



FACING THE MUSIC

Experiences of a Hybrid CI user by Dr Ray Glover, presented at the 2007 Summer Meeting

Ray Glover, an Executive Member and our new Secretary, explained how he

had moved on from hearing aids to a cochlear implant and the challenges that that presented to his hearing. His hearing loss started as a teenager and ultimately forced him to take early retirement from university lecturing having gained his Doctorate in electronic engineering. Tragically both he and his wife are, unknowingly, carriers of a gene which affects hearing and two of their children were born profoundly deaf. Ray was a reluctant hearing aid user and struggled with increasing background noise problems which are common to us all and being in full time work found himself working twice as hard as hearing people just to keep up.

He had followed the development of cochlear implants and his son Ben had one when he was 2 years old and this was Ray's biggest inspiration for getting an implant for himself. "I was very jealous of Ben and his hearing ability because when we went shopping he had to explain what the shop assistant was saying to me because I was asking –what's the price, and there was I as a hearing aid user with considerable residual hearing having to use my son with a cochlear implant to exist in the real world".

His resistance to implants was because they would destroy the good low frequency residual hearing that he still possessed. Following a visit to a conference in Sweden about children's implants, he learned of the DUET system from MED-EL. This is a combined cochlear implant and hearing aid and the technique is known as Electro Acoustic Stimulation (EAS). The implanted electrode assembly's length is deliberately short and does not enter the final turns of the cochlea where low-frequency hearing takes place.

"Quite a few people who could be considered for an implant have some residual hearing below 500 Hz which for those of you who know music is above middle C, about where the right hand sits on a piano and most people would be able to understand melody and tune even though they couldn't understand speech. I particularly didn't want to lose my hearing below 1000 Hz

which was very important to me. Music is a strong feature of my life. I've sung has a young child, joined the church choir and have performed in various choirs throughout my life. I get the most enjoyment by performing not as a soloist but as a member of a group and particularly an unaccompanied group".

"After switch on, environmental sounds were absolutely normal straight away but, for speech I was hearing two individual sounds, one for the hearing aid and one for the cochlear implant and initially my mind couldn't combine them. For the first year, I removed the hearing aid in my implanted year and forced myself to listen to the cochlear implant side. This is quite important otherwise once one's brain decides to ignore something, as we all know, it's very difficult to get it back into attention. I was hearing two different pitches at once and this was quite distorting. There was no test the Audiologist could do to decide that she was setting the electrode frequencies correctly because there was no acoustic feedback to be heard by my residual hearing. However, frequencies were found that made speech sound much better by trial and error but and it all improved very quickly. There was still a difference which, as a musician, I was able to identify that I was actually hearing the wrong notes on the piano which I'm used to playing. Those in the right hand heard though the implant were not in tune with the left hand heard using hearing aids".

Ray gave a series of musical demonstrations of pure tones and harmonics to explain the conundrum that he was dealing with. Some people in the audience couldn't hear the difference between various tones and some could. Ray then explained how using his computer and headphones he was able to match the actual frequency that at each electrode was set at with the actual frequency he could hear in the other un-implanted year. This produced a series of frequency settings for each of the electrodes in the implant assembly and the Audiologist then reset his processor to those values. "I immediately noticed that speech was far more natural and, more importantly to me, I could hear the same note correctly in both ears. Thus not only was I benefiting from my new hearing but also it embraced the musical spectrum. I was able to renew my singing which has always been the centrepiece of my life. Last week, in Bristol cathedral we were singing unaccompanied music and during Psalm 104 I had to stop because emotion swept over me as I realised the cochlear implant has enabled me to re-enact the words of the psalmist in this particular verse":

"I will sing unto the Lord as long as I live; I will praise My God whilst I have my being".