

Music

listening with hearing aids



Music listening with hearing aids

Hearing loss can range from mild to profound and can affect one or both ears. Understanding what you can hear with and without hearing aids can help you decide what might help you to hear music.

This leaflet is based on feedback about music listening from a large number of hearing aid users. It results from the 'Hearing Aids for Music' project (2015-2018) at University of Leeds and Sheffield Teaching Hospitals NHS Foundation Trust.

This leaflet provides advice applicable to most listeners, but not all the information will be suitable for everyone. We have tried to make it clear how to decide what might work for you. We have also provided a number of further resources to help clarify any further questions you may have.

Music listening with hearing aids is challenging, but regular listening practice can help improve your enjoyment of music again. Please experiment with the suggestions in this leaflet, and discuss your findings with your audiologist at your next appointment.



“Without my hearing aids, there's nothing there except the thump, thump, thud bits of a track. They do improve it, vastly.

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Why is it important to understand my hearing loss?

Figure 1 shows an 'audiogram' or hearing chart. You may have seen this during your hearing appointment. The circles and crosses on the chart show the quietest sounds you are able to hear without using hearing aids. Ask your audiologist to explain your hearing test to you if you are unsure.

Hearing loss is normally categorised into mild, moderate, severe and profound depending on where your hearing levels fit on the audiogram.

The shape of the audiogram represents the tonal balance of your hearing without aids. Using hearing aids will reintroduce frequencies you have become accustomed to doing without. This will change the tonal balance of the sound you hear, and may initially make sounds appear more 'tinny' or 'sharp' than you would expect.

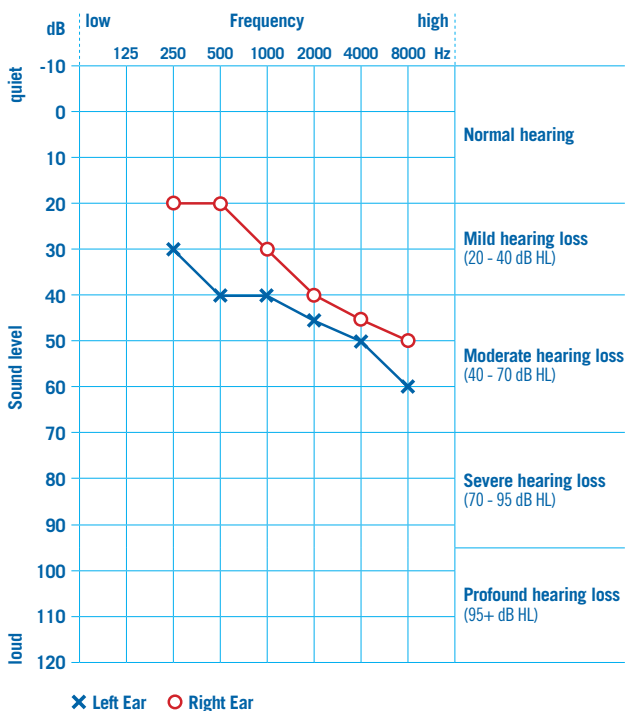


Figure 1: Example audiogram showing moderate hearing loss at high frequencies.

Why can it be hard to listen to music?

Music listening with hearing aids is challenging because these devices were designed first-and-foremost to transmit the information that is important for understanding speech. Speech varies relatively little from person to person, and from culture to culture. This is definitely not the case for music!

The shaded area in Figure 2 represents the acoustic properties of speech which exist in a narrow pitch and loudness range and are relatively well-reproduced by hearing aids.

Music on the other hand often includes components which lie far beyond this range. Unfortunately these sounds are not always well-reproduced by hearing aids.

As a general rule, you will be able to hear those sounds beneath the line of your audiogram without your hearing aids, but you will need to wear your aids to hear the sounds above it. For example, if you have a moderate hearing loss (40-70 dB), then without hearing aids you may have some difficulty understanding speech, but would be able to hear rock musicians performing at an amplified concert.



“At a classical concert, I have difficulty hearing the quiet parts. Same problem with some recorded music.”

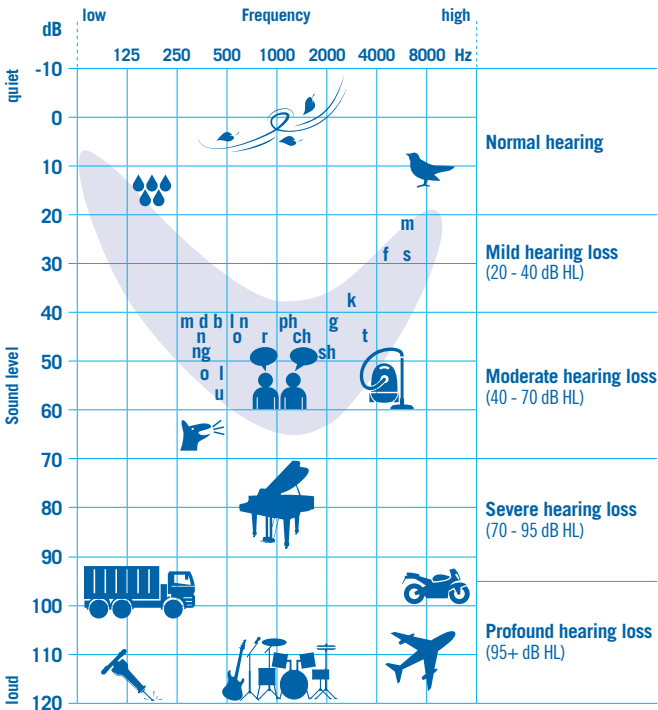


Figure 2: Hearing levels and everyday sounds.



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I used to struggle to pick out the instruments when I first noticed I was losing my hearing. Now if I've got my hearing aids in, I can hear when the guitar comes in.

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I would probably give my hearing aids a 9 out of 10. I used to struggle with lyrics but I can hear the words clearer now.

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How can my hearing aids help me?

As well as understanding your hearing loss, it is important to understand your hearing aids too.

- Do you have a volume control? Do you know how to use it?
- Do you have additional programs? What are they for? Do you know how to switch between them, or how to turn them on and off?
- Does your hearing aid have loop (Telecoil) enabled?
- Does your hearing aid have streaming programs enabled? This may be important if you want to use extra equipment with your aids to help you hear music.
- If you wear two hearing aids, are your aids linked? Do you need to press a button on both of the hearing aids to control the volume or to change program?
- If your hearing aid is linked with a smartphone, do you know how to control the app?

If you are unsure about any of these points, remember to ask your audiologist at your next appointment.

Modern hearing aids are often able to solve some of the problems that were common in older style hearing aids, such as hearing wind noise in the microphone, sudden unwanted loudness, or experiencing feedback (a squeal or whistle resulting from re-amplification of the sound generated by a hearing aid). The adaptive features within the hearing aids that solve these problems can have a negative impact on music appreciation. For example, feedback cancellation results in pure tone musical stimuli (e.g. organ, flute) being mistakenly analysed as feedback and being suppressed, and the adaptive microphone directionality used in speech-in-noise programs can make it harder to focus on music in the presence of an audience and competing noise. Let your audiologist know if you are experiencing uncomfortable loudness levels, or feedback or other whistling pitches when listening to music.

If you are actively singing or playing with hearing aids, the sound of your own voice or instrument can sound very different when hearing aids are blocking your outer ear. This effect is known as occlusion. Some evidence suggests that using one aid instead of two might make occlusion less noticeable, and some hearing aid users have found it helpful to wear just one aid while performing. Again, if this is a particular problem for you, make sure you discuss it with your audiologist.

What other assistive listening devices might help me?

Your audiologist will be able to discuss your experience listening to music with assistive listening devices (also known as ALDs). In some cases you may be able to buy or borrow equipment for a trial period so that you can assess whether it improves your experience of music listening. Some technologies are designed for use at home, while others are designed to help in the larger acoustic spaces found in live music venues.

Amplified headphones

Amplified headphones are usually worn without hearing aids. Since they cover your ears, they block a little of the background room sound. Most amplified headphones can deliver signals at a louder level than is achievable with standard headphones. A separate headphone amplifier can also give you a degree of tone control so you can separately boost low, mid and high frequencies.

Noise-cancelling headphones

Noise-cancelling headphones are powered devices which use active noise cancellation technology to reduce environmental sound. They can often be worn over the top of your hearing aids, allowing you to listen to music over headphones at a lower level than would otherwise be possible.

Loops

A hearing loop provides a wireless signal that can be picked up by a loop-enabled hearing aid when it is set to 'T' (Telecoil) setting. Look out for loops when using landline telephones, mobile phones (with a neckloop), or inside public buildings e.g. in the cinema, church or music venue.

Streamers

A streamer is a small device that can transmit sound from other audio equipment wirelessly into your hearing aid. Your hearing aids need to have a streaming program enabled for this to work.

Remote mic

A remote microphone is a device that lets you pick up live sound in a room by putting a microphone closer to the sound source itself. This can reduce some background noise from the signal, and effectively puts you closer to the musicians that you are listening to in a live performance venue.

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I use wireless connection to my hearing aid a lot. The wireless system can sometimes distort the sound, but it is useful and often provides enough clarity that I can learn a new song without disturbing others in my home.

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Noise cancelling headphones have revolutionised my listening habits. I can now listen to music without taking my hearing aids out.

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If I'm playing the classical guitar, that's a quiet instrument, but it comes out quite loud and slightly distorted, so I turn the hearing aid down.

... when I go to concerts with a full orchestra, it's awful if it's distorted, so I wait for the first loud bit, in a Mahler symphony or whatever, and then adjust volume to that and then I know I can ride with the dynamics.

... in a jazz club they stick trumpets and sax through an amplifying system and it gets even louder so I go to the concert without my aids.

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How can I make the best of the environment?

There are steps you can take to improve your experience of listening to music in different settings.

- At home, introduce soft furnishings (cushions, curtains, rugs) to lessen reverberation from hard surfaces.
- Ask venue staff in advance whether any assistive listening devices are supported (e.g. loop, streamer, remote microphone).
- Consider the layout of the venue, and experiment to find best position in the room.
- Remember that the 'best' room position will differ for each person since it will vary with the type and degree of hearing loss. In a small room, or if you have loudness discomfort, it is usually best to move further away from the musicians and/or loudspeakers. In a larger room, try to move around and experiment to find your preferred sound level.
- Remember that the 'best' room position will also differ according to the type of music that is being played.
- If you want to talk during the event, you may wish to sit further away from the sound source.
- Remember too that it is crucial to protect your remaining hearing in loud environments. Don't be afraid to swap your hearing aids for earplugs if it feels like the right thing to do!



Top tips for music listening

As we saw above, music is often much, much louder than speech. This is one of the main reasons it can be challenging to listen to music with hearing aids. If the music is too loud for the hearing aid's input microphone, then the signal will be distorted from the outset. No matter what the hearing aid subsequently does to 'improve' the sound, it will not be able to remove the effects of that distortion.

Our top tip for listening is, when possible, to

- Reduce the volume of the music, and let your hearing aids amplify the sound.

Experiment with lowering and raising the volume until you find your preferred listening level. With a bit of practise you will be able to find the loudness level that minimises distortion (when the music level is too loud) and reduces inaudibility (when the music level is too quiet). By letting your hearing aids take care of the amplification stage, the music will be amplified according to your own hearing loss profile and you'll get a better balance of high, mid and low frequencies in the amplified sound.

Of course, it is not always possible to just 'turn it down' – especially if the music is being performed live by musicians right in front of you! We have collected suggestions from people who use hearing aids and encourage you to try them out for yourself. Depending on your level of hearing loss, you should find that some work better than others.

- For recorded music, turn down the volume on your music player.
- For live music, move further away from the musicians and/or loudspeakers.
- Use the hearing aid volume control to reduce the input level.
- Put Scotch tape (not other sticky tapes!) over the hearing aid microphone, but only after discussing this with your audiologist.
- Try different listening programs on your hearing aid.
- Try wearing noise-cancelling headphones as well as your hearing aids.
- If you have a mild loss, it might be best to take your hearing aids out altogether.



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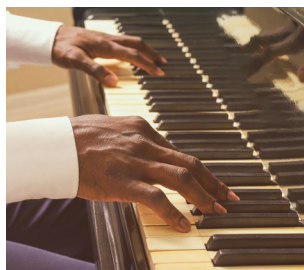
I refuse to have a problem, I hear it in a different way to somebody with perfect hearing, but if I like it, I will still carry on.

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It was two years before it was a pleasure to put them in rather than a pleasure to take them out.

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Persistence pays off

It will take some practice to get used to how music sounds with your hearing aids, but recent research shows that time spent practising listening is time well spent.

The following recommendations are based on listening suggestions from surveyed hearing aid users, and might help you widen your listening choices and find 'easier' music to listen to.

- Start by listening to familiar music. This will help you get used to how things sound with your aids.
- Try listening to solo instrumental music where just one instrument plays at a time. You may find that some instruments are easier to hear than others. Next, try listening to different combinations of instruments.
- Listen to music with lyrics. If you can, practise listening whilst following along with a written text of the lyrics too.
- Try listening to different versions of the same song, perhaps with a different vocalist singing, or else recorded in a live concert rather than studio setting.
- Explore musical styles. Again, you may find that some styles of music are easier to hear than others. Also be aware that your enjoyment of different styles may change over time too!
- Experiment with the available settings on your hearing aid, and if possible, with other assistive listening devices too.
- Explore different places to practise your listening, and remember to make the most of your environment. Room acoustics can make a big difference to the experience of listening, and you will probably find that you prefer listening to music in some locations over others.

These suggestions led to improved music listening for people using hearing aids in our research. However, since hearing losses and specific hearing aids vary greatly between people, we can't yet predict how quickly you will feel the benefit of your listening practice. It is important to remember that music listening can be challenging, and not to be discouraged if things don't sound right immediately. Although we can't predict the rate of improvement, we can be sure that persistence pays off!

Making the most of your audiologist

Your audiologist can help you to get the most out of your hearing aids for music listening, but it is useful if you can come prepared to your appointments. During the weeks before your appointment, make some notes about your music listening habits and wishes. Make sure you discuss your notes with your audiologist, as this can help them to assess your needs and preferences more quickly and more thoroughly.

- What do you listen to and where? Tell your audiologists about the situations in which you enjoy listening to music. For example, this might be listening to recorded music at home, or attending live concerts at your grandchildren's school.
- What problems do you have when listening to music? Try to itemise the specific things you are having difficulty with, e.g. hearing the lyrics, or following the bass guitar.
- What are your priorities for music listening? For example, do you want to listen to recorded music, alone? Or attend more live music events (and what styles, in what venues)?
- If you have extra programs, how do you want them setting? For instance, if you have the loop enabled, do you want this mixed with the microphone sound in addition?
- Use our resource *A glossary of terms for music listening with hearing aids* in your discussions with audiologists.

As well as talking to your audiologist you could consider seeing a hearing therapist, if there is one in your local area, whose job it is to provide counselling about the psychological and emotional effects of hearing loss.



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The audiologist set one of my hearing aid programs to have no feedback so that it does not attenuate very loud sounds. This lets me enjoy the full dynamic range of my listening choices.

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I had a look online and found a website containing some information directed at musicians with a hearing loss. It was good to know that there were others with similar experiences, and there was some good advice given too.

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What other resources exist?

There are many additional resources available to support your music listening practice. This section of the leaflet can help you find out where to look to find out more information, and who to contact to find out more about your local support services.

Our website holds a growing list of resources at www.musicandhearingaids.org

- A glossary of terms for music listening with hearing aids
- Results from our recent research
- Suggestions of books about music and hearing aids
- Links to websites and blogs
- Links explaining hearing aids
- Links explaining hearing protection
- Descriptions of new technologies including assistive listening devices and phone apps
- Links to further organisations (international, national and local)
- Specific advice for musicians
- Specific advice for audiology professionals

Greasley, A. E., Crook, H., and Beeston, A. V. (2018).
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