

White Matter Changes in the Brains of Adults with Tinnitus

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Abstract

Tinnitus is a hearing disorder that causes the sensation of noises to be heard when there is no source generating it (“ringing in the ears”). Many people that experience tinnitus become depressed or anxious and are left with a sense of not wanting to participate in their daily activities. Tinnitus affects about 10-20% of the population (American Tinnitus Association, 2012). White matter tracts in the brain connect different brain regions and conduct information between these regions. In this study, we will examine white matter tracts through diffusion tensor imaging (DTI) that allows us to investigate the manner in which the white matter tracts are organized in patients with differing tinnitus severity with also taking into consideration the limbic and attention areas of the brain. This information can give important insights into neural mechanisms underlying tinnitus perception. Currently there is no cure for tinnitus. As a result of conducting this study, better understanding of tinnitus’ neural mechanisms will then lead to better therapy treatments.