



A mostly true story about HEARING AND YOUR HEALTH

Back in the 1970s I had the good luck of taking classes from an outstanding audiologist named David Lipscomb. He would later become one of my most beloved mentors.

Early in my first class from him the subject was noise induced hearing loss (his expertise) and other causes of hearing loss in general. He told a mostly true story that goes something like this:

A researcher was studying the reason for differing amounts of age-related hearing loss, called presbycusis, in different locales. Two places with greater-than-average presbycusis was Europe and the United States. The most popular hypotheses at the time was that the reason for this advanced presbycusis in these locations was due to the high noise levels associated with industrialization.

This researcher, I remember his name as Stephenson but I am not certain of it, came upon a society/tribe in North African called the Mabaan. Nearly all Mabaan tribes-people had excellent hearing into their 80s, with little or no presbycusis. All of this was true. In honor of Dr. Lipscomb I will interject the part of his story that was not true:

Researcher Stephenson did rarely happen upon a Mabaan person who was said to have “womb deafness”. He took this to be a congenital deafness, as in “from the womb”, and since it was only males who suffered this, he thought it might be a sex-linked, genetically-based condition.

As Stephenson got to know the elders of the Mabaan and learn their language, he asked them to tell him more about womb deafness. They explained to him that they have a long tradition of once a year hunting elephants, who were very smart. Warriors would track a lone elephant for days. Sometimes the elephant would eventually get mad at the warrior and take the offensive. He would back into a cave and wait to ambush the hunter.

When the unexpected hunter came by in front of the cave, the elephant would expel gas and the shape of the cave would resonate the flatulence such that it come out in a loud “womb”, causing noise induced hearing loss, or what the Mabaan called womb deafness. Now, back to the true part of the story.

It turns out that the Mabaan not only heard better than their American counterparts in old age, they suffered less heart disease, kidney disease, dementia, type 2 diabetes and high blood pressure. Surely the high noise levels associated with industrialization cannot be at the root of these other illnesses.

It seems that noise levels in Europe and the United States does not explain the difference in hearing between them and the Mabaans. My theory is that the differences are related to lifestyle and, probably, diet. Diet-related differences can explain all the differences mentioned above, and we’ve learned in recent years that hearing loss is related to heart disease and diabetes.

Why could presbycusis be related to heart disease and diabetes?

My research area with Dr. Lipscomb was noise induced hearing loss and the possibility of improving hearing function following, during, or preceding an acoustic trauma. He and others had shown that improving the oxygenation of the cochlea, that part of the inner ear most effected by high noise levels, could improve the ear's recovery from the noise. That is, those ears with more oxygen recovered better than those deprived of oxygen. My research hinted (didn't prove) that it wasn't just oxygen, it was the blood flow into and out of the cochlea that explained an improved recovery response.

Improving the blood flow both into and out of the cochlea during noise exposure improves the cochlea's recovery from that noise, probably because more oxygen and other nutrients are being supplied, and also because of the removal of waste products from the cochlea's hard work during noise over-exposure.

To take a leap from that research done in the 1970s, the connection of hearing loss to heart disease probably has a similar explanation. The better the cochlea is both supplied with the nutrients it needs, including oxygen, and rid of the metabolic waste product from an organ that is metabolically very active even under normal circumstances, the better it can thrive and not suffer impaired function.

So the next time you hear someone linking hearing loss to smoking, diabetes, heart disease and the like, you can think of womb deafness and have some understanding of why it is probably true.

Gary Harris