The Rotherham NHS Foundation Trust

TRFT NHS Library and Knowledge Service

Ear Care and Audiology Bulletin

Winter 2013/2014

Inside this issue:

HEARING LOSS, TINNITUS AND MENTAL HEALTH

This paper brings together key pieces of research investigating the links between hearing loss, tinnitus and mental health. The research identifies an increased risk of some mental health problems for people with hearing loss. For example, older people with hearing loss are 2.5 times more likely to develop depression than those without hearing loss.

The research highlights a range of factors which influence mental health outcomes including:

- Losing hearing post-lingually, in particular people who have been deafened
- Poor social and support networks
- Hearing loss not being effectively managed

The report also identifies the significant barriers to people with hearing loss when accessing mental health services such as staff who are not deaf aware and a lack of communication support.

ACTION ON HEARING LOSS

NOT JUST LIP SERVICE

Not just lip service

There are an estimated 10 million people in the UK who are deaf or hard of hearing: one in six of the population. For many people with hearing loss, a long-term condition, lip-reading is a vital communication skill.

A new report 'Not Just Lip Service' provides evidence about how lip-reading classes can improve communication and help people with hearing loss to live full and independent lives.

As a basis for the research project, a beginners lip-reading and managing hearing loss class was funded. Interviews were conducted with the class members to discuss their experiences and they were also asked to take an exercise to assess their lip-reading ability.

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In the news

Deaf couple say hospital failed to provide sign language interpreter during traumatic birth

The Guardian published a story about a deaf couple, who have criticised a hospital for failing to provide them with a sign language interpreter during the traumatic birth of their son. They say the hospital failed to provide them with the information that hearing patients would receive, which they say left them uninformed and added to an already stressful situation.

Their case reflects the experience of many people with hearing loss when accessing NHS services. A 2012 survey which was conducted in partnership with a coalition of deaf organisations as part of the Our Health In Your Hands campaign, found that two out of three people who ask for an interpreter at a hospital appointment do not get one.

Response:

As the number one provider of communication support in the UK, the Chief Executive of Action for Hearing Loss, Paul Breckell, said: "This is an issue of basic human rights. People who are deaf have the right to the same level of service as hearing patients and, to avoid misunderstandings and frustration in what can often be very emotional circumstances, it is vital that hospitals provide appropriately qualified, registered interpreters that fully meet individual needs.

"By law, under the Equality Act 2010, health services must make reasonable adjustments to ensure they are accessible to everyone – and this includes providing sign language interpreters."

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Our Health in Your Hands

Obesity associated with higher risk of hearing loss in women

According to the World Health Organization, 360 million people have disabling hearing loss, a condition that is often considered to be an unavoidable side effect of aging. New research from Brigham and Women's Hospital (BWH) published online in The American Journal of Medicine, finds that a higher body mass index (BMI) and larger waist circumference are each associated with higher risk of hearing loss, while a higher level of physical activity is associated with lower risk of hearing loss in women.

"We often think of hearing loss as an inevitable part of the aging process, but these findings provide evidence that potentially modifiable risk factors, such as maintaining a healthy weight and staying physically active, may help in the prevention of hearing loss or delay its progression," said Sharon Curhan, MD, ScM, lead author of the paper and a researcher in the Channing Division of Network Medicine at BWH.

Using data from 68,421 women in the Nurses' Health Study II who were followed from 1989 to 2009, researchers analyzed information on BMI, waist circumference, physical activity, and self-reported hearing loss. The baseline and updated information was obtained through validated biennial questionnaires. Researchers found that women with a BMI of 30-34 had a relative risk for hearing loss that was 17 percent higher, and with a BMI of 40 or more had a relative risk that was 25 percent higher, when compared with those with a BMI of less than 25.

For women with waist circumference 80-88 cm, the relative risk for hearing loss was 11 percent higher and with waist circumference greater than 88 cm the relative risk was 27 percent higher when compared with women with waist circumference less than 71 cm.

Researchers also found that higher level of physical activity was associated with lower risk. Compared with women who were the least physically active, women who were the most physically active had a 17 percent lower risk of hearing loss. Walking, which was the most common form of physical activity reported among these women, was associated with lower risk; walking 2 hours per week or more was associated with a 15 percent lower risk of hearing loss, compared with walking less than one hour per week.

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Other news

New technology optimizes ear infection diagnosis and management

A new, smartphone-enabled otoscope provides clear, transmittable images of the ear drum, or tympanic membrane, which someday may allow for ear infection diagnosis without a visit to the doctor's office, according to an abstract presented Monday, Oct. 28, at the American Academy of Pediatrics (AAP) National Conference and Exhibition in Orlando. In the study, "Comparative Assessment of a Smartphone Otoscope for the Diagnosis and Management of Acute Otitis Media," researchers studied the effectiveness of a smartphone otoscope attachment and app in accurately diagnosing acute otitis media or ear infections, in children. The research involved 63 children with upper respiratory symptoms who sought care at a single, major urban emergency department (ED) between May and December 2012. Each child was examined with a conventional otoscope as well as with the CellScope Oto, a new device that attaches to a smartphone providing video of the inner ear through an app. The smartphone app facilitates viewing a child's ear tympanic membrane. Ninety-five percent of parents responded favourably to viewing the images, and also said they would feel comfortable operating the attachment and app on their own. "The CellScope Oto allows parents to see what the doctor sees, which helps them to better understand the child's diagnosis and treatment," said study author Kathryn Rappaport, MD. In addition, the video images provide a baseline and ongoing documentation of the child's ear infections. "Now you can have actual video documentation of findings that can be followed over a period of time which can help in diagnosis and treatment decisions," she said. Parents also were very receptive to obtaining images of their child's ear remotely, or from their home, and transmitting them for diagnosis, said Dr. Rappaport.

BTA
BRITISH TINNITUS ASSOCIATION
A WORLD LEADER IN SUPPORT AND ADVICE

Tinnitus Awareness Week 2014 will run from 3-9 February and aims to bring the condition of noises heard in the head and/or ears to the attention of thousands across the UK.

Affecting at least one in 10 of the UK population, a massive 6.3 million, tinnitus is the unseen condition which can cause distress to individuals of any age. Tinnitus can be mild to severe and can affect sleep and concentration. It can also lead to anxiety and depression and at this time there is currently no cure.

Tinnitus is a condition which is heard but not seen – but the BTA wants to hear from people with the condition, to offer the help and support which is so vital in the early stages. During Tinnitus Awareness Week the BTA will be raising awareness by

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Latest research

Hearing and diet

International Journal of Audiology: Jan/Feb 2014—Volume 22—No. 6

A relationship between food intake and susceptibility to acquired hearing loss is an emerging trend in the field of audiology, although the variability in outcomes across studies hinders the possibility of a clear-cut final statement. One possibility is that dietary quality influences hearing status by mediating vulnerability of the inner ear to noise insult and to age related changes. Uncertain results of current studies are probably related to differences in the measures used to quantify nutrient intake, where in most instances a single nutrient is analysed, failing to recognise interactions between multiple nutrients. The authors examined the potential relationship between diet and hearing by an overall dietary quality approach, based on the Healthy Eating Index (HEI), developed by the US Department of Agriculture's Center for Nutrition Policy and Promotion. Researchers at the University of Florida at Gainesville contrasted the HEI with the hearing thresholds of a sample of 21,004 adults aged 20 to 69 years, collected during the National Health and Nutrition Examination Survey (1999 -2002). The epidemiological study was based on random selection, within specific demographic distributions, of a sample that was representative of the entire US population. Controlling for age, race / ethnicity, sex, education, diabetes and noise exposure, the authors found, not unexpectedly, a significant negative relationship between diet and hearing thresholds at higher frequencies, i.e. worse dietary quality was associated with lower hearing sensitivity.

Inadvertent insertion of hearing aid impression material into the middle ear: Case report and implications for future community hearing services

International Journal of Surgery Case Reports - Volume 4 - Issue 12

The creation of ear moulds for hearing aids is generally considered a safe and routine procedure for trained professionals. In the literature there are reports of otological complications caused by hearing aid mould impression material in the middle ear cavity but such complications are considered rare. A case of a patient is presented in whom impression material entered the middle ear through a perforation of the tympanic membrane during the process of making a hearing aid mould and review how this was managed. The discussion is around how many aspects of the British Society of Audiology guidelines were not followed during this procedure and make recommendations as to how independent community practitioners need to be closely supervised with regular review to minimise the risks of such complications. The report demonstrates how a serious otological complication from the creation of a hearing aid impression in a community based private hearing clinic was managed.

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Latest research

The earlier the cochlear implantation, the better for spoken language

International Journal of Audiology: Nov/Dec 2013 - Volume 22 - Issue 5

The rationale for early cochlear implantation (CI) is to provide auditory signals during the sensitive periods in which spoken language skills develop rapidly in children with normal hearing. Despite the auditory information delivered by CI, providing much of the critical and complex information necessary for learning spoken language, on average, language development in children with CIs lags behind that observed for normal hearing peers. In this prospective work the authors compared the language skills of 98 children who received CIs before the age of two and a half with 62 children who received them between two and a half and five years of age. Language was assessed four, five or six years after CI using the Comprehensive Assessment of Spoken Language, a global language comprehension and expressive measure normalised on the analysis of 1700 children in the USA. In general, younger children achieved higher scores than those implanted at a later age for vocabulary, expressive syntax and pragmatic judgments. However, in both groups, some children performed much worse than the group mean, especially for grammar and pragmatics, while some scored well above the mean. While these occasional individual outcomes remain to be investigated, on average spoken language abilities appear to be directly correlated to the precocity and quality of speech exposure. The number of words heard during the first year after CI has a major effect on language skills and academic performance at school age.

Belgium: one of the leading countries in cochlear implantation

Cochlear Implants International: Jan/Feb 2014 - Volume 22 - Issue 6

It seems that Belgium remains one of the leading countries regarding cochlear implant utilisation / provision. This may very well be attributed to the fact that Belgium, and especially the northern region, Flanders, has been a centre of expertise in cochlear implants and early hearing screening for many years. Some of their surgeons and engineers were pioneers in the development of cochlear implants and in 1998 Flanders was the first region in Europe to implement a universal hearing screening programme for all neonates. The Belgian National Institute for Health and Disability Insurance has reimbursed cochlear implants in children and adults since 1994 and bilateral implantation in children under the age of 12 since February 2010. The evidence shows that in 2010, 93% of severe-to-profound deaf preschool children in Flanders had received cochlear implants and 25% had bilateral implants. Although the situation in adults is less clear, the fact that on average twice as many adults as children are implanted every year in Belgium is very promising.

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Latest research

Impact of electronic patient records (EPR) on ENT outpatient clinics

International Journal of Surgery: 2013 - Volume 11 - Issue 8

Objectives: To assess the impact of EPR on patient clinics. Two audit standards were examined: the introduction of EPR should not reduce the time doctors spend with their patients; coding procedures on EPR should be performed correctly. Methods: Time spent on EPR per clinic was recorded by each of the doctors in the department over a week. This was compared to a week before the introduction of EPR. In addition the number of flexible nasal endoscopes (FNE) recorded on the computer system was compared to the physical number of FNEs used. Results: On average 1:38 min was spent on EPR per patient. Consultant clinic time per patient reduced from 15:57 to 13:19 min after the introduction of EPR. Middle grade and ear care clinics lengths increased (16:39 to 17:07 min and 12:36 to 13:33 min). The number of FNEs performed was 57, but only 11 were coded on EPR. Conclusions: Patients spend less time with their doctors since the introduction of EPR. Overall, the time spent on EPR per clinic corresponded to an additional patient per clinic. The shift of responsibility to clinicians for coding procedures has financial implications: not coding FNEs correctly in the week examined cost 2226.40

Bigger is Not Better: Effects of Hearing Loss on Central Processing

The Hearing Journal: January 2014 - Volume 67 - Issue 1

Older adults who wear hearing aids often report that speech is too loud, yet they have difficulty with the clarity of the message.

With new hearing aid wearers, we often use the analogy of coming out of a theatre in the middle of the day and being momentarily blinded by the brightness of the sun. As we know, however, the retinal adjustment to increased light occurs quickly, while adjustment to amplified sound is a longer process.

Part of this difficulty is rooted in the well-known phenomenon of recruitment. However, changes in speech representation in the central auditory system also play a role.

The latest edition of Audiology Matters is now available. This special tinnitus issue includes:

- Drawing pictures and telling stories: treating tinnitus in childhood
- Selecting and optimising hearing aids for tinnitus benefit: a rough guide
- What do animal models tell us about tinnitus and hyperacusis

audiology matters

January/February 2014

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Latest research

Tinnitus: causes and clinical management

The Lancet Neurology: September 2013 - Volume 12 - Issue 9

Tinnitus is the perception of sound in the absence of a corresponding external acoustic stimulus. With prevalence ranging from 10% to 15%, tinnitus is a common disorder. Many people habituate to the phantom sound, but tinnitus severely impairs quality of life of about 1—2% of all people. Tinnitus has traditionally been regarded as an otological disorder, but advances in neuroimaging methods and development of animal models have increasingly shifted the perspective towards its neuronal correlates. Increased neuronal firing rate, enhanced neuronal synchrony, and changes in the tonotopic organisation are recorded in central auditory pathways in reaction to deprived auditory input and represent—together with changes in non-auditory brain areas—the neuronal correlate of tinnitus. Assessment of patients includes a detailed case history, measurement of hearing function, quantification of tinnitus severity, and identification of causal factors, associated symptoms, and comorbidities. Most widely used treatments for tinnitus involve counselling, and best evidence is available for cognitive behavioural therapy. New pathophysiological insights have prompted the development of innovative brain-based treatment approaches to directly target the neuronal correlates of tinnitus.

Other news

Revealing 'hidden' hearing loss: major new study

In collaboration with hearing experts at the University of Manchester, the Nottingham Hearing Biomedical Research Unit and the University of Nottingham have been awarded over £1 million to conduct a major 5-year programme on 'hidden' hearing loss. It is known that noise exposure causes detectable hearing loss through damage to the sensory hair cells in the cochlea. However, research suggests that noise may damage the auditory nerve which transmits messages from the hair cells. Such damage does not affect our ability to hear quiet sounds, so it is undetectable using standard hearing tests. This makes it difficult to understand the scale of the problem and the impact it has on everyday listening. The research will explore this 'hidden' problem and determine how it may be related to tinnitus and hyperacucis. It will also seek to develop the means to test for 'hidden' hearing loss and inform ways to prevent hearing damage and improve patient outcomes.

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