Audiology Newsletter

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Christmas 2009
Issue 18

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CHRISTMAS CLOSURE DATES:

18th December-6th January

20th January-27th January

Brain Rewiring

The current research focus with hearing is all about how we can *develop the brain* with hearing instruments, as opposed to just focusing on the *technology* in the device. That is, the focus is on how we *process* sound. Research findings are consistently showing it is never too late to 'rewire' the brain. It seems that until we die, our brain is constantly rewiring to increase the number of neurons needed to process information. Just as you need to keep exercising the body, you must keep exercising the brain. If the brain is denied sounds over a long period of time from hearing loss being left untreated, then the brain will forget to (1) recognise, (2) localise, and (3) ignore / filter out certain sounds. It is critical that auditory stimulation be received (via hearing aids or cochlear implants) so that the brain can rewire itself to deal with hearing loss.

- For specific 'brain rewiring exercises', including improving one's ability to hear in background noise amongst many other things, the website www.positscience.com is highly recommended.
- For more detailed reading, the text "The Brain that Changes Itself" by Norman Doidge is highly recommended.

Cochlear wants to be Heard but not Seen

Hearing device maker Cochlear has signed an exclusive licence deal to buy the patent rights and intellectual knowhow of US company Otologics, as it moves to develop an implantable microphone. "This purchase is an exciting step in achieving our long-term goal of developing a totally implantable cochlear implant," Cochlear chief executive Chris Roberts said. Cochlear implants now include an external device that sits behind the ear and contains the power circuit and controls. "With Otologics' technology we hope to produce a new Cochlear implant, which incorporates an implantable microphone. This is our long-term goal," Cochlear chief financial officer Neville Mitchell said. Cochlear has recently received approval from the US Food & Drug Administration for its new-generation Cochlear Nucleus 5 implant. The Nucleus 5 device is the world's thinnest Cochlear implant—about 40% more narrow than Cochlear's existing implant—and it lasts a lifetime.

I Hear Innovation

I Hear Innovation is an international hearing education and medical research organization in Brisbane, specializing in innovative hearing research with a neuroscience, paediatric and bio-technology focus. There are many people involved—the Hear & Say Centre clinical team and professionals and researchers from around Australia, the Australian HEARing and Co-operative Research Centre, a consortium of 25 global universities, hearing healthcare companies, professional associations and clinical service agencies. The ultimate goal is to improve opportunities for the 278 million people with hearing loss worldwide. Examples of projects include *Outcomes for babies diagnosed before 6 months of age*, and *Auditory Brain Development; optimal development periods*.
Bronwen is absolutely thrilled to have been accepted in the role of voluntary research analyst with IHearInnovation.

University of Queensland (UQ) Study

Researchers from the Audiology division at UQ are currently investigating what factors facilitate, or otherwise prevent, adults with a hearing loss from making an appointment with an audiologist, taking up a form of hearing rehabilitation (e.g., hearing aids), and wearing hearing aids successfully.
Thank you to my randomly selected clients who have agreed to participate in this project.

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CHICAGO CONFERENCE:

HEARING CARE FOR ADULTS—THE CHALLENGE OF AGING

Bronwen attended this excellent conference in November, and the remainder of this newsletter is an attempt to summarise and share with you all the presentations, research findings and candid discussions that were had! The most positive message I took home with me is that the priority of all the research is to ensure that its outcomes enrich the lives of people with hearing impairment.

The Big Picture of Changes with Age

Addressing the special needs of older adults is such an important topic because by 2025 the older adult population is expected to increase by 15%. The growth of hearing impairment is predicted to increase by a staggering 42% over the next 25 years. Much research is looking at what can go wrong with the ear and the brain with aging. It is now thought that neurodegenerative changes occur *as a result of* changes in the ear, and therefore it is even more important than before to protect hearing and treat any hearing loss as soon as it is diagnosed, as a means of preventing neurological degeneration.
Another big future drive for audiology is the need for integrated health services (namely with neuropsychology and vision). The motto of the conference could be summarised as "*life is on*" or "*use it or lose it*", because so many research findings prove over and over again that it is vital we stay active (mentally, physically, sensory, and socially) if we want to live a well life.

Cognition and Aging

Audiology, marketing and engineering departments in hearing aid manufacturing companies are certainly forming stronger ties to make not only the best sounding product, but a more functional product for those with special needs (eg arthritis). One engineer told how his hearing aid protocol was recently received by a person in the marketing department: "*go and put on dark glasses, a pair of gardening gloves and go in to a dark room and try and operate the device you just designed, then come back and talk to me*"! The future does seem certain to see neuropsychologists and audiologists working together. This is because there is a need to treat both *audibility* and *processing* (neurological) ability. Research appears to be proving that central (*processing*) auditory dysfunction is an early manifestation of cognitive impairment, and it is much more prevalent than we used to think. Research is suggesting that central auditory dysfunction testing should be done routinely, and the results should determine if referral to a neuropsychologist is needed. One way to summarise this is "*your brain is not keeping up with your ears*". We really need to better understand how the brain and the ears work together, because sometimes the brain is the 'good guy' and can help the damaged ears out (eg when hearing in background noise) and vice versa. Separate research showed hearing loss causes decrements for long term memory, even when age was accounted for. Again, this is more evidence of the need for audiology and neuropsychology to work closely together.

Communication and Aging

Unfortunately, there are cross-cultural aging stereotypes (even in Asia) BUT there are also positive stereotypes worldwide. Older people are seen as having the attributes of friendliness, helpfulness, wisdom and benevolence. There are also sad accounts of where people do not take the elderly seriously or make very wrong assumptions about their ability. For example, one presenter discussed the case of an elderly nursing home patient ('Betty') who one morning refused to take her tablets, even though she had been compliant for a long time. Betty kept repeating "*I don't take this medicine*" and the nurse assumed Betty was just being difficult. Two more nurses attempted throughout the day and got the same "*I don't take this medicine*" response. That evening Betty's doctor saw her to try to help the nursing staff, but as soon as he saw the tablets he said "*this is the wrong medication—this isn't what Betty takes*". When the doctor asked Betty how she knew not to take the tablets, she simply said *"they're the wrong colour and size—I take blue oval tablets, not these pink round ones*". Research is looking at communication and assertiveness strategies that can easily be implemented in nursing home environments to better respect the elderly and ensure their needs are better met. Writing is certainly proving to be a great way for the elderly to be selectively assertive, and a great way to be prepared for communication (eg take a list of questions to a doctor's appointment).
On a different note, age is certainly subjective—there were many examples of the 99 year old nursing home resident who "doesn't want to have anything to do with old people". That takes more than communication strategies to overcome!

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Conversation Therapy

Conversation is ultimately a social activity, and much research is being dedicated to how to better facilitate conversation between a person with hearing impairment and their partner / family / friends. Because research shows the more socially active one stays the better their wellbeing (the less likely they are to become isolated and depressed), it is now even more critical people be given specific communication exercises they can do to improve their conversations. An easy one is for people to read text to each other (eg from a newspaper) and repeat the text, so that where errors are made the couple work together at repairing the error and each gets a better understanding of how they can better help their partner to communicate.

One quote that will ring true for many people is "*when someone in the family has a hearing loss, the whole family has a hearing problem*".

Some great advice we received from one presenter was "*don't let hearing aids be the focus of your attention, rather focus on communication needs"*.

One trend that seems to be emerging is for people to move away from the traditional 'efficiency' mindset to taking time with person-to-person interaction. An example would be the nurse who spends time having a conversation with a resident before bathing her, and is actually more time-efficient in bathing the resident than the nurse who tries to be time-efficient by running the bath straight away but who as a result of lack of bonding with the resident will take longer to get co-operation and complete the bathing task.

On a different note, it was reassuring to learn there is a new category of impairment called CINDY—Cognitively Impaired, Not Demented Yet!

Amplification for Older Adults

Much hearing aid research is now assessing what type of signal-processing best works for people with different cognitive abilities. For example, it is now known high cognitive ability listeners get much greater benefit from a hearing aid that uses fast-acting wide dynamic range compression, whereas listeners with low cognitive ability get more benefit from slow-acting compressing hearing aids. Again this shows the need for audiology and neuropsychologists to work together; the ear and the brain / how we process sound cannot be treated as independent components in an aural rehab program.

Much work is being done in the area of voice control technology and its future use for hearing aids, as it would particularly benefit those with poor vision and / or dexterity. At the moment though this new technology continues to be prohibitively expensive.

The take home point was probably that older people are not an homogenous group and we cannot base hearing aid technology fitting decisions on age alone.

Practical Challenges

We need to look at the whole person, not just the impairment. That is, hearing loss is the impairment but what implications of this can we also address, for example, social, cognitive and work needs. Communication needs must be met as engagement in social activities is critical to wellbeing. Research has proven that social isolation impacts on mental health, most commonly in the form of depression.

My favourite presentation was by an English audiologist who detailed her "Hard of Hearing Club". This is a social club / group that she formed 9 years ago, and has been running every Tuesday ever since. Members of the group have all degrees of hearing impairment, and all benefit from the opportunity to have weekly social interaction with people who can understand their needs. It gives members the chance to share their problems, learn better strategies, become more assertive and confident, feel as though they belong and are accepted, and simply enjoy themselves and form strong friendships. Videos were shown of interviews with several of the Club's members, and it was just wonderful to see how much the group meant to them and how for once a week they felt as though their hearing loss did not matter. One 100 year old member has been attending for years and has missed only one Tuesday and this was because of the wind; she said she would have been blown over if she tried to attend, and kept reinforcing the point that the wind and nothing else had stopped her from going! The Club also allows for inclusion of family and friends.

Audiology needs to be promoted as LONG TERM REHABILITATION and not 'buying a hearing aid'. We accept that a physical injury requires long term physiotherapy, and we need to better make people aware of the same need for a damaged ear. A hearing aid is just that—an aid—and must better be taught to be used with communication therapy.

On a completely different note, it was interesting to learn that every restaurant in San Fransisco has to have a 'noise rating' as well as a food, wine and service rating. It would be terrific to see this implemented worldwide.

If forming a 'Hard of Hearing Club' appeals to anyone, please contact Bronwen in the New Year and together we can facilitate this.

Also in the New Year, Bronwen and a very dear client will be designing a document for family members to help them better understand how to communicate with people with hearing impairment. We would welcome any ideas for inclusion in this project.

I continue to achieve my goal of remaining independent from any hearing aid manufacturer. It is a privilege to be entrusted with your hearing needs. I value the relationships I have with my clients.

I wish you and your families a happy, safe and festive Christmas. Don't behave!

I look forward to seeing you all in the New Year.

Warmest Regards,

Bronwen

CHRISTMAS CLOSURE

Please note, during the Christmas period the clinic will be closed from Friday 18th December, 2009 and reopen on Wednesday 6th January, 2010.

The clinic will also be closed Wednesday 20th January—Wednesday 27th January, 2010.

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