

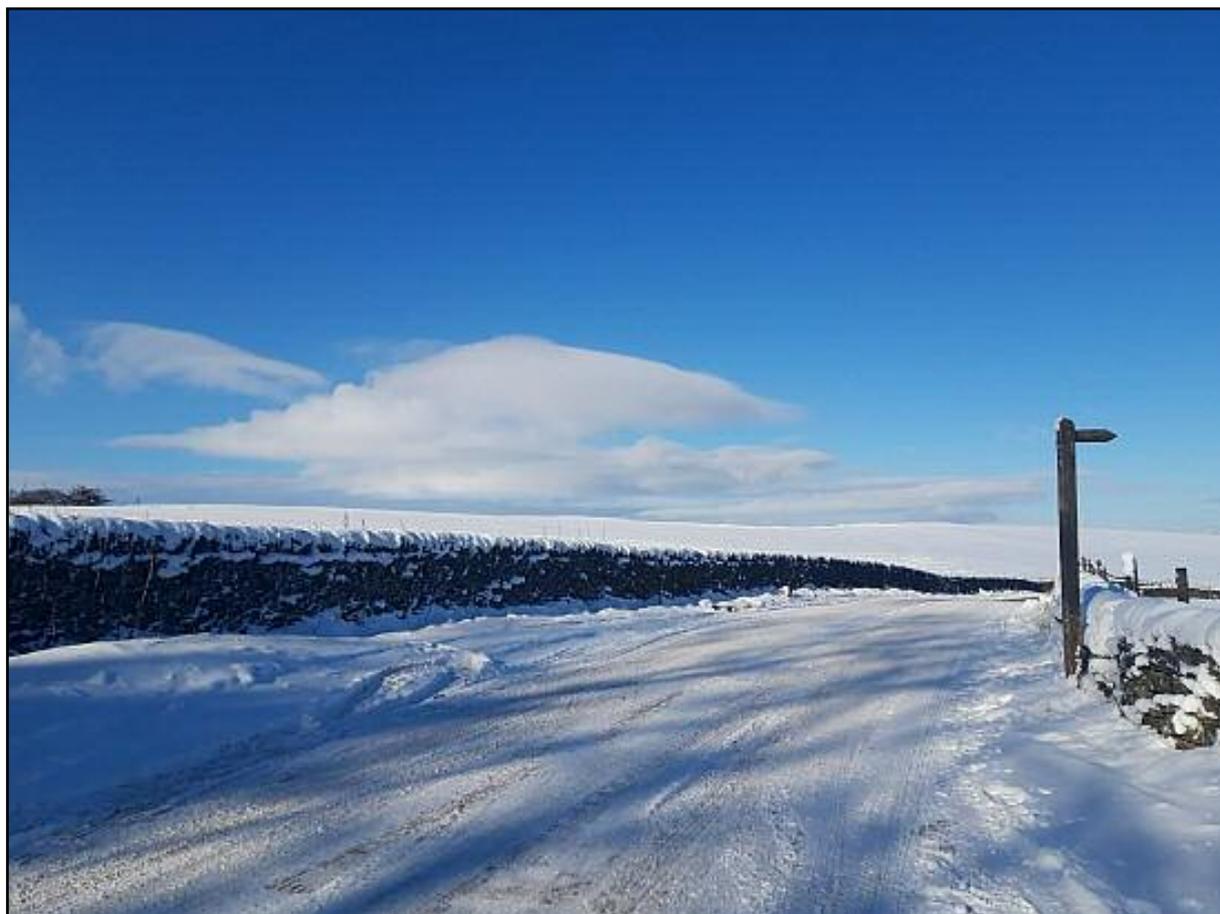
# ReSound

For people with Cochlear Implants

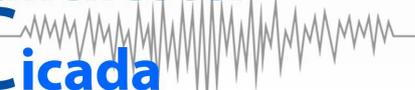
Winter 2019

Issue 61

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*The Derbyshire hills above Great Hucklow*

**Manchester**  
**Cicada**  a charity supporting implant patients

This newsletter has been produced on behalf of the Manchester CICADA Charity

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## Editorial

Welcome to the Winter edition of Resound.

As we begin the new year we are finalising the events planned for the coming season and will be publishing the final list and dates for these by the time we have our AGM.

As each event approaches we will be sending out information but you can check any time for updates on the website :

[www.manchestercicada.org.uk](http://www.manchestercicada.org.uk) where you can also find lots of other information from back copies of Resound to links to help and useful information including the two new Apps published by CICADA this year now available on the Google PlayStore and the Apple AppStore.

If anyone has an idea for a useful App for us to develop then get in touch with me.

CICADA is continuing to work closely with the Implant team at the MRI and also other hospitals such as Tameside General to help both new and existing CI users. If

you think that you could help your local hospital in any way do get in touch with anyone from the EC and we will do all we can to help.

Our close association with the MRI has also helped us recruit new members during last year and hopefully with the extra publicity we are planning this year we can continue to grow.

Once again, if you have a story to tell about your journey with the Implant program or an everyday occurrence we would love to hear from you, this magazine after all is about you.

The AGM and tour at Gaskell House in Manchester is the first event on the list, details will be going out this week and we would love to see you there.

We hope you enjoy this issue and if you've any comments, or stories to send along please let me know.

Kevin Williams - Editor

# National Theatres caption glasses

by Alison Cookson and Barbara Hitchins



Alison Cookson (left) and Barbara Hitchins (right) in their caption glasses.

In January, Alison Cookson and Barbara Hitchins took the opportunity of a visit to London, to test out the National Theatre's caption glasses. We went to a performance of *Hadestown*, a modern day retelling of the story of Orpheus and Eurydice.

Firstly the show - we weren't sure what to expect, and from the blurb, thought it might be a bit weird. Instead, it was a lively 'musical', with jazz and blues type instrumentation, that had us bouncing in our seats. A brilliant show, well deserving of its 'sold out' run.

Now to the glasses. We were extremely sceptical, and couldn't believe they would provide a quality experience. However,

from start to finish, it was excellent. They have to be set up for the specific seat, (meaning that no one else has to be 'distracted' by the captions!). Once the usher had set them up, he gave us a quick run down, and some basic written instructions. Initially, Barbara was seeing two of everything, very clearly, but once we went into the theatre this resolved itself. The glasses have an inbuilt induction programme, which we went through. The glasses have various adjustments that can be made, including font size, font colour, position of text horizontally and vertically, and single line or scrolling.

We were surprised at the clarity of the text.

The captions 'float' in front of your eyes, so they move as you move your head.

This can be a bit strange - for example, tilt your head and the captions tilt; nod your head to the music and the captions go up and down. It does mean, though, that the captions can appear in direct relationship to whoever is speaking/singing, so making it much easier to follow the stage action and look at the captions.

We both found the second half clearer than the first half. I don't know if this was because we were getting used to them, or because we had learned to adjust the position of the glasses, or made adjustments to the text. They 'froze' for a couple of minutes in the second half, but soon restarted, and this was the only

technical hiccup.

The usher who gave us the initial instructions came back before the show started, again during the interval, and took them back after the show, checking out how it had been. It is, of course, a new venture for them, and they clearly want to ensure it is a good experience for the people who are using them.

So, overall, from a somewhat sceptical position, we are both huge converts. We are hoping they will soon be rolled out to other theatres, and a return visit to the National is definitely on the cards, if we get the opportunity.

Alison Cookson and Barbara Hitchins

## The Doctor will hear you now after 30 years of lipreading

by Aidan Radnedge



A DOCTOR who spent his career lipreading patients because of his profound deafness can finally hear again after nearly 30 years.

Prof Willie Hamilton, 60, started losing his hearing in 1982 as a trainee medic and by 1989 he was nearly completely deaf.

However, a cochlear implant operation has been successful for the GP (pictured) from Newton Abbot, Devon.

He said: 'I always explained my deafness

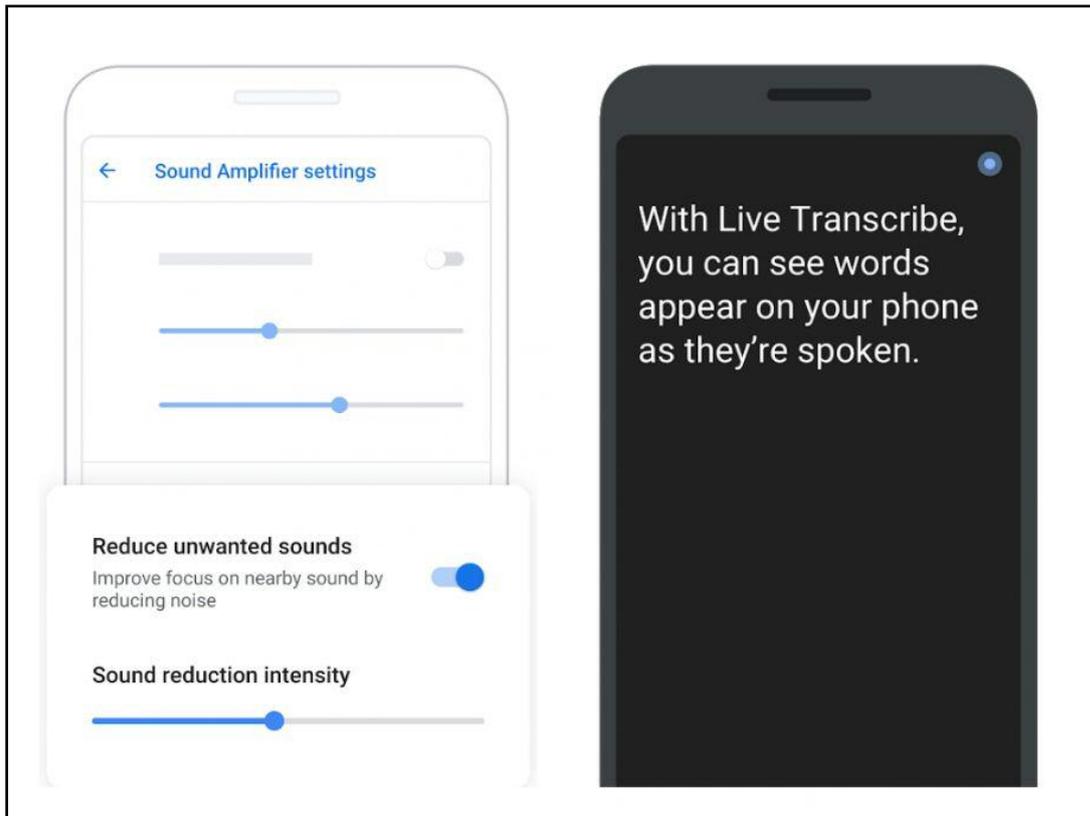
when I met patients, but now for the first time in 29 years after not hearing a thing, I can hear. Much of my communication has been conducted over email, but it's a revelation now to just pick up the phone and have a conversation.'

The professor realised his hearing had returned when a friend rang his mobile while he was out walking.

He said: 'I gave it to my wife Ali to answer, as I've done for many years previously, but then at that moment I could hear [my friend] talking and realised my phone had been Bluetoothed to my implant and his voice was crystal clear.

'I was so thrilled that when I found him in a nearby village pub, I gave him a huge bear hug with tears in my eyes.'

# Google unveils Android accessibility apps for hearing-impaired users



Smartphones do a pretty good job of adapting for visually-impaired users, but what about making life easier for the hard of hearing? Google has just unveiled a pair of apps that aim to make deaf users' day-to-day interactions that bit easier.

The two apps are Live Transcribe and Sound Amplifier, and while the former is currently only in beta, the latter is available for anyone to download right now. Google is so confident in them, that they'll come pre-installed on Pixel phones moving forwards, too.

So what do they do? Well, let's start with the one that anyone can download right now: Sound Amplifier. Connect a pair of wired headphones and you can filter loud noises out of the environment, leaving the quieter sounds that you actually want to hear.

While this is most useful to hearing-

impaired users, Google thinks this could be of use to any user in a distractingly loud environment, from cafes to airport lounges. All the processing is done on the phone itself, so no internet access is required.

You will need internet access for the Live Transcribe app, however. That's because the app relies on the Google Cloud speech API to do its heavy lifting. As the name suggests, it transcribes speech in real time, allowing deaf users to read what is being said to them.

That may sound like the kind of simple functionality that could be introduced via any transcription app, but it has some neat extras that make it especially suited to its mission.

It has haptic feedback, for example, and will vibrate if it detects somebody talking to you, making it harder to miss speech, even if you can't see the person vying for your

attention.

An indicator also appears in the top right corner of the screen showing the general loudness of the environment, so the phone owner can clearly see when they need to speak up in reply.

If they don't want to reply out loud, they can just type text directly into the app, of course.

While no transcription software is perfect (believe me, I've tried most of them in search of the holy grail for interview write-ups), Live Transcribe lets you connect an external microphone for greater accuracy, and impressively it works in over 70 languages.

The fact that it needs an internet connection is disappointing, ruling out certain environments, but it's clearly a product that would struggle using just a phone's internal processing alone.

"The World Health Organisation estimates that by the year 2055, there will be 900 million people with hearing loss," Brian Kemler, Google's product manager for Android Accessibility wrote in a blog post introducing the new apps.

"With both Live Transcribe and Sound Amplifier, our goal is to help the hundreds of millions of people who are deaf or hard of hearing communicate more clearly."

*Report by Alan Martin of Trusted reviews.*

## Mechanism helps explain the ear's exquisite sensitivity

### **A critical gel-like structure in the inner ear moves according to a sound's frequency, researchers find**

The human ear, like those of other mammals, is so extraordinarily sensitive that it can detect sound-wave-induced vibrations of the eardrum that move by less than the width of an atom. Now, researchers at MIT have discovered important new details of how the ear achieves this amazing ability to pick up faint sounds.

The new findings help explain how our ears can detect vibrations a million times less intense than those we can detect through the sense of touch, for example.

The results appear in the journal *Physical Review Letters*, in a paper by visiting scientist and lead author Jonathan Sellon, professor of electrical engineering and senior author Dennis Freeman, visiting scientist Roozbeh Ghaffari, and members of the Grodzinsky group at MIT.

Both the ear's sensitivity and its selectivity -

- its ability to distinguish different frequencies of sound -- depend crucially on the behavior of a minuscule gelatinous structure in the inner ear called the tectorial membrane, which Freeman and his students have been studying for more than a decade. Now, they have found that the way the gel membrane gives our hearing its extreme sensitivity has to do with the size, stiffness, and distribution of nanoscale pores in that membrane, and the way those nanopores control the movement of water within the gel.

The tectorial membrane lies atop the tiny hairs that line the inner ear, or cochlea. These sensory receptors are arranged in tufts that are each sensitive to different frequencies of sound, in a progression along the length of the tightly curled structure. The fact that the tips of those hairs are embedded in the tectorial membrane means its behavior strongly

affects the way those hairs respond to sound.

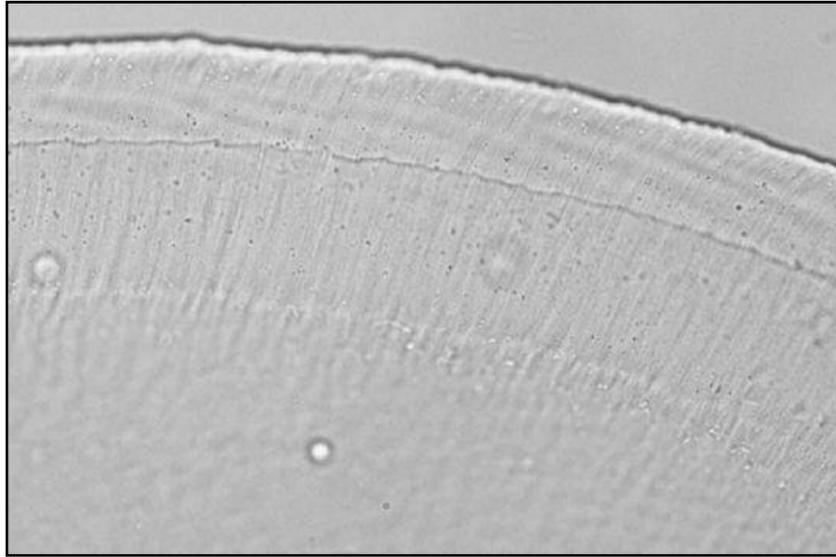
"Mechanically, it's Jell-O," Freeman says, describing the tiny tectorial membrane, which is thinner than a hair.

Though it's essentially a saturated sponge-like structure made mostly of water, "if you squeeze it as hard as you can, you can't get the water out. It's held together by electrostatic forces," he explains. But though there are many gel-based materials in the body, including cartilage, elastin and tendons, the tectorial membrane develops from a different set of genetic instructions.

The purpose of the structure was a puzzle initially. "Why would you want that?" Sellon says. Sitting right on top of the sensitive sound-pickup structure, "it's the kind of thing that muffles most kinds of microphones," he says. "Yet it's essential for hearing," and any defects in its structure caused by gene variations can significantly degrade a person's hearing.

After detailed tests of the microscopic structure, the team found that the size and arrangement of pores within it, and the way those properties affect how water within the gel moves back and forth between pores in response to vibration, makes the response of the whole system highly selective. Both the highest and lowest tones coming into the ear are less affected by the amplification provided by the tectorial membrane, while the middle frequencies are more strongly amplified.

"It's tuned just right to get the signal you need," Sellon says, to amplify the sounds



that are most useful.

The team found that the tectorial membrane's structure "looked like a solid but behaved like a liquid," Freeman says -- which makes sense since it is composed mostly of liquid.

"What we're finding is that the tectorial membrane is less solid than we thought." The key finding, which he says the team hadn't anticipated, was that "for middle frequencies, the structure moves as a liquid, but for high and low frequencies, it only behaves as a solid."

Overall, the researchers hope that a better understanding of these mechanisms may help in devising ways to counteract various kinds of hearing impairment -- either through mechanical aids such as improved cochlear implants, or medical interventions such as drugs that may alter the nanopores or the properties of the fluid in the tectorial membrane. "If the size of the pores is important for the functioning of hearing, there are things you could do," Freeman says.

Other authors of the paper include Mojtaba Azadi, Ramin Oftadeh, and Alan Grodzinsky at MIT and Hadi Tavakoli Nia at Massachusetts General Hospital and Harvard Medical School. This research was supported by the National Institutes of Health and the National Science Foundation.

Story Source:

Materials provided by Massachusetts Institute of Technology. Original written by David L. Chandler. Note: Content may be edited for style and length.

# Bluetooth - what's it all about?

by Kevin Williams

If you see adverts for SmartPhones and a lot of electronic devices these days it's more than likely that you will see mention of something being 'Bluetooth' enabled. You may be surprised to know that a lot of hearing equipment is already Bluetooth enabled and has been for a while using this technology in the Remote Control box for example, to change channels or settings on the CI. But these control boxes only work with their own manufacturers models of CI.



Bluetooth? Well as with all things in the Electronic world there have been dramatic developments in Bluetooth connectivity which promise to give CI and Hearing Aid users much better access to Bluetooth devices opening up a huge range of things that can be done to improve our access to them.

So before we look at where developments are going with Bluetooth lets take a minute to understand what it is - Deep breath!

## A bit of History

When originally conceived computers were free standing devices, you went to the computer, put information in it and waited for the result to come out (usually on paper) and one computer did not know about another computer in the next room!

All that changed with the World Wide Web, which was invented by Tim Berners-Lee, and we now take it for granted that our computer, phone or tablet can talk to another computer anywhere in the world.

All this is very interesting if you are a computer buff, however we are now at the stage where we are getting computers / Smartphones, communicating with things that we wouldn't consider to be a 'computer'.

I can now switch a device such as a room heater on and off from wherever I am in the world, with my Smartphone so long as I can connect to the Internet.

So what has all this got to do with

## What is Bluetooth?

**Bluetooth** is a wireless technology standard for exchanging data over short distances using short-wavelength UHF radio waves in the ISM band from 2.400 to 2.485 GHz from fixed and mobile devices, and building personal area networks (PANs). It was originally conceived as a wireless alternative to RS-232 data cables.

OK it's a wireless system.

It was designed to be able to replace cables in a situation where you needed to connect two devices that were not too far apart and where each device needs low power consumption. The typical range it works at (for the most common variation used) is approx. 30ft and a Bluetooth setup involves a Master station and up to seven slave devices. So on your Mobile phone when you switch on the Bluetooth option it scans around looking for devices to connect to, this process is called 'pairing'.

## History

The development of this short range radio technology was started in 1989 by Nils Rydbeck and Johan Ullman when working for the Ericsson Mobile in Lund, Sweden, who wanted to produce wireless headsets.

## The Name

The name Bluetooth is an Anglicised version of the Scandinavian Blåtand/Blåtann (Old Norse blátǫnn), the epithet of the tenth-century king Harald Bluetooth who united dissonant Danish tribes into a single kingdom.

The implication is that Bluetooth unites communication protocol

The idea of this name was proposed in 1997 by Jim Kardach of Intel who developed a system that would allow mobile phones to communicate with computers. At the time of this proposal he was reading Frans G. Bengtsson's historical novel the Long Ships, about Vikings and King Harald Bluetooth.

## Logo



The Bluetooth logo is a bind Rune merging the Younger Futhark runes and Harald's initials.  

## Why is it relevant?

For a long time now Hearing Aid and CI users have had the facility to use the 'T' setting on their device to connect to Loop Systems to help to hear such things as televisions, or others speaking in public places such as Banks, Supermarkets, Theatre's and Cinemas. In the meantime however the Mobile phone came along which in the main did not have any built in facility for us to use.

We could use a neck loop, which plugged into the phone's earphone adapter but it was not always convenient to carry around

a neck loop wherever you went.

As the technology has improved with CI's and Hearing Aids they are now routinely setup by loading software into them from computers and this has been made possible by new designs for the electronics (chips) in each new design.

We are now at the point where some of these chips include Bluetooth facilities by default.

The ability to make adjustments to the CI's without touching the CI itself has been available for a while using proprietary devices as mentioned above, but although these used Bluetooth, a range of manufacturer specific devices was needed to cater for all eventualities, e.g. A Microphone for person to person use, a telephone adapter, a television adapter etc.

For those with older CI's that didn't have these facilities then the other option has been to use a neck loop with a Bluetooth receiver and switch the CI to the 'T' setting.



In the meantime more and more devices were being produced that were Bluetooth enabled and the mobile phone has become common.

So the time has come to allow CI's (and hearing aids) to be able to use common devices without the need for specialist equipment.

Recent announcements by Cochlear and others have indicated that a lot of development is going on and as the latest

Bluetooth chips support fast communication such things as Health Professionals remotely adjusting a users CI whilst the user simultaneously communicates with the professional are possible.

Another example would be for those who have a satnav device in the car which uses Bluetooth, a CI user would be better able to hear directions whilst driving.

Voice recognition in Smartphones and devices is becoming more sophisticated and it should be possible soon to receive sound

from a standard Bluetooth microphone, for example on a Speakers desk, by an audience with Bluetooth enabled hearing devices regardless of their make.

All this may lead to the situation where the CI is just another Bluetooth device and you will be able to connect to and use other devices as easily as most people do now.

We shall see.



## Cochlear CI SmartPhone developments

The GN logo, consisting of the letters "GN" in a bold, orange, sans-serif font.

### Cochlear and GN Hearing Strengthen Technology and Commercial Alliance to Develop Best-in-Class Integrated Hearing Solutions

Cochlear Limited (ASX: COH), the global leader in implantable hearing solutions, and GN (GN.CO), the global leader in intelligent audio solutions, today signed a new agreement to significantly expand their Smart Hearing Alliance collaboration.

The Smart Hearing Alliance was established in 2015 to develop the most integrated, best-in-class hearing solutions – giving hearing aid and cochlear implant recipients access to the latest in connectivity and wireless technology, and allowing bimodal recipients to achieve seamless connectivity between a cochlear implant in one ear, and a GN hearing aid in the other.

The deepening of this relationship includes joint research and development, shared technology and strengthened global Smart Hearing Alliance commercial collaboration between Cochlear and GN Hearing, the hearing aid division of the GN Group.

Recognising their successful collaboration to date, Cochlear and GN Hearing are now

strengthening focus on their integrated product offering and expanding their presence in the clinical hearing aid and implantable hearing solutions markets globally.

The vision for this new collaboration will include a focus on fast-moving connectivity and wireless technology to allow for closer integration between Cochlear and GN Hearing technologies.

The two companies will leverage research and development investment to jointly develop firmware and software technologies.

In addition to technology sharing, the two companies will strengthen the commercial collaboration and work together to enable clinicians to deliver a more seamless solution and best-in-class hearing experience to their patients.

GN Hearing CFO Marcus Desimoni and Cochlear CEO & President Dig Howitt

welcomed the signing of the expanded agreement.

Mr Desimoni said: "This strengthened alliance is an important step forward for the millions of people around the world with disabling hearing loss – making the most advanced technology more accessible and simplifying the experience with more integrated solutions. GN Hearing is committed to advancing what is possible for people with hearing loss. This strategic partnership is a very smart and cost-effective way to expand the R&D capacity of both companies to reach our goals."

Mr Howitt said: "At Cochlear, we're driven to develop hearing solutions that empower people to connect with others and live a full life. By expanding our collaboration with GN Hearing, we're able to bring the latest in connectivity and wireless technology to our implant recipients more quickly. We're also able to give bimodal recipients – those using a cochlear implant in one ear, and a hearing aid in the other – unparalleled performance and a seamless experience with both devices.

As two leaders in our areas of hearing health, this collaboration demonstrates our commitment to design and bring to market the best hearing solutions available."

This collaboration aims to improve the hearing outcomes for more people with moderate to profound hearing loss. In developing more integrated bimodal hearing solutions, Cochlear and GN Hearing have focused on achieving greater connectivity for people – not only between the two companies' devices – but also with Apple and Android technology.

Most recently, Cochlear and GN Hearing collaborated to bring to market the first Made for iPhone Smart Bimodal Solution, enabling recipients to synchronize streaming to both ears from a compatible iPhone, iPad or iPod touch.

The Nucleus® 7 Bimodal Solution is delivered by using a Cochlear Nucleus 7 Sound Processor in one ear, a compatible ReSound hearing aid in the other ear, and a paired iPhone or iPod touch to control functionality for both hearing devices.

The Smart Hearing Alliance delivers bimodal solutions connecting Cochlear Nucleus cochlear implants, Cochlear Baha bone conduction implants, wireless accessories, and ReSound hearing aids.

## **About Cochlear Limited**

Cochlear is the global leader in implantable hearing solutions. The company has a global workforce of more than 3,500 people and invests more than AUD\$160 million a year in research and development.

Products include hearing systems for cochlear implants, bone conduction implants and acoustic implants, which healthcare professionals use to treat a range of moderate to profound types of hearing loss.

Since 1981, Cochlear has provided more than 550,000 implantable devices, helping recipients of all ages, in more than 100 countries, to hear. [www.cochlear.com](http://www.cochlear.com)

## **About GN**

GN is a global leader in intelligent audio solutions. Founded in 1869, GN is dedicated to making life sound better and developing meaningful solutions that transform lives through the power of sound.

GN has pioneered advances in communications, from the continental telegraph connections in the early 19th century to the technologically advanced headsets and hearing aids of the 21st century.

GN is the only company in the world with innovative and intelligent medical, professional and consumer audio solutions, which are marketed by the Interton, ReSound, Beltone, Jabra and BlueParrott brands in 100 countries. GN employs more than 5,500 people worldwide and is listed on Nasdaq Copenhagen (GN.CO). [www.gn.com](http://www.gn.com)

# New Lipreading Story website

## Stories for Lipreading - The Next Chapter

Have you ever wanted some lipreading practice but felt that you needed something more 'real life' than drills and exercises? - Or have you wished there was something to lipread that would grab your attention and keep you concentrating to the last line ?

If so, perhaps you've spent the past year enjoying a new website, Stories for Lipreading.

Not used it yet? You may find it's just what you've been waiting for. Stories for lipreading is the brainchild of lipreading student Annabel Hervey-Bathurst and three lipreading tutors, Sandy Marlow, Barrie Wickens and Meg Finlayson.

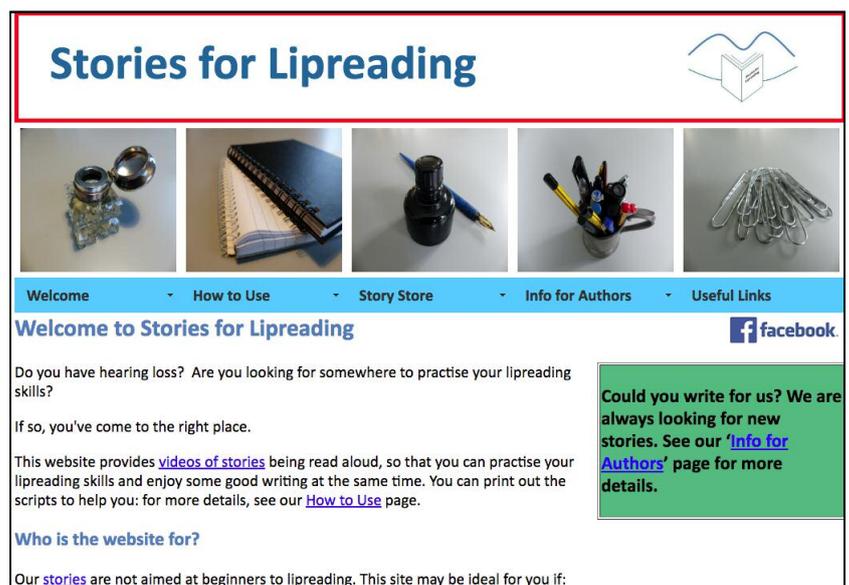
"We have one simple aim," says Sandy, "which is to provide a free resource where people with hearing loss can practise their lipreading skills. We're thrilled the website is proving so popular - users from all over the world have emailed some wonderful comments and thoughts."

Stories for lipreading launched in May last year.

Responding to users' feedback, all stories are now available to view on YouTube via the website. So they flow smoothly without any buffering. One year on, the founders look back with delight at what they have achieved.

"We started with nine stories," says Barrie, who has himself written for the project.

"We're thrilled that, by the end of this year, more than 60 stories will all be available."



**Stories for Lipreading**

Welcome   How to Use   Story Store   Info for Authors   Useful Links

Welcome to Stories for Lipreading 

Do you have hearing loss? Are you looking for somewhere to practise your lipreading skills?

If so, you've come to the right place.

This website provides [videos of stories](#) being read aloud, so that you can practise your lipreading skills and enjoy some good writing at the same time. You can print out the scripts to help you: for more details, see our [How to Use](#) page.

**Who is the website for?**

Our [stories](#) are not aimed at beginners to lipreading. This site may be ideal for you if:

**Could you write for us? We are always looking for new stories. See our [Info for Authors](#) page for more details.**

Thanks to our previous article on the project (AOHL Autumn 2017), and support for the Writers Forum magazine, the team now receive a steady stream of story submissions, The authors, including professional writers, give their work for free, knowing that it's helping so many people.

"Without their generosity, we wouldn't have a website," says Barrie. "We'd love to hear from any other budding authors out there! All our guidelines are on the site, so do have a look."

All stories are read to camera by readers specifically chosen for their 'lip readability'. There is a range of delivery, from very clear and steady, through to more animated and challenging.

"Lipreading students often say they want

practice which reflects real life," explains Meg. "We hope the variety, including some very short stories and some factual pieces, means there is something for everyone"

One happy student, Joy Wallis, comments, "I find stories for

Lipreading a wonderful idea. I recently had to have a few weeks away from my lipreading class and have been able to practice my lipreading skills with its very good stories, jokes and mystery objects. You can always go back over what you watched previously, to see if your memory and lipreading are up to scratch."

Navigating the site is easy, explains

**One year on this success story looks set to grow and develop to meet lipreader's needs**

website, I've found the introductory page - about how to navigate it, plus useful links - extremely clear and useful.

I'm a long term hearing aid user and he's a sometimes exhausted spontaneous

lipreader who's looking forward to practice that I can rewind if I need to !"

Her comments are typical of those steaming into the Stories for Lipreading inbox, and sometimes appearing on its Facebook

Page; yet another innovation this year, which lets followers know whenever new stories are added.

"Facebook enables us to interact with our users," says Annabel, "We're grateful to our Facebook supporters for sharing our posts, so as many people as possible know about , and can enjoy using this resource."

Stories for Lipreading isn't designed for complete beginner, but, as Meg points out, "Many people who've had hearing loss for some time develop lipreading skill without realising it, and can often lipread more than they expect when they give our website a try."

However, the team stress that it's not intended to replace a lipreading class, if you're lucky enough to have one nearby (see [www.atlialipreading.org.uk](http://www.atlialipreading.org.uk) for a list of classes nationwide).

So, one year on , this particular success story looks set to grow and develop to meet lipreaders' needs. "It's a very exciting journey for us." Says Sandy.

"Who knows what changes the next year will bring?"

Have a good read at:

[www.storiesforlipreading.org.uk](http://www.storiesforlipreading.org.uk)

*(This story first appeared in the AOHL magazine)*



Selecting the type of story to lipread

Annabel: "As the story Store grew, we organised it under headings such as 'Tales of the Unexpected', 'affairs of the Heart', or 'Autobiographical', so our users could browse much more easily."

### Exciting Journey

Christiane Lieberman appreciates the layout and concept: "as a new visitor to the

## N.I.C.E update

### Hundreds more children and adults eligible for cochlear implants on the NHS



Hundreds more people with severe to profound deafness are expected to be eligible for cochlear implants each year, due to updated NICE guidance.

The update comes after a review of the definition of severe to profound deafness which is used to identify if a cochlear implant might be appropriate.

Meindert Boysen, director of the Centre for Technology Evaluation, said: "The appraisal committee listened to

stakeholder concerns regarding the eligibility criteria for cochlear implants being out of date. Upon review it was concluded this needed to be updated.

"The new eligibility criteria for cochlear implants will ensure that they continue to be available on the NHS to those individuals who will benefit from them the most."

Severe to profound deafness is now recognised as only hearing sounds louder than 80dB HL at two or more frequencies without hearing aids, a lowering of the previous threshold.

A cochlear implant works by picking up sounds which are turned into electrical signals and are sent to the brain. This provides a sensation of hearing, but does not restore hearing.



By Kevin Williams

## Bluetooth News

MOUNTAIN VIEW, Calif., Nov. 27, 2018 /PRNewswire/ -- CEVA, Inc. (NASDAQ: CEVA), the leading licensor of signal processing platforms and artificial intelligence processors for smarter, connected devices, today announced that Sonova Holding AG, the world's leading provider of hearing solutions, has licensed and deployed CEVA's RivieraWaves Bluetooth IP in its latest SWORD™ 3.0 wireless chip for hearing aids and other smart hearing devices.

SWORD™ 3.0 is the world's first and only hearing aid radio chip to fully support direct

binaural streaming of audio content and phone calls from billions of Bluetooth enabled devices. Through data connection of SWORD™ 3.0 to a smartphone, internet access is achieved. This allows hearing aid wearers to have their devices adjusted virtually in real-time, in any situation, anywhere by the hearing care professional. Furthermore, voice-to-text phone call transcription is enabled, providing live visual captions as an additional help to the user.

"Our latest generation SWORD™ chip reinforces our mission to continually

introduce new and innovative technologies that greatly improve the user experience of hearing aids. The integration of CEVA's advanced Bluetooth Dual Mode IP into our wireless chip enables us to bring low power stereo audio streaming and data connectivity to our hearing aids, giving our customers an unparalleled user experience," said Marc Secall, Director Research & Development Wireless of Sonova.

Aviv Malinovitch, vice president and general manager of the Connectivity Business Unit at CEVA, stated: "We are delighted to formally announce our partnership with Sonova, for our RivieraWaves Bluetooth IP. It's a testament to the quality of our Bluetooth technology for even the most stringent use cases and we look forward to continuing our work together as Bluetooth looks set to become the wireless standard of choice for hearing aids and other smart hearing devices."

CEVA's RivieraWaves Bluetooth IP platforms provide comprehensive solutions for both Bluetooth LE and Bluetooth dual mode

connectivity. Each platform consists of a hardware baseband controller, plus a feature-rich software protocol stack. A flexible radio interface allows the platforms to be deployed with either RivieraWaves RF or various partners' RF IP, enabling optimal selection of foundry and process node. All Bluetooth 5 features are supported, including LE 2Mbps data rate, Long Range and LE Advertising Extension. Widely adopted with different processor subsystems, CEVA also offers RISC-V based fully integrated platforms. With more than 1.5 billion devices shipped to date and dozens of licensees, the RivieraWaves Bluetooth IP is widely deployed in consumer and IoT devices with many of the world's leading semiconductor companies and OEMs, including smartphones, tablets, wireless speakers, wireless headsets and earbuds, hearing aids and other wearables. For more information on RivieraWaves Bluetooth IP platforms, go to <https://www.ceva-dsp.com/product/rivierawaves-bluetooth-platforms/>.

**MED<sup>o</sup>EL**

**NEWS**

[Get the latest MED-EL products and accessories at the click of a button](#)

In our busy lives with so much to do and not enough time to do it in, so many of us use on-line shopping to buy our everyday essentials. With you in mind MED-EL have launched myMED-EL Shop.

The new online store brings the latest products, accessories and spares to your fingertips, anytime, anyplace.

It's all so simple - create an account at [mymedelshop.co.uk](http://mymedelshop.co.uk) browse from the range of products, add them to your basket and away you go! With instant access to your past orders you can select your regularly ordered items and checkout in a flash.

The online shop has an array of accessories in many colours and patterns to keep the most fashion conscious up to date, as well as additional wearing options and assistive listening devices which you can add to your current processor to enhance your listening experience. The online shop will also allow you to order the newest product ranges as soon as they become available.

Information on exclusive offers, promotions and discounts will also be signposted giving you the opportunity to grab a bargain.

### **Planning a trip?**

For added peace of mind, when travelling

you can now book your holiday loaner request through the online shop; simply select the audio processor you wish to loan and the length of time required and proceed to checkout!

### **Taking a dip?**

MED-EL has that covered too! With a full range of WaterWear available for all current processors there is no need to miss

a swimming lesson, avoid water aerobics, or abandon your lilo!

As a special introductory offer, deliveries are free of charge until 31st December 2018 so why not take advantage and stock up on your essentials today.

To sign up for a speedy, secure and stress-free service visit [mymedelshop.co.uk](http://mymedelshop.co.uk)

## **RONDO 2 with wireless charging and WaterWear**

Now available in the UK, the RONDO 2 is the world's only single-unit audio processor with rechargeable battery, wireless charging pad, one-touch activation, and automatic sound management that adapts to any environment. This makes RONDO 2 the natural choice if you prefer to forget about your cochlear implant and simply enjoy each day.



RONDO 2 wearers also benefit from never needing to use a drying kit, a splash proof design, and Bluetooth connectivity. A choice of a free connectivity kit or accessory kit makes the RONDO 2 perfect for every lifestyle.

### **Change your style not your battery**

The revolutionary wireless charging pad recharges the RONDO 2 in just four hours; this provides 18 hours of battery life, giving you a full day of hearing from one overnight charge. Carrying and changing batteries is a thing of the past!

The only thing you need to think about is which design cover you want to wear today. Blend in with natural hair tone designs or stand out with fun and bright patterns. It's completely up to you.

### **Swim or splash with WaterWear**

A free WaterWear package is included as standard for all new RONDO 2 users. The brand-new accessory allows you to wear the RONDO 2 while bathing, swimming or taking part in other water sports.

WaterWear for the RONDO 2 consists of a tight transparent cover which is simply put over the processor and closed with an adhesive strip. The adhesive strip provides a tight seal and prevents any dust or water from entering the audio processor. WaterWear has an IP68 protection rating for water and dust, meaning it is fully submersible in natural, chlorinated or salt water.

WaterWear comes in a pack of three WaterWear covers and nine adhesive strips. Each WaterWear cover may be used up to three times; while the adhesive strips are designed for single-use.

Ask your audiologist about choosing RONDO 2 as part of your cochlear implant system, or next audio processor upgrade.

For more information about RONDO 2 visit [medel.com/rondo2](http://medel.com/rondo2)

Nowadays a whole range of possibilities for binaural hearing is available, from two hearing aids or two Baha® when the hearing loss is moderate, to bilateral cochlear implantation for severe to profound hearing losses. It is also possible to combine different devices and different stimuli such as a cochlear implant and a hearing aid or a Baha and a CI. This type of stimulation is called BIMODAL because it combines two different modes of stimulation: electrical stimulation coming from the cochlear implant and acoustic stimulation from the ear fitted with a traditional hearing aid or a Baha.

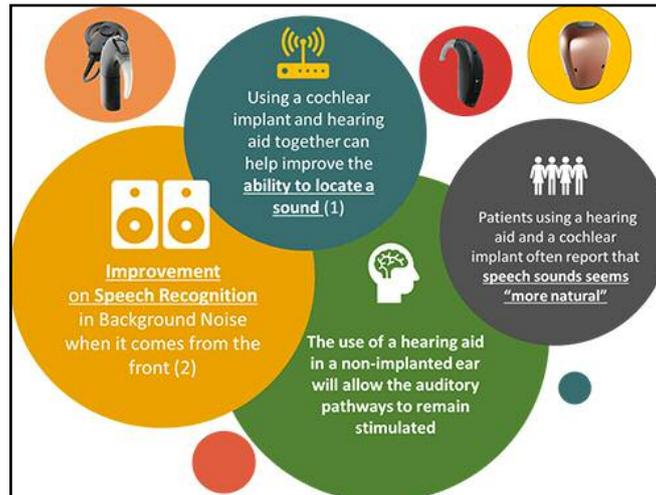
## BENEFITS OF BINAURAL HEARING

Binaural hearing is important because listening on both sides brings important advantages such as:

- binaural redundancy and summation effects which give better speech discrimination both in quiet and more noticeably in noisy situations. Listening with two ears allows the recipient to access the advantages of the spatial separation between both ears, binaural squelch and head shadow effects (the reduced amplitude of a sound when it reaches an ear because it is obstructed by the head),
- head shadow effect is fundamental in the localisation of sounds. The brain is able to calculate the phase differences in time and volume of the sound waves as they reach each ear. Localisation (the ability to tell the direction of a sound source) gives a more natural and comfortable listening

experience. It is important for safety reasons such as avoiding oncoming traffic and also allows the listener to turn toward the sound source and use the additional visual cues,

- research in recent years has demonstrated the benefits of a single cochlear implant when combined with a traditional hearing aid. We see, for example, better recognition of speech including phonemes, words and phrases in quiet and in background noise, especially when the noise comes from the front. This can be a



very real benefit for people who work in jobs that require face-to-face communication, in the bimodal situation, the hearing aid provides acoustic information, particularly in the low frequencies, which gives an important complement to the cochlear implant. The information we extract from these frequencies allows better recognition and identification of voices and appreciation of the melody of music.

- very young children must acquire sensitivity to the phonemic units of language to develop most language-related skills. Combining electric-acoustic input provides benefits to language learning, probably due to the enhancement in spectral representations provided.

## REHABILITATION FOR BINAURAL HEARING

A very important part of rehabilitation is home-based auditory training and listening

experience to maximise the benefits of bimodal stimulation. A recipient can be counselled to ask a friend or relative to support them through listening and conversational practice. First they can try listening to speech on the side of the implant and then switching to the side of the hearing aid. The recipient should be encouraged to focus on the voice without using lip reading. One step up is to add background noise, e.g. switch-on TV or a radio placed in front. Parents can do similar activities with children through play and everyday conversation situations.

Practice with listening over a distance can also be helpful, for example from one room to another. As well as listening to speech, it is useful experience to practice localising environmental sound sources such as the doorbell or phone ringing. Ask the recipient to take a mental 'sound-picture' i.e. sit in each room, close the eyes and take an impression of space, distances and new auditory sensations; this can be made into a game with children.

Encourage recipients to take a focussed approach to listening in everyday situations. They could perhaps take listening walks and keep a listening journal, become familiar with other environments (in the street, in the car, in the work environment), and make a focussed effort to notice sounds, trying to localise the source of the sound. Finally they could experiment with moving their head and considering if and how this affects the sound. Rather than 'testing' their child, parents can be encouraged to try this as shared activity with their child.

Children enjoy 'hide and seek' or 'treasure hunt' games, so this is a great opportunity to practise sound localisation in a fun way, for example, hide the mobile phone and set the alarm to ring while the child is looking. A useful resource is the app - Hide and Seek <https://itunes.apple.com> created with the aim of finding the phone by listening.

Toys with a similar focus on sound localisation include 'Max & Jojo's World Electronic Talking Hide and Seek Easter Egg Hunt' and 'Toysmith Hidden Tweets'.

## **ADDRESSING PARTICULAR CHALLENGES**

A challenging situation is when different stimuli are received in each ear, for example, talking to a person on one side and trying to follow another conversation overheard from the other side; we call this dichotic listening<sup>2</sup>. This type of listening can be replicated in games such as chinese whispers or included in telephone training. With younger children, mum and dad (one on each side) can say different words (perhaps the names of objects or activities in a picture book) at the same time. It can be fun to have a 'sync speak' game, both talking at the same time e.g. "... ready, steady and go!...". Make this into a fun game by each person taking their turn to talk or listen.

Developing music appreciation benefits from focus but it should be enjoyable too. Starting with familiar songs and printing the lyrics may help, try to tap out the pace, hum the melody and if the recipient has a special map for the music, remind them to use it. Motivation to build in regular focussed listening to music may be encouraged if the recipient is interested in monitoring this with data logging.

Today we also have wireless technology and synchronisation possibilities between the hearing aid (ReSound) and the implant (Cochlear), allowing both the hearing aid and the sound processor to simultaneously stream with the True Wireless™ Devices: Cochlear Wireless Mini Microphone, Cochlear Wireless Phone Clip or Cochlear Wireless TV Streamer.

For optimal listening, it's vital to have the hearing technology in the best working condition. So the care and maintenance of both the hearing aid and the sound processor is crucial if the full benefit of bimodal fitting are to be realised.

# You Cannot Hear the birds

By Norah Clewes

So sad, they said  
You cannot hear the birds  
But I thought, that doesn't matter.

I cried to hear  
My family, my friends and  
Favourite voices on the radio.

Understanding  
Speech by sight, now my eyes  
Must learn communication.

Being alert  
To the silent danger,  
Traffic and alarms unheard.

Missing so much  
Music, laughter, jokes  
Isolated and excluded

Restoration  
Learning to hear again  
Many sounds to recognise.

Water running  
Phone ringing, dog barking,  
Ticking them off on the list

Practising next  
Sentences read out loud  
Joy to hear without looking

In the garden  
Spring sunshine, purple crocus  
A new sound, is that birdsong?

I can hear birds  
The garden is alive  
Country walks no longer mute.

They were right  
When I hear birds singing,  
I am happy never lonely

Some snaps from the Palace with our Patron Lawrie Cleary being presented with his MBE



Professor Ramsden and Lawrie, without whom there would be no CICADA!

## Notes for the diary



The 2019 AGM will take place on Saturday 23rd March at Gaskell House in Manchester, starting at 11:00

We have chosen this location close to main transport facilities in Manchester and

because of its unique facilities.

After the AGM which includes lunch there will be a guided tour of Gaskell House just for our group so it will be like having two events in one.

The address is below and details will be sent out shortly, we would love to see you there to help us shape the future of our charity.

If you would like to come or have any questions please let me know.

Address:

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84 Plymouth Grove, Manchester M13 9LW

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