

Cambs Tinnitus Support Group

No. 139

NEWSLETTER

February 2018

MEETING

Saturday 17 February

10.00 for 10.30 am

“Music as Therapy”

**Speaker: Peter Shearer
Petrageace**

Peter plays what he describes as 'soaking music' on piano or keyboards. This helps access the right (creative side) of the brain and can prove therapeutic for those who live with various disorders including tinnitus. He brings peace, purpose and harmony to the listener using an interactive approach and he will illustrate some relevant case studies as well bringing examples of his music.

Meadows Community Centre

1 St Catherine's Road, Cambridge, CB4 3XJ, off the junction between King's Hedges and Arbury Rds

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Refreshments and Raffle

EDITOR'S CHAT

Very belated Happy New Year greetings, and I hope Santa bought you lots of goodies. New CTSG members (and there have been quite a few lately) may not be aware that Tinnitus Awareness Week (TAW) will soon be with us (February 5-13th). This is an opportunity to raise awareness about tinnitus and the support that is available to help manage the condition. Over recent years the CTSG has put on TAW displays at local hospitals inc. Hinchingbrooke, Addenbrookes and Peterborough City, plus the Grand Arcade and Grafton Centre in Cambridge. For 2018 we planned to display at Hinchingbrooke and Addenbrookes again, however we will only be at Hinchingbrooke (5-7th) because Addenbrookes wasn't available (your Editor must book earlier next year!). However we will be at their Tinnitus Clinic on the 8th.

The article on page 5 originated via a post by a member on our Facebook page. What I initially thought would be just a small 'filler' piece actually ended up as an article that nearly filled a whole page! Incidentally, it would be interesting to find out how many of our members actually have somatic tinnitus; the American sources implied that up to two thirds of those with tinnitus had the ability to modify their 'noise' by moving their jaw etc., a figure that surprised me.

Do try to get along to our February meeting, particularly if you are one of our newer members who hasn't seen him, as our speaker Peter Shearer will be well worth listening to.

National Theatre launches 'transformational' captioning glasses for deaf audiences

The National Theatre (NT) has unveiled new technology that will enable D/deaf* audiences to read live captioning for performances in front of their eyes using special glasses. (removing the need for captioning screens in the auditorium). Developed by the NT with its innovation partner, consultancy firm Accenture, Open Access Smart Capture is being introduced during a year-long pilot.

The glasses boast 97% accuracy in the timing of the captions, and can also facilitate audio description, for audiences with restricted vision.

NT director Rufus Norris said the plan is to roll out the technology during the next year, It is hoped that audio description will be available for all performances by April 2019. He added "If you think about it for even a minute you can understand that if we can get this right and develop this type of technology, the possibilities in terms of broadening our audience and really serving the people of this country are pretty fantastic."



(Amended from Action on Hearing Loss - AoHL - Soundbite)

[*The expression D/deaf describes a group who are Deaf (who use sign language) and deaf (hard of hearing who may lip read and/or use hearing aids)]

CHUCKLES

Three legionnaires are walking through a desert under a baking sun. The trio have plenty of water but little food, and they began to see mirages. Suddenly one of them stops and points at the horizon. 'Regardez, mes amis, is zat not a bacon tree?' The others stare into the distance, and sure enough, a tree is standing there festooned with rashers of bacon. The legionnaire runs towards it and is within a stone's throw when a shot rings out. The legionnaire collapses into the sand. His two friends hurry to help him. 'Alas, mes amis, says the dying Legionnaire, 'Zat was no bacon tree, zat was an 'am bush.'

Charity backs pioneering new project to prevent childhood deafness following treatment with life-saving cancer drugs

Action on Hearing Loss (AoHL) is supporting the biotechnology firm Otomagnetics, a University of Maryland, US, spin-out, which recently announced an important breakthrough towards preventing hearing loss caused by Cisplatin, a widely-used chemotherapy drug.

Cisplatin is commonly used to treat childhood cancers but can lead to permanent or severe high frequency hearing loss in 9 out 10 children following treatment.

Steroids are known to reduce cisplatin-induced hearing loss but they may also reduce the effectiveness of Cisplatin's ability to kill cancer cells. Therefore to be effective and to avoid this side-effect they need to be directly delivered to the cochlea; however the current approach of injecting liquid steroids directly into the middle ear via the eardrum is not very efficient.

Otomagnetic's new approach uses magnetic fields to push drug-covered iron nanoparticles into the cochlea, and by using this technique they have been able to reduce hearing loss in mice treated with the drug by 50%. Otomagnetics anticipate that their magnetic delivery method could also be used to deliver a wide range of drug, gene and stem cell-based treatments to ultimately treat many different types of hearing loss.

Dr Ralph Holme, AoHL's Director of Research, said: 'It is vital that we find effective ways of getting drugs into the inner ear, which is why we are backing Otomagnetics.' 'It is great news that progress is being made towards finding new ways to protect children's hearing following cancer treatment with Cisplatin.'

(Amended from AoHL Soundbite)

FRONTIERS - Celebrating the one million

Winfried Schlee talks about a new tinnitus research collaboration

In February 2016, 25 tinnitus researchers from a large variety of different scientific fields including medicine, psychology, audiology, genetics, epidemiology, statistics, mathematics and software engineering decided to start a new and interdisciplinary research topic on tinnitus. They were convinced that a breakthrough in tinnitus research could only be made by a large team of specialists coming from many different disciplines.

The aim of the Frontiers research topic was to create a publication platform that collects research articles on



tinnitus from all these different fields and to make the articles available to the general public at no cost.

Eighteen months later, this research topic has grown to become the largest open access collection of scientific

articles on tinnitus in the world. There are over 60 articles, which focus on the different aspects of the condition; such the neural correlates of tinnitus, genetic aspects, clinical management and treatment, methods for measuring tinnitus, and the various factors that can influence the perception of tinnitus.

Altogether over 250 researchers from all parts of the

world (including Associate Professor Derek Hoare who spoke to us last September) have contributed to the research topic, which has received extremely high levels of attention. In fact on 5 October 2017, the number of unique visitors on the website reached the hallmark number of one million! This huge number demonstrates the enormous importance of tinnitus to modern society. It is a problem that affects and troubles a large percentage of our society and deserves a lot of attention.

Using the tinnitus research articles for yourself?

All the articles, and the data contained therein, are openly available and free of charge for everybody from all over the world. You can read the articles to inform yourself and learn about a special aspect of tinnitus.

Even though the articles are not always easy to understand, the articles as well as the figures and tables are usually very informative and understandable. This knowledge can help you to better understand tinnitus in general and finally to better understand your own tinnitus.

You can find The Frontiers research topic following this link: <http://bit.ly/tinarticle>.

CHUCKLES

- A ship's captain radios a lighthouse keeper, 'Radio reception is very bad. Please spell out your weather report.' The keeper replies, 'W-E-T-H-O-R R-E-P-O-R-T.' The captain says, 'My God, that's the worst spell of weather I've had in a long time.'
- Some tortoises are playing cards when they run out of beer. They pick Billy to go to the off-licence. He goes off but after waiting two days the others start getting impatient. 'Billy is getting really slow,' says one. 'He's not what he used to be,' says another. A voice shouts from behind the door, 'Oi! If you're going to talk about behind my back I'm not going.'

Ear syringing is unsafe and doesn't work, health chiefs warn

(From recent AoHL Soundbite)

Attempting to improve patients' hearing by "ear syringing" is unsafe and ineffective, the NHS practice watchdog has warned. The National Institute for Health and Care Excellence (NICE) ruled that using a large manual syringe to pump water into the ear canal risks permanent damage. In new guidance, the organisation also warned against using cotton buds to clean ears. Instead, NICE recommends using an electronic irrigator as a means of removing built-up ear wax contributing to hearing loss.

It said the procedure, where a machine pumps water into the ear at a controlled pressure, is safer. Health chiefs want to see the service increasingly used at GP surgeries or community clinics, avoiding the need for referrals to specialist ear, nose and throat clinics. Other accepted methods of earwax removal include microsuction and manual removal, NICE added.

Katherine Harrop-Griffiths, consultant in audiovestibular medicine and chairwoman of the guideline committee, said: "Earwax build-up which is causing hearing problems should be managed in primary or community care. Ear irrigation is an effective method

of removing earwax."Ear drops should be used to soften the wax before irrigation, either immediately before or for up to five days before the procedure." The use of a metal syringe risks damaging the tympanic membrane and the oval and round windows of the ear. It also presents a risk because of the difficulty controlling water pressure, which can increase the damage, and be challenging to disinfect.



Professor Mark Baker, director of the centre for guidelines at NICE, said: "Our draft recommendations can help improve care for people with hearing loss through better management of earwax and referring people with symptoms to the right service at the right time. "We encourage those working in primary and specialist services, patients and stakeholders to comment on the proposed advice."

THE NEUROSCIENCE OF TINNITUS

Neuroscience is the scientific study of the nervous system and it has rapidly expanded in recent years as new techniques have been developed. Probably it is research using various imaging technologies (including MRI [magnetic resonance imaging] and PET [positron emission tomography] scans) that have received most publicity, but neuroscientists also use a wide range of other procedures including some from the worlds of molecular biology and genetics.

So can neuroscience help discover what exactly is going on in the nervous system, particularly in the brain, when someone is experiencing tinnitus? Some of these studies were conducted in animals, where various techniques (noise or toxins) were used to damage hearing and to attempt to cause tinnitus. Researchers then had to make judgements as to whether the animals were actually experiencing the condition. Although the results from such research have so far been inconclusive, and sometimes contradictory, it is thought that they may be relevant to tinnitus in humans and could therefore help investigate what causes the condition and to evaluate potential treatments. For example, one study found that long or intense periods of noise are more likely to give mice hyperacusis, whereas shorter or milder periods seem to lead to tinnitus. In another study, rhythmic electrical stimulation of the brain led to the disappearance of 'behavioural evidence' of tinnitus in rats.

The electrical currents caused by brain activity can be detected by EEG (electroencephalography) devices and it had been hoped that these measurements would turn out to show different patterns in tinnitus patients than in people without the condition. Disappointingly, however, the most recent research has not shown up any such differences.

Paul Chinnock reviews the current state of research

Another disappointment has been the failure to find any consistent differences between people with or without tinnitus in terms of the physical structure of the brain; where any such differences have been found, they seem to disappear when factors such as ageing and hearing loss are accounted for.

One study, however, found that a particular type of 'brain wave', detectable by EEG following unexpected events, occurs at a reduced level in tinnitus patients. In other research, tinnitus patients who had mild hearing loss were compared with others whose loss was more severe. EEG results showed increased levels of electrical activity in the auditory areas of the brain in the mild hearing loss patients, while for the others an increased level was identified elsewhere, in a part of the brain dealing with memory. It is looking likely that it is not only the auditory areas of the brain that are involved in tinnitus; activity in other regions also plays a part.

While some people with tinnitus do have hearing loss, others do not. It has been suggested that tinnitus patients who have normal results in standard hearing tests actually have a 'hidden' hearing loss, detectable when sound stimulation fails to produce the expected level of electrical activity in the auditory nerve. Some recent studies appear to back up this theory but others do not. However, research in this area is yielding some interesting findings, which could ultimately lead to a better understanding of the relationship between hearing loss and tinnitus.

So far neuroscience has only given us small clues to help understand what is going on in tinnitus, and Dr William Sedley, who was the author of the original article (see www.tinnitus.org.uk/ATRR2017) describes this research as looking for a needle in a haystack.

However, in time, it could produce useful results.

COMIT'ID (Core Outcomes Measures in Tinnitus - International Delphi survey) - study update

Professor Deb Hall, Deputy Director of the National Institute for Health Research, Nottingham Biomedical Research Centre, shares the key findings of her group's research study to improve the design of future trials for evaluating tinnitus treatments.

COMIT'ID has involved the global tinnitus community with over 600 people taking part from over 40 countries. Three separate online consensus surveys have now been completed to identify how sound, psychology and drug-based tinnitus treatments should be commonly assessed before and after treatment.

A wide range of people took part based on their experience with one or more of these treatment types. These included people with lived experience of tinnitus, healthcare professionals, researchers, industry experts and funders of tinnitus research (inc. the BTA and Action on Hearing Loss).

From each online survey, participants all agreed on

around 20 different tinnitus-related problems to recommend to researchers for assessing in a trial. However this number was not practical, to measure in a clinical research study, so using workshops containing 20 participants (lived experience of tinnitus and professionals) for each treatment type, the list was reduced to a more manageable number. This created a **minimum** set that will become international standards to be used in research.

This minimum set was selected on the basis that assessments are i) directly relevant to patients with tinnitus, to the healthcare professionals giving the treatment, and to the researchers designing the trial, ii) directly relevant

[Cont. on page 5]

[Cont. From page 4]

to how the treatment is supposed to be working, and iii) are expected to be very sensitive to change during the treatment.

Although all three online surveys and workshops were completed separately, everyone taking part in the study agreed that **tinnitus intrusiveness** is important and critical to measure, no matter what type of tinnitus treatment is being tested, or what stakeholder group was asked.

The next steps will be to define exactly what each of the assessments means to the community so that we can make recommendations on how they should be measured.

(Amended from January 2018 AoHL Soundbite)

[This blog appeared when the this N/L was almost complete, consequently some more detail of the findings will now appear in the April edition-Ed]

WORDPLAY

- Giraffiti: Vandalism spray-painted very, very, high.
- Inoculate: To take a coffee intravenously when you are running late.
- Intoxication: Euphoria at getting a tax refund, which lasts until you realise it was your money to start with.
- Dopeler Effect: The tendency of stupid ideas to seem smarter when they come at you rapidly.
- Reindarnation: Coming back to live as a hillbilly.
- Glibido: All talk and no action.

"Auditory-somatosensory Stimulation to Alleviate Tinnitus"

Although there is currently no cure for tinnitus, now there's a treatment for the neurological condition that embraces a new way of thinking about hearing loss.

Charles Liberman, director of the Eaton-Peabody Laboratories at Massachusetts Eye and Ear says: "It was always thought that the hair cells were the only vulnerable elements in the ear and that nerve fibres never died until after the hair cells were gone; the new view is actually the nerve fibres are more vulnerable than the hair cells. It seems to be true in noise damage and it may be true in aging as well."

Dr. Susan Shore, a professor of Otolaryngology, and her team at the Kresge Hearing Research Institute, University of Michigan, US, discovered that in addition to hair cell damage, these nerve fibres played a role in the neurological condition of tinnitus as well.

A dual-stimulus approach to treating tinnitus

A team from the University of Michigan (U-M) have reported results of tests in guinea pigs and double-blind human clinical trial (involving 20 tinnitus patients), using an approach called targeted bimodal auditory-somatosensory stimulation, that involves two senses.

The device plays a sound into the ears, alternating it with precisely timed, mild electrical pulses to the cheek or neck. These precisely timed sounds* and weak electrical pulses that activate touch-sensitive nerves, are



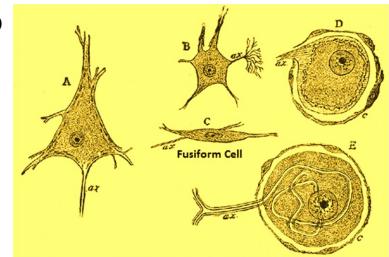
The U-M device being tested

both aimed at steering damaged nerve cells back to normal activity (*The crucial timing of the auditory and electrical stimulation came directly from tests in guinea pigs

that had noise-induced tinnitus).

The approach aims to reset the activity of the fusiform cells (which normally help our brains receive and

process both sounds and sensations such as touch or vibration – known as somatosensory inputs). Under normal conditions, fusiform cells help our brains focus on where sounds are coming from, and help us tune out sensations that result from the movement of our own head and neck. But U-M team's previous work in animals showed that loud



Various forms of Fusiform cells

noise can trigger a change in the nerve cell's activity – altering its timing so they fire off synchronized signals spontaneously, instead of waiting for an actual sound in the environment.

Results in human participants

Human participants reported that after four weeks of daily use of the device, the loudness of 'phantom' sounds decreased, and their tinnitus-related quality of life improved. A sham "treatment" using just sounds did not produce such effects.

For the study the team only recruited a particular type of tinnitus patient who could temporarily alter their symptoms if they clench their jaws, push their face, or turn or flex their necks (known as somatic tinnitus). Dr Shore says "These manoeuvres appear to be self-discovered ways of changing the activity of fusiform cells-providing an external somatosensory signal to modulate their tinnitus."

Recruitment for the next clinical trial will begin in early 2018, with the trial expected to start in late summer.

[Link to Science Friday blog and video:
<https://tinyurl.com/y86r5tee>]

Focus on Psychological Therapy

Psychological therapy is one of the tinnitus management options recommended by the Department of Health Good Practice Guide. Amongst different psychological approaches, therapist led Cognitive Behavioural Therapy (CBT) has good evidence for effectiveness in managing tinnitus distress.

Another approach is Mindfulness Behavioural Cognitive Therapy (MBCT), which has been successfully applied to manage depression and chronic pain, but up to now there was no evidence for its effectiveness for tinnitus. MBCT involves teaching meditation techniques - usually in a group format-over a course of eight weeks, paying careful attention to one's physical, emotional and cognitive experiences.

Between 2013 and 2015, Dr Laurence McKenna and Dr Liz Marks from University College London Hospitals (UCLH) conducted a study assessing effectiveness of MBCT for tinnitus and compared it to the Relaxation Therapy (current standard treatment). Seventy-five participants took part and the results have shown that both MBCT and Relaxation Therapy resulted in reductions in tinnitus severity, psychological distress, tinnitus loudness, anxiety and depression.

(Taken from BTA 2017 Research review)

However, for MBCT those positive effects lasted much longer (up to 6 months). The results were presented at the 10th International Tinnitus Research Initiative (TRI) Conference and a research paper describing the results of the study has been submitted to the medical journal *The Lancet*. The long term goal is to adopt MBCT more widely as a treatment for tinnitus.

Following on from that project, Dr McKenna and Dr Marks are continuing their research in this area by looking at how CBT can be used to treat tinnitus-related insomnia. About 70% of people with tinnitus complain of sleep disturbance including getting to sleep or staying asleep and poor sleep may contribute to tinnitus distress. Currently there has been limited research into tinnitus-related insomnia and the most effective management options for it. However, there is evidence that CBT can be effective for insomnia either on its own or co-morbid with other health problems. CBT for insomnia (CBTi) is now part of the NICE guidelines for the management of long term insomnia. The study will assess the effectiveness of CBTi for tinnitus-related insomnia and compare it to the current standard approach of sleep hygiene.

BTA wins 2017 British Medical Association Patient Information Awards

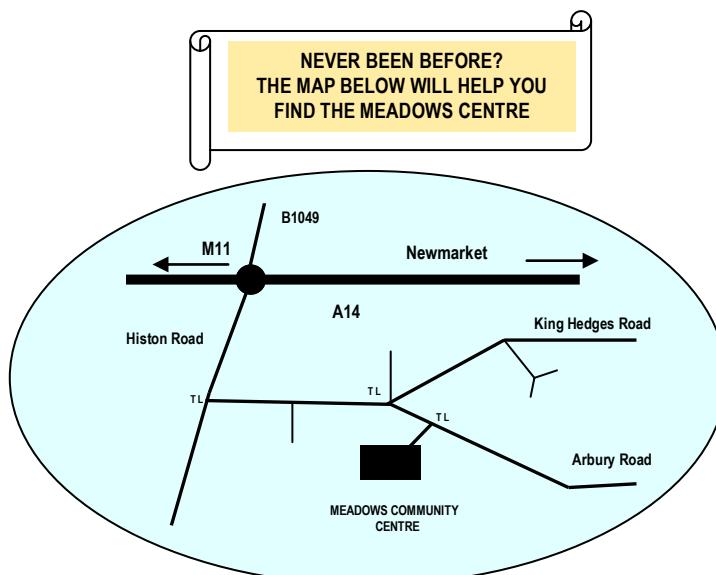
The BTA won First Prize in the Information for Children category, with workbook for young people aged 11-16 with tinnitus, written by Nic Wray (Editor of *Quiet*), illustrated by Kate Smith and with audiological input from Dr Veronica Kennedy. [See tinyurl.com/yc9puhfr]. These leaflets have been incredibly popular with paediatric audiologists. They were also Runner Up in the Easy Read category with leaflets based on the BTA 'self help for tinnitus' leaflet written by Beth-Anne Culhane.[See tinyurl.com/ydaj2qv2].

Please remember

This is your newsletter and all comments, letters, contributions or editorial copy relevant to tinnitus or CTSG, or anything you think maybe of interest to our members would be very welcome. Please send to :-

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(T)
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CONNECTIONS

CTSG is an independent voluntary organisation with a good supporting relationship with Addenbrookes' Audiology Department. We receive no financial support other than from membership subs, donations and sales. This pays for the hire of the meeting facilities and printing and postage of Newsletters. Reports and comments expressed in this newsletter do not necessarily reflect the views of CTSG.

Our next meeting is on Saturday 21st April at the Meadows Community Centre. Our speaker, Fara Afifi, is a Tai Chi Chuan teacher and a massage therapist, so her talk should prove interesting!