

# The Preventative Audiologist

**T**raditionally the profession of the audiologist is predominantly reactive; we assess and investigate, we diagnose or assist in diagnosis, and we manage or rehabilitate individuals who present with a range of auditory or vestibular disorders. We respond to those who we suspect have acquired various conditions, and our role could be considered a curative one.

It is frustrating that many of the people we see, present with disorders which may have been completely avoidable. As we know induced auditory conditions such as hearing loss and tinnitus as a result of noise exposure or ototoxicity, are often unnecessary, yet irreversible. They may potentially have a huge socio-economic impact on the life of the individual, their families, and possibly their work environment. In the past, general understanding of the consequences of excessive exposure to loud or prolonged sound was limited, however for many years now, with the support of applicable health and safety legislation this hazard to our health has been recognised and, we would have hoped, prevented. Yet despite the improvements in regulation, nationally we continue to see thousands of individuals who, due to their exposure to loud sounds, have acquired permanent damage to their health.

The audiological profession should be part of the vanguard against this damage to health, as certainly our expertise and assistance is required once this permanent

damage has occurred. Many of us supply hearing protection, some of us also provide audiometry as part of an occupational health hearing conservation programme.

However I feel that the continued prevalence of induced conditions should be addressed, and those procedures, equipment and services that have been used as part of traditional hearing conservation schemes have not developed significantly and so, at times could be considered inadequate. This is why much of my time has been concerned with increasing awareness on the subject and researching improvements in how we conserve the health of our auditory system in these environments.

If we consider the rehabilitative care we provide to those with hearing loss; 30 years ago when I began my role as a hospital based audiologist, flexibility in the hearing aid technology we employed then was limited. The main tool we had to adjust the performance of the hearing aid was a screwdriver that could be used to change high frequency output in a very crude way. Thankfully technology has moved on with great acceleration and we now have access to the digital facilities that allow us to offer and achieve so much more to benefit those who seek our help. We would be shocked if any practice still provided the old BE11 or BW81 analogue aids with the screwdriver adjustment (some of you may be old enough to remember them).



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When I began as an audiologist the test we used as the earliest indicator of damaging exposure to noise was the audiogram. As we all know this is a subjective procedure which measures the performance of the whole auditory system and relies completely on the cooperation of the 'testee'. It does not specifically test the vulnerable structures of the inner ear which are the first to be damaged by noise. Although audiometry is a vital test in our armoury, it is a test that will highlight reduction in thresholds only after a significant level of irreversible damage has occurred to those vulnerable structures, and sometimes after the emergence of tinnitus. Although technology has now moved on, why are we not shocked that the same test procedure is still being used, unchanged for decades?

Some 15 years ago I was approached by those responsible for healthcare in a high profile, noisy activity, to investigate the risk to the hearing of those performing in that activity, and to research and advise on the most effective programme that would protect auditory health.

After demonstrating the huge risk that the measured noise levels presented, it was clear from my experience that we needed to improve the health surveillance test in addition to what and how protection was provided. So by using the advanced clinical technology available to us we were able to investigate complimenting audiometry with the use of Otoacoustic Emissions (OAE) measurement. The OAE test procedure has been hugely beneficial, and is used primarily in clinics around the world for a screening test of hearing loss in new-born babies, but this resource, pioneered by Professor David Kemp offers us potential to be used for wider applications in addition to neonatal screening. As we know this robust and reliable test is objective, specifically tests the function of the vulnerable part of the cochlear damaged by noise, and will highlight reduced cochlear performance before audiometric thresholds alter.

Our research was instrumental in developing our thinking that instead of relying purely on the traditional audiogram with its limitations, this new technology provided a more effective indicator of damaging noise exposure before permanent hearing loss developed.

Overseas organisations have also recognised the same limitations in existing procedures, and the work of like minded people around the world who have undertaken comprehensive research, means that these complex procedures have been harnessed and adapted to address their own draw backs in the non-clinical environment, and created a format ideal for occupational and recreational hearing conservation. These benefits have been acknowledged by those who develop guidance around protection of health at work; The Health and Safety Executive has now started to study these test procedures and have recognised that they present the leading indication of damaging exposure to noise. Last month the first European Hearing Conservation conference was held where all these issues were explored and the solutions discussed.

In my opinion the traditional, sometimes fragmented, approach to hearing conservation is not as effective as we would want it to be. We must begin to embrace alternative measures, and to quote our own CEO, David Welbourn, "The pure tone audiogram is NOT the only game in town."

"We need to realise that what used to be the best available solution may now be far from the best, given that the paradigm has changed."

Our work has helped us in assessing more advanced technologies so we may now all offer them as part of a cohesive and efficient auditory health conservation programme made up of a number of complimenting elements. Each element being important in the whole programme achieving its goal in the conservation of our hearing. This could include risk assessment and profiling, personal protective equipment provision and verification, health surveillance test, and what we feel is the most important aspect; education and motivation, which all affects the behaviour of the individual to fully embrace and take ownership of their auditory health programme and better protect their health. Even equipment manufacturers, have recognised the benefit with this approach and so have developed instruments and products to work together in this type of programme. So the approach we are all able to offer becomes centred on the individual and their health and not the conventional approach or tick box exercise.



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Our aims are to address the shortfalls of traditional hearing protection schemes but also we can develop or create a greater role for the audiologist, to add value to an already vital but often unrecognised medical profession.

This pro-active role may be one that either existing audiologists may undertake or that a new position, one differentiated from the clinical professional, could be created. This skilled professional would possess the knowledge to organise, implement and evaluate a multi-disciplinary hearing conservation program, focusing on the safety, health and well being of the person at risk. They will have the skills to use state of the art technologies and improvements in procedures that facilitate the most effective level of hearing conservation available. This new approach to a longstanding health issue offers the very real opportunity to reduce significantly the unnecessary damage to our very precious sense of hearing.

Many of the articles we read in our various professional publications confirm what we all recognise, that the provision of audiological services in both the public and private sectors is changing. We need to consider our role in this changing landscape in order that we may consolidate our position and secure our future interests. Preventative audiology offers us the opportunity to develop that role, to enhance the outstanding rehabilitative service we currently provide, and I think most importantly better conserve the hearing of those who place their health and welfare in our hands.

We are all proud of the curative role we undertake and the service we offer to those who may be troubled by a hearing impairment or other condition, and I suspect many of us would take some exception were we to be described purely as suppliers of hearing aids.

Manufacturers do a great job of supplying hearing aids, however audiologists strive to provide the best in rehabilitative care and support to our clients or patients who are affected by some form of auditory disorder. We fully assess their condition, we investigate their lifestyle and needs, we take a holistic approach to each

individual and to the hearing healthcare we offer them. Often an element of that effective care journey will be the utilisation of appropriate hearing technology, but we do not just supply hearing aids.

We take pride in our role as audiologists, and we wish to be recognised as providing a service that excels in our chosen field of auditory rehabilitation, therefore I think we should be equally passionate or enthusiastic about providing that same care, skill mix and service when it comes to protecting or conserving the vitally precious sense of hearing, and not just supplying an earplug.

Some of you may have read 'Action Plan on Hearing Loss' recently published by NHS England. The purpose of this report is to encourage action and promote change. Developing strategies for the prevention of hearing loss and early detection are clearly highlighted as aims of this report. In line with this, it is important that we continue to develop how we provide measures to conserve the auditory health

of the individual in all the environments where noise exposure will damage the auditory system.

So if our clients work in music, motor sport or industry, any activity where they need to protect and conserve their hearing, we need to consider how best we can help them do that. We would want our practice to provide the most effective technology and techniques available and be recognised for doing so. There is no hope of improving that service and advice without changing the procedures and products we offer.

If you, like us, are interested in developing the service we offer, and driving forward those improvements in hearing conservation then we should be happy to discuss how we as audiologists can do that together.

Or on the other hand we could carry on with the current measures; follow tradition in the hope that something else will change and suddenly peoples' hearing will not be damaged by noise. ■

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