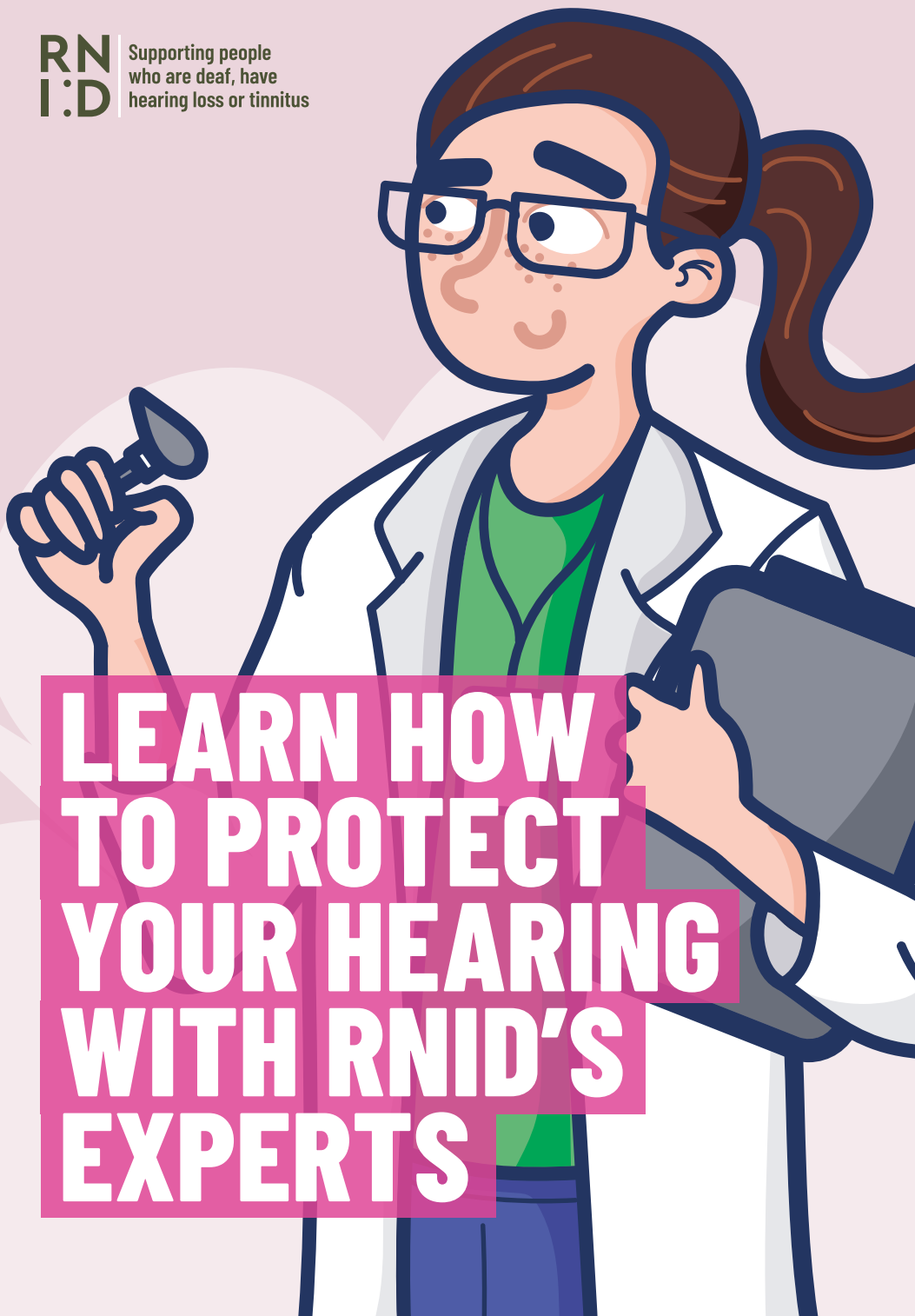


**RN  
I:D**

Supporting people  
who are deaf, have  
hearing loss or tinnitus



**LEARN HOW  
TO PROTECT  
YOUR HEARING  
WITH RNID'S  
EXPERTS**

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## WELCOME!

Thank you for taking the RNID hearing check. You received a result that suggests you do not have hearing loss so, what's next?

There's no better time to learn how you can protect your hearing now and into the future.

Hearing loss can happen gradually over time so it's important we take steps as early as possible to protect our ears and instil safe listening habits for ourselves and our families.

Inside this booklet you'll find lots of information on how you can protect your hearing, from the type of products you can use to understanding levels of noise. Plus, discover the science behind your hearing with Dr Stuart Johnson.

**I'm Franki. I worked as an audiologist in the NHS for four years until I moved to RNID where I hoped I could make a bigger impact to our communities. I've been lucky to be a part of some life-changing campaigns including saving NHS hearing aids in North Staffordshire, and more recently our campaign to encourage more people to check their hearing. I hope this booklet is helpful to you.**

**Franki Oliver**  
RNID Audiology Manager



## How loud is too loud?



Noise is measured using the decibel (dB) scale, which reflects the sensitivity of human ears to different levels and frequencies of sound.

Here are some examples:



**0dB:** the quietest sound a healthy human ear can hear

**40dB:** a quiet library

**60dB:** ordinary spoken conversation

**85dB:** a food blender

**88dB:** heavy traffic

**91dB:** a pneumatic drill

**97dB:** an industrial fire alarm

**100dB:** a nightclub

**110dB:** a live gig or concert

**130dB:** an aeroplane taking off 100m away.



Experts agree that repeated or long exposure to sounds at 85dB or above can cause hearing loss.

## How long you're exposed to noise matters

The length of time you can 'safely' be exposed to sound without needing to use hearing protection depends on how loud it is.

Sound intensity (the energy the sound wave carries) doubles with every increase of 3dB. So even though, for example, the sound of heavy traffic doesn't sound twice as loud as a food blender, it's twice as intense.

The safe exposure time for sounds of 85dB is up to eight hours a day. However, with every with every increase of 3dB, the safe exposure time halves. So, for example, the safe exposure time for 88dB is four hours.

You're at risk of hearing damage after just 15 minutes when you're in an average nightclub, which plays music at 100dB. This is why protecting your ears with earplugs is so important!



## An easy way to tell if noise is too loud

It can be hard to tell how loud sounds are, but if you can't talk to someone who's about 2m (6ft) away without shouting because of background noise, it's likely that noise levels are dangerously high. There are decibel reader apps that are available to download onto your smartphone or tablet, which may give some indication of how loud the surrounding environment is.

If after being exposed to loud noises you find you can't hear properly or have ringing in your ears for a few hours afterwards, it's a sign you've been exposed to noise that's too loud.

If noise is so loud that it hurts your ears, you should immediately leave the venue or stop the activity that's causing the noise – and use hearing protection in future.

It's never too late to start protecting your hearing, and there are plenty of ways to do this, from using hearing protection to practising safe listening.





## How does loud music damage our hearing? Dr Johnson explains...

Dr Stuart Johnson, a researcher at the University of Sheffield, received a Discovery research grant in 2022 and began looking into - "Understanding the impact of noise exposure on age-related hearing loss". Here he explains what actually happens inside our ears when they're damaged.

Inside the cochlea (our hearing organ that sits deep inside), there are thousands of sound-sensing cells called hair cells. These tiny cells are essential for hearing: they pick up sound waves and turn them into electrical signals that are sent to the brain along nerve fibres and

interpreted as sound.

Experts agree that hair cells, and their nerve fibres, can start to become damaged by noise at 85dB (decibels) and above. That's a problem when you consider that music at clubs and concerts is often around 110dB, and some headphones play music that's just as loud when the volume is turned right up.

When you're exposed to too much loud noise, the hair cells become overstimulated. This overstimulation begins to damage a subset of the nerve fibres around each hair cell. The hair cells also become fatigued

and their response to sound is reduced. This can result in temporary hearing loss that you may recognise as dulled hearing - it can last from a few minutes to a few days.

At first, after a break from loud noise, the hair cells recover but the damaged nerve fibres do not. If you continue listening to music that's too loud, over time the number of nerve fibres lost will continue to increase and eventually the hair cells may also lose their ability to recover and die. The initial loss of nerve fibres is hidden to us but can be noticed as an inability to discriminate speech in a noisy environment. As the nerve fibre loss and eventual hair cell loss continues the hearing loss becomes noticeable - and it's permanent.

Research has shown that when hair cells are damaged, nerve fibres further along the auditory pathway start searching for electrical signals that aren't being received from the ear and may become hyperactive. It's been suggested that this hyperactivity makes the brain more aware of the electrical

'noise' from the neurons, which is heard as tinnitus.

Again, this can be temporary, but with continued exposure to loud music, it's likely that the tinnitus will become permanent.

### **An easy way to remember how damage is done**

You can think of loud music affecting hair cells like the way a fresh patch of grass is affected by someone trampling over it. Before the person walks on the grass, it stands upright and tall.

When someone tramples on this patch and some of the blades of grass remain flattened. Over a day or two, some of the blades of grass may pop back up, but if someone keeps trampling over the patch of grass, more damage will be done, and the damage will become permanent.



## Your rights at work

**Did you know that if you work in a noisy environment your employer is obliged to take steps to protect your hearing, including making sure that you have hearing protection?**

Employers have a legal duty to protect your hearing under the Control of Noise at Work Regulations (2005), which protect you if you are in a noisy job. [See the HSE website for details.](#)

The regulations say that if you are exposed to loud noise at work, your employer must have noise levels assessed, and keep a record of the assessment. You'll know that an assessment is needed if you have to shout to communicate with someone who is two metres away from you.

If noise exposure reaches 80 decibels (dB), employers are legally bound to start taking action.



**Alice Tracy, Contact RNID**

If you work in a noisy environment – such as construction, manufacturing or in a music venue, or if your work involves listening to loud sounds through headphones or earpieces – your employer should make sure that you have hearing protection. For more about noise at work in the music and entertainment industry, see the [Sound Advice website.](#)

### Compensation for noise damage to hearing

If you feel that your current or previous employer has failed to protect you in the workplace, and this was the cause – or part of the cause – of damage to your hearing, then you can try to get compensation. To get this, you will need to bring a successful claim for personal injury through the civil courts. You are strongly advised to get legal advice.

**Industrial Injuries Disablement Benefit (IIDB)** compensates people who have become disabled as a result of an industrial disease or an accident at work. You can claim for it even if you're still working. But it is restricted to certain occupations that are known to be noisy.

### The armed forces

If you have hearing loss due to service in the armed forces on or after 2005, you may be able to claim under the Armed Forces Compensation Scheme. This scheme replaces the War Disablement Pension for people who have become disabled (including hearing loss) while serving in the armed forces before April 2005.

### Contact RNID

If you (or someone close to you) are deaf, have hearing loss or tinnitus and need free confidential and impartial information and support, contact RNID. We are open 8:30am to 5.00pm, Monday to Friday.

#### You can:

**Chat to us** on the RNID website at [www.rnid.org.uk](http://www.rnid.org.uk)

**Call:** 0808 808 0123

**Email:** [contact@rnid.org.uk](mailto:contact@rnid.org.uk)

**Book a BSL video call** via our partners at Sign Live: create an account at the [SignLive website](#) or download the SignLive app for Android or the SignLive app for iOS

**SMS/text:** 07360 268988

**Relay UK:** 18001 then 0808 808 0123

**Write:** RNID, York House, Wetherby Road, Long Marston, York, YO26 7NH





## How can I protect my hearing?

Whether we're at work, at home or out socialising – in any situation - we can be exposed to unavoidable loud noises. But there are comfortable, easy to use and affordable products that when used correctly can help protect your hearing from dangerous levels of noise.

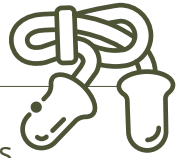
It can seem a bit daunting when considering what hearing protection to use. There is a lot of choice and sometimes it can be difficult to know where to start. If you think you need to wear hearing protection for work, it's best to discuss this with your employer.

## Types of hearing protection

There are three types of ear protectors, they are earplugs, earmuffs and canal caps. They all work in broadly the same way, by blocking sound waves from entering the ear canal and reducing the level of sound reaching your ears.



## Earplugs



### Disposable

Disposable earplugs should be soft and fit comfortably in your ear. They're usually made of foam, mineral wadding, or soft silicone. Most disposable earplugs need to be rolled between your fingers, inserted into the ear and held in place until they expand to fill and seal the ear canal. Ordinary cotton wool isn't recommended for this purpose.

### Reusable

Reusable earplugs are made from foam, soft plastic, or rubber. They can be washed and used again. Pre-moulded, re-usable earplugs are very hardwearing and don't need to be rolled to fit in your ear. But they may not fit as snugly as custom-made earplugs and are unlikely to give quite as much protection.

### Music earplugs

Music earplugs are a type of reusable earplug that are designed for people who go to clubs, gigs or festivals.



These earplugs have special acoustic filters that reduce the harmful levels of sound at specific pitches so sound quality isn't compromised but you're still protected. They're a great option if you go to these venues regularly. They aren't the same quality as musician's earplugs, but are much less expensive and still give a good amount of protection while allowing you to enjoy your night out.

### Earplugs for the catering industry

If you work in the catering industry, you can get earplugs that are detectable using a metal detector if they fall into food.

### Custom-made

Earplugs can also be custom-made to give a better fit in your ear canal. They tend to be expensive, but, with the better fit they should reduce

the noise more effectively and be more comfortable. They may last for several years and so may be cheaper than disposable earplugs for regular, long-term use. There are different types of custom-made earplugs and the types of protection they provide are tailored to the needs of the wearer, like musicians or people who shoot.

### Musicians' earplugs

Like music ear plugs, musicians' earplugs have acoustic filters to reduce noise at specific pitches by required amounts, so music is heard at normal but safe levels. However, these are specifically designed, and custom-made, for people in the music industry who may be exposed to music more frequently and at more harmful levels than people who go to clubs or gigs. For more information about music and noise levels, contact the [Musicians' Union](#) or the [British Association for Performing Arts Medicine](#).

### Shooters' earplugs

You can get earplugs that protect from sudden explosive

noises such as gunshots.

These allow normal hearing at non-harmful levels but reduce all high intensity sounds to a safe level. Some are electronic, while others contain special types of materials or filters.

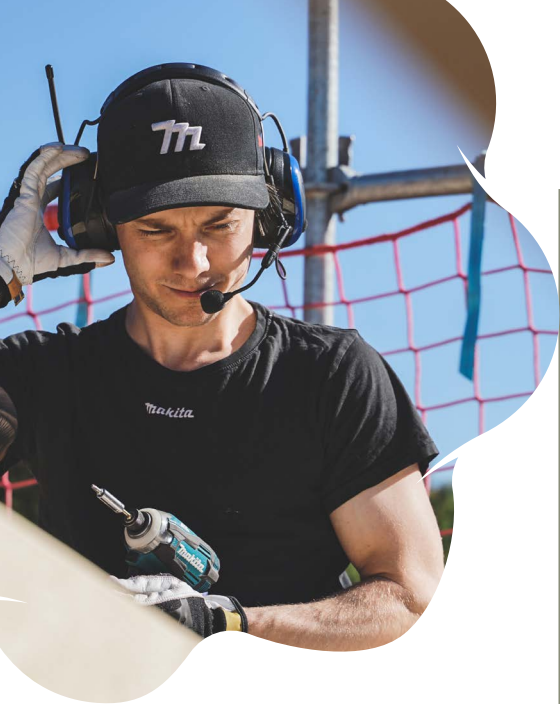
### Earmuffs



Earmuffs, or ear defenders, look like large headphones. Hard cups fit over your ear and are sealed to your head with soft cushions on their rims.

These offer different amounts of protection. Some are similar to standard earplugs, whereas others provide higher reduction in sound and may be more appropriate for louder environments. Some are specially designed to provide high levels of protection but allow you to hear sounds like speech or alarms.

You can also get earmuffs with folding headbands, which can be carried around or stored more easily, and earmuffs with neckbands, which can be worn with face shields or helmets. It's



also possible to get earmuffs that attach to a helmet, rather than a headband. Some earmuffs are only activated when loud noise is present.

These are usually electronic and act in a similar way to shooters' earplugs. Earmuffs are also available with built-in radio or audio systems for communication.

## Canal caps



Canal caps are attached to a headband or chin-band, which can be carried round your neck and placed onto your ears when you need them. Canal caps are useful for noise that comes and goes.

## How comfortable are they really?

Earplugs are probably best for long-term use, but if noise levels are high, you'll need to wear high-attenuation earmuffs. Earmuffs and canal caps are easier to put on and take off, so are more convenient if you're exposed to noise now and again. For very high noise levels, earmuffs and earplugs can be worn together. This usually provides extra protection than if either is used alone.

You can purchase ear protection from various places, including our partner Connevens. By buying from our dedicated website, Connevens will donate 10% of all sales to RNID to support those who are deaf, have hearing loss or tinnitus.



## Enjoy music safely!



Without even realising it, loud music can damage your ears causing permanent hearing loss and tinnitus – a ringing or buzzing in your ears. That's not to say we can't and shouldn't enjoy music! But understanding the risks is important so you know how to look after your ears while dancing to your favourite tunes!

Here are some healthy habits to get into and top tips for listening to music safely:

### When listening through headphones

- Take regular breaks of at least five minutes every hour to give your ears a rest.
- Use a volume limiter on your device (if there is one) – this means you won't be able to turn the music up without realising it.
- Don't go over the 'safe' volume level that appears on your devices screen when you change the volume.

- Turn the volume down a notch – it'll make a big difference to how long you can listen safely for.
- Invest in some noise-cancelling headphones – not only will these block out the noise around you, they also mean you won't have to turn up the volume to a dangerous level to hear your music properly over background noise.

### When out at gigs, clubs and festivals

- Carry earplugs with you - and use them!
- In a music venue, stay away from the speakers, as the closer you are, the greater the risk of hearing damage.
- Take regular breaks from the loudest areas to give your ears a rest. The chill-out zones in clubs are perfect for this.
- If noise is so loud that it hurts your ears, you should immediately leave the venue.





Thank you for taking the time to read our guide on how and why you should protect your hearing. I hope you've found it helpful, and you can see how easy, but important, it is to look after your ears right now.



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