

## **The role of the Piriform Cortex in Temporal Lobe Epilepsy: A Current Literature Review**

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Temporal lobe epilepsy is the most common form of focal epilepsy and can have various detrimental consequences within many neurologic domains. Recent evidence suggests that the piriform cortex may also be implicated in seizure physiology. The piriform cortex is a primary component of the olfactory network and is located at the junction of the frontal and temporal lobes, wrapping around the entorhinal sulcus. Similar to the hippocampus, it is a tri-layered allocortical structure, with connections to many adjacent regions including the orbitofrontal cortex, amygdala, peri- and entorhinal cortices, and insula. Both animal and human studies have implicated the piriform cortex as a critical node in the temporal lobe epilepsy network. It has additionally been shown that resection of greater than half of the piriform cortex may significantly increase the odds of achieving seizure freedom. Laser interstitial thermal therapy has also been shown to be an effective treatment strategy with recent evidence hinting that ablation of the piriform cortex may be important for seizure control as well. We propose that sampling piriform cortex in intracranial stereoelectroencephalography (sEEG) procedures with the use of a temporal pole or amygdalar electrode would be beneficial for further understanding the role of the piriform cortex in temporal lobe epilepsy.