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NGF-Neurognathological functions: A new trigeminal electrophysiological paradigm in masticatory rehabilitation

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The masticatory system should be considered a “Complex System”, which is divided into a number of constituent elements bound together in a set of non-linear and stochastic relationships. The result of all the constituent elements determines an “Emergent Behaviour” of the system itself. The NGF Paradigm puts the excitability of the central and peripheral masticatory pathways and the network of brain connections at the centre of this complex system.

To achieve this purpose it has been necessary to create a bridge between Neurophysiological Trigeminal knowledge technologies and those of Gnathology, hence the term “Neuro Gnathological Functions”. Neurophysiological procedures aim to establish the presence or absence of the integrity of the neuromuscular system through the motor evoked potentials of the bilateral trigeminal roots (bRoot-MEPs) using electrical and/or magnetic transcranial stimulation methods (eTCS and mTCS). This first procedure would be able to generate a “Normalization Factor” to which to refer all trigeminal reflexes, bypassing the maximum voluntary contraction (MVC), which is too variable and unstable. In prosthetic implant rehabilitation and in patients with TMDs, however, these neurophysiological trigeminal procedures are capable of determining an intermaxillary spatial relation called “Neural Evoked Centric Relation”. Further, the study of trigeminal reflexes, normalized to the bRoot-MEPs represents a potential clinical support in masticatory rehabilitation procedures such as orthodontic treatment, implant prosthesis and in the differential diagnosis of Orofacial pain. Some clinical cases will be presented in order to better identify the clinical support that this paradigm could add to the dental sciences.

Biography

Gianni Frisardi completed his Bachelor's degree in Medicine and Dentistry in 1983 and 1987 respectively at the “La Sapienza” University in Rome. In 1993 he obtained a grant with Bioengineering on an ENEA Institute study grant with an experimental thesis on “Mandibular Kinematics”. He worked for several years of trigeminal neurophysiology and gnathology, published papers in reputed journals and has been serving as an Editorial Board Member of reputed journals. In 2014 he was chosen as Editor by the World Dental Federation for the International Dental Journal.

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