a sound in your ear. Only one ear at a time is measured. There will be loud sounds, quiet ones and all at differing frequencies. Some sounds will seem very quiet, but it is important that you always respond. Another headset will be placed behind your ear and a similar test conducted. Sometimes it is necessary to do extra tests known as masking for the expert to ascertain a true reading for an ear. You might initially find it confusing to know when to press the signal button if you have a rushing sound in one ear and a tone that may sound as if it is in either ear. Please let the audiologist help to guide you through – they are highly trained to know what to do and will always be willing to explain what they are doing and how that stage of the test will help them to help you.

If the initial tests suggest that your hearing could be improved, the audiologist is likely to make more measurements that are all designed to help identify the best way to help. These may involve placing a hearing aid in your ear and checking your response again with in-situ audiometry, sometimes called Real Ear Measurement (REM).

The basic test, called the Pure Tone Audiogram (PTA), enables your audiologist to produce a map of how sensitive your hearing is at different frequencies. This will show how your hearing compares to the full range of hearing possible for the average person. This is very similar to the way in which a sight test will show up whether you could benefit from corrective lenses. In many ways, a hearing aid can compensate for hearing loss similar to the way in which a lens can restore your eyes' ability to focus. However, assessing hearing is much more complex than measuring eyesight. Although the audiogram provides important information, it does not always provide sufficient information to understand how your hearing can best be helped. Other measurements are required as well.

17.3 Assessing your ability to understand speech

One of the most common complaints is that people begin to struggle to understand speech in a noisy environment. There are several tests designed to measure these effects which provide a fuller picture of your hearing needs, including speech-mapping, and speech-in-noise tests (such as Quick-SIN). The measurement of signal-to-noise ratio loss (SNR) is important because speech understanding in noise cannot always be reliably predicted from the pure tone audiogram. In this test you are asked to repeat whatever you think you hear of someone speaking against increasing background noise – don't worry, no-one expects you to get them all. Speech-mapping, like REMs, are intended to provide a clearer picture that the hearing aid is delivering exactly what we think it is but, owing to the variances in the construction of the ear canal, it isn't always the case. Pre-determined tones are sent through the aid and picked up by an incredibly small microphone inserted just beyond the aid and relayed back to the computer from where the aid is programmed.

17.4 Other measurements

Another test, Tympanometry, is usually performed when it is suspected that your eardrum (TM – Tympanic Membrane) is compromised in some way and not reacting as expected. This involves a machine applying a pulse to change the pressure in your ear and measuring how your eardrum reacts.

All of these tests are used to give a clearer picture of your individual needs in order that your audiologist can give you as professional a service and product as you deserve.

18.0 APPENDIX 3: Tinnitus

18.1 What is Tinnitus?

Tinnitus can be defined as the perception of sound in a situation where no external sound source exists.

The sound perceived by the individual varies from person to person and has been described as banging, whistling, music playing, rushing, or pulsing – with many other descriptions having been reported.

The most common description is of a high pitched ringing in one ear or both. Irrespective of how the sound is perceived, it may be sometimes or all the time, steady or pulsatile – for example a number of people get temporary tinnitus after exposure to loud noise.

Tinnitus is described as unilateral if it affects just one ear, or bilateral if it affects both. The numbers of people experiencing unilateral and bilateral tinnitus are roughly equal.

Approximately 10-15% of the UK population may experience persistent tinnitus, but if occasional or transient tinnitus is included, this figure rises to over 30%. People are more likely to experience tinnitus as they grow older. Around 4% of those aged between 17 and 30 report tinnitus, but people between 61 and 70 report nearly four times this level. More women live with the effects of tinnitus than men, and children may report tinnitus.

The effect tinnitus has on people's lives varies considerably. Over a quarter of a million UK citizens say that their tinnitus is severe enough to stop them leading a normal life – e.g. because of sleep or concentration difficulties. Despite around a quarter of a million people apparently suffering from tinnitus, only around 3-4% of adults ever consult a doctor about it – about the same as consult for hearing loss. Yet we know that people with tinnitus need not have hearing loss and people with hearing loss need not have tinnitus.

Since most tinnitus is felt as coming from the ears ("ringing in the ears" is often reported) it's tempting for tinnitus clients to believe that it must be an ear or hearing problem which is causing the tinnitus. However, in cases where the main hearing (auditory) nerve has been surgically cut so that no signal from the ears reaches the brain, the tinnitus is still there!

So where is it coming from? Recent research is helping us to understand better how tinnitus arises and it appears that there are three or four different causes, but despite the best efforts of professionals worldwide, we don't know for sure. There is also no reliable diagnostic test to understand the precise nature of tinnitus in each individual. If we knew its cause, we'd be able to treat tinnitus much more effectively.

18.2 How can an audiologist help with tinnitus?

In many cases, though not all, hearing aids can reduce the effects of tinnitus perception, and some hearing aids have special programmes to help reduce its severity. Some Audiologists also dispense specialised tinnitus therapy equipment.

Some audiologists have undergone training in tinnitus as part of their training or practice, some are tinnitus advisors accredited by the British Tinnitus Association, and some may be fully qualified counsellors or practitioners in various therapies. If an audiologist claims to be any of these things, you should satisfy yourself about the nature of this training, what qualifications support this, and who has accredited the claims.

18.3 Tinnitus treatment

You should always remember that not all clinicians agree on what causes tinnitus or how many different causes there might be. No reputable practitioner claims that tinnitus can be "cured", but there are many treatments and support programmes that provide relief from its effects, with varying levels of success.

Even though there is, currently, no "cure" in sight that does not mean that tinnitus cannot be treated. There is a range of treatments available worth trying. Some treatments might be effective for you, but not for someone else – and a degree of experimentation may be necessary before you find something that helps you. It is also possible that nothing will help your tinnitus, but many tinnitus clients find something that can help to some extent.

There **may** be some treatment available via the NHS, so you may wish to investigate if it's available in your area and to what degree – but you may find it difficult to access NHS tinnitus services and prefer to make private arrangements.

One strategy, which can help, is **Sound Enrichment** – the introduction or highlighting of other sounds, which refocus attention away from the tinnitus sound.

Any hearing aid can do this to some extent by amplifying external sounds so that the tinnitus sound is less disturbing. In addition, some hearing aids have tinnitus therapy built in, which means that a chosen sound is generated by the aids, which can then be introduced alongside or instead of the usual amplification. An example might be the noise of the sea – which would play alongside the hearing aid's normal function or (if you prefer) instead of it. Such sounds can even be made to move from ear to ear depending on the hearing aid model, so that you are aware of the relaxing, soothing sound of the sea instead of your tinnitus sound.

You can also do this for yourself by purchasing sound generators or by making sure you always have a variety of sound sources to listen to – but you are likely to have greater success if the sound enrichment source is "matched" by a hearing care professional to your tinnitus frequency and volume.

Another strategy, which has reported success, is Tinnitus Retraining – whereby you are trained to stop or reduce your focus on it. The practitioner will take an in-depth history of your tinnitus and daily routine to assess the most suitable treatment. Ear worn sound generation equipment, similar to that described above, will probably also be utilised similar to those described above, and psychological techniques will be used to enable you to relax, de-stress, and ignore your tinnitus noise. The practitioner could be a hearing aid audiologist, a cognitive behavioural therapist, a neuro linguistic programming therapist, a psychologist – or any combination. If any expertise is claimed, always satisfy yourself as to its credibility.

There is also an ever expanding range of devices, which claim to treat tinnitus – from soft laser therapy to "Neuro-Stimulation". These are things that you may wish to try after looking into how good they really are and the qualifications of the practitioner offering them.

A range of alternative therapies have claimed success in treating tinnitus – from hypnotherapy where (for example) you might be trained to picture your tinnitus as being controlled by a dial and you being able to turn that dial down as necessary, to acupuncturists, homeopaths, herbalists, and even nutritionists. All of these practitioners can point to various degrees of success – but there is no guarantee.

At BSHAA, we believe that your best chance of success in managing your tinnitus is to put yourself in the care of a qualified, accredited, registered healthcare professional who will match their knowledge and skills to your experiences and lifestyle, to provide the best possible outcomes. Remember – nothing is guaranteed, there is no cure. Whatever methods they use, any tinnitus practitioner will help you to set realistic goals to reduce the impact tinnitus has on you, and then support you to work towards these goals.

CARE • SUPPORT • ADVOCATE