

OLFACTORY SENSORY NEURONS ARE PRESENT IN THE INFERIOR TURBINATE?

A. Mazzatenta¹, S. Zara², C. De Luca¹, S. Invitto³, A. Di Tano¹, A. Cataldi², M. Cacchio¹, C Di Ilio⁴, C. Di Giulio¹

¹ Section of Physiology and Physiopathology, Department of Neurosciences, Imaging and Clinical Science, 'G. d'Annunzio' Chieti-Pescara University, amazzatenta@yahoo.com

² Pharmacia Department, 'G. d'Annunzio' Chieti-Pescara University

³ Department of Biological and Environmental Sciences and Technology, University of Salento

⁴ Department of Medical, Oral and Biotechnological Sciences, 'G. d'Annunzio' University of Chieti-Pescara

Nasal turbinates are functional important structures for respiration because generate air turbulence regulated by nasal cycle for air depuration and warming, essential in the defense mechanism to pathogens by forming a continuous barriers to protect the upper airway from external environment. Turbinates, in mammals, are lined by sensorial epithelium characterized by olfactory sensory neurons involved in sensing mechanism essential for food, environment and partner choice. A growing body of literature shows that nasal mucosa respond to hypoxia in failure of transepithelial oxygenation, nonvascularized exudates, inflammatory hyperplasia, mucus hypersecretion, activation of HIF1a and share with carotid body the presence of some odorant receptors, eg Olfr78 suggested to be an hypoxia sensor and Galanin involved in neurons renovation. In humans up to now no report assess the presence of olfactory sensory neurons in the inferior turbinate. Consequently, the aim of our work is investigate such presence. Cells from inferior turbinate were collected by scraping and cytological analysis; inferior turbinate portions during aesthetic surgery were collected to perform histology and immunohistochemistry. Our data support the presence of olfactory sensorial neurons in the inferior human turbinate. This is of importance in sensing and other physiological functions.