Hearing loss

Auditory dysfunction is a common clinical symptom that can induce profound effects on the quality of life of those affected.

Partial or total inability to hearing is called hearing loss.

Types

Conductive Hearing Loss

Sensorineural Hearing Loss

Mixed Hearing Loss

Unilateral hearing loss

Etiology

Hearing loss etiology.

In medical contexts, the meaning of deafness is hearing loss that precludes a person from understanding spoken language, an audiological condition

see also pure word deafness

Congenital deafness represents a particular case with respect to other types of sensory deprivation, because cortical reorganisation is not only a consequence of auditory deprivation, but also of language-driven mechanisms. Visual crossmodal plasticity has been found in secondary auditory cortices of deaf individuals, but it is still unclear if reorganisation also takes place in primary auditory areas, and how this relates to language modality and auditory deprivation. Here, we dissociated the effects of language modality and auditory deprivation on crossmodal plasticity in Heschl's gyrus as a whole, and in cytoarchitectonic region Te1.0 (likely to contain the core auditory cortex). Using fMRI, we measured the BOLD response to viewing sign language in congenitally or early deaf individuals with and without sign language knowledge, and in hearing controls. Results show that differences between hearing and deaf individuals are due to a reduction in activation caused by visual stimulation in the hearing group, which is more significant in Te1.0 than in Heschl's gyrus as a whole. Furthermore, differences between deaf and hearing groups are due to auditory deprivation, and there is no evidence that the modality of language used by deaf individuals contributes to crossmodal plasticity in Heschl's gyrus [1)].

The primary auditory cortex is the part of the temporal lobe that processes auditory information in humans and other vertebrates. It is a part of the auditory system, performing basic and higher

functions in hearing.

It is located bilaterally, roughly at the upper sides of the temporal lobes – in humans on the superior temporal plane, within the lateral fissure and comprising parts of Heschl's gyrus and the superior temporal gyrus, including planum polare and planum temporale (roughly Brodmann areas 41, 42, and partially 22).

Unilateral destruction results in slight hearing loss, whereas bilateral destruction results in cortical deafness.

Acute deafness

Acute deafness

Conductive deafness

see Conductive deafness

1)

Cardin V, Smittenaar RC, Orfanidou E, Rönnberg J, Capek CM, Rudner M, Woll B. Differential activity in Heschl's gyrus between deaf and hearing individuals is due to auditory deprivation rather than language modality. Neuroimage. 2016 Jan 1;124(Pt A):96-106. doi: 10.1016/j.neuroimage.2015.08.073. Epub 2015 Sep 5. PubMed PMID: 26348556.