

Functional Imaging of Tinnitus

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Recent advances in functional imaging have opened new possibilities for understanding and treating tinnitus. By revealing the workings of the brain directly in tinnitus patients, functional imaging may provide new insights in the neurophysiology of tinnitus and may have an impact on patient care. Firstly functional imaging may contribute to the identification of target areas for brain stimulation techniques or drug therapy, secondly it may be further developed as a biomarker to assess treatment induced changes of neuronal activity. Furthermore functional imaging can be used to assess whether neuronal activity patterns in animal models of tinnitus correspond to those of patients. Functional imaging can be used in two different ways.

Positron emission tomography (PET) can investigate certain metabolic processes of steady state activity in the brain of tinnitus patients.

Functional magnetic resonance imaging (fMRI) provides a promising approach to detect brain activity associated with the auditory and limbic system in tinnitus patients according to specific types of stimulation.

We aim at combining these approaches to better delineate different tinnitus subtypes according to their brain activity patterns.

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