

New Study Investigates Sudden Hearing Loss

Waking up with no hearing in one ear can be disorienting and frightening. Not enough patients, or healthcare providers, know that it can be permanent, if not acted upon quickly. Many don't know that it needs to be treated as a medical emergency.

Yet researchers still really don't know why sudden hearing loss happens.

Dr. Desmond Nunez, who works at Vancouver Hospital & Health Sciences Centre and is Head of the Division of Otolaryngology Head and Neck Surgery at The University of British Columbia, wants to find out more about this condition.

"We're calling a condition sudden hearing loss. It's not a diagnosis; it's a term about a presenting syndrome it tells us we know nothing about it. There are several different conditions that could lead *toward* this condition. This is why we probably have a variable rate of recovery from the condition. We don't undertake directed treatment to the cause because we don't actually know what the cause is."

A recent Vancouver Coastal Health Research Institute article summarized sudden sensorineural hearing loss (SSNHL), also known as sudden deafness, as the clinical presentation of the onset of an averaged reduction or degeneration of hearing acuity of 30 dB or more over a minimum of three frequencies, over a period of less than 72 hours. While the human ear's total range of hearing frequencies varies with age, the frequencies that are important for hearing speech are between 250Hz and 8,000Hz. Experiencing SSHNL, it said, is like suddenly losing the ability to hear any sound that's the volume of a whisper two feet away from the ear.

A new study being led by Dr. Nunez, also a Vancouver Coastal Health Research Institute (VCHRI) scientist, is searching for clues to investigate the cause of sudden sensorineural hearing loss.

"Sudden hearing loss, most times by definition people are coming within 24-48 hours losing their hearing. It's extremely rapid. To me that offers an opportunity - yesterday this person could hear, today they can't hear.

My study involves trying to get patients involved to give samples of blood and we're going to look for small elements of nucleic material, that function at the cell level. So what I want to do is look at those profiles of those small nucleic acids in patients both with the condition and without and find out what is the difference and then we may be able to unlock which are under attack during sudden sensorineural hearing loss".

Dr. Nunez also wants to get an idea of the size of the problem and see if there are any particular groupings of patients with similar characteristics – such as age - and also wants to get an idea of the how well some of the current treatments are working.

He will soon be going into the recruitment phase, and then the study will extend over a 24-month period. At that point he hopes he will have found sufficient information to interest funders to keep investigating.

Dr. Nunez believes familiarity with the condition among GPs and emergency doctors is variable, but it's improving.

"I would say 10 years ago or so it was very poor but increasingly patients are being referred faster with the condition."

Dr. Nunez says that it reflects societal response to hearing loss. "Not only is hearing loss the fastest-growing disability in the developing world because of the demographic shift in our populations, If you asked people what is the most common disability I think no one would say hearing loss - it's a hidden disability."

With sudden hearing loss, Dr. Nunez says all the evidence points toward earlier intervention as being more effective.

"Twenty-four hours would be ideal, the definition says over 72 hour window, so any treatment within that time frame would be good. Earlier is more effective."

The sooner the better could also be said of his research study...the more causal and treatment evidence, the better emergency departments can respond to patients presenting with sudden sensorineural hearing loss.

Lisa Mighton works with the Canadian Institute for the Relief of Pain and Disability. She has experienced sudden hearing loss twice - ten years apart. In the most recent incident, acting within 24 hours saved the hearing in that ear.