The Technology

Researchers at The University of Auckland are developing a first-in-class interactive gaming system that offers a treatment for sufferers of tinnitus, a constant, often high-pitched ringing in the ears that can be debilitating.

Tinnitus is a common result of hearing loss, and currently there are no effective treatments for the condition. The simple auditory gaming system in development can be customised to the individual’s condition. Four training applications work to exercise and improve sound categorisation, discrimination and localisation.

In the game, correct navigation is directed through auditory cues – responding to “good” sounds is positively rewarded, and responding to “bad” sounds is negatively rewarded. The listening tasks become progressively harder as the game continues.

Over time, players are trained to not hear their tinnitus. Initial tests have shown significant auditory improvement.

Applications and key aspects

- Effective treatment for tinnitus
- Simple yet effective treatment option
- Customisable
- Unique and interactive – higher rates of compliance
- Game format allows independent management

Game to hear again

An interactive gaming system that trains tinnitus sufferers to not hear the ringing in their ears.
The University of Auckland’s Audiology Section

This technology was developed by Dr Grant Searchfield and Dr Kei Kobayashi of The University of Auckland’s Audiology Section.

Dr Searchfield is a member of the Scientific Committee of the Tinnitus Research Initiative (Germany) and led a working group focused on the use of perceptual training as a tinnitus treatment. His research focus is cognitive processes involved in hearing and tinnitus perception, and innovative technology for aural rehabilitation.

Dr Kobayashi provides engineering support in the development of innovative hearing technology for the Audiology Section.

The Audiology Section was established in 1990 and is part of the university’s Faculty of Medical and Health Sciences. Research areas include mechanisms, assessment and management of tinnitus; use of digital technology, hearing aids and music in the management of tinnitus; noise induced hearing loss; cochlear physiology and pathophysiology; mechanisms and the diagnosis of sensorineural deafness; auditory evoked potentials; central auditory processing; and auditory habituation and otoacoustic emissions.

IP Position
Provisional patent 593160, ‘Interactive Gaming System’, was filed by UniServices in May 2011. This patent covers an interactive gaming system for auditory training rehabilitation relating to tinnitus.

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