

How technology can help

A guide to products and technologies which
could benefit deaf children and young people



“The technology we’ve used has opened up a new world for Alex and he’s looking forward to trying out other products.”

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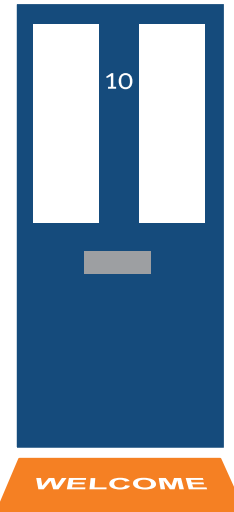
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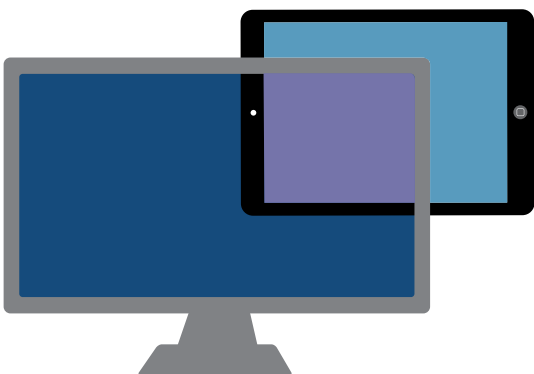


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Introduction

This booklet will give you an introduction to the wide range of products and technologies that might be helpful to your child at home, at school or when socialising with friends.

If you are wondering how you can help your child in their everyday life, for example waking up independently in the morning, having a phone conversation or listening to music or the TV, this booklet can help. Some of the products and technologies in this booklet support independence while others work with a child's hearing aids to improve communication and overcome issues caused by background noise. There are an increasing number of products and technologies, particularly those which allow deaf children to enjoy entertainment and to socialise with their friends, just like their hearing peers.

Families have told us that using products and technologies has made a big difference to their child's life. You can find quotes from parents throughout this booklet.

Some products and technologies may be available from your local authority or NHS services. At the end of this booklet, we let you know what entitlements your child may have.

Did you know you can borrow products and technologies from NDCS? Go to www.ndcs.org.uk/technology for more information on products and technologies, how to borrow them from us and to see reviews from parents and deaf children.

A few things to note

- Throughout this booklet we use the terms hearing aid and cochlear implant frequently but most of the equipment in this booklet can also be used by children with other types of auditory implants including bone anchored hearing aids, bone conduction implants, active middle ear implants, and auditory brainstem implants. Ask your implant team audiologist or call the NDCS Freephone Helpline on 0808 800 8880 for further information.

- Throughout this booklet we mention the following technologies:
 - direct input
 - the T programme
 - digital streaming.

These can all be used to connect your child's hearing aid, cochlear implant or other implantable device to products including TVs, entertainment devices, telephones and radio aids. To find out more information about direct input, the T programme and digital streaming, go to page 34.

- NDCS uses the word 'deaf' to refer to all levels of hearing loss.



“The products we’ve discovered mean Alex can be more independent with everyday things. We knew he wasn’t getting as much enjoyment out of watching TV as he could, and we wanted him to be able to talk to his classmates about programmes they’d watched. We got a TV listener and now he’s able to enjoy lots of programmes and watching TV as a family is now a much better experience for us all.

“At school Alex uses a Soundfield system and a radio aid, which he finds really helpful in class. He also has a ‘shoe’ that plugs into his hearing aid – this means he can plug his iPod or mobile phone straight into his hearing aid, to listen to music - just as if he were using earphones. It helps him feel the same as other children his age.

“The technology we’ve used has opened up a new world for Alex and he’s looking forward to trying out other products. The next thing we’d like to try is a vibrating alarm clock.”



**Lynn, Mum of
12 year old Alex**



Find out more on page 40

Alarm clocks are one of the most borrowed products from the NDCS Technology Test Drive loan service

Waking up in the morning

“I can be independent in getting myself up. I don’t need to rely on someone else.”

It’s important that all children have the opportunity to take some control of when they wake. Having an **alarm clock** is often the first step towards independence and can help younger children learn about time and daily routines.

There are lots of different alarm clocks which can wake your child by using strong vibrating pads, flashing lights and loud alerts with adjustable volume and tone. The vibrating pad should be placed under your child’s pillow or mattress. It is usually connected to the alarm clock by a wire but you can get wireless, rechargeable models as well.

Families have told us that having an alarm clock with a vibrating pad for their child has made the morning routine easier and given their child more independence.

“My son has woken up by himself without me running up and down the stairs to wake him. It has made our mornings less stressful.”

Most alarm clocks are designed to sit on a bedside table, but there are also portable alarm clocks for times when your child is away from home.



Did you know

Some alarm clocks can be linked with other products, alerting you to other things happening around the home, such as the telephone ringing.



Knowing the doorbell is ringing

“Our son now turns to the door when he sees the flashing doorbell. It’s given him a chance to learn what to expect next, a real boost to his confidence.”

By choosing a suitable **doorbell** you can make sure that even a young child knows when someone is at the door and likely to come into your home. This can help them learn about visitors and feel more confident.

A **standard doorbell** near the front door may be difficult to hear in other parts of your home, though you may be able to add an extra bell in another room or rooms.

Wireless doorbells have two parts: a doorbell transmitter (which you fit near your door) and the doorchime receiver which can be put anywhere in the home.

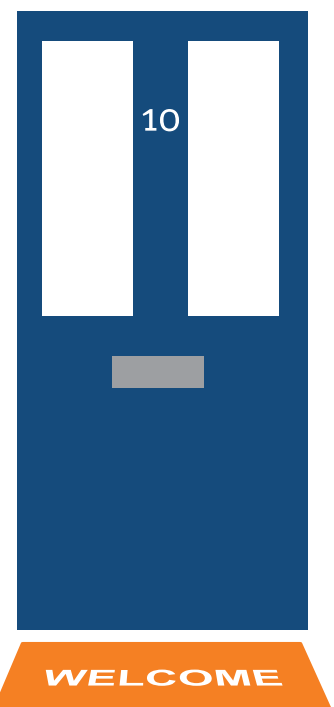
Some deaf children may prefer doorbells that are extra loud or have certain tones or melodies which are easier for them to hear and identify. Other children may like flashing lights – xenon strobe lights are very effective even in the day as their bright flashing light reflects off household surfaces. Other lights are only effective if you are close by. Many doorbells have a combination of these alerts.

You can get doorbells that are battery powered, attach to a mains power socket, can be carried around the house or come as part of a pager system.



Did you know

You could use the doorbell as a personal alert between you and your child. They could have the doorchime receiver in their room, or carry it round the home with them, and you can use the doorbell transmitter to tell them when dinner is ready or it’s time to go out.





Remember
Always have
a fire plan at
home and away!

Alerting your child in case of fire

Everyone in the home needs to be alerted if there is a fire so that they can take responsibility for their own safety if you can't reach them.

Smoke alarms for deaf children usually have a very bright flashing light and a vibrating pad attached for use at bedtime. Social services or the local Fire and Rescue service may provide fire alarms for deaf children. Contact your local services for more information. Having a fire plan, so that everyone in the house knows what to do if there is a fire, is also a good idea.

If your child is at school, college or in the workplace they may be able to use a **Deaf Alerter**, a radio-based system that uses a transmitter connected to a building's fire alarm panel. When the fire alarm is activated, the Deaf Alerter system broadcasts a signal to a portable hand-held unit, called an Alerter. The Alerter then vibrates, beeps and displays an emergency message on its screen.

If your child has a Deaf Alerter pager unit it can be used wherever Deaf Alerter is installed - this includes thousands of buildings across the country such as schools and hotels. For more information please see www.deaf-alerter.com.





Personal paging systems

Instead of having a separate alarm clock, doorbell, telephone alerter, burglar alarm, smoke alarm or any other alerter – your child could use a **personal paging system** which connects to all these items. Personal paging systems can be used by more than one person in a household.

A pager can alert your child using:

- a vibrating wrist unit, like a watch,
- a pager clipped onto their clothing,
- a table top strobe light unit,
- a vibrating pad for night time alerting.

The pager has transmitters which are placed next to, or connect to, an alerting device for example, a doorbell or telephone. This transmitter sends a message to the receiver which then vibrates, flashes or makes a sound. The receiver will have a symbol that lights up to show your child which transmitter has been triggered.

Personal paging systems are very convenient and effective, but can be expensive.

Using the telephone

Using a conventional phone

Telephones are one of the main ways we keep in touch with friends and family, contact others or get help in an emergency.

If you have a conventional home phone with no special features you could adapt it by using:

- A **telephone handset amplifier** connects between the telephone handset and the phone itself and allows you to adjust the volume of speech in the handset. Most have variable volume settings and a boost button to really increase the volume. They are easy to install and use.
- A **portable, telephone loop system** can fit onto the earpiece of any domestic corded telephone, meaning it will be able to work with the T programme on your child's hearing aid – effectively making your conventional phone hearing aid-compatible.

However, unless you really like your current phone, the best option is to buy an **amplified phone**.

Knowing when the phone is ringing

Many phones, including amplified phones, have loud ringtones or flashing lights to help your child know when someone is calling. If you have a phone without any of these features then you might want to use a **telephone alerter**. This product attaches to the landline phone socket and lets your child know when the phone is ringing by flashing or making a very loud sound. Alerting devices like this can encourage your child to use the phone more and help them feel more independent.

Amplified phones

“Now my son can call people and use the phone to talk to them. Prior to this he never used the phone as it was too difficult to hear and he was embarrassed.”

Amplified corded phones all have very high amplification (volume) and many other useful features such as flashing lights, variable tone, a hands-free speakerphone and hearing aid compatibility. Many models are available and they are often cheaper to buy than cordless phones.

Amplified cordless (DECT) phones have similar features to amplified corded phones, but allow you to walk around the house whilst making a call. You can buy models with more than one handset, but some can cause interference with hearing aids.

You can also buy amplified phones which have both corded and cordless handsets – giving you the advantages of both types. Here are some of the features you might want to look at when choosing an amplified phone:



Did you know

Telephone alerters are sometimes included on alarm clocks and door bells



High voice amplification – look for a phone which has variable volume and makes the caller’s voice louder. Some have an extra boost control as well. A 20dB volume boost will make the sound about four times louder.

Hearing aid compatibility – if a phone claims to be hearing aid compatible it will have an inductive coupler, basically a small loop, built into the handset which should give you loud, clear sound when used with a hearing aid set to the T programme.

Tone control – this useful feature allows you to adjust the tone of a caller’s voice, making it clearer and easier to hear.

Loud ringer and ringtones – a loud ring will make it easier for your child to tell when they’re receiving a call, but also look for models with a range of ringtones. Your child might be able to hear some tones, or tunes, better than others so it’s good to have a choice.

Visual ring indicator – some phones have flashing lights but many aren’t very large or bright. If this is an important feature for your child make sure you choose a phone with a strobe light.

Answering machine – a popular feature, but look for a model where you can listen to the message through the handset (ideally hearing aid compatible) or loudspeaker.

Hands-free speakerphone – a speakerphone can be a useful feature and is popular with children with cochlear implants, but sound quality is rarely as good as the handset.

Memory buttons – a useful feature, especially for younger children or those with additional needs. You can get phones with programmable memory buttons. These might be different colours or have numbers or large buttons where you can add your own photo or label.

Additional earpiece or headset – an extra earpiece or headset can be worn by a parent/helper to help those who would like to use the phone but struggle to hear all of the conversation. The parent/helper can then repeat the conversation (with their face in view) for those who rely on lipreading or sign to compliment the communication.

Bluetooth – you can get Bluetooth phones that can be used with Streamers or other Bluetooth hearing devices. See page 16 for more information on Bluetooth.

Bone conduction handsets – if your child has a conductive hearing loss or uses a bone anchored hearing aid they might find this helpful. The handset replaces the existing one and can be used with certain models of phone. During a call your child holds it against the bone on their temple or behind their ear and the handset produces both sound and vibration. This allows the sound to travel by bone conduction to the cochlea.

“My son has been able to speak to his grandparents on his own without my help. They all live far from us, so it’s wonderful for them and him.”

Memory buttons



Find out more on page 40

We loan technology products to more than 400 families a year

A **Screenphone** is a phone which allows you to speak into the handset and receive your replies in text – so it's designed for people who can speak but cannot easily hear the reply. It works with the **TextRelay** service – see page 19 for more information.

“My son is now 16 years old and wants to be able to use the telephone to phone his bank. He does not want me to be there to act as an interpreter. The screenphone has enabled him to be more independent”



Using a mobile phone

“She can now hear her phone calls (using a Bluetooth neckloop). We were relying on text messages before, but this has changed everything for us.”

Mobile phones are an important product for many deaf young people. They can be used for social media, entertainment, searching for information on the web and for communicating with others by voice, text or video.

There are many different mobile phones available ranging from basic phones to those specially designed for people with a hearing loss. There are also **smartphones** – mobiles which allow you to access the internet and use apps.





Conventional mobiles and smartphones

Here are some features to consider if you are purchasing a mainstream mobile or smartphone for your child:

- **Volume and sound quality** – you will find that volume and sound quality vary greatly between phones so ask if you can try the phone out before you buy it. Interference between a mobile and your child's hearing aid could also cause a problem. **If you look on the phone's technical information, a phone rated M3 or M4 should produce little or no interference with a hearing aid and so give good sound quality.**
- **Hearing aid compatibility** – many of the latest mobiles and smartphones are hearing aid compatible, so they should give your child clear sound when used with the T programme on their hearing aid. Most manufacturers do not promote this fact, so **to find a mobile which might work with your child's hearing aid look on the phone's technical information for a T rating – a rating of T3 or T4 means it should work well with little or no interference.**
- **Loud ringer and ringtones** - a loud ring will make it easier to tell when you're receiving a call, but also look for models with a range of ringtones. Your child might be able to hear some tones, or tunes, better than others so it's good to have a choice.
- **Vibration** – in addition to ringing, all mobiles have a vibrating alert to tell you when the phone is ringing or you are receiving a text message. The strength of vibrations can differ greatly so try to find one with a stronger vibration.
- Like a home phone, consider whether your mobile phone has a **tone control, visual ring indicator** and **hands-free speakerphone.**

There are also some extra products and accessories that can make it easier for your child to hear when they use a mainstream mobile:

- **Bluetooth neckloops** are worn around the neck and pick up sound from a mobile phone using Bluetooth. The neckloop sends the sound to your child's hearing aid via the T programme so your child will need to have this enabled on their hearing aids. See page 35 for more information on the T Programme. These neckloops have a microphone built into them so your child can talk on their mobile without having to hold the phone next to their mouth.

“Now, using a Bluetooth neckloop, we can communicate better with our mobile phones. It has opened up new possibilities for my son. It also means that he can listen to his music without having to remove his hearing aids.”



What is Bluetooth?

Bluetooth is a wireless communication technology which allows devices such as mobile phones, smartphones, tablets and laptops to communicate with each other over short distances. Because Bluetooth transmissions ‘hop’ between frequencies they do not suffer from interference. You do need to ‘pair’ devices before they can communicate but this is quick and easy to do.



Streaming products

“The streamer has made a huge difference to my son. We now know that using this single product is far superior to the three different products he was using before.”

A **streaming device** (also known as a **streamer**) sends signals digitally to your child’s hearing aids and links with other products using Bluetooth such as mobile phones, laptops or tablets. It can work with your TV or home telephone using a special adaptor.

A streaming device is generally worn around the neck or clipped to clothing. The type of device your child can use will be determined by their hearing aid. For example, if your child has a Phonak hearing aid they will only be able to use the Phonak streaming device. This means that if your child’s hearing aids are changed they may no longer be able to use their streaming device.

Some streamers have additional features including:

- a clip-on microphone to help you hear conversations better,
- an adaptor to listen to the TV,
- an adaptor for the home telephone,
- T programme to allow access to loops,
- a connection for FM receivers,
- a remote control to change the hearing aid programme.

Specially designed mobile phones for deaf people

There are mobile phones available which have been designed specially for people with a hearing loss. These are usually designed for older people, so your child may prefer not to use them. However they do have some very useful features including:

- **Loud volume** through the earpiece and speakerphone.
- **Hearing aid compatibility** – many of these phones have a built-in loop and are hearing aid compatible. They should give your child clear sound when used with the T programme on a hearing aid.
- Because they are usually designed for older people these phones tend to be **easy to use**, have **large controls** and very **clear and easy to read displays**. So they might be ideal if your child has a visual impairment or other additional needs.

Although they allow you to send and receive text messages, these phones don't usually have a camera, the ability to store music or provide access to the internet.



Communicating by text message

One of the most common ways to communicate is by sending **text messages** from a mobile phone. These can be either SMS (short messages) or MMS texting (text messages incorporating pictures or video). They provide a quick and easy way to send a short message, so are ideal for making social arrangements or keeping in touch with friends and family. When deciding upon a mobile phone tariff you might want to consider how many text messages your child sends, as many network providers offer text-only or unlimited text deals.

Textphones

Textphones have been around for many years and are best suited to children who are profoundly deaf. They connect to your domestic phone line and allow your child to have text conversations with other textphone users. Textphones have a traditional keyboard and a small screen. Older models use scrolling text but newer products have larger screens so you can read more than one line at a time. They are less commonly used by deaf children now, but many organisations (banks, large shopping chains and government departments) have a dedicated textphone system so that deaf people can contact them. In these cases you should look for their textphone number.

Some textphones have a handset allowing you to use them for voice calls as well, these are useful when there are hearing and deaf people using the same phone.



The TextRelay service

Using the **TextRelay service** you can communicate between voice and text phones. When making a call you dial a prefix number before the main number to tell the TextRelay operator what type of phone you are calling from and what type you are calling (for example a voice phone calling a textphone). You then speak or type your conversation and the TextRelay operator relays your message to the other person either by voice or text. So you might speak to an operator who will type the message, which will then be received by the recipient on their textphone. They reply in text to the operator who then speaks the message to you. TextRelay is a popular service with deaf adults. For more information on the TextRelay service go to **www.textrelay.org**.

Contacting the emergency services

The **emergencySMS service** lets deaf, hard of hearing and people with speech difficulties in the UK have an SMS text conversation with the police, ambulance service, fire and rescue, or coastguard.

By sending an SMS text message to 999 you can ask for help and the emergency services will be able to reply to you.

Your child will need to register their mobile phone by visiting **www.emergencysms.org.uk** before they are able to use the emergencySMS service.

In an emergency situation your child can send a text message (from their registered phone) to 999. This text will then go to a TextRelay operator (see above) who will speak to the relevant emergency services operator. Your child will then have a text conversation with the emergency services via the TextRelay operator until their emergency has been resolved. The emergency services will ask your child their name, location and for details about their emergency.





Communicating online

Much of our communication with other people is now carried out online, which can be very helpful for deaf children. There are many ways of communicating online - here are some of the main methods your child might use.

- Many of us use **email** to communicate with others, using a computer, laptop, tablet device or smartphone. Email is useful if you want to share documents or information with others, and it is ideal for long messages and messages that need to be easily stored and retrieved. Most companies and organisations use email so it can be a useful way to find out information or make contact with others. However, do be aware of junk or inappropriate emails.
- In the last few years we have seen the emergence of **social networking** sites such as *Facebook* and *Twitter*. There are even some specifically designed for younger children, such as *Club Penguin* and *Moshi Monsters*. Social networking has become a part of everyday life for many people and organisations and it can be a great way to keep up to date with people from all over the world. Most schools now give information about how to use social networking responsibly and there are recognised organisations offering practical support to parents and families.



- Some social networking and internet services have a **livechat** facility which allows your child to have real-time text conversations with other people.

If your child has specific hobbies or interests then they might enjoy following **internet forums** or reading/writing **blogs**.

- Communicating through **forums** means sharing your thoughts and views with people you may not know so they should be used with caution. However, as long as no private information is given away, and young people are educated in using them, forums can be a useful way to interact with others.
- **Blogs** are regular articles written by people with specific interests or knowledge and can be interesting and educational to read. Some schools now produce blogs or your child may even want to produce their own.

When communicating online you and your child need to be aware of their security. See the box for information on where you can find out more.

Information on how to keep your child safe online

Information can be found on the NSPCC website www.nspcc.org.uk with sections on understanding the internet, identifying the risks to children and where to find more advice.

Communicating using online video

Recent advances in video and wireless internet technologies have been particularly valuable to deaf people, allowing them to use video so that they can communicate by lipreading or using sign language. As well as this, many people use online video to express themselves and communicate to a wider audience. Video is used by many organisations to give information in a way that your deaf child may find easier to understand than written information.

To communicate by video your child needs a webcam attached to their computer, a computer or laptop with a built-in camera, or a tablet or smartphone with a forward-facing camera. There are lots of video programmes and facilities available and many are free to use. Popular ways to communicate using video include Skype, Facetime, YouTube and most social networking sites.





Apps

If you have a smartphone or tablet device then you will have access to a huge range of apps allowing you and your children to do many different things, from enjoying games and entertainment to learning sign language together.

App is short for 'application' and is basically software which allows your phone or tablet to quickly and easily do new, different things. To use apps you need a smartphone or tablet device which uses one of the main operating systems: Apple iOS, Android, Windows Phone and Blackberry. Many apps are free to download or cheap to purchase.

Many mainstream apps might be suitable for your child but there are also a number of apps specially designed for deaf people. These apps might help your child with their communications (including social media), entertainment, sign language, education and in giving them greater independence and confidence.

For more information on apps please look on our webpages at www.ndcs.org.uk/technology/apps.

WWW

Enjoying TV, films and music

Watching TV and enjoying music is a big part of growing up and helps children develop social and communication skills. Using a TV listening product or subtitles can make watching TV together a more enjoyable experience for all of the family.

Hi Fi systems, portable music players (such as iPods and mp3 players), DVD players, gaming devices, tablets, and laptops can be connected to various products that can help deaf children to hear them better.



If your child doesn't use hearing aids

Headphones may be useful if your child has a mild, moderate or unilateral hearing loss. They will enable you to turn down the volume of the main speakers when watching TV, but be aware that using headphones on some TVs will mute the main speakers.

When buying headphones you may want to consider the following things:

- if your child has different hearing in each ear look for headphones with a balance control or variable volume in each ear,
- cordless headphones are ideal – they are more convenient to use and are far safer than having a long cable between your child and the TV,
- if you are using corded headphones make sure the cable is long enough, so your child doesn't have to sit right in front of the TV.

Personal listeners are basically small personal amplifiers. They receive sound either from their built-in microphone, an external microphone or through a lead (for example, connected to the TV) and make sound much louder. If you're using an external microphone, place it on the source of the sound, for example a television speaker. Your child can then listen to the sound either through headphones or earphones.

Personal listeners are easy to use: on most you can simply change the volume and tone of the sound. They should not be confused with **radio aids** which have a larger range, higher sound quality and more useful functions.

Radio Aid systems can be connected to your TV or entertainment devices and will be suitable for a child who does not wear hearing aids if they use the appropriate ear-level receivers - please go to page 27 for more information.

Wireless TV listeners with a stetoset can be used by children who don't have hearing aids. Instead of listening using a neckloop your child could use a TV listener with a stetoset headset, which is similar to earphones but uses air tubes to conduct the sound instead of wires. Alternatively you could connect headphones to the receiver unit worn around their neck.



Radio aid receiver

If your child has hearing aids

Audio direct input leads connect an entertainment device directly to your child's hearing aids using a simple cable. For more information, please go to page 34.

Radio aids are commonly used in school but you could also use them in the home, connecting the transmitter to your TV or music devices using a simple cable or by placing the microphone near the speaker. Your child will receive the sound direct to their hearing aids (via their ear-level, neckloop or body worn receivers) and they will get good sound quality over quite a large range. For more information on radio aids please go to page 27.

A **streaming device** can be used with certain models of hearing aid – it sends signals digitally to your child's hearing aids and links with other products using Bluetooth. The device is normally worn around the neck or clipped to clothing. For more information on streaming devices see page 17.

If your child has hearing aids which have the T programme

If your child's hearing aids have the T programme they could also use the following products. For more information see page 35.

- **Room loops** – the loop amplifier connects directly into your television. A loop of wire is linked to the amplifier and then needs to be installed around the room - it is usually tucked under the edge of the carpet or fixed onto the skirting board with cable clips. To use the loop your child will need to switch their hearing aid to the T programme and the sound from the TV will be loud and clear within the looped area.

Room loops don't affect the sound coming from the TV speakers, so everyone in the family can still hear the TV. Another advantage is that they can be used by more than one person at a time, so they are ideal if there is more than one deaf person in the house.

- **Wireless TV listeners** have a transmitter that connects to the TV but instead of having a wire around the room, your child wears a small receiving device and neckloop around their neck. This receiver allows your child to control the volume of the sound and the sound signal is either transmitted by infra-red or FM radio signal.

With **infra-red** you have to be positioned in front of the transmitter. You will lose the signal if you turn around, leave the room or if someone stands between you and the transmitter. However, the advantage is that you could have a different infra-red device working in neighbouring rooms with no interference.



Wireless TV listener

After using a wireless TV listener one parent told us that her son *“is now able to join in with the family more and was very excited to hear the words to films he had watched many times before and be able to understand them.”*

With **FM radio** you will be able to hear the sound throughout your house. It won't make any difference if your child leaves the room or if someone walks between them and the transmitter. This could be useful for listening to music or the radio.

- **A neckloop** is a wire worn around the neck, often under clothing, which connects to the output socket on any entertainment device. They often have a small pendant unit which helps amplify the sound signal. This is transmitted to the hearing aid via the T programme.
- **Bluetooth neckloops** are worn around the neck and pick up sound wirelessly via Bluetooth. They work with any Bluetooth enabled device – such as a smartphone, MP3 player, laptop or tablet device. For more information on Bluetooth, go to page 16.

“With the Bluetooth neckloop she can now listen to her MP3 player and she doesn't feel left out by not being able to use gadgets like her friends can.”

- **Inductive earhooks** are small flexible hooks that sit behind the ear next to the hearing aid. They have wires and are plugged directly into the sound source. The sound is then transmitted to the hearing aid using the T programme. They are available with one hook (mono), two hooks (stereo) or with one hook and one standard earphone (for people who have one hearing aid and can hear using a standard earphone in their other ear).
- **Personal listeners** - If your child has hearing aids with the T programme then they could listen to the TV using a personal listener with a neckloop.
- **Silent headphones** look just like standard headphones but don't produce any sound. Instead they produce an inductive output that a hearing aid set to the T programme can pick up.

Using a games console

Hearing aid compatible headsets can be used with games consoles. They allow your child to talk to other gamers whilst clearly hearing what they are saying.



Inductive earhooks

Subtitles and signing on the TV and films

Subtitles are available on many TV channels - in fact the BBC broadcasts them on all of its main channels. All main TV channels have to subtitle at least 80% of their output, however smaller channels have far lower levels of subtitling.

Subtitles are easy to access, either through a button on your remote control or from a main menu, and will usually tell your child about sound effects as well as dialogue. They may help your child's literacy as well as helping them share the enjoyment of watching the TV with your family. Some home entertainment systems will allow you to record programmes with subtitles so that you can enjoy them later.

Subtitles are available on most DVDs and Blu-ray discs and on some on-demand films or films for download - do check before purchasing or downloading a film.

Subtitles are also available on some catch-up TV services such as the BBC iPlayer. Using a computer, laptop, tablet or smartphone you can watch previously broadcast programmes and an increasing number now have subtitles available.

With **signed programmes** an interpreter will be shown towards the bottom of the screen, so you can watch the programme and the signing at the same time. There is much less signing available on the TV than subtitling. At the moment BBC and ITV only provide signing on 5% of their programmes. These programmes tend to be broadcast late at night or early in the morning, so you might need to record them for your child to watch at a more suitable time.

Look out for signed programmes on the BBC including their deaf TV programme *See Hear*. On the BBC iPlayer you can search for programmes and one of the search categories is 'Signed' – this will give you access to a range of previously broadcast programmes with signing. For details of other signed TV programmes go to www.bslzone.co.uk.

For information about visiting the theatre or cinema go to page 31.



Hearing better at school and clubs

“The radio aid has made a huge difference to him. Everything has changed, his attitude and his behaviour. He was struggling at school but now he’s above average.”

Deaf children and young people should have the chance to take part in all social, sporting and educational activities - but to help them do this they may need to use products that will help them to hear better.

Deaf children can sometimes find it difficult to hear what is being said in the classroom and at after school clubs. Although hearing aids can help, they also amplify all the sounds around them, including unwanted background noises such as chairs being moved and children talking.

Using a **radio aid** or **soundfield system** can help deaf children to hear others at school and during after school activities. These systems are easy to use and children, their parents and professionals tell us that they help deaf children do better at school and feel more confident. They can also help increase a child’s concentration levels and help them to get more involved in the classroom and during out of school activities.

Radio aids

“Now she can hear everything, even when the teacher turns around or she sits at the back of the class. She has gone up a level in every class.”

Radio aids are commonly used in schools and enable clear, direct communication between a teacher and a deaf child wherever they are sitting in the classroom. They reduce problems caused by background noise and make it easier for a child to understand the teacher and take part in classroom activities.

A radio aid system consists of a transmitter, worn by the teacher, and a receiver or receivers, worn by your child. The transmitter converts the sound which your child needs to hear into an FM radio or digital signal. This is picked up by the receiver which changes it back into sounds that your child can hear.

The most commonly used radio aid receivers are small wireless units which attach directly to your child’s hearing aid - but other receivers can be body worn (attached to hearing aids with wires), built into a hearing aid or use a neckloop. If your child has a mild, moderate or unilateral hearing loss, or does not wear a hearing aid, they might use small ear-level receivers instead.

Radio aids are expensive products to purchase and are normally provided by your local authority through your



Radio aid



child's Teacher of the Deaf (or through the Education and Library Board in Northern Ireland).

Radio aids can also be very useful outside of school, for example, when your child is travelling in the car, using public transport or enjoying out-of-school activities such as sports, Scouts or horse riding.

“We used the radio aid for out-of-school classes in skiing and cycling – it made a tremendous difference as he didn't need 1:1 skiing tuition and he could ride ahead on his bike”

Please go to page 37 for more information about how you can get a radio aid for your child.

For more information on radio aids, see our publication *Radio Aids: An introductory guide*.

Soundfield systems

A **soundfield system** makes the teacher's voice louder and clearer, wherever they are in the classroom. The teacher speaks into a microphone and the sound is transmitted through speakers which are either fixed in the room or are portable.

Soundfield systems are not public address systems and don't produce very loud sounds – instead they give a clear and consistent level of sound throughout the classroom. The teacher's voice is made just loud enough to be heard above unwanted background noise and is easier to hear wherever you sit in the classroom.

A good soundfield system should enable all children in a classroom to hear equally well, wherever they are seated. It also means that the teacher doesn't have to raise their voice during a lesson. Most children who wear a hearing aid or a cochlear implant can benefit from soundfield, but they will also still need to use a radio aid. Soundfield systems work better in rooms that already have good acoustic conditions.



For more information, see our publication *Radio Aids – An introductory guide*

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Communicating in noisy places

At home, or in quiet places, your child might find it relatively easy to communicate with you. However this can become more difficult in noisy places or when in the car. Here we suggest some products that might help your child in these situations.



Communicating with friends and family

- **Radio aids** (see page 27) are good for communicating where there is a lot of background noise, for example in the car, out shopping or during a family meal.
- Some **streamers** (see page 17) have a separate microphone transmitter which can be used when you're having a conversation. These have a shorter range than radio aids but are good to use in informal situations.
- **Personal listeners** are very versatile but are probably best suited to older children who might feel less self-conscious about using them. They are small, personal amplifiers so can be very helpful in making conversations and meetings easier to follow. The personal listener has a microphone to pick up speech or other sounds, and your child can listen to the amplified sound through headphones, earphones or a neckloop. An extra microphone can be used with most personal listeners – this can be especially useful in meetings.

At the shops, a cafe or in public places

As well as the products mentioned above, your child can also make use of loop systems in shops, cafes, banks and other public places if they have the T programme on their hearing aid. You will see the sign on the right in places where there are loop systems available, as well as information on where to stand to benefit from the loop.



As soon as your child switches their hearing aid to the T programme they should hear the person's voice clearly above any background noise. However, staff sometimes may need reminding to switch the loop system on.

Out and about

Enjoying activities outside of the home is an important part of growing up – becoming independent, learning about the world and experiencing different places and other people.

There are lots of products and technologies that can help your child enjoy an active social life and help you enjoy days out with your child. Here are some examples of how technology can help when you and your deaf child are out of the home.



Going on an overnight trip

If your child is going on holiday, on a school trip or staying with friends or relatives, they may not be able to use the products that they normally rely upon. Below are some portable products that might be useful.

- **Portable alarm clocks** to wake your child when they're on holiday or having a 'sleep over' – see page 8.
- **Personal listeners** can help with conversations and are very portable – see page 29.
- **Telephone handset amplifiers** can be attached to a domestic corded telephone, between the telephone handset and the phone itself, and allow you to increase the volume of speech in the handset. See page 12 for more information.
- **Portable telephone loop systems** fit onto the earpiece of any domestic corded telephone, making it able to work with the T programme on your child's hearing aid and effectively making a standard phone hearing aid compatible.
- **Portable paging systems** – these can be triggered by any sound so can be used as general, portable alerting devices. The transmitter can be placed by a sound source (for example, the telephone or doorbell) and when the sound occurs it sends a signal to the receiver (attached to clothing, in a pocket or on the wrist) which will then vibrate, ring or flash to alert your child. This might be a good idea for holidays or staying at friends and relatives houses. See page 11 for more information.
- **Deaf Alerter** is a radio-based system that uses a transmitter connected to a building's fire alarm panel. Deaf Alerter is installed in thousands of buildings across the country including hotels – see page 10.



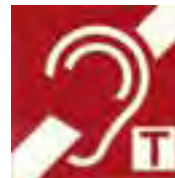
Portable phone loop



Deaf alerter

Going to the cinema, theatre and museums

All museums and entertainment venues should provide systems to help deaf children and young people to communicate with staff, such as a loop system at the box office, information desk or food kiosk. For more information on loop systems see page 35. These technologies should be clearly signposted in the venue and online using the symbol on the right.



At the cinema

Subtitles can help your child follow the dialogue, sound effects and background noise in a film. In the UK around 550 screenings of subtitled films are shown each week. However these are not usually at peak times so you may need to go to an early or late show. Although most major films are subtitled at the cinema, many less popular films are not.

To find out when subtitled screenings are taking place contact your local cinemas, look on their websites or go to www.yourlocalcinema.com.

Your child may be entitled to apply for a discount card from the Cinema Exhibitors Association. This entitles the holder to one free ticket for a person accompanying them to the cinema. For more information go to www.ceacard.co.uk.

Equipment

A cinema may have equipment available to help your child to hear the film better. If your child has hearing aids with a T programme then they could use a **room (induction) loop, infra-red neckloop or FM neckloop**. If they do not use hearing aids then there may be listening products available for them with **headphones, earphones or stetoscopes**.

At the theatre

Options for your child are similar to those at the cinema, but you might look out for performances using **captioning** such as **stagetext** (which includes the dialogue and sound effects of a performance, similar to cinema subtitles). There may also be performances with live British Sign Language interpreters.

Arts/cultural venues

Many galleries provide **audio guides** to their exhibitions. An **induction neckloop** can be plugged into the socket where the headphones would normally connect. See page 35 for more information on the T programme.

For tours guided by a member of staff, a **portable induction loop** can be used. Here the guide wears a tie-clip microphone and carries the small induction unit with them. If your child sets their hearing aid to the T programme, they will be able to clearly hear the guide if they stand close to them.

Some galleries and museums also provide smartphones with visual information – others have interactive displays of information. Your child may also be able to download a related app that they can use on a smartphone or tablet device. These can be used before, during and after the visit to add to your child's learning and understanding.



Think about

- Phoning ahead before you go to the cinema or theatre to make them aware that your child will be using their specialist equipment or relying on subtitles.
- Using social networks or the NDCS parents' forum Parent Place to ask other parents about the accessibility of venues for deaf children and young people.
- Researching how accessible the venue is before your visit.

At work or on a work placement

There are lots of products (which have already been described in this booklet) that might help your child when they are on a work placement, in a part-time job or starting to work full-time. These might include:

- an **amplified, hearing aid compatible telephone, telephone handset amplifier or headset** (page 12),
- a **textphone** (page 18),
- a **paging system** (page 11), or **Deaf Alerter** (page 10), so they can be aware of a fire alarm or other things happening around them,
- **radio aids** (page 27) or a **streamer** (page 17) to help with face to face communications, discussions and meetings,
- a **personal listener** which could help with work conversations or in meetings (page 29).

All disabled people are entitled to have equal opportunities at work.

The Equality Act 2010 applies in England, Wales and Scotland and places employers under a duty to make 'reasonable adjustments' to ensure that their workplace is suitable for a disabled person. In Northern Ireland this responsibility is covered by the Disability Discrimination Act (1995). This legislation means that employers must make arrangements to ensure that disabled employees, including those with a hearing loss, are not at a substantial disadvantage compared to non-disabled employees.

There is no justification for not making a reasonable adjustment, however in some circumstances an employer may be able to argue that what is being asked of them is unreasonable. This will depend on the cost of the adjustment and the circumstances of the employer. It is the responsibility of the employer to pay for any associated costs, but the government can provide support through a scheme called Access to Work – though this support is not available on work placements unless these are being undertaken as part of an education or training course.



Access to Work provides advice and sometimes funding for disabled people to get support and equipment (including communication support) at work. Importantly, not enough employers know about the funding they can get from this scheme, so if your child thinks they might be eligible they should discuss this with their employer.

For information on Access to Work go to www.gov.uk/access-to-work/overview.



Products that can help if your child has additional needs

There are many products and technologies which could help your child if they have additional needs as well as a hearing loss. A lot of the products already mentioned in this booklet will be suitable for your child.

Depending upon your child's additional needs, you might also want to consider the following features when choosing products:

Large buttons – these are easy to see, easy to use and fingers don't slip off them as easily.

Coloured controls – controls in different colours, and giving strong colour contrast, are easier to identify, use and understand.

Large, bright displays, numbers, pictures and labels – these are clearer and easier to read and understand.

Range of alerts or noises – everyone's hearing is different so it's always helpful to have a range of different alerting noises on products, for example different phone ringtones or bell chimes. All children comprehend sounds differently and may find particular sounds frightening, for example.

Intuitive and easy to use – look for products which are simple to use and don't have too many features, as this can make them appear complicated.

Wireless options – some children either dislike wires or like them too much and won't stop playing with them. You might want to look at wireless options for headphones, neckloops or vibrating pads.

For more information go to our dedicated webpages
www.ndcs.org.uk/family_support/technology/additional_complex





Hearing aids and how they work with other technologies

Your child's hearing aid, cochlear implant or other implantable device can be connected to different products (including TVs, entertainment devices, telephones and radio aids) by using the following technologies:

direct input • the T programme • digital streaming.

Direct input

Direct input shoes attach to the bottom of a hearing aid and will allow your child to attach other products directly to their hearing aid. You will need to visit the audiologist to make sure that your child's hearing aid is set up to work with a shoe – most hearing aid models will have a specific model of shoe that works with them.

When the shoe is attached to the hearing aid you can use it to connect to **radio aid receivers** (see page 27) or **audio direct input leads**. Direct input leads connect an entertainment device directly to your child's hearing aids using a simple cable. Again, your child's hearing aids must be set up by their audiologist to accept these leads.

Cochlear implants and bone anchored hearing aids also usually have a connection for these leads.



Check out our video of Alex using his technology
www.ndcs.org.uk/alex.



The T programme

The **T programme**, also called the **T setting, telecoil** or just **T**, is a programme that an audiologist can activate on your child's hearing aids or cochlear implants. Bone anchored hearing aids will require an adaptor – your child's audiologist can let you know more about this.

Unlike a standard microphone programme, T doesn't amplify sounds – instead it picks up magnetic fields from **loop systems**, and converts these into sounds in the hearing aid itself. A deaf child, with their hearing aids set to the T programme can hear music, the TV or someone speaking through a loop system much more clearly and with no background noise.

Where would I find a loop system?

Loop systems are often fitted in public buildings, such as theatres, cinemas, banks or shops, to help deaf people hear more clearly. This symbol (to the right) is displayed in places where a loop system is fitted.



You can also use loop systems and the T programme at home:

- A loop system can be fitted to help your child hear the TV better.
- A portable loop system, such as earhooks or neckloops can be plugged into any device with a 3.5mm jack socket, such as mobile phones, portable game consoles, laptops and tablets.
- A portable Bluetooth neckloop can be used as above but by connecting to an audio source via Bluetooth.
- Loop systems are sometimes incorporated into the handsets of home phones, mobile phones and smartphones. These are called 'hearing aid compatible' phones.

An audiologist needs to activate the T programme on your child's hearing device. However, many audiologists may decide not to do this for young children as it can be hard for them to understand how it works and when they need to change between programmes. You can talk about when to get the T programme activated with your child and your audiologist.

Often a child will be given separate M (microphone) and T programmes for their hearing aid, though your audiologist may suggest a combined M & T programme.

Digital streaming

A **streaming device** (also known as a **streamer**) sends signals digitally to your child's hearing aids and links with other products using Bluetooth such as mobile phones, laptops or tablets. It can work with your TV or home telephone using a special adaptor. Go to page 17 for more information.

Checking your child's hearing aid is working with other products

If you have a younger child or a child with additional needs it may be more difficult for them to tell you how well their equipment is working. If this is the case you might want to check the equipment yourself.

A **stetoclip listener**, which costs less than £10, can be used to make sure the hearing aid is working well with various products. One end connects to the hearing aid and the other is worn on your ears so that you can hear exactly what is coming out of the hearing aid. So, if you want to check that a radio aid or a TV loop is working, this is an easy way.

For more information on this, see our video here www.ndcs.org.uk/radioaidvideo.

If you have any concerns over whether your child's equipment is working properly, contact your child's audiologist or consultant.

Cochlear implants, bone anchored hearing aids, and other implantable devices

There are a range of accessory adaptors and leads available for implantable devices which will allow your child to use a direct input shoe or the T programme (see page 35). For more information on these accessories or leads, please talk to your cochlear implant team or your child's audiologist.



Streaming device



How to get technology for your deaf child

Local education and social care services and the National Health Service (NHS) may be able to provide you with any equipment that your deaf child needs and, in some cases, have a legal duty to provide you with this.

Education

Technology/assistive devices to help your child at school are usually provided by your local authority in England, Scotland and Wales or the local education and library board (ELB) in Northern Ireland.

For example, radio aids and soundfield systems (see page 27) are frequently used in schools - they make it easier for a deaf child to hear their teacher by reducing the effects of distance and background noise. These technologies can help your child to do better at school and increase their concentration and confidence.

What the law says

Under the Equality Act 2010 (or the Disability Discrimination Act 1995 in Northern Ireland) schools must make 'reasonable adjustments' to make sure what they offer is accessible to disabled pupils. If you live in England, Scotland or Wales, this includes the provision of auxiliary aids (e.g. radio aids) and means that all schools may be required to provide these to disabled pupils where needed, unless the school can show that this would be unreasonable.

Many deaf children will be identified as having 'special educational needs' or 'additional support needs'. In England, Wales and Northern Ireland the Education Act 1996 and its accompanying Special Educational Needs Code of Practice gives statutory guidance on how to identify and assess children with special educational needs. All children with special educational needs must have their needs met and this may include providing special equipment.

In England, Wales or Northern Ireland your child may have a statement of special educational needs which may specify the need to provide special equipment. This means that the local authority has a legal responsibility to ensure that any equipment detailed in the statement is provided. At the time of writing, governments in England, Wales and Northern Ireland were considering changes to the special educational needs framework.

In Scotland some deaf children will have a co-ordinated support plan which may specify the need to provide special equipment. This will also mean that by law the education department in your local authority must ensure the equipment is provided.

For more information see the NDCS factsheets *A Guide to Statutory Assessments and Statements of Special Educational Needs for Deaf Children (England and Wales)* and *A Guide to Additional Support for Learning (Scotland)*.

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NHS Services

Most deaf children use hearing aids, bone anchored hearing aids, or cochlear implants provided by the NHS. Hearing aids, batteries and accessories are available free of charge to anyone normally resident in the UK. Your local health authority must provide the most appropriate hearing aids for your child's needs. All NHS hearing aids, bone anchored hearing aids and cochlear implants are compatible for use with radio aids.

Most hearing aids require an adaptor (known as a shoe) to be fitted to the bottom of the hearing aid that the radio aid receiver plugs in to. The shoes may be provided by either the NHS or the local authority depending on local arrangements.

Some NHS hearing aids are available with an integrated FM receiver option and these may be fitted in partnership with the local authority. The local authority then funds the transmitter part of the radio aid system. In areas that provide integrated FM receivers it is important to check local procedures and responsibilities for replacement or repair of faulty equipment.

Your child's Teacher of the Deaf or educational audiologist is usually responsible for setting up the radio aid, ensuring that it works well with your child's hearing aids, and showing mainstream teaching staff how to use the equipment effectively in school.

Modern hearing aids often have accessories that enable the wearer to connect easily to other equipment such as mobile telephones, MP3 players, games consoles, TV and computers. These accessories may need to be 'paired' with the hearing aids so that they only work with those hearing aids. Funding arrangements vary by area. Accessories may be available free-of-charge from the NHS in some areas but in other areas you may be asked to pay for them.

If you have any questions, talk to your child's audiologist or the consultant in charge of your child's hearing care.

Social care services

Many of the assistive devices described in this booklet can be provided by local social services for children with different levels of deafness to support them in their everyday lives. Products provided commonly include alarm clocks, alerting devices, amplified telephones or TV loops/listeners.

An assessment of your child's needs must be undertaken before any equipment is provided and there is considerable variation in what products are provided and in eligibility criteria between local authorities.

What the law says

UK law supports the need to provide assistive devices to deaf children. This includes various disability discrimination laws which cover the provision of goods and services by all public and private bodies - which should not discriminate against disabled people including children and young people.

The Children Act 1989 (England and Wales), The Children (Northern Ireland) Order 1995 and the Children (Scotland) Act 1989 define deaf children as 'children in need' who therefore have a right to have their needs assessed. This may result in the provision of services which can include assistive devices.

These laws also place general duties on local authorities or Education and Library Boards to provide services to minimise the effect of children's disability on their lives. They safeguard and promote the welfare of children in need in their areas and promote wherever possible the upbringing of children by their families.

Other laws such as the Chronically Sick and Disabled Act (1970) (Northern Ireland 1978), the NHS and Community Care Act (1990) and the Disabled Persons (Services Consultation and Representation) Act 1986 (Northern Ireland 1989) assert that social services are responsible for assessing deaf children to see if they need assistive devices.

For more detailed information on the assessment and provision of assistive devices by your local social care services please read our factsheet on *Deaf Children and Social Care - Your Child's Rights* or contact the NDCS Freephone Helpline on 0808 800 8880 (voice and text).

Further information and support

If you want to know more, go to the technology pages of the NDCS website where you can find up to date information, product descriptions and user reviews. These pages are updated on a regular basis and are a useful next step once you have identified a product you think might be useful for your child. Alternatively call our Freephone Helpline on **0808 800 8880** (voice and text).

Try out technology before you buy

You can borrow and try out products through the **NDCS Technology Test Drive** service to help you decide which might be best for your child.

This service is free to members and includes over 80 different products ranging from the latest radio aids to assistive products including alarm clocks, phones, listening devices and accessories. In fact, almost all of the products discussed in this booklet are available for short term loan.

For more information go to www.ndcs.org.uk/technology.

WWW

“It gave us the chance to see the product in the flesh and test it out in different scenarios. Having a trial meant we could find out how user friendly the product was and the benefits it could give to our children.”

“The loan was very useful – we were able to make a direct comparison between the TV listener and the loop system we already have in place. As a result, he was able to see which system best meets his needs.”

Borrow products from NDCS to help you decide which might be best for your child.

FREE to members

Over 80 products to try



Joining NDCS is easy, free and there are loads of ways to join.
Go to www.ndcs.org.uk or contact our Freephone Helpline on 0800 029 9999

“Through the NDCS publications and website we’ve had so much help coming to terms with her deafness and making sure that it isn’t a barrier to her life.”

We have more than a hundred free publications for you at www.ndcs.org.uk/info.

They cover everything from hearing aids and cochlear implants to advice on how to support your child in school and at home.

A collage of various NDCS publications and a large blue circular badge. The publications include:

- 'Me and my deaf brother and sister' with a cartoon illustration of a boy and a girl.
- 'Supporting the achievement of deaf children in secondary schools' with a photo of a man and a woman.
- 'Helping your deaf child to read and write' with a photo of a man and a child.
- 'Helping your deaf child to develop early maths skills' with a photo of a woman and a child.

A large blue circular badge in the bottom left corner contains the text 'IT'S ALL FREE!' in white, bold, capital letters. The NDCS logo is visible on several of the publications.

ways we can support you!
helpline **0808 800 8880**

“A whole new world opened up – meeting other families meant I didn’t feel alone.”

Our free events are a fantastic way of meeting other families with deaf children. You can also get tips from professionals, share your experiences and learn from the inspiring stories of deaf adults.

And, as your child gets older, there are fun activities to boost their confidence and help them make new friends.

Find events in your area at www.ndcs.org.uk/events.



Questions?
Phone us
0808 800 8880



“It is so nice to have people willing to listen and help.”

We’re here for you when you need help and support.

Our Freephone Helpline is open:
Monday to Thursday
9.30am–9.30pm

Friday
9.30am–5pm

You can get in touch with us on **0808 800 8880**,
at www.ndcs.org.uk/live
or helpline@ndcs.org.uk.

There’s lots we can do for you –
visit www.ndcs.org.uk to find out more.

NDCS is the leading charity dedicated to creating a world without barriers for deaf children and young people.

**NDCS Freephone Helpline:
0808 800 8880 (voice and text)**

helpline@ndcs.org.uk

www.ndcs.org.uk

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every deaf child