Understanding the underlying mechanisms of Tinnitus: A behavioural, molecular and physiological approach

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Abstract:

Tinnitus is the sensation of a sound when no external sound source is present. It is estimated to affect 10-17% of adults worldwide. There are many ways in which tinnitus can be generated; however Noise-Induced Hearing Loss (NIHL) is the most common cause and is increasingly apparent in individuals across all age groups. It is understood that tinnitus is a disorder of the auditory system, but the neural mechanisms remain unknown. Excessive levels of noise can cause damage to the cochlea, which can result in premature deafness and NIHL. The main purpose of this study was to investigate the physiological, molecular and behavioural consequences of NIHL. These investigations have implications for the generation of associated acoustic disorders, such as tinnitus and possibly hyperacusis.