

Temporal Neocortex

1. Definition

- The **temporal neocortex** consists of the lateral and superior parts of the temporal lobe. - It is a **six-layered (neocortical) structure**, distinct from the three-layered hippocampus.

2. Main Anatomical Regions

Region	Main Function
Superior Temporal Gyrus	Auditory processing, speech perception
Middle Temporal Gyrus	Language comprehension, semantic memory
Inferior Temporal Gyrus	Visual object recognition
Temporal Pole	Social and emotional processing
Fusiform Gyrus	Face and complex object recognition

3. Functions

- **Auditory processing** (sound and language). - **Language comprehension** (especially left hemisphere). - **Semantic memory** (facts, general knowledge). - **Visual processing** (object recognition). - **Social and emotional cognition**.

4. Clinical Relevance

- **Epilepsy**: Temporal neocortical seizures affecting speech and memory. - **Tumors and lesions**: Risk of language and memory deficits. - **Neurosurgery**: Need to balance seizure control and functional preservation. - **Neurodegenerative disorders**: Atrophy associated with cognitive decline.

Summary

The **temporal neocortex** plays crucial roles in **language, auditory processing, memory**, and **social cognition**, with major clinical relevance in epilepsy and neurological disorders.

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