

The olfactory pathway as a route for special afferent perception and behaviour

La vía olfatoria como ruta de la percepción aferente especial y la conducta

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The olfactory pathway represents a route of anatomical and functional interaction between the brain and the environment. The particular structural arrangement of chemoreceptors and nerve terminals located in the olfactory mucosa is a clear link between the odorous environment and its internalization through the cribriform plate of the ethmoid bone to form the olfactory bulbs.

Remnants of the so-called olfactory ensheathing glia confer particular importance on physiological and regenerative processes. Its connection with the medial olfactory area defines part of the primitive and behavioral patterns of the brain related to a social context, which explain herd behavior in different species.

This behavior explains the marking of territories with urine, defines tribal leadership, determines the reproductive cycle in connection with the estrous period in females, and defines mating behaviors, whose driver is represented by pheromones. Although this has a neurobiological translational link, in the case of *Homo sapiens*, conditioned mechanisms associated with consumer practices have been added to the perception of certain odors and perfumes.

These behavioral patterns contrast with the activity of the amygdala, which partly defines the lateral olfactory area and is correlated with emotional and behavioral patterns because of its mesial location in the temporal lobe and its connections with the limbic system. Patterns of memory consolidation and recall are generated, especially those integrated in the

association cortex, which gives olfactory capacity the possibility of operating as a sensory relay center.¹ Similarly, this explains its clinical disorders through olfactory hallucinations and the uncinate seizures characteristic of the phenomenon known as “aura” in temporal lobe epilepsy.²

This basic description by the authors shows that olfaction is involved in various functions, beyond olfactory perception linked to the gustatory pathway. Its behavioral influence is broad despite the limited extent of its anatomical area compared with other species.³

Some previously published evidence, with a very similar title, describes alterations in olfactory function related to degenerative disorders, such as Alzheimer disease, or immune-mediated disorders. However, it may be appropriate for the authors to define the differences from other texts, such as the one described, in the interest of scientific integrity.⁴

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Conflicts of interest

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Ethical considerations

Protection of humans and animals. The author declares that no experiments involving humans or animals were performed for this research.

Confidentiality, informed consent, and ethical approval. The study does not involve personal data, medical records, or human biological samples; therefore, ethical approval is not required. The SAGER guidelines do not apply.

Declaration on the use of artificial intelligence. The author declares that no type of generative

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