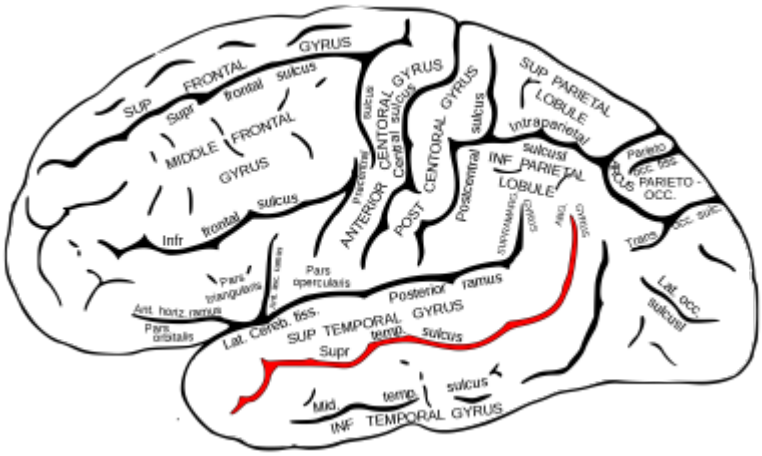
Superior temporal sulcus



- Activation Likelihood Estimation Meta-Analysis of the Effects of Cognitive Behavioral Therapy on Brain Activation in the Treatment of Depression and Anxiety Disorders
- The RELN heterozygous single-nucleotide polymorphism rs362691 increases the prefrontal cortical thickness and modulates systemizing-related autistic tendencies in typically developing children and adolescents
- Ultrasound-induced blood-brain barrier opening and selenium-nanoparticle injection lower seizure activity: A mouse model of temporal lobe epilepsy
- Optimized stereoelectroencephalography-guided thermocoagulation versus anterior temporal lobectomy in mesial temporal epilepsy: A pilot randomized controlled study
- The brain computes dynamic facial movements for emotion categorization using a third pathway
- Functional Localization of Visual Motion Area FST in Humans
- Characteristic parameter analysis of magnetic resonance diffusion tensor imaging in children with autism spectrum disorder: a retrospective study
- The combination of the ¹⁸F-FDG PET and susceptibility-weighted imaging for diagnosis of cerebral glucose metabolism and iron deposition in Parkinson's disease

The superior temporal sulcus is the sulcus separating the superior temporal gyrus from the middle temporal gyrus.

The superior temporal sulcus terminates in the angular gyrus.

The superior temporal sulcus is the first sulcus inferior to the lateral fissure.

It is involved in the perception of where others are gazing (joint attention) and is thus important in determining where others' emotions are being directed.

It is also involved in the perception of biological motion.

Recent studies reveal multisensory processing capabilities.

In individuals without autism, the superior temporal sulcus also activates when hearing human voices.

Unfortunately, most studies explored either the functional organization or the anatomy of the STS

only.

Bodin et al. linked these two aspects by investigating anatomo-functional correspondences between the voice-sensitive cortex (Temporal Voice Areas) and the STS depth. To do so, anatomical and functional scans of 116 subjects were processed such as to generate individual surface maps on which both depth and functional voice activity can be analyzed. Individual depth profiles of manually drawn STS and functional profiles from a voice localizer (voice > non-voice) maps were extracted and compared to assess anatomo-functional correspondences. Three major results were obtained: first, the STS exhibits a highly significant rightward depth asymmetry in its middle part. Second, there is an anatomo-functional correspondence between the location of the voice-sensitive peak and the deepest point inside this asymmetrical region bilaterally. Finally, theuy showed that this correspondence was independent of the gender and, using a machine learning approach, that it existed at the individual level. These findings offer new perspectives for the understanding of anatomo-functional correspondences in this complex cortical region [1].

Approach

see Superior temporal sulcus approach

1)
Bodin C, Takerkart S, Belin P, Coulon O. Anatomo-functional correspondence in the superior temporal sulcus. Brain Struct Funct. 2018 Jan;223(1):221-232. doi: 10.1007/s00429-017-1483-2. Epub 2017 Jul 29. PubMed PMID: 28756487.