

JOINT EVENT

10th International Conference on **Childhood Obesity and Nutrition**
&
2nd International Conference on **Metabolic and Bariatric Surgery**

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The vagal system as a mediator of the therapeutic effects of bariatric surgery

Obesity and type-2 diabetes are chronic diseases that respond with difficulty to drug therapies and lifestyle changes. At the origin of this resistance to treatment, an alteration in the functioning of brain sectors in charge of the reward system and of the energy homeostasis, due to a modification of synaptic transmission has been hypothesized. Overfeeding, presumably beginning as a psychological compulsive search for a rewarding stimulus turns into food addiction due to the adaptation of synapses in the reward circuit in response to the increased intensity of the inputs (synaptic plasticity). The same would apply to the brain areas responsible for the maintenance of energy homeostasis. The afferent vagal paths transmit to the brain information about ingested food from the digestive tract. Their intermediate station in the brainstem, the vagal nucleus of the solitary tract has an important role in modulating the metabolic function of the liver and the pancreas. Moreover, they work as a channel for the transmission of information from the periphery to the CNS with regard to both favorable and adverse events. In this way, they influence the synaptic activity of various brain areas through neuroplasticity. The profound anatomical and functional changes in the vagal system caused by bariatric surgery could explain the dramatic improvement in diabetes and the renewed sensitivity to diet by a normalization of synaptic activity. In the future, modulating pharmacologically vagus-vagal synaptic connections or driving brain plasticity via stimulation of the vagus afferents could obtain knifelessly the same therapeutic effects as surgery.

Biography

Claudio Blasi completed his graduation in medicine at Sapienza University of Rome and post-graduation in endocrinology at La Sapienza School of Medicine. He has been the director of ASLRMB-1D hospital diabetes center in rome. He has published more than 30 papers in reputed journals.

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