ReSound

For people with Cochlear Implants

Summer 2020 Issue 67

Summer in Canterbury

Manchester CICADA a charity supporting implant patients

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

contents

Editorial

Welcome to the Summer edition of Resound.

We have included in this issue the sad news about two people who have supported CICADA for many years along with their partners. David Clewes and Marion Leeming have passed away and we extend all of our sympathies to their families

While the uncertainty of the coronavirus remains it has had a massive impact on our activities especially during the summer months which have in the past been our busiest time of the year for events.

The main purpose of CICADA is to help and support people with improving their skills in hearing situations. Clearly it is not possible to do that at the moment and we have to assume that the uncertainty over the safety of gatherings will continue. However the EC will be examining ways in which we can have 'virtual events' using the latest communictions software which has been used extensively in Business and government.
We will be contacting everyone shortly with proposals that we come up with and I would ask all of you to help us with feedback when we send you information on these new ideas.

The next newsletter to hit the streets will be the August edition due out in a couple of weeks so if you have anything interesting to report, experiences of the lockdown, issues, solutions (hopefully) then please feel free to send it to me.
I also encourage everyone who may have information or experiences to pass on, to take full advantage of our Facebook site to keep in touch with others.

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

Kevin Williams - Editor

CICADA update - Where are we?

by John Newton

So where are we with this pandemic and where is CICADA? It's easy to think, when you see the busy roads and the people on the High Street now compared with the deserted streets of last April, that the situation is somehow sorted and back to normal. But of course it isn't, the threat of the disease is just as it was then except that we are getting used to it.

As the news media keep telling us, how you are affected depends mostly on how old you are. I personally am very vulnerable because of my asthma and my advanced age but anyone of fifty or more is at risk. The paradox is that the chances of getting infected for almost everyone are quite low, lower than one in a thousand but, if you do get it, for some the chances are high that it proves serious and life threatening.

Covid 19 strikes at the heart of CICADA because our primary objective is to bring people together face to face because we know and have proved time and again that meeting others in the same boat as ourselves is very therapeutic. It was what we were set up to do but what the pandemic regulations now forbid us to do. In the circumstances, what can we do?

Well, there are two things, both equally important and which our Hon Secretary Kevin Williams and Hon Treasurer Alan Corcoran have been working hard on in the recent months. The first is to make sure CICADA continues both as an idea and as a proper legal entity.

When you stop doing something, the tendency is that, after a while you begin to forget it and regard the new situation as normal. It's vital that we don't let that happen so that CICADA survives to help people in the future. In practice, among other things, that means fulfilling the rules of the Charity Commissioners. Alan has been busy with that preparing the accounts they demand and ensuring that we follow their rules and keep in their good books.

The second is to try to keep in touch with you, the members and other interested parties by whatever means is available. Up to know that means publishing "Resound" and regular newsletters and via our website. All these rely primarily on the hard work of Kevin. Some of us will have recent experience of video conference apps like Zoom. If so you will know about the problems with such technology as well as the advantages. We are discussing at the moment how we might arrange some sort of get together by those means. Stay tuned!

I am afraid that things will get more difficult over the coming winter. The experts tell us that colder weather makes the virus more robust and outdoor meetings will become less comfortable. I propose to overhaul my winter weather clothing so that I can still meet up outdoors for a chat with friends occasionally, (especially in chilly Buxton.) Maybe a set of thermal underwear will finally beat the virus! Whatever happens we will be working hard to keep in touch with you and to provide support to you when it's needed.

Best wishes from your chairman

John Newton

Sound Advice on TINNITUS

by Rachel Carlyle

This debilitating condition is more common after the age of 40, and can be caused by stress, anxiety or simply by attending too many loud music concerts. But as Rachel Carlyle discovers, a new app may help to treat this.

When musician Rupert Brown tries to describe his tinnitus, he's aware it sounds like most people's vision of an 'audiological hell'.

There were roaring ocean waves, clanging church bells, a helicopter whirring overhead, boat engines and the screech of knives - all just inside his ear.

"There were eight different sounds I could hear - it was absolutely horrendous. At its worst I couldn't sleep or even go out", explains Rupert, who developed the condition at 22 after damaging his left ear playing the drums in a series of Roy Ayers gigs at Ronni Scott's jazz club in Soho.

Tinnitus affects one in eight people in the UK to varying degrees; its more common after 40 and peaks in the 60-69 age group. Sufferers hear noises in their head or ears:it could be a humming, a familiar tune on repeat or more complex or intrusive, like Rupert's.

No cure exists, but there is growing evidence that sound therapy may train your brain to dial down the noise. After years of experimenting in his music studio and travelling the world 'collecting' sounds, Rupert launched new free tinnitus app, T-Minus, earlier this year, and it will be tested in a clinical trial of 50 patients later this year or next.

Rupert, now 51 remembers the moment he accidentally discovered sound therapy could help. 'It was in the early days of my tinnitus and I was playing around with tape recorders for work. I realised that if I pressed record, play and pause, turned up the volume and tone control, I got a high pitched hiss. By mistake, I found that by doing this with three different tape recorders I could knock out the tinnitus and get some respite at night. There was no scientific literature at that time to back up anything I was doing, but I worked out that if I made the volume lower than the tinnitus, my brain would start to follow that volume and bring down the tinnitus volume. Within a year those eight tinnitus sounds became one - a muffled hiss that I didn't find partcularly annoying.'

Over the following years Rupert worked as a drummer for Cher, Lighthouse Family and others but in 2008 he suffered a second hearing injury and the tinnitus returned. this time itt was like someone sharpening an axe inside of one of his ears.

By this time he owned a music studio and was able to pinpoint the sound's exact frequency and worked on finding similar sounds using synthesisers, which he hoped would dial down the tinnutus. He came up with the idea of an App four years ago when a friend commissioned him to create music for a meditation group. 'I kept wanting to add to it. I had this eureka moment and realised what I was making was unique sounding tinnitus music.'

There are tinnitus sound therapy apps already available, but most use simpler, one dimensional sounds such as a hairdryer, or cricket, which may mask the tinnitus sound or distract the brain. But what Rupert has created are intricate 'soundscapes' that meld natural or artificially created sounds with music (nothing with too much of a beat or a

melodic structure), and sometimes indistinct speech, too.He travelled the world collecting sounds - a pelican's wings flapping, the sound of bats in a cave, a waterfall and industrial sounds such as a car on a gravel path, a steam train. The idea is to relax the brain and make it less fearful.

Listeners can control the volume, tone and frequency and can add in white noise or similar sounds.Since the app launched the feed back has been astonishing says Rupert. 'Some users have opened up the tone control and been in tears that they were able to make sense of their sounds at long last.

Audiologist Susan Poole uses sound therapy and finds it works for many but not all tinnitus patients. You need to use it for at least eight hours a day (or night) she says. 'its about training the brain to stop paying attention to the tinnitus and to listen to something else. The trick is to play the level of the tinnitus. Tinnitus, she says, is a complex condition. The noise is real for people she stresses, 'In fact, we think noises are in the background of everyones brain. Stress can make tinnitus worse, anxiety over coronavirus for example has brought more people to the British Tinnitus Association's website. "Its been a difficult time for people with tinnitus" says chief executive David Stockale, "They've lost some of their coping mechaisms such as getting out and about."

Ruperts experience shows that sound therapy could at last give some hope. 'I'd say on a scale of one to ten, my tinnitus is down from ten at its worst to two or sometimes one now. It really doesn't affect my life in the way it used to. I am proof that tinnitus may not be the end of everything.

The T-Minus app is available on the Apple App Store; Android verion coming soon.Free with a premium spotify account.

New way of assessing deafness

University of Oregon neuroscientists have shown that a person's hearing can be assessed by measuring dilation of the pupils in eyes, a method that is as sensitive as traditional methods of testing hearing.

The approach is being developed as a potential way to test hearing in babies, young adults with developmental disabilities and adults suffering from a stroke or illness -- populations where direct responses are not possible.

In the experiments, changes in pupil size of 31 adults were monitored with eye-tracking technology for about three seconds as they performed a traditional tone-based hearing test while also staring at an object on a monitor.

Dilation in all subjects matched their subsequent push-button responses, when prompted by a question mark on the screen, signifying whether or not a tone was heard.

The project, detailed in an open-access paper published online last month in the Journal of the Association for Research in Otolaryngology, was inspired more than a decade ago when the study's lead author, Avinash Singh Bala, noticed changes in the pupils of barn owls in response to unexpected noises in their environment.

In the interim, Bala and co-author Terry T.

Takahashi -- whose lab studies how owls hear and process sounds -- researched how an eye-focused hearing exam could produce results with the same sensitivity as traditional tone-based exams.

"This study is a proof of concept that this is possible," said Bala, a researcher in Takahashi's lab in the UO Institute of Neuroscience. "The first time we tested a human subject's pupil response was in 1999.

We knew it could work, but we had to optimize the approach for capturing the detection of the quietest sounds."

In the research, a traditional hearing exam and eye-tracking methods were done simultaneously to allow for comparison. A dot appeared on the screen, and tones at 1, 2, 4 and 8 kilohertz were played at randomized delays to make sure subjects couldn't predict when the sound would appear.

Pupil size was tracked for at least one second before the sound, and two seconds after the sound. Then, the dot on the screen changed to a question mark, cuing participants to push one of two buttons to indicate whether or not they heard the sound. Since just pushing a button can change pupil size, the button press task was delayed until after pupil size had been tracked for two seconds.

"In this project we randomized the timing of the tone's pulsing in relation to the dots, which also helped us avoid the expectation of a tone within a pattern," said Takahashi, a professor of biology and member of the Institute of Neuroscience.

Pupils began to change within 250 milliseconds, about one quarter of a second, of the sound stimulus. The swiftness of the response, Bala said, allowed the team "to see and establish causality."

"What we found was that pupil dilation was as sensitive as the button-press method," Bala said. "We had presented early data analyses at conferences, and there was a lot of resistance to the idea that by using an involuntary response we could get results as good as button-press data."

Internal grants from the UO supported the research. Elizabeth A. Whitchurch, a former doctoral student now at Humboldt State University, was a co-author.

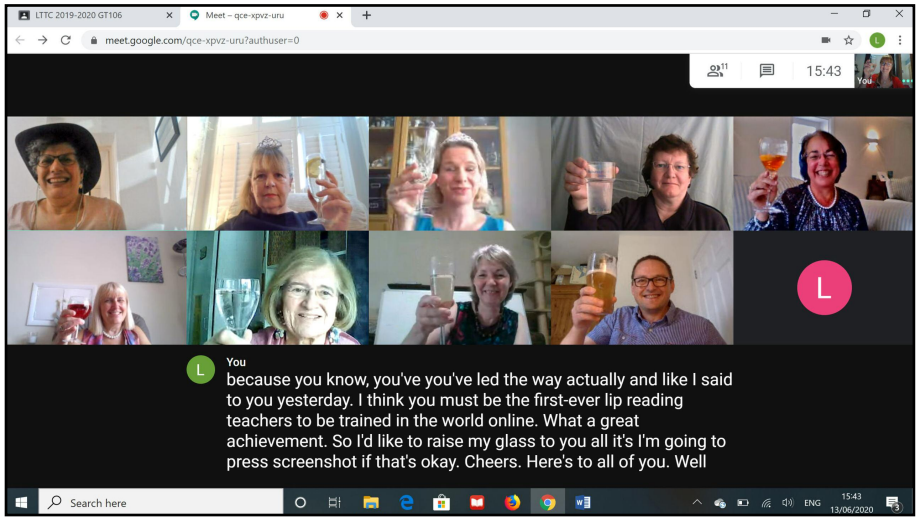
"A pupil dilation test is not as useful in adults, who can communicate with the tester," Takahashi said. "The utility of the method is in testing people who can't tell us whether they heard a sound -- for example, babies."

Takahashi and Bala are now part of a university-supported collaboration with Dare Baldwin, a UO psychology professor, to test the approach in babies. The two neuroscientists also have formed a UO spinout, Perceptivo LLC, to pursue development of an infant-hearing assessment.

Story Source:

Materials provided by University of Oregon. Original written by Jim Barlow. Note: Content may be edited for style and length.

Lipreading teachers qualify online for the first time



Trainee lipreading teachers at City Lit have celebrated becoming the first ever lipreading teachers to qualify online.

The group held a virtual party last month to mark the occasion on the final day of their course.

The trainees were two thirds of the way through their 10 month course at City Lit when lockdown struck earlier this year due to the Coronavirus pandemic.

Teacher trainers Fiona Pickett and Lorraine Braggins enabled them to complete their teaching practice online by devising ways in which various lipreading exercises could transfer to the small screen and the teaching be assessed.

Lorraine Braggins, Head of Progamme for Lipreading and acquired hearing loss, said: "Not only does teaching lipreading online present many challenges, but most of the trainee teachers have a hearing loss themselves.

So they are not only juggling the delivery of their material and how they are including and assessing deaf and hard of hearing learners, but also at the same time reading the captions which they rely on to understand what their students are saying. We were incredibly impressed with the way all the trainees rose to the challenge."

Having to put the teacher training online has not only enabled this cohort of trainees to complete their course, but it has been the catalyst for City Lit to find new and creative ways to train lipreading teachers in the future.

The team will now deliver at least the first 3 months of the next course online, aiming to provide a blend of online and classroom learning over the duration of the whole course.

Lorraine Braggins added: "It's also likely there will be a trend towards learning lipreading online in the future – not replacing face-to-face classes, but as an alternative or additional offer. So training new teachers to have the skills and experience to deliver online lessons could open up new opportunities for them.

We congratulate the newly qualified lipreading teachers on their tremendous achievement and wish them all the very best in their new careers".

Applications are now being accepted for City Lit's next course starting next month (Sept 2020). For more details email lipreading@citylit.ac.uk

David Clewes

We are sorry to report the death of David Clewes recently, our thoughts and prayers are with Norah and her family at this time. We have his eulogy and service below.

The funeral of David Clewes was held at St Thomas of Canterbury church Chester celebrated by vicar Fr. Steve Sheridan assisted by Fr Paul Shaw from St Werburgh's Church Chester.

After the readings from the Book of Revelation and the Gospel Fr Steve spoke about David's life.

David was born in Liverpool on the 3rd December 1936. The eldest son of David Clewes and Annie. They were delighted with the birth of David as they previously given birth to a daughter who suddenly died when she was just 18 months old. The family was later completed with the arrival of Jimmy, in 1940.
The young family, lived through war time Britain, David remembered the sound of the sirens and the bombs coming down on his city when he was a child.

Following the war, David continued his education. Progressing from the Church of England school in Anfield on to Liverpool Collegiate. It was during this time that David's father was suddenly killed in an accident. It was at school that he met his lifelong friend Bob, David enjoyed English and drama.

After studying science at A level he commenced National Service and spent 2 years in the Air Force.

David's time in the RAF was remembered more for a number of amusing stories, rather than anything productive he might have learnt there.

He used to recall travelling across the Pennines where he was stationed in Lincolnshire on the back of his friend's motor bike.

His friend's riding skills prompted David to describe him as an absolute nut case.

He also recalled a sergeant major who he said, would make Windsor Davis shouting "you horrible lot" sound mild mannered in comparison!

The memories of this time included his description of Retford train station as being the coldest railway station anywhere.

After National Service David went to work in the laboratories of Goodlass Wall in the department of Research and Development. It was here in 1961 that he met a girl called Norah, who worked in the analytical chemistry laboratory. After spending sometime getting to know each other at work the couple finally went out together in November 1962. Their first date Norah remembers they went to the Carlton cinema to see the new James Bond movie "Doctor No"

It was definitely a yes from Norah as early as her second date, she secretly thought this was the man for her.

You will remember the winter of 1962/63 from extremely cold, still Norah was impressed that David turned up more concerned about her being dressed for warmth rather than fashion.

After 4 years of courtship the couple married on the First October 1966 it Saint Austin's Roman Catholic church Liverpool after which they set up their home together. In December 1968 they welcomed their first child Tim and he was followed in 1971 by Peter.

By this time the family had moved to Chester.

At one stage in his career David did try a teaching job so that he could support the family, but he did not quite take to this, and instead found work in Johntown, Wrexham with a paint company and later worked with printing inks in Manchester, a job that he really enjoyed.

David retired work in 2001 at the age of 64.

Outside of his working life he had time to enjoy a number of hobbies. He was keen on drama and after retirement acted in productions at the Little theatre and at St Thomas's he appeared in productions of Everyman and also in Joseph and the amazing Technicoloured Dreamcoat.

He has also enjoyed writing scripts and short stories and joined a U3A creative writing group.

David also liked listening to music; he particularly liked folk music. He enjoyed the music of Steel Eye Span and Lonnie Donegan along with classical music and the opera Carmen to which this service will end today.

David also enjoyed TV and was a fan of Dad's Army, Last of the Summer Wine and Morecombe and Wise.

Any one who had met David will describe him as a man with a kind heart, who would also think of others before himself.

A family man who enjoyed the togetherness of both his biological family and his church family.

He will be remembered as kind, generous, funny, and devoted to his wife Norah.

He will be greatly missed.

Bob Harrington then spoke of his memories of David.

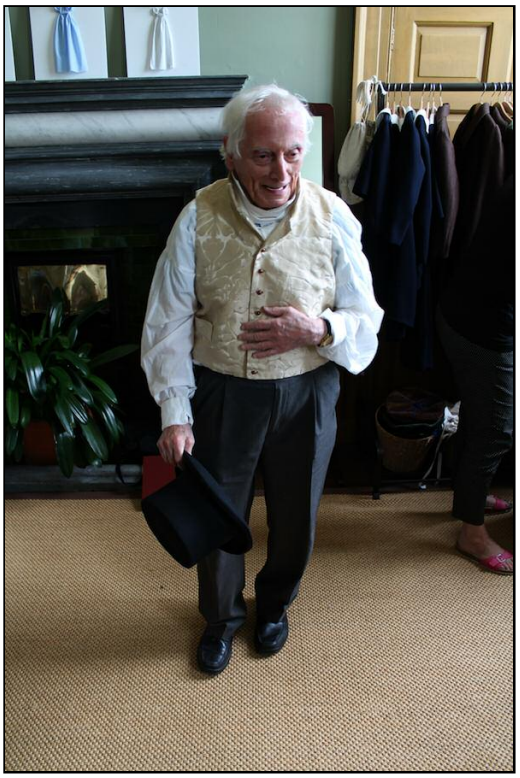
Bob said

My good friend Dave.

He was a man of many parts, as you just heard his life story, and to say a few words about my relationship with Dave.

Norah, Tim and Peter, you are many other bits you cobble together to form this jigsaw that was the life of Dave.

All of these bits that we put forward play a part in influencing our own lives and our families, there is family here today to give thanks to Dave. It was in 1953 that Dave and I became firm friends, we went to Liverpool Collegiate school and Dave and his younger brother Jimmy lived with their mother in Stanley Park.



In costume at Lyme Park

One part of Dave impressed me very early on when we were teenagers he could take on the mantle of head of his household, helping his mother when a decision was required.

He never lost his temper Dave, he could show exasperation, yes, but he was never a show off, somebody on a look out for self praise. But there was a showman in him that was drawn to the theatre and the stage

He was a man that was of many parts.

Good at science, and he was also knowledgeable in the world of literature.

We were both fascinated by science fiction which we collected and read and we revelled in the emerging world of astronautics we experimented with home made rockets in nearby Stanbury Park Naturally we both joined the RAF for our National Service

Dave started work as a paint technologist. In his spare time Dave had a stint in amateur dramatics at the youth club in Saint Mary's and we ran a yearly pantomimes, co-writing them. Mutiny on the Crunchie, Knights of the Square Table, and Doctor No-all!

We had ideas and turned them into a good standard of theatre

During the 1960s Dave introduced us to Norah and of course, this led to their wedding, when he kindly asked me to be his best man, and then Dave took on this important role of being the loving husband, caring father and a good home provider. Then he moved to Chester and the meet ups and the chats we all miss now that David has gone.

His influence still remains with me and is still part of our family life.

TIM then spoke of his father First he said thank you for every one coming along that day. I know people have travelled and its sad so many people can't come today because of Covid rules It is also very sad that it's a long time since a lot of people have seen my Dad because of the lock down.

He was really looking forward to seeing every one again and meeting up again in church and the U3A and things getting back to normal.

He was a great Dad, he inspired us a great deal. Science and specially science fiction and supporting all the completely daft things we could possibly do.

Things like going to see heavy metal concerts as I used to do, one occasion I missed the last train back to Chester he drove to Manchester to bring me home.

Out for a meal with Cicada

He was always happy helping others. Rather than doing things for himself. He didn't go abroad until after he retired when he went on holiday to Australia which he absolutely loved. Obviously Peter and I did go on holiday and had all of the schools trips and every thing, which he paid for us to do.

All of these things not for himself, he was happy that we were doing them and he just enjoyed the family. So we had family holidays in Scotland, Wales and England.

Tim had other memories of his father especially going to York for his first University interview when the car broke down on the M62 with a leaking radiator. Stopping every 5 miles to top it up with water from roadside puddles and bottles of water he eventually reached the university late but impressed them with his story of

the journey! Tim mentioned his mother would be self-isolating for two weeks ready for a new implant operation and would rely on all our friends to support her while she will be missing his father very much.

PETER also had memories of his father always ready to rescue him in car breakdowns or lockouts and always completely relaxed and willing to come at a moment's notice. That is the person that Dad was, always incredibly helpful.

He would always be there for you, generous with his time, unhesitating, helping everywhere and doing whatever he could for you.

He looked after every thing after he retired, becoming the primary cook. He loved gadgets, every pan and utensil that could be used was used.

In his working life he was always interested in technology. He used to bring the 1970s equivalent of a laptop home from work and in 1980 he bought our first home computer, and of course, it's not really surprising Tim and I both ended up working in software development.

Dad's favourite holidays was Scotland and we always loved it up there. As Tim, said we did not go abroad.

When I was 16 I took up golf and we played together a lot and we went off to Scotland many times, He could hit the ball a good distance but not often in the right direction, much like myself. We didn't really measure a round by score, but on number of balls we lost.

In retirement Dad loved all of the activities he did with Mum, watching cricket and church social events. The U3A, creative writing, the play reading, the work with the NADP. They were even still playing table tennis up until lockdown. They were always busy and had a great retirement together and the friendships formed are helping Mum through at the moment with many people on Zoom.

Dad loved Christmas, he would organise games and quizzes and he loved having family round to visit or visiting them.

Boxing Day and the day after were our big days visiting Uncle Jimmy and Aunty Dot, and then we would see Bob and Thelma. And Aunty Margaret with Uncle Paul and Uncle Frank and their families.

We always loved it and thanks again to our Uncle Bob, Dad's lifelong friend for speaking today. There would always be a bottle of whisky, would always be opened at some point and Mum would inevitably end up driving home and we would be singing Christmas carols on the way home.

Late update - Marion Leeming 1933-2020

We have just learned of the death of Marion Leeming whose funeral was last week and who together with her husband Roy has been members for many years. In recent years Roy and Marion have not been as mobile as they were and have been unable to come to many of our events but always had a cheerful comment to make when the stories came out in Resound or on the website.

A more fitting tribute to her will be carried in the next issue but for now our thoughts and prayers are with Roy and the family. A link is provided below.

https://tinyurl.com/yywmf7ob

Hearing deterioration reported by discharged COVID-19 patients

A significant number of patients reported a deterioration in their hearing when questioned eight weeks after discharge from a hospital admission for COVID-19, according to University of Manchester audiologists, in a study supported by the NIHR Manchester Biomedical Research Centre (BRC).

One hundred and twenty one of the adults admitted to Wythenshawe Hospital, part of Manchester University NHS Foundation Trust, took part in the survey by telephone. When asked about changes to their hearing sixteen people (13.2%) reported their hearing was worse. Eight people reported deterioration in hearing and another eight reported tinnitus (hearing noises that are not caused by an outside source).

The results, published in a letter to the International Journal of Audiology, adds to a growing body of anecdotal evidence that the strain of coronavirus which causes COVID-19, SARS CoV-2, has long-term impacts on health, and possibly hearing.

Professor Kevin Munro

Professor Kevin Munro, Professor of Audiology at The University of Manchester and NIHR Manchester BRC Hearing Health Theme Lead said: "We already know that viruses such as measles, mumps and meningitis can cause hearing loss and coronaviruses can damage the nerves that carry information to and from the brain."

"It is possible, in theory, that COVID-19 could cause problems with parts of the auditory system including the middle ear or cochlea.

"For example, auditory neuropathy, a hearing disorder where the cochlea is functioning but transmission along the auditory nerve to the brain is impaired could be a feature."

People with auditory neuropathy have difficulty hearing when there is background noise, such as in a pub.

A condition called Guillain-Barre syndrome is also linked to auditory neuropathy which is also known to have an association with SARS CoV-2.

However, the researchers say more research is needed to be able to identify why there is an association between the virus and hearing problems.

Their observation follows a rapid systematic review of coronavirus and the audio-vestibular system by Professor Munro's team in June.

The review identified reports of hearing loss and tinnitus, but there were only a small number of studies and the quality of evidence was low.

Professor Munro added: "While we are reasonably confident in the differentiation of pre-existing and recent changes in hearing and tinnitus, we urge caution.

"It is possible that factors other than COVID-19 may impact on pre-existing hearing loss and tinnitus.

"These might include stress and anxiety, including the use of face masks that make communication more difficult, medications used to treat COVID-19 that could damage the ear or other factors related to being critically ill.

"That is why we believe there is an urgent need for high-quality studies to investigate the acute and temporary effects of COVID-19 on hearing and the audiovestibular system.

"Timely evidence for decision-makers is urgently needed, so we need to be able to act quickly."

The letter, 'Self-reported changes in hearing and tinnitus in post-hospitalisation COVID-19 cases' is published in .The International Journal of Audiology

Our animal inheritance: Humans perk up their ears, too, when they hear interesting sounds

Many animals, including dogs, cats and various species of monkeys, will move their ears to better focus their attention on a novel sound. That humans also have this capability was not known until now.

A research team based in Saarland has demonstrated for the first time that we make minute, unconscious movements of our ears that are directed towards the sound want to focus our attention on.

The team discovered this ability by measuring electrical signals in the muscles of the vestigial motor system in the human ear. The results have now been published in the journal eLife.

Asking children to 'perk up their ears' means asking them to listen intently. Nobody seriously thinks that kids literally move their ears the way that cats, dogs or horses do. But the fact is, they do, as researchers at the Systems Neuroscience & Neurotechnology Unit (SNNU) have now shown.

The research team, led by Professor Danial Strauss, has shown that the muscles around the ear become active as soon as novel, unusual or goal-relevant sounds are perceived. 'The electrical activity of the ear muscles indicates the direction in which the subject is focusing their auditory attention,' says neuroscientist and computer scientist Strauss. 'It is very likely that humans still possess a rudimentary orientation system that tries to control the movement of the pinna (the visible outer part of the ear).

Despite becoming vestigial about 25 million years ago, this system still exists as a "neural fossil" within our brains,' explains Professor Strauss. The question why pinna orienting was lost during the evolution of the primate lineage has still not been completely resolved.

The researchers were able to record the signals that control the minute, generally invisible, movements of the pinna using a technique known as surface electromyography (EMG).

Sensors attached to the subject's skin detected the electrical activity of the muscles responsible for moving the pinna or altering its shape. Two types of attention were examined. To assess the reflexive attention that occurs automatically when we hear unexpected sounds, the participants in the study were exposed to novel sounds coming at random intervals from different lateral positions while they silently read a monotonous text.

To test the goal-directed attention that we show when actively listening, the participants were asked to listen to a short story coming from one laterally positioned speaker, while ignoring a 'competing' story

from a speaker located on the opposite side. Both experiments showed that muscle movements in the vestigial pinna-orienting system indicate the direction of the subject's auditory attention.

To better characterize these minute movements of the ear, the team also made special high-definition video recordings of the subjects during the experiments. The subtle movements of the ears were made visible by applying computer-based motion magnification techniques. Depending on the type of aural stimulus used, the researchers were able to observe different upward movements of the ear as well as differences in the strength of the rearward motion of the pinna's upper-lateral edge.

'Our results show that electromyography of the ear muscles offers a simple means of measuring auditory attention. The technique is not restricted to fundamental research, it also has potential for a number of interesting applications," explains Professor Strauss. One area of great practical relevance would be in developing better hearing aids. 'These devices would be able to amplify the sounds that the wearer is trying to hear, while suppressing the noises that they are trying to ignore. The device would function in a way that reflects the user's auditory intention.' The hearing aid would almost instantaneously register and interpret the electrical activity in the ear muscles. A miniature processor would gauge the direction the user is trying to direct their attention towards and then adjust the gain on the device's directional microphones accordingly.

The research project was conducted by researchers at the Systems Neuroscience & Neurotechnology Unit (SNNU), which is affiliated to both the Medical Faculty at Saarland University and to the School of Engineering at the University of Applied Sciences in Saarland (htw saar). External project partners were Dr. Ronny Hannemann from the hearing aid manufacturer Sivantos GmbH and Steven A. Hackley, Professor of Psychology at the University of Missouri-Columbia, who in 2015 first postulated the existence of a vestigial pinna-orienting system in humans.

Hypothesis underlying the sensitivity of mammalian auditory system overturned

A new study from the University of Colorado Anschutz Medical Campus challenges a decades-old hypothesis on adaptation, a key feature in how sensory cells of the inner ear (hair cells) detect sound.

The paper, out today in Science Advances, examines how hair cells transform mechanical forces arising from sound waves into a neural electrical signal, a process called mechano-electric transduction (MET).

Hair cells possess an intrinsic ability to fine-tune the sensitivity of the MET process (termed adaptation), which underlies our capacity to detect a wide range of sound intensities and frequencies with extremely high precision.

Up until now, 30+ years of research had convinced auditory scientists that the molecules and proteins responsible for adaptation have been figured out.

First published in 1987, the prevailing model for how adaptation works asserted that the sound-sensitive "antenna" of the hair cell (called the hair bundle) undergoes a mechanical change during adaptation, such that a decrease in stiffness of the hair bundle caused a decrease in MET sensitivity.

Ancillary experiments conducted over the ensuing decades have suggested that a motor protein, myosin 1c, is required for MET adaptation.

Through multiple experiments and a variety of controls, Anschutz researchers determined that this existing hypothesis needs to be reexamined; that although adaptation does require myosin motors, it does not involve a mechanical change in the hair bundle.

Anschutz researchers performed a series of sophisticated experiments to examine the relationship between the mechanical properties of the hair bundle and the electrical response of the hair cell.

Using a custom-built high-speed imaging technique, Giusy Caprara, PhD, post-doctoral fellow at the University of Colorado School of Medicine and lead author of the study, performed simultaneous electrical recording and imaging of hair cells in a variety of mammalian species at 10,000 frames per second.

They did this to examine the mechanical changes to the hair bundle during adaptation, an extreme departure from the experiments of 1987 which used photodiodes.

"The reason this wasn't uncovered earlier is because there are very few experiments that tested the mechanical properties of the hair bundle," says Anthony Peng, PhD, supervising author and assistant professor of physiology and biophysics at the University of Colorado School of Medicine. "Technology drove and made this discovery possible."

Understanding the mechanism of adaptation is important for determining how the sensory cells of the inner ear work.

While the research is not directly translational, it is an important first step in fixing and replacing cochlear function, potentially leading to technological improvements for better sound processing and treatment of hearing dysfunction down the line.

"The discovery that the original model of adaptation was incorrect is important in a couple of ways," says Peng. "In basic science, this has opened avenues for more research, including proposing a new model of how adaptation works.

More importantly, hearing sensitivity and the range of hearing we are able to achieve relies on this process, so understanding this will help us better understand different types of hearing loss people experience."

Source:

University of Colorado Anschutz Medical Campus

Notes

As these are exceptional circumstances and as a result of the current virus situation we do not have events to remind people of.

However we thought that if we could give you links /contact details then you would not be short of someone to ask if you need assistance or advice.

The key to getting through all this is to follow advice, and if you encounter a situation that causes you risk then don't hesitate to shout for help.

Our website has a dedicated page for the Clinic, so, in no particular order :-

CICADA

Website:www.manchestercicada.org.uk

Facebook group:Manchester CICADA club

Secretary direct contact:Text 07533217730

Main contacts for cicada listed at the bottom of this page.

Manchester Implant Centre

The Richard Ramsden Centre for Auditory Implants,Peter Mount Building, Manchester Royal Infirmary, Oxford Road,Manchester, M13 9WL
Main Contact Details:
TeL: 0161 701 6931 (Appointments)
TeL: 0161 276 8079 (repairs and spares)

* Please check the website regularly for updates on what the clinic are doing in the light of the virus outbreak.

http://www.manchestercicada.org.uk/implant-clinic/

National Support organisations

British Tinnitus Association:
https://www.tinnitus.org.uk/
Hearing Link:
https://www.hearinglink.org/
RNID (Action on Hearing Loss):
https://www.actiononhearingloss.org.uk/
Disabled Travel Advice:
http://www.disabledtraveladvice.co.uk/
Meniere's Society:
http://www.menieres.org.uk/
National Deaf Children's Society:
http://www.ndcs.org.uk/
National Association of Deafened People (NADP): http:// www.nadp.org.uk/

Equipment Suppliers for Deaf People

Sarabec: https://www.sarabec.com/
Connevans: http://www.connevans.co.uk
Hearing Link UK: https://www.hearinglink.org/
RNID (Action on Hearing Loss):
https://www.actiononhearingloss.org.uk/

COVID-19 information links.

(Just some official ones which you can subscribe to to get updates)
Main government website whih has links to information and also a facility to be on a mailing list for updates which is handy.

https://www.gov.uk/coronavirus

Most local council websites now have a corona virus section to tell us what they are doing and what services may be affected.

If you need help for other thngs during the duration of the virus then contact social services in the first instance.

Chairman	Honorary Treasurer	Hon Secretary
John Newton	Alan Corcoran	Kevin Williams
32 Queens road	45 Polefield Road	107 Manchester Road
Buxton	Prestwich	Hyde
Derbyshire	Manchester	Cheshire
SK17 7EX	M25 2GN	SK14 2BX
chairman@manchestercicada.org.uk	treasurer@manchestercicada.org.uk	secretary@manchestercicada.org.uk