

The Key to Cognitive Health:

An Interview with Max Stanley Chartrand, Ph.D.
(Behavioral Medicine)

Editor's Note: Recently, Aural Rehab Concepts sat down with Dr. Chartrand to ask him to expound a bit on his findings in human cognitive development. Profoundly deaf, and a cochlear implant user, Dr. Chartrand lost most of his hearing to a childhood disease at age three, and later to the toxic medicines used to control rheumatic fever at age ten. Despite a lifetime of first severe hearing impairment as a child and then profound deafness during adulthood, he has had to overcome almost impossible obstacles, earning six advanced university degrees, including a doctorate in Behavioral Medicine.

Ironically, as a severely hearing impaired child, he started playing the

clarinet at age ten, adding the tenor sax age 12, playing first chair clarinet in Denver All-City Band and Colorado All-State Bands and Orchestras, and making his first professional recordings while still a teenager. Over the years, he's performed before thousands of live and televised audiences over the US and several other countries, performing with some of the top musicians in the field. He has composed and arranged music of all idioms, including choirs, orchestras, jazz bands, etc. and to this day is still very active in doing that which he loves to do despite not being able to distinguish pitches on his cochlear implant.

As a well-known researcher, author, and lecturer, he has served on and chaired research committees on a diverse range of topics, including, Alzheimer's, Tinnitus, Learning Disorders, Parkinson's, Diabetes, Fibromyalgia, Neuropathy, Cancer, and Traumatic Brain Injury. He and his wife Glenys have eight children and eighteen grandchildren. They dedicate time to church, community, and educating young and old. Today, he serves as Managing Director of DigiCare® Behavioral Research, based in Casa Grande, Arizona.

ARC: Dr. Chartrand, how can you hear me and what do you hear without your cochlear implant?

Dr. C.: First, I want to thank you for the opportunity to raise awareness on topics that are dear to my heart. *Without* my cochlear implant—I hear absolutely nothing, except the roaring tinnitus in my head. *With* my cochlear implant, the tinnitus drops to about half, and I'm able to understand about 18% of live speech. Add quiet surroundings, good lighting, and speechreading, and my speech understanding zooms to about 60%-65%. But, alas, I cannot differentiate one note from another in music, nor do I recognize songs or words in songs with my cochlear implant. But at least I am able to function in the hearing world.

ARC: If you cannot hear how were you able to play your music all these years?

Dr. C.: Well, at age 10—severely hearing impaired at the time with no hearing above 1KHz—I started playing the clarinet, which of course goes far higher than 1KHz in range. By age 12, the tenor saxophone was added and so on, until I found myself playing professionally as a teenager. Years later people would ask how I learned to play difficult symphonic music and jazz without hearing, and my answer is, "I guess someone forgot to tell me that I couldn't do it". In reality, however, I take what's in my head (or written in the sheet music) and transfer that to my horns and hope others can

hear what I 'hear". Anyone can do just about anything they really put their mind to do regardless of the obstacles in front of them. Those that say you cannot do such and such should not have to be listened to.

ARC: One of your statements from a recent article you wrote referred to the "rampant misdiagnosis and mistreatment" in Alzheimer's. What led you to these conclusions?

Dr. C.: I would say that *most* of today's Alzheimer's diagnosis falls into the category of over-diagnosis or misdiagnosed, based on numerous studies and meta studies that bear out this figure. My observations on this started in the late 1970s when I began working with a group of mild and moderate cases of Alzheimer's. All had hearing loss and none had hearing aids. It was distressing to me that uncorrected hearing loss in older adults combined with Normal Aging Factors (NAF) were so often mistaken as dementia. The symptomatic profile of uncorrected hearing loss combined with NAF and the profile of actual Alzheimer's are so similar that not even trained professionals can easily differentiate the subtleties in the commonly applied diagnostic screening batteries. More over, it is rare that diagnostics ever go beyond the screening level before one's life is turned completely upside down by others around them. On the other hand, if those individuals were fitted with appropriate hearing aids, and other necessary remedial actions were taken, *every* single one of them improves in mental scoring and become more involved with life again. This outcome has been borne out in countless studies since the 1970s.

ARC: What about children with uncorrected hearing loss, what are the educational and developmental implications?

Dr. C.: I'm glad you brought that up, because that was *me* growing up. For years the literature referred to hearing impaired children as learning disabled, slow of mind, underdeveloped, etc. Kids struggled in public schools, and rarely received a decent education. That is somewhat improved today, but is still an abysmal educational and cognitive developmental experience for most of these children. This is particularly true of deaf children who are made feeling like traitors if they choose to break out of their silent world and get hearing aids or cochlear implants. I am out to change this by performing at schools wherever I am invited. Musical training and oral/auditory



Dr. Chartrand, profoundly deaf, guest conducted and performed with the Arkansas Valley Orchestra in 2008



ferers burn so much glucose in the brain trying to understand speech in conversations that it can impair both one's memory and response time.

ARC: From your extensive work in research, what are the primary causes of memory loss in older adults?

Dr. C: We just published the *New Open Systems Model for Memory Loss in Older Adults*, which delineates an hierarchal order of progression for most cases of Alzheimer's. Uncorrected hearing impairment is at the top of that cascade, but near it is today's over-medication of older adults (polypharmacy), as well as unrecognized (organic) nutritional deficiencies, toxic food additives, uncorrected injuries and degeneration (like stenosis of the spine), underlying subclinical infection/inflammation (tooth/jaw sepsis, for instance), heavy metal accumulations (lead, particularly), and other aspects of health that are rarely assessed and treated in today's healthcare system. Our admonition is to "assess and resolve underlying causes, and dementias will shrink to a fraction their current rates."

ARC: With the knowledge we have now where do you see things going in the future?

Dr. C.: I envision a sea change in the diagnosis and treatment of cognitive health. Causal factors will be identified and treated instead of treating only symptoms. Hearing loss will be corrected before cognitive disorders are diagnosed and treated. Keeping the body fit and the mind active will come to the fore. Music will come back to US public schools so kids' brains can develop. In that enlightened era, there will be a dramatic reduction in prescribing unneeded drugs to older adults and for shorter periods of time, along with a big drop in unnecessary testing and surgeries. The cost of healthcare will plummet, and our population will be much, much healthier. ■

habilitation along with appropriate instrumentation are the deaf child's ticket to succeeding in the hearing world. Anything less is simply less than optimal.

ARC: In the early 1990s you were a scientific observer in the groundbreaking Nuns of Manakato Study. What did you learn from that experience?

Dr. C.: In a nutshell, that there was little relationship between manifestations of dementia and the amyloid plaques that were, until recently, considered the main cause of Alzheimer's disease. Surprisingly, the nuns with the most plaques tended to be among the best specimens of superior cognitive function. Also, those with the most education and hearing correction for their hearing loss retained memory and cognition past 100 years of age. These sisters were stalwart promoters of hearing health to the point they led their state Self-Help for Hard-of-Hearing Persons (SHHH), and came to know me from my work in finding the connection between hearing loss and memory loss. A more recent study which I chaired was of a group of older adults in Sun City, Arizona. Data from that study concurred with the early studies.

ARC: What about other studies on memory?

Dr. C.: Since the Nuns I Study, there have been a slew of excellent studies from a wide range of universities. One of the most recent was from Johns Hopkins University (2014) showing that uncorrected hearing loss in older adults make brains shrink. Of course, I need to add that most prescription medications also cause the brain to shrink. Since Americans consume up to 80% of the world's prescription drugs it is more than obvious that we are really hurting our senior population by pushing side effect laden medication instead of getting to the root causes of their health problems. Other studies have revealed that risk for dementia in older adults grows exponentially with the degree of uncorrected hearing loss, and yet another study confirms that hearing loss suf-



Above: Backstage after a recent televised national performance in Kobe, Japan. Included was a symposium on development of young brains through music education, and how to revive memory and cognitive function in older ones.