

Uncinate Fasciculus: The Brain's Emotional Bridge

Authored by
Mohammed loot

June 10, 2026

RECOMMENDED CITATION

Mohammed loot (2026). *Uncinate Fasciculus: The Brain's Emotional Bridge*. Encyclopedia of psychology. Retrieved from <https://encyclopedia.arabpsychology.com/?p=11211>

The uncinate fasciculus (UF) is a white matter tract in the brain that connects the prefrontal cortex to the temporal lobe. It plays a key role in connecting various regions of the brain and has been linked to various cognitive and emotional functions. In this article, we review the anatomy, functional connectivity, and clinical relevance of the UF.

Anatomy

The UF is a white matter tract in the brain, located in the inferior frontal lobe. It extends from the frontal lobe to the temporal lobe, connecting the prefrontal cortex to the amygdala and hippocampus. It is composed of two main fibers, the anterior limb and the posterior limb, which wrap around the lateral ventricle. It is also connected to other subcortical regions including the thalamus, the caudate nucleus, and the putamen.

Functional Connectivity

The UF has been shown to play an important role in connecting various regions of the brain. It is involved in the processing of emotional and social information, and has been linked to the regulation of emotions. It is also involved in the processing of language and memory. The anterior limb of the UF has been linked to the processing of language, whereas the posterior limb has been linked to the processing of memory.

Clinical Relevance

The UF has been linked to several neurological and psychiatric disorders. In particular, it has been linked to language impairments, such as in autism spectrum disorders and aphasia, as well as memory impairments, such as in Alzheimer's disease and other types of dementia. It has also been linked to depression and anxiety disorders.

Conclusion

The uncinate fasciculus is a white matter tract in the brain that connects the prefrontal cortex to the temporal lobe. It is involved in the processing of emotional and social information, language, and memory. It has been linked to various neurological and psychiatric disorders, including language impairments, memory impairments, depression, and anxiety disorders.

References

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