

Outer Hair Cells and Sound Amplification: How Dr. Ebenezer Yamoah's Research Is Paving The Way For Hearing Restoration

Why Outer Hair Cells Matter – And How Dr. Ebenezer Yamoah's Research May Help Restore Hearing Function In Humans

RENO, NV, UNITED STATES, May 12, 2021 /EINPresswire.com/ -- We rarely take the time to slow down and think about how hearing works. We hear a sound and we know what it means – but the process of a sound occurs, the vibrations from the sound flowing through the air and into our ears, and our brains understanding the meaning behind the sound is quite complicated. [Ebenezer Yamoah, Ph.D., is a leading researcher on hearing.](#) studying the specific cell types in the ear that allow hearing and sound interpretation to occur – as well as what can go wrong in the process, and how it can be fixed.

The thought of hearing loss is scary, yet many people experience at least some degree of hearing loss at some point throughout their lives, according to Dr. Ebenezer Yamoah. Genetics, acoustic damage, drug side effects (both legal and illegal), and age can all play a role in the degeneration of hearing over time.

[Ebenezer Yamoah, Ph.D., explains that in some animals \(such as birds\)](#) cells in the ear that are responsible for receiving sound vibrations can regenerate over time, making long-term hearing loss unlikely. In humans, this is not the case. Ebenezer Yamoah, Ph.D., is a leader in researching how stem cells may be used to allow the ear to regenerate hair cells – a type of cell within the ear vital for the process of receiving vibrations and transmitting them to the brain for interpretation.

Outer hair cells work to amplify and tune the sound in the cochlea. The cochlea is then responsible for transmitting sound vibrations into electrical impulses, which are then transmitted to the brain for interpretation. Hair cells operate at much higher frequencies than research suggests, based on the electrical properties of the cells, according to Dr. Ebenezer Yamoah. Hair cells are complicated, and currently, cochlear implants are the main course of action for people who have suffered hearing loss. Ebenezer Yamoah, Ph.D., is working to change that.

Dr. Ebenezer Yamoah's current research has focused on curing age-related hearing loss in mice. In humans, the only current solution to age-related hearing loss is the use of hearing aids or

cochlear implants. Dr. Ebenezer Yamoah's work is paving the way for the use of stem cells for age-related hearing loss. He's proven that delicate hearing cells in mice can be altered with the use of stem cells, and hopefully, the same will soon be true for the ear cells of humans who have suffered age-related hearing loss.

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