

Digital hearing aids

About this factsheet

This factsheet is part of RNID's **hearing aids** range. It is written for deaf and hard of hearing people who would like to find out more about digital hearing aids.

This factsheet covers:

- How digital hearing aids work.
- Their advantages when compared to traditional analogue hearing aids.
- Digital hearing aids on the NHS.
- How to buy them privately.

At the end of this factsheet we give you details of organisations you can contact for further information.

If you would like this factsheet on audio tape, in braille or in large print, fill in the *Want to know more?* form at the end of this factsheet and send it to RNID.

How do analogue hearing aids work?

Analogue hearing aids have a microphone that picks up sound and converts the sound to small electrical signals. These signals vary according to the pattern of the sound. The signals are then amplified (made louder) by transistors and fed to the earphone on the hearing aid so that the person using the aid can hear them.

Most of the better analogue hearing aids compress the sound using 'automatic gain control' (AGC). This amplifies quiet sounds until they are loud enough to be heard, but gives less amplification to sounds that are already loud, so that the person using the hearing aid is protected against uncomfortably loud sound levels. Analogue hearing aids are generally not as flexible as digital aids, but they are the cheapest hearing aids available.

How do digital hearing aids work?

Digital aids work in a different way. They take the signal from the microphone and convert it into 'bits' of data – numbers that can be manipulated by a tiny computer in the hearing aid. This makes it possible to tailor and process sounds very precisely, in ways that are impossible with analogue aids. The better digital aids can be very finely adjusted to suit individuals. Many even adjust themselves automatically to suit different sound environments.

Cutting out background noise

When someone talks to you, you usually want to hear what they are saying, rather than whatever noise is going on in the background. People who use traditional analogue hearing aids often complain that they find it difficult or impossible to follow conversation in noisy places. Many digital aids are designed to reduce steady kinds of background noise such as the rumble of traffic or the whirr of a fan. This makes listening more comfortable. However, it does not necessarily help you to pick out a single voice from everything else that is going on, especially when several people are talking.

Two things have been shown to improve hearing in noisy situations more than anything else – wearing hearing aids in both ears, and using hearing aids that have twin microphones.

What are twin microphones?

'Twin' or 'dual' microphones are a type of directional microphone that work effectively in hearing aids. The twin microphone picks up sounds that come from in front of you much better than sounds to the side or behind you, making it easier for you to focus on what you want to listen to in a noisy place. Some – but not all – digital hearing aids have twin microphones. You can also switch settings on some aids. This is ideal when you want to switch to 'all round sound' when you need to, for example, when you are crossing the road.

Some sophisticated analogue hearing aids have twin microphones, but digital hearing aids can increase the directional effect of twin microphones.

Can digital aids help reduce whistling?

Yes. Some digital hearing aids have 'acoustic feedback suppression' or – better still – 'feedback cancellation'. This means that they can automatically reduce the whistling that bothers many people who use hearing aids.

More comfortable listening

Many digital hearing aids have a feature called 'wide dynamic range compression' that can be adjusted separately in each of several 'bands' or 'channels'. It means the aid can be programmed to suit your particular hearing loss and ensures that you always hear different sounds at levels that are comfortable for you. This type of aid is often completely self-adjusting. The aid will only work well for you if the person who fits it adjusts its settings carefully in the first place. Some fine-tuning may be needed when you have become used to the aid.

Some types of analogue aid can also be programmed to suit individual users but the way loudness is controlled in these aids is less sophisticated than in multi channel digital aids. These types of aid may not always give as comfortable listening as digital aids.

What is the 'T' switch?

As with all NHS analogue aids it is generally possible to switch to 'T' with a digital hearing aid. This allows you to pick up sound from a loop system or inductive coupler. However, if you choose a very small style of analogue or digital aid that fits into your ear canal there may not be room for a telecoil and so you will not have the 'T' option.

What size are digital hearing aids?

Digital hearing aids – just like analogue ones – come in 'behind-the-ear', 'in-the-ear' or 'in-the-canal' models. They are not necessarily smaller than analogue hearing aids. You may be offered a choice but remember that the very small styles, though less noticeable, may be more fiddly to use, tend to break down more often and you may not be able to use them with a loop system.

Digital hearing aids on the NHS

RNID has campaigned long and hard for modernisation of the NHS hearing aid service. In January 2000 the Government announced that it would fund a project to upgrade the service and introduce high quality digital hearing aid technology.

The NHS is the largest buyer of hearing aids in the world and can use this purchasing power to obtain high quality digital aids in bulk and at greatly reduced prices. It provides these free of charge as with traditional analogue NHS hearing aids.

The upgrade of the NHS hearing aid service in England

In September 2000 the first of 20 selected NHS trusts in England began to provide digital aids as part of the 'First wave' project.

The Department of Health asked RNID to manage the work to make sure that audiology departments were ready to provide the new service. These departments required additional equipment and training, and most needed extra staff to deliver the modernised service.

An independent evaluation of the 'First wave' showed that people were benefiting more from the new digital hearing aids than they had from the old analogue NHS hearing aids provided by the traditional service. They were also using their hearing aids for more of the time in different situations.

50,000 RNID supporters campaigned with us for the modernisation to be extended throughout the NHS. On 24 December, 2001, the Health Minister announced an additional £20 million to modernise hearing aid services in 46 more NHS Trusts during 2002. They will all have started fitting digital hearing aids by April 2003. You will find them listed in the table at the end of this factsheet.

In February 2003, the Health Minister announced a further £94 million to complete the modernisation programme, bringing the new digital hearing aid service to all remaining audiology departments in England by April 2005.

Many services are keen to modernise as soon as possible. But in some areas the local funding organisations – Primary Care Trusts – are not giving them the support they need to join the programme quickly.

What sort of digital hearing aids are available on the NHS?

Both moderate-power and high-power digital hearing aids are available for adults and children. They are sophisticated multi-channel aids with features such as directional microphones and automatic noise reduction. The NHS is able to buy them much more cheaply than the £2,000 it would cost you to buy them privately.

Who can qualify for a digital aid?

If you have not had an NHS hearing aid before you must go to your GP to be referred. The audiology departments that have now been modernised are offering digital hearing aids to every patient waiting for their first hearing aid if their hearing tests show that they would benefit from one. You may be offered two digital hearing aids, one for each ear. If so, it is worth trying because many people benefit more from an aid in each ear than from just one.

If you are a war pensioner you will be given priority for hearing aids if your pension was awarded for deafness resulting from service. This means that you may be seen more quickly at your clinic but it does not mean that you are entitled to better hearing aids than other patients receive. If your local clinic is already part of the modernisation programme you will probably be able to try digital hearing aids.

You can get an NHS digital hearing aid even if you have already bought a hearing aid privately. If you are a private ear, nose and throat (ENT) patient you must wait the same amount of time to be fitted with an aid as NHS patients referred by their GP. You will not be given any priority over other referrals.

Who will not be eligible for a digital aid?

You will generally not be eligible to get digital aids if you have been fitted with a new hearing aid within the last three years, unless your hearing has got significantly worse since then. If you already have an NHS hearing aid you should wait to be invited for a review appointment, unless you are having real difficulties with your aid or you think that your hearing has got worse, in which case you should ask for an appointment.

If you are an overseas patient, as defined by the NHS rules, you will not generally be eligible to be fitted with digital aids.

It is very unlikely that hospitals will accept patients from outside the areas they normally provide a service for. Many already have long waiting lists and demand is increasing all the time.

Follow-up service on the NHS

You will be given a follow-up appointment if you get digital aids on the NHS. Batteries and hearing aid repairs will be available free of charge. NHS hearing aids remain Government property so they cannot be insured on your household policy, and should be returned to the audiology department if you no longer need them. If you lose or damage a digital hearing aid you may, in some circumstances, be charged or have to accept a non-digital – analogue – aid as a replacement.

The upgrade of the NHS hearing aid service in Northern Ireland

The Northern Ireland Minister has pledged £2.5 million to modernise audiology services by March 2004. This will be used to equip and train

audiology staff and to supply departments with digital hearing aids so that they can begin to provide these to patients by September 2003.

The upgrade of the NHS hearing aid service in Scotland

In February 2003 the Scottish Executive announced an investment of £8 million over four years to modernise audiology services. This was on top of the £2.25 million funding that they had already provided to upgrade audiology equipment.

The upgrade of the NHS hearing aid service in Wales

The Welsh Executive has provided £2.25 million to help modernise audiology services and hearing aids throughout Wales. Local funding was also provided and all departments are now delivering the new service.

Can I buy digital aids privately?

Yes, It is possible to buy digital hearing aids from high street dispensers, but the cost of private purchase is very high – up to £2500 for each aid. If you choose to buy privately, you will want to be sure that what you are getting is right for you. Ask the dispenser for a 28-day money-back guarantee so that you can try the hearing aid out properly in plenty of different situations, before committing yourself.

See the RNID factsheet *Buying a hearing aid?* for more information.

Buying abroad

Some people have bought digital hearing aids on the Continent, where they are much cheaper. If you decide to buy abroad you should be aware of potential problems. The main concern is lack of follow-up and after-care. People often take weeks to get used to new hearing aids.

You may need further fine-tuning of your hearing aid in order to get the most from it. It is important to check beforehand what will happen if you need more help or if your aid breaks down once you are back home again.

Further information

Visit www.mhas.info for the latest information about Modernising Hearing Aid Services (MHAS).

Further information from RNID

If you want to find out more about some of the subjects covered in this factsheet you may find our factsheets *Buying a hearing aid?* and *The NHS hearing aid service* useful. You may also want to look at our leaflet *All about hearing aids*.

The RNID Information Line offers a wide range of information on many aspects of deafness and hearing loss. You can contact us for further copies of this factsheet and the full range of our information factsheets and leaflets.

RNID Information Line

RNID Information Line, 19-23 Featherstone Street, London EC1Y 8SL.
Tel: 0808 808 0123. Textphone: 0808 808 9000. Fax: 020 7296 8199.
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RNID Information, February 2003

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Addenbrooke's NHS Trust	Addenbrooke's Hospital, Cambridge	Adults and children
Barking, Havering and Redbridge NHS Trust	Oldchurch Hospital, The Willows, St George's Hospital	Adults and children
Basildon and Thurrock General Hospitals NHS Trust	Basildon and Thurrock Hospital	Adults and children
Birmingham Children's Hospital NHS Trust	Birmingham Children's Hospital	Children
Birmingham Heartlands Hospital NHS Trust	Yardley Green Hospital	Adults and children
Bolton Hospital NHS Trust Bolton Primary Care Trust	Royal Bolton Hospital Children's Hearing Assessment Centre, Halliwell	Adults and children
Bournemouth Primary Care Trust	East Dorset Audiology Service	Adults and children
Bradford Hospitals NHS Trust	Bradford Royal Infirmary	Adults and children
Brighton Healthcare NHS Trust	Royal Sussex County Hospital	Adults and children

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Central Manchester and Manchester Children's University NHS Trust	Manchester Royal Infirmary	Adults and children
Central Manchester Primary Care Trust	Moss Side Health Centre	Children
City Hospital Sunderland NHS Trust	Sunderland Royal Hospital	Adults and children
Countess of Chester Hospital NHS Trust	Countess of Chester Hospital	Adults and children
Croydon and Surrey Downs Community NHS Trust	The Crystal Centre	Children
East Cheshire NHS Trust	Macclesfield District General	Adults and children
East Sussex Hospitals NHS Trust	Conquest Hospital, Eastbourne Hospital	Adults and children
Essex Rivers Healthcare Trust	Essex County Hospital	Adults and children
George Eliot Hospital NHS Trust	George Eliot Hospital Nuneaton	Adults and children
Gloucestershire Hospitals NHS Trust	Gloucestershire Royal Hospital	Adults and children
Great Ormond Street Hospital NHS Trust	Great Ormond Street Hospital	Children

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Hammersmith Hospitals NHS Trust	Charing Cross Hospital	Adults and children
James Paget Healthcare NHS Trust	James Paget Hospital, Great Yarmouth	Adults and children
Leeds Teaching Hospitals NHS Trust	Leeds General Infirmary	Adults and children
Maidstone and Tunbridge Wells NHS Trust	Preston Hall Hospital	Children
Mayday Healthcare NHS Trust, Croydon	Mayday University Hospital,	Adults
Mid Cheshire Healthcare NHS Trust	Leighton Hospital	Adults and children
Morecambe Bay Hospitals NHS Trust	Furness General Hospital, Westmorland General Hospital, Royal Lancaster Infirmary	Adults
North Cheshire Hospitals NHS Trust	Warrington Hospital	Adults and children
North Devon Healthcare NHS Trust	North Devon District Hospital	Adults and children
North Hampshire NHS Trust	North Hampshire Hospital	Adults and children
North West London Hospitals NHS Trust	Central Middlesex Hospital; Northwick Park Hospital	Adults and children

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Pennine Acute Hospitals NHS Trust	North Manchester General Hospital	Adults and children
Peterborough Hospitals NHS Trust	Edith Cavell Hospital	Adults and children
Queens Medical Centre University NHS Trust Nottingham	Hearing Services Centre and Children's Hearing Assessment Centre, Ropewalk House, Nottingham	Adults and children
Rochdale NHS Trust (now called Pennine NHS Trust)	Birch Hill Hospital	Adults and children
Royal Berkshire and Battle Hospitals NHS Trust	Royal Berkshire Hospital, Reading	Adults and children
Royal Cornwall Hospitals NHS Trust	Royal Cornwall Hospital, Truro	Adults
Royal Devon & Exeter Healthcare NHS Trust	Royal Devon and Exeter Hospital	Adults and children
Royal Free Hampstead NHS Trust	Royal National Throat, Nose and Ear Hospital, London; Royal Free Hospital, Hampstead Nuffield Hearing and Speech Centre, Gray's Inn Road	Adults and children

The trusts in England that will be modernised and providing digital hearing aids by April 2003		
Trust name	Hospital	Fitting
Royal Liverpool and Broadgreen University Hospitals NHS Trust	Royal Liverpool University Hospital	Adults
Royal Shrewsbury and Princess Royal Hospitals NHS Trusts	Royal Shrewsbury and Princess Royal Hospitals	Adults and children
Royal United Hospital Bath NHS Trust	Royal United Hospital Bath	Adults
Salford Primary Care Trust	Hope Hospital and Eccles Health Centre	Adults and children
Sandwell and West Birmingham Hospitals NHS Trust	Hearing Services Centre, Western Road	Adults and children
Sheffield Children's Hospital NHS Trust	Sheffield Children's Hospital	Children
Sheffield Teaching Hospitals NHS Trust	Royal Hallamshire Hospital	Adults
Sherwood Forest Hospitals NHS Trust	Kings Mill Centre; Newark General Hospital	Adults and children
South Manchester University Hospitals NHS Trust	Withington Hospital	Adults
Southampton University Hospitals NHS Trust	Royal South Hants Hospital	Adults and children

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Southport and Ormskirk Hospital NHS Trust	Ormskirk and District General Hospital	Adults
St Helens and Knowsley Hospitals NHS Trust	St Helens Hospital	Adults
Surrey and Sussex Healthcare NHS Trust	Crawley Hospital	Adults and children
Swindon and Marlborough NHS Trust	Princess Margaret Hospital	Adults and children
Tameside and Glossop Acute Services NHS Trust	Tameside General Hospital	Adults and children
Trafford Healthcare NHS Trust	Trafford General Hospital, Manchester Hearing Assessment Centre for Children, Timperley Health Centre	Adults Children
United Bristol Healthcare NHS Trust	Bristol Children's Hospital	Children
University Hospital Birmingham NHS Trust	Selly Oak Hospital	Adults
University Hospitals of Leicester NHS Trust	Leicester Royal Infirmary	Adults and children
West Dorset General Hospitals NHS Trust	Dorset County Hospital	Adults and children
West Suffolk Hospitals NHS Trust	West Suffolk Hospital	Adults and children

The trusts in England that will be modernised and providing digital hearing aids by April 2003

Trust name	Hospital	Fitting
Whipps Cross University Hospital NHS Trust	Whipps Cross Hospital, London	Adults and children
Winchester and Eastleigh Healthcare NHS Trust	Royal Hampshire County Hospital, Winchester	Adults
Windsor and Maidenhead Primary Care Trust	King Edward VII Hospital, Windsor	Adults and children
Wirral Hospital NHS Trust	Arrowe Park Hospital, Child Development Centre, Clatterbridge Hospital	Adults and children
Wolverhampton Healthcare NHS Trust	West Park Hospital; Red Hill Street Clinic	Adults and children
Wrightington, Wigan and Leigh NHS Trust	Thomas Linacre Centre Children's Hearing Service, Jack Ashley Centre	Adults Children

Want to know more?

This factsheet is available in **audio tape**, **braille** and **large print**. We can also send you more information on many of the subjects covered in this factsheet. Just tick the boxes below, tell us what you particularly need to know about, or see our website at **www.rnid.org.uk**

Please send me:

Digital hearing aids audio tape braille large print

The RNID *Publications Catalogue*.

Information about RNID Typetalk and BT TextDirect.

Details of RNID communication services in my area.

RNID's fundraising leaflet. RNID relies heavily on donations from, individuals, companies, trusts and fundraising events. Our leaflet shows how *you* can help.

Details on supporting RNID's future work with a legacy.

Information on how to take part in RNID campaigns.

A copy of the RNID Sound Advantage *Solutions* catalogue, giving details of equipment for deaf and hard of hearing people.

Other information – please tell us what you would like to know.

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Please send this information to: (Please write clearly using block capitals)

Title (Mr/Mrs/Ms/Miss) First Name _____

Surname _____

Address _____

Postcode _____ **E-mail** _____

Telephone _____ **Textphone** _____

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We will use any information you give below to monitor requests for this factsheet and help us tailor our services to your needs. You do not have to give this information, but if you do, please tick this box to confirm we may keep it on our database.

Tick all boxes that apply

Is the information:

- For you
- For a friend or family member
- A professional enquiry

Are you?

- At school or below school age
- A student
- Working age
- Retired

How would you describe yourself?

- Profoundly/severely deaf
- Hard of hearing
- Hearing
- Hearing aid user
- I have tinnitus
- I have balance problems

If we could provide it, would you like to receive information in a different format? Please use number 1, 2 or 3 to show your preferred choice.

- Videotape in British Sign Language (BSL) and with subtitles
- E-mail
- Face-to-face

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