

# Sound Sense

Issue 5

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Placido Domingo, tenor, conductor and Hear the World ambassador

"music is nothing if no one can hear it"

## Widex Inteo tailoring the world to you

One of the biggest challenges when designing hearing aids is to make all the components and information fit into a device so small that the ear can hold it. Not long ago hearing aids used analogue technology that simply amplified all the sounds around them. This could be very uncomfortable for the wearer in some situations as loud noises could become louder. Then came the digital revolution. This allowed for the development of hearing aids with enhanced processing power and features. Digital aid's primary aim is to deliver to the wearer, sound quality that is as close to normal hearing as can be achieved within the limits of the patients hearing loss.

Danish company Widex is now to the fore front in the development of highly advanced hearing aids. Their current range of hearing aids includes the 'Inteo', 'Akia' and 'Flash'. The Inteo is the hearing aid we look at here.

Inteo uses Integrated Signal Processing (ISP) which is a new technological approach to efficiently and accurately process sound for each individual. Indeed two main factors prevented the implementation of ISP in earlier hearing aids – knowledge and technology. Other key features of the Inteo are the Dynamic Integrator which provides detailed information about each situation the wearer is experiencing, and adjusts all the signals within the aids as necessary. The High Definition Locator picks up voices even if from behind and reproduces the sound intelligibly.

A feature unique to the Inteo is the Audibility Extender. This allows people with an unaidable high frequency hearing loss to hear the missing high frequencies without distorting the characteristics of the sound - thus preserving the naturalness of the transposed sounds. The Speech Enhancer was developed to improve the challenge of making speech stand out in noisy environments.

The patent-pending Active Feedback Cancelling or anti-whistle system differs from others in many ways such as prevention of feedback if the aid starts to work loose or if the wearer holds the phone too close to the ear.

It takes time working with each patient to maximize the effectiveness of the newer hearing aids most advanced features but as you are aware this is something we always factor in during the assessment and fitting periods.

Do not hesitate to contact us if you would like further information on the Inteo or indeed any other hearing aid system.



natural  
sound



## Cot deaths linked to babies with damaged hearing

Evidence indicating a link between cot death and hearing difficulties has been proposed in the July 2007 journal of Early Human Development by paediatric anesthesiologist Daniel Rubens of the Children's Hospital and Regional Medical Centre in Seattle USA. Rubens and his colleagues, working without funding, studied an archive of newborn hearing tests, comparing those given to babies who later died of Sudden Infant Death Syndrome (SIDS) or cot-death as it is more commonly known. They found that each of the babies who later died had tests which revealed lower hearing levels. In Ireland SIDS claims the lives of about 50 infants a year.

Rubens suggests that the normal surge of blood from the placenta during birth, which is designed to kick-start breathing, may in some cases damage the cells of the inner ear which detect higher sound frequencies. This is identified by tests in early infancy. He further suggests that these cells may function as an early-warning system to the brain that oxygen levels are falling in the baby's blood. If these cells are damaged then this early-warning relay is turned off putting babies with weaker lungs at risk from choking, suffocating from overheating or a cramped position in a cot.

Experts are divided on whether there are one or many causes behind SIDS, but Rubens says the research is at an early stage, and he will be working with two different British groups in tracking 100,000 babies over many years.

## Resound plays it cool with Azure

Human beings are unique in the way they look, think and use their senses. Hearing aids have always relied on the individual adapting to match the technology, rather than the reverse. Danish company GN ReSound has developed innovation in the Azure from a wide range of scientific studies, conducted over a number of years. The concepts involved make use of the most powerful sound processor there is – the brain.

This represents an entirely new approach to hearing aid design reflecting insight into the way the human hearing system naturally perceives and processes sound. The key is that it is you deciding what you want to hear, not your hearing aids dictating what you can hear.

### Natural Directionality

ReSound Azure provides the latest in 'directionality' technology, allowing the wearer to zoom in to better hear what people are saying. Uniquely however, it performs this and allows the wearer to hear what is going on around them as well. To achieve this goal, binaural fitting i.e. wearing two hearing aids is essential. For example, a person with normal hearing at a meal with others can follow the conversation of the speaker opposite him, or decide to concentrate on a conversation taking place at the table beside him. Azure allows the wearer with a hearing loss to concentrate on the speaker, without losing contact with his/her environment, as if they had natural hearing. This is automatically done without having to remember to push a program button on the hearing aids.



unique

### Natural Personalised Amplification

Environmental Optimizer™ reflects subtle differences in the way each person experiences loudness, automatically giving the hearing aid wearer his or her personal loudness settings in each listening situation.

### Rechargeable Convenience

A handy recharger means no more fiddling about changing batteries. Azure is recharged at night on its base to give 28 hours of usage.

### Bluetooth Wireless Technology Phone Headset

Azure confirms the possibility of connecting with mobile or landline telephones via Bluetooth technology. Thanks to a receiver that can be clipped onto the hearing aids three hours of talk time is possible with excellent sound quality and without feedback. ReSound Azure is available across a range of styles and colours and the actual features vary by model. If this exciting new technology is of interest to you please contact us. Do remember – hearing aids properly programmed and fitted, most efficiently use the hearing that you have left, but cannot restore it.

## Starkey Destiny - The future is now

Global company Starkey Laboratories whose headquarters are in Minnesota has, after many years of research, made available quality digital hearing aids. The ground-breaking series includes the Destiny 400, 800, 1200 and the latest addition the 1600, all of which are available in a variety of hearing aid styles and colours, including dual colour options.

What mainly distinguishes the Destiny range from other hearing aids is the Active Feedback or "whistle" intercept which is recognised as one of the best feedback cancellation systems developed to date. Starkey has researched an entirely new method that effectively minimizes whistling, squealing and other irritating feedback sounds without compromising the power of the hearing aids.



minimum  
feedback

Some of the most useful and imaginative features in the new Destiny 1600 are firstly the Self Check function. Simply opening and closing the battery door three times runs a diagnostic check of the microphone, circuit and receiver. Reminder to help remind you of maintenance and return visits. Voice Indicators which allows the option of using speech with male or female voices to alert to low battery, Self Check, Reminder, memory and shut down. In addition, the Integrated Real Ear, which is a sophisticated measurement process for ensuring an accurate hearing aid fit, is the first of its kind.

Also innovative are the latest additions to the Destiny 1200 range; the most impressive being the Destiny 1200 Power Plus for people with a severe to profound hearing loss. Features include an environmental detection system that automatically adapts to signals such as mechanical sounds and wind, technology that continuously monitors the differing environments and adjusts accordingly, selectable automatic telecoil (T switch) and continuous logging of the times the hearing aids are worn which is very useful in carrying out adjustments where they are needed

We have successfully fitted some of the new Destiny hearing aids with a very positive response from the wearers particularly with regard to the effective feedback system. If you need any further information we will be pleased to help you.

## Hear the world

"Music is nothing if no one can hear it."  
Placido Domingo, tenor, conductor and  
Hear the World ambassador

Peter and Margaret have been asked to join the Hear the World Foundation an initiative by the Phonak Group to raise awareness for the topic of hearing loss and to promote good hearing across the planet.

"Today, hearing is not perceived as an important subject". This fact, stated by Valentin Chaperro, CEO of the Phonak Group was what led the company to develop a non-profit organization Hear the World Foundation in January 2007. This foundation will support charitable organizations and projects destined to come to the aid of those with hearing loss. For this, the Foundation will create projects in all the countries where Phonak is present and this includes Ireland.

To ensure that its message gets across to a wide audience, Phonak has enlisted the support of world-class musicians; since appreciation of the finer nuances of music require good hearing. Thus, the ambassadors of this initiative are no other than the prestigious Vienna Philharmonic Orchestra and Placido Domingo who share the commitment to making people around the world aware of how they can protect and support the vital sense of hearing.

## universal language

As a universal language music is the ideal medium to spread the message of Hear the World-that hearing loss is one of the most frequent and the most easily avoidable handicaps.

Phonak, for its part, has put a starting contribution of €315,000 into the foundation and plans initially to lead a project valued at €630,000 in a school. Details of this project are about to be released shortly.

The Hear the World magazine won Best of Corporate Publishing Award and also iF Communication Design Awards this year. If you would like a copy of the current magazine just call in to us and we will be delighted to give you one.

As a family we have been actively involved in the Limerick School for the Deaf and Hard of Hearing in Rosbrien in Limerick. Peter and his late father Willie were both founder members of the Mid West Parents of Deaf Children who built that first school. We hope that in time, when the foundation is up and running that we can encourage it to support and enhance the already excellent school and preschool which benefits so many young children in the Mid-West.

## Visible Speech Mapping: seeing is believing



Fergusons  
is the only clinic  
in Ireland with  
Visible  
Speech  
Mapping  
technology

In keeping with our policy of having the most up-to-date equipment, which has a positive and critical affect on our patient care, we have recently installed Visible Speech Mapping from Danish company GN Otometrics, who are one of the leading companies in the research and provision of equipment to hearing aid audiologists, ear nose and throat consultants and hospitals.

Traditional approaches to verifying how successful hearing aid fittings were, developed when analogue hearing aids were available. Today's more sophisticated digital signal processing hearing aids incorporate many more adjustable features. Therefore, more advanced techniques to ensure the hearing aids fitted are providing maximum benefit to the patient, are needed.

Visible Speech Mapping (VSM) is a hardware and software wireless technology, which works in conjunction with our Unity 2 Audiometry and Practice Management system and can be of use in one of two ways. Firstly, it helps patients and their families visualize the hearing loss and provides an objective demonstration of different hearing aid features. By using a flat screen monitor the patient and his or her family, spouse or companion can be provided with an understanding of the patient's hearing loss using voice and sounds that the patient will encounter in the real world.

Secondly, we can see how voices and sounds are affected by the hearing aids worn by the patient. Each of our patients has a unique hearing loss and similarly each has a differently shaped ear canal. The latter can have a significant impact on the way sounds are transmitted through the ear.

By placing a microphone inside the ear canal we can accurately measure the sound being produced at the eardrum by the hearing aid.

The patient can view this live on the monitor which makes it easy to understand. We can do fine-tuning or an adjustment at this stage using live voice, music or recorded sounds but always within the limits of the person's hearing loss.

VSM is now considered the "gold standard" in verifying that the hearing aids fitted are performing as desired by the patient. Presently we are the only practice in Ireland and one of the few in both the UK and Ireland with this technology.

Speech mapping data can be obtained quickly and easily without tiring the patient. This system provides a useful and valuable tool for the hearing aid audiologist and the hearing aid wearer.