Using the telephone with your cochlear implant

The telephone is important for communication at home, in the workplace, and socially. Many cochlear implant users are able to use the telephone. Practising your listening skills and using the correct technique and equipment can help you make the best use of the telephone.

Choosing a mobile phone

Phones vary in how well they work with a cochlear implant and there is no one model or make that is best. Everyone’s experience is different. The best advice when selecting a mobile phone is to visit the store and try out different phones. If a friend or family member has a recent model of a mobile phone, try it out and see if it works well for you. If you plan to use a telecoil with your mobile phone, make sure to test its compatibility too.

Some features you might want to look for when purchasing a new phone include:

- Volume control
- Caller ID
- Integrated answering machine
- A high-quality speaker phone
- Integrated telecoil

When purchasing a landline telephone

Look for an analogue phone. Although digital phones can provide better clarity, analogue phones usually provide better sound quality and telecoil compatibility. Extended-range analogue cordless phones, such as 2.4 GHz phones, usually offer a clearer signal than those in the 900 MHz range. Avoid purchasing cordless phones labelled ‘digital’, especially if you plan to use a telecoil with the phone.

How can I reduce interference when using a mobile phone?

A number of mobile phone features can produce radio frequency interference with your cochlear implant. Interference can come from the transmission signal that
controls the call, the antenna, battery or screen backlight. Mobile phones that are not telecoil compatible will also produce interference when held next to a telecoil.

The interference won’t harm you or your implant, but it can cause noise that may interfere with your ability to hear a telephone conversation. Flip-top or clamshell designs can sometimes improve this because your implant is further from the antenna battery.

Accessories that allow hands-free use will also help to minimise mobile phone interference by creating distance between the phone and the cochlear implant.

**Additional equipment**

Other things you can try include:

- Directly connecting the telephone to your speech processor with an accessory adaptor cable.
- Using the telecoil function on your processor with a phone.
- Using a neck loop with a Bluetooth phone and your telecoil.

**Talking on the phone**

For the first few months after your cochlear implant has been switched on you need time to get used to the whole new world of sounds around you. Once you can understand some speech without lip reading and you feel ready to start trying to use the phone you should ask your clinical scientist for advice.

For most cochlear implant users it takes time and practice to be a confident user of the hone. There are several steps you can take to help you communicate better on the telephone:

**Telephone tips**

- Make sure you are holding the phone in the correct position. Try positioning the earpiece slightly higher and further back than normal. The microphone is normally at the top of the earhook. You may need to move the telephone
earpiece slightly until you find the strongest signal. (If you are using a T-mic with a Harmony processor the microphone is at the end of the earhook.)

- Using a speakerphone can be useful.
- Try using different landlines and mobiles.
- Practice ‘hello’ and ‘good-bye’, listening for family names and trying to identify if it is a male or female voice.
- Sometimes a ‘telephone code’ can help initially. You might change simple words to a different syllable length to make them easier to distinguish – for example, ‘yes- yes’ and ‘no’.
- Decide on a standard phrase you can say and your caller can repeat if you become stuck. This can often help you tune back in to their voice.
- Use scripted calls with a prepared piece of text. Ask a friend to call you and make sure you and they have the same piece of text. This can be a newspaper article or a passage from a children’s book. Your friend says ‘hello’ then begins reading the text over the phone. You listen and read the same text. Finish the conversation with goodbye. This helps you to tune in to the way voices sound on the phone. Try to do this for about five minutes each day. As you become more confident try this with different voices.
- Progress from scripted calls to themed calls where you decide on a topic for the conversation beforehand and you stick to this topic during the call. This gives you some clues as to the context and vocabulary. Again begin and end the conversation with ‘hello’ and ‘goodbye’.
- Often it helps to rehearse real life situations such as making an appointment or ordering a take out meal. Practice listening for numbers and times.

After lots of practice using the tips above you should become more confident on the telephone.

You may also want to try using additional equipment to help you hear.
Using the telephone on the telecoil setting

Telecoils send a signal directly to your processor without interference from background noise. A telecoil is a special circuit inside the speech processor designed to pick up electromagnetic signals. These signals are wirelessly transmitted to the speech processor by using an assistive listening device such as a neck loop or by directly using the telecoil on the phone. To use this setting you need a telephone with a built in telecoil or loop system.

All processors have telecoil capability but some may need to have a programme modified at the clinic to allow for telecoil use. Ask your clinical scientist about this. Some speech processors have the capacity to mix the telecoil and microphone input so they can be heard at the same time. You should discuss the telecoil function with your clinical scientist.

There are 3 ways to use the telecoil function:

1. Using a telecoil-equipped phone, audio is delivered directly to the speech processor that is in telecoil mode. To use the telecoil function you should position the handset slightly lower on your ear and further back than the position suggested for normal use.

2. A telecoil neck loop is connected directly to the phone through the headphone socket. Audio is sent wirelessly through induction signals picked up by the speech processor in telecoil mode.

3. A Bluetooth® enabled phone wirelessly communicates with a Bluetooth neck loop. Audio is sent wirelessly through induction signals picked up by the speech processor in telecoil mode.
Direct connection

You can also directly connect your speech processor to the telephone headphone socket using an accessory adaptor cable. Be sure to check the telephone microphone will still be active when using a cable in the headphone socket. This will be necessary when making calls.

And finally ......

Be realistic. Hearing on the phone is not easy. You have no visual clues and cannot lip read. Give yourself time to adapt to listening with your implant first. Users who can pick up some speech without lip reading are usually ready to start trying the telephone.

Be patient. Taking time to practice daily with a friend or family member will improve your progress. Don’t be discouraged; it is difficult but you will see improvements over time.

Don’t compare yourself to others. Everyone is different. Some people are able to use the telephone very quickly, but far more commonly it takes time and lots of practice to become a more confident user of the phone.

Find the best settings and accessories for you. Experiment with the volume, sensitivity and different programmes (where appropriate) on your processor. Use different phones; landlines and mobiles. Try using your telecoil if your phone has an in built telecoil. Find out what sounds best for you.
Personal experiences

These articles have been written by patients who use the phone very successfully, have tried a wide variety of equipment and who have offered to share their experiences.

Please note: telephone technology is constantly changing and some of the equipment mentioned may no longer be available or suitable with some processors. We are unable to endorse or recommend any product and would always suggest you try any equipment for yourself before buying. If you need any further advice please contact the clinic.

Martin R- My experiences with telephones and the Freedom speech processor

I've found that it's a matter of trial and error getting the right adapter to work with a particular phone. I've also found that the quality of BT phones just isn't as good as it used to be and their newer models and Geemarc products aren't as good as the old BT Converse 200/300 range. You can't get the Converse 200/300 in the shops any more, but you can still buy them second hand on Ebay and I've bought several.

I have found the sound quality on BT's Big Button phone is poor and I barely used the one I bought. Geemarc phones are probably better than BT across the range as Geemarc phones seem to have quite a lot of amplification available even if the sound quality isn't as good as the old Converse 200/300. I have a Geemarc phone with a 2.5mm hands free socket, which works with the hands free adapter I got for a mobile phone. I don't use this to speak of, as it's a backup phone for me, but it might suit other people quite well.

I don't really use inductive couplers at all for phones. They don't work for most mobile phones unless you get some adapter or other (for example, Bluetooth or neck loop) so it's a more cumbersome/fiddly and expensive and I just don't think it's worth the bother. Telecoil sound quality is less good quality than plugging the walkman adapter straight into the phone. A lot of phones now have a 3.5mm stereo socket for headphones now and the walkman lead should work in all of them. If I don't have
the lead handy, I can manage to listen through the microphone, but it's a lot less
good, so I almost always use the lead, or a Phonak Bluetooth adapter (see below).

If a phone doesn't have a 3.5mm audio socket, there are hands free headphone
adapters available for most phones for about £10, so just about anyone should be
able to use them. I also like Nokia mobiles as I think the sound quality is consistently
better than other manufacturers and the battery life is very good too. There's maybe
not so much in it for me in terms of sound quality as there is for Gerry and I'm
planning to try something else out before too long. There are a lot of "Smart phones"
like Blackberry, iPhone, HTC or Nokia which double up as MP3 players and I expect
the sound quality will be pretty good on all of them. They all have 3.5mm stereo
sockets, so the walkman lead should plug straight in.

When I got my cochlear implant, being able to use the phone was a high priority for
me and I put a lot of effort into finding things that worked well. I have several tape
recording adapters which you can get at Maplin for about £12. These are meant to
connect to a tape recorder for recording phone calls, but they can easily be
connected to a cochlear implant walkman lead. The sound quality is pretty good,
and I found this so much better than telecoil that it made it a lot easier getting used
to the phone. I used the lead and with a phone adapter a lot to practice getting used
to the phone, but soon realised that it was too limited for everyday use - either you
have to stay very close to the phone to keep it connected to the cochlear implant, or
constantly connect and re-connect the lead to let you move around.

The inconvenience of connecting a lead direct to the phone made me realise that it
would be worthwhile for me to get an FM receiver called a Phonak Microlink together
with a compatible transmitter called a Phonak Telcom. I have three of the
transmitters, one at home, one at work, and a spare which I bought because Phonak
stopped selling them in the UK. I also have a Phonak Smartlink transmitter which is
rechargeable and portable. It's a very nicely made multi-purpose radio microphone
combined with Bluetooth, but it's expensive and I don't really use all of the features,
so it doesn't compare well with the Telcom. It does have Bluetooth, which after a fair
bit of fiddling around, works quite well for me and I do use it, but when Bluetooth is
on, the battery life is pathetic, and it usually runs out before the end of my working
day, so it's not really as reliable as it should be. The Phonak transmitter and receiver together will cost at least £850, so it's far from cheap, but it is worth it for me as it's so much easier to use (once you get used to it) and I think the sound quality is better too. Access to Work ought to help with the cost for someone who is working, but if you're retired, it seems a bit pricey. The Telcom was much better value at about £200 and is a much better choice for landline phones and the TV but it just doesn't seem to be available any more.

Another thing that makes an FM system a lot better for me is that I find that the fluorescent lighting and PC monitors in offices give off enough magnetic interference for me to get a constant hum or buzzing sound when I try to use the telecoil. So although it cuts out background noise from the office, it introduces another background noise of its own. I also find (depending on the phone) that it can be awkward holding the phone handset in the right position. Either the Telecoil sound fades in and out as I try to line up the handset, or the microphone ends up too far away from my mouth, and although I can hear OK, the person on the other end can't hear me that well. FM systems just don't have these disadvantages and so I find FM invaluable as I am completely relaxed on the phone when I am using it.

It's also worth mentioning Skype. I use this quite a bit to call relatives overseas and the sound quality is always fine. I usually have my PC plugged in to the spare Telcom, so I am listening through the FM again, but I'm sure it would work with the audio lead just as well.

The phone model I have is a Panasonic KX-TG8421E. I think it may have been superseded by a similar model called a KX-TG8421E or a KX-TG8521.

The sound is quite good – above average I think, but the main thing about it is that it has a 2.5mm audio socket for a hands-free headset, and you can plug a hands free headphone adapter into it, and plug the walkman lead from a cochlear implant into the hands free adaptor.

It is really the hands-free adaptor (which is meant for a mobile phone) that makes the difference to the sound. The adapter is called an “Adaptor for Phones with
2.5mm Connector” or a “Universal 2.5mm” adaptor and you can find it on sensorcom’s website here:


or you can see more details on the last page of the PDF catalogue attached.

There are quite a few phones which have a 2.5mm socket that works with the adaptor – I use it with a Nokia 2330 classic which is basic, but good and has great battery life. There are also a few normal (not cordless landline phones) that have the 2.5mm socket – my Geemark CL400 has one, and the set-up works well. There are also other cordless phones that have the socket – there’s a whole page of them here

http://www.pmctelecom.co.uk/categories/headset-with-2.5mm-jack-for-dect-phones/59, but I haven’t tried the others so don’t know what the sound is like. The sound on the Panasonic is pretty good. It also has an answering machine which is clear enough for me and you can text with it, so it’s quite a good choice all-round.

**Gerry L - My experiences with telephones and the Freedom speech processor**

**Landline phones:**
We have three BT Graphite 1100 digital phones and one Geemarc CL1100 analogue phone. All have volume control and only the Geemarc has caller tone control.

I can generally hear okay on the BT digital phones and if necessary will adjust the volume to suit the caller, but if there is any background noise it can become difficult.

Sometimes I have to play around with the volume dependant on the other person’s level of speech or line quality or even ask them to speak a little slower. Deep male voices are my biggest problem.

On the Geemarc, I have a tone and volume setting which now remain unchanged. It took me a while to get the best settings. Very occasionally have to ask the caller to hold-on while I reset my ‘Freedom’ to the ‘T’ position and then continue the call. That usually resolves the problem.
Since my implant I have tried a number of different phones, both digital and analogue. Settling on the ones that are good is a difficult process. I bought a BT big button phone recently it was a disaster. I returned it because when I turned up the volume I got feed back through the earpiece from my own speech. BT were not helpful at all. I used to think BT phones were best but since they closed their disability department I think they have lost interest in supplying phones to deafened people and now concentrate on the mass market.

**Mobile phones:**
I was told years ago by Carphone Warehouse that Nokia mobiles had the best speakers therefore I have tended to stay with Nokia. I’m told that is no longer true as other makes have improved the quality of their speakers. Last year, I experimented by changing over to a Samsung mobile that I really liked. It sounded okay but would not work properly with my Artone Neckloop. I therefore took it back and changed it for another Nokia model.

I can hear most of the time on my mobile without resorting to the neck loop, but if I am calling from a noisy environment or know my contact is a problem for me to hear I will call using Bluetooth and my ’Artone’ neck loop with my Freedom set to ‘T’. I would recommend the use of a neck loop in difficult circumstances to anyone with an implant or compatible hearing aid. I also sometimes use my mobile and Artone in the car connected to the car’s Bluetooth system which means I can hear and speak whilst I drive. All my contacts are stored in the SatNav system as well.

Finally the biggest problem is that there is no real guidance out there and it's not easy to try-out any kind of phone out in a shop. It seems the only thing to do with land line phones is to buy one and try it out for maybe a week and if unhappy then take it back to the shop for a refund or to change it for another model.

With mobiles you can usually try them in the shop but it's not a real life situation and you have to be very careful and confident in your appraisal, otherwise you can get stuck with a phone that is not quite good enough for purpose.

The RNID do surveys from time to time but and they do sell phones on their website which are probably okay if you don't mind the design which quite frankly seem
geriatric. And again I'm not sure how well they are tested as I notice they also sell the BT Big Button Phone!

**Martin L - My experiences with telephones and the Freedom speech processor**

I do use a Bluetooth loop with my cochlear implant. I use this in excess of 100 times a week as my job consists of a lot of technical support over the telephone. It works very well and I think it is great as a hands free kit too, as there is a button on the loop set for answering and ending calls. There is also a volume control on it too. It is an Artone M458 Bluetooth loop which I purchased on the [www.actiononhearingloss.org.uk](http://www.actiononhearingloss.org.uk) website. The link to the product is [www.actiononhearingloss.org.uk/shop/bluetooth-loop-product-m458.aspx](http://www.actiononhearingloss.org.uk/shop/bluetooth-loop-product-m458.aspx).

The features of the loop are:

- Neck loops are extremely useful for a hearing aid wearer (if you have a hearing aid with a T switch) for two key reasons:

  - When you hold a mobile up to your ear its close proximity to your hearing aid sometimes causes interference. A neck loop means you don't need to hold the mobile to your ear so you won't get any interference.

  A neck loop also means you can talk on your mobile phone hands-free. This means you can drive, or go about your day normally while you're still on the phone.

  - This neck loop is particularly useful because it is a Bluetooth one. This means it is wirelessly connected to your mobile. Having a wirefree connection means you can be anywhere within 10 metres of your mobile and still answer it. This means your mobile doesn't have to be permanently stuck in your pocket or belt case. You can always hear your mobile ring as without a Bluetooth neck loop your mobile's ringtone is likely to be muffled in your pocket or bag or just sound too distant.

To use it simply 'pair' it with your mobile (this is extremely simple - just follow the instructions), place it around your neck and use the built-in microphone and volume control.
You can charge it while at home using the mains charger, in the office using the USB connector for your computer or in the car with your car's cigarette light socket.

- Wireless Bluetooth connection
- Up to eight hours talking time
- Charging time up to two to three hours
- Up to 10 hours standby power
- Push button volume control
- Range of up to 10 metres
- On / off button for answering and disconnecting calls

The problem I had though was that because I have to switch to Telecoil every time the mobile rings I had to have the four programmes retuned to display normal, telecoil, normal and telecoil. This way after the conversation finished I had to press the programme select button three times to get back to the ‘normal’ programme. I have already had the switch replaced as it has worn out with the numerous key presses. I get longer out of the unit now, on the existing programme setup but obviously have limited programme options.

I would, however, recommend the Artone as have had no issues and it works well with my Freedom implant.