Editor's Letter. Pedro Planas – from madman to genius

Orlando Santiago Júnior
School of Dentistry, Arnaldo Jansen Unicenter, Belo Horizonte, Brazil
E-mail: *osjofm@gmail.com*

Received 22 May 2026; published online 30 June 2026
DOI https://doi.org/10.21595/jfocg.2026.26690

Abstract. This editorial letter for Jaw Functional Orthopedics and Craniofacial Growth revisits the legacy of Pedro Planas and his contribution to Neuro-Occlusal Rehabilitation. Once considered by many to be far ahead of his time, Planas proposed that the stomatognathic system plays an important role not only in oral function, but also in broader systemic and neurological health. Recent scientific evidence increasingly supports the relevance of mastication, occlusion, and oral function in relation to brain health, cognitive function, and quality of life.

Keywords: neuro-occlusal rehabilitation, neuroscience, central nervous system, stomatognathic system.

In the 1950s, Dr. Pedro Planas created his treatment protocol and named it Neuro-Occlusal Rehabilitation [1]. The first reaction of many dentists, mainly orthodontists, was to consider it completely nonsensical. How could neuro-occlusal rehabilitation be possible, they asked, if there are no nerve endings in tooth enamel? Planas replied that he knew this very well, but that changes in occlusion, jaw motion, and mastication could change the way the central nervous system (CNS) works. In addition, an improved force vector resulting from chewing could improve the morphology of the mouth and, in a moto continuo way, contribute to better CNS function.

His treatment protocol consists of changing the mandibular position to a more physiological position and allowing, as well as stimulating, physiological mandibular movement. This is achieved by adjusting the occlusion through removal, such as selective grinding, or apposition, such as Planas Direct Tracks (PDT), or by using functional orthopedic appliances developed by him, known as Planas Indirect Tracks (PIT). These methods stimulate the stomatognathic system (SS) in a manner very similar to adjustments made directly on the occlusal surface.

Clinical results stemming from the application of his treatment protocol have been reported worldwide since that time, mainly in populations of Latin origin, including Mexico, where the first publication of his book appeared, as well as Venezuela, Brazil, Spain, Portugal, and other countries. His treatment protocol was embraced mainly by clinicians who were more focused on clinical results and improvement in patient quality of life than on producing statistical data.

About 25 to 30 years ago, around the turn of the millennium, his status began to change. There is an important and revealing fact about training in dentistry and medicine: the medical doctor studies a body without a stomatognathic system, and the dentist studies a stomatognathic system without a body. To connect them, studies began to report the influence of the SS on systemic diseases, identifying correlations between the SS and cirrhosis, diabetes, sepsis, arthritis, and atherosclerosis [2]. Other studies, such as Nakamura et al. [3], reported correlations between oral dysfunctions and cognitive impairment and dementia. In addition, evidence has shown that the oral cavity is related to nervous system diseases, and that oral problems have a bidirectional correlation with cognitive dysfunction. Poor oral condition is a risk factor for cognitive dysfunction; in turn, poor cognition may aggravate the deterioration of oral function [4].

The term oral fragility was introduced by Japan's Ministry of Health, Labour and Welfare in 2013 to emphasize the role of oral function in overall health. Evidence suggests that oral fragility significantly increases the risk of frailty, sarcopenia, disability, and death in older adults, and that it is also associated with cognitive impairment [3].

Krishnamoorthy et al. [5] showed how mastication activates several cortical areas in the brain and how the increase in oxygenation of cerebral blood in the hippocampus and prefrontal cortex

may enhance learning and memory processes.

There is a clinical fact that functional orthopedists around the world know well: after correction of malocclusion with Jaw Functional Orthopedics (JFO), the school performance of patients often improves. For a long time, it was believed that this improvement in school performance after malocclusion treatment with JFO was due to an increase in the size of the upper airways through maxillary and mandibular expansion, mandibular advancement, and related procedures, allowing for greater airflow and better oxygenation of the brain. The airway space enhancement theory has not been fully proved and may indeed occur; however, based on the evidence suggesting improved CNS function through better SS conditions, it is reasonable to consider that correction of malocclusion, together with maintenance of good occlusion and oral health, may contribute to long-term neurological health.

According to Jou [6], dental deafferentation, such as tooth loss, local and generalized periodontal detachment, improper operative or prosthetic restorations, and malocclusion resulting in impaired mastication, should be avoided. The sooner mastication is corrected, the less effect and suffering the brain may experience. If impaired mastication continues into adulthood and old age, it may contribute to the onset or aggravation of dementia or Alzheimer's disease.

Therefore, the so-called madman was transformed into one of the greatest geniuses dentistry has ever seen. One question is still, and always has been, in my mind: did Planas somehow know all the implications of impaired mastication on the CNS and simply not tell the general public, or did he know only that correcting malocclusion as early as possible would make the brain thankful? What really matters is that the master Pedro Planas was ahead of his time and changed the way the stomatognathic system has to be viewed.

References

[1] P. Planas, *Genesis of neuro-occlusal rehabilitation*. Mexico City, Mexico: Ed. San Luis, 1972.

[2] L. Gao, T. Xu, G. Huang, S. Jiang, Y. Gu, and F. Chen, "Oral microbiomes: more and more importance in oral cavity and whole body," *Protein and Cell*, Vol. 9, No. 5, pp. 488–500, 2018, https://doi.org/10.1007/s13238-018-0548-1

[3] T. Nakamura, K. Zou, Y. Shibuya, and M. Michikawa, "Oral dysfunctions and cognitive impairment/dementia," *Journal of Neuroscience Research*, Vol. 99, No. 2, pp. 518–528, 2020, https://doi.org/10.1002/jnr.24745

[4] B. Daly et al., "Evidence summary: the relationship between oral health and dementia," *British Dental Journal*, Vol. 223, No. 11, pp. 846–853, 2017, https://doi.org/10.1038/sj.bdj.2017.992

[5] G. Krishnamoorthy, A. I. Narayana, and D. Balkrishanan, "Mastication as a tool to prevent cognitive dysfunctions," *Japanese Dental Science Review*, Vol. 54, No. 4, pp. 169–173, 2018, https://doi.org/10.1016/j.jdsr.2018.06.001

[6] Y.-T. Jou, "Dental deafferentation and brain damage: a review and a hypothesis," *The Kaohsiung Journal of Medical Sciences*, Vol. 34, No. 4, pp. 231–237, 2018, https://doi.org/10.1016/j.kjms.2018.01.013

Orlando Santiago Júnior has a Ph.D. in Mechanical Engineering from the Department of Mechanical Engineering, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil. He graduated in Dentistry in 1985 at Universidade Federal de Minas Gerais. He is a specialist in Jaw Functional Orthopedics, temporomandibular disorders, and orofacial pain, and holds master's degrees in Pathophysiology and Orthodontics. He currently works in private dental practice and is an Associate Professor at the School of Dentistry at Unicentro Arnaldo Jansen and the School of Dentistry at Unicentro Promove, Belo Horizonte, MG, Brazil. His research interests include Jaw Functional Orthopedics, temporomandibular disorders, dental occlusion and bite force measurement, bioengineering, and nanomaterials.