Severe tinnitus has similarities with chronic neuropathic pain

Tinnitus has many different forms and it seems unlikely that the same treatment will be effective for all different forms of tinnitus. Recent studies of tinnitus in humans and in animal models have revealed many similarities between severe tinnitus and chronic neuropathic pain. Activation of maladaptive neural plasticity plays an important role in creation and maintaining the symptoms in some forms of tinnitus and chronic neuropathic pain. Recent studies using electrical stimulation of the vagus nerve for reversing such “bad” plasticity have shown promising results in treatment of some forms of tinnitus. Transcranial magnetic stimulation (TMS) can activate specific parts of the brain and it has a beneficial effect on some forms of tinnitus, as has deep brain stimulation. Electrical stimulation of the skin behind the ears can reduce some forms of tinnitus. The phantom sound of tinnitus is often accompanied by conditions that affect sleep, the ability to do intellectual work and life in general. Some people experience fear of sounds. These conditions are best described as suffering and they often impair the quality of life to a greater extent than the tinnitus sound. The degree of suffering is not directly related to the strength of the tinnitus sound. New development in neuroscience have shown that strengthening or weakening of connections in the brain play important roles in some forms of tinnitus. These and other recent findings in neuroscience may become important in development of new and more effective treatments of tinnitus.

Biography

Aage R Moller completed his Doctor of Medicine from the Karolinska Institute, Stockholm, Sweden, in 1965. He spent 12 years teaching neuroscience research at the same institution after which he immigrated to the USA and became Associate Professor of Otolaryngology at the University of Pittsburgh School of Medicine, later Professor of Neurosurgery at the same institution 1978-1998; 1998-present he is at The University of Texas at Dallas School of Behavioral and Brain Sciences as the Founders Professor and Distinguished Lecture of Cognition and Neuroscience. He is author of 205 articles in refereed journals, 16 single author professional books, co-editor of 9 books, most recently "Textbook of Tinnitus" by Springer 2010.

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