



46th Meeting of the Continental European Division  
of the International Association for Dental Research  
with the Scandinavian Division (NOF)

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pulpal anesthesia as well as total anesthetic efficacy declined. Shortest time of anesthesia and lowest anesthetic efficacy was seen for the solution without epinephrine (all  $p < 0.002$ ) which gave sufficient pain relieve in 50% of cases only. No associations between the local anesthetic drug and cardiovascular parameters were seen. Soft tissue anesthesia was significant shorter when using no epinephrine ( $p < 0.001$ ).

#### Conclusion:

In this study, the substantial benefit of the vasoconstrictor in dental infiltration anesthesia by means of prolongation and deeper therapeutic deafness in a dose dependent manner could be proven. Though, even when using epinephrine-reduced agents, a safe anesthesia was possible. The use of the solution without epinephrine resulted in a distinct limitation of utilization time and efficacy.

447 (179981 )

**From Periodontal Mechanoreceptors To Chewing Motor Control** [M.G. PIANCINO](#)<sup>1</sup>, G. ISOLA<sup>2</sup>, G. FRONGIA<sup>1</sup>, D. DALESSANDRI<sup>3</sup>, P. BRACCO<sup>4</sup>, and G.P. ANASTASI<sup>5</sup>, <sup>1</sup>Orthodontics and Gnathology, University of Turin Italy, Torino, Italy, <sup>2</sup>Orthodontics and Gnathology, University of Turin, Messina, Italy, <sup>3</sup>Department of Orthodontics, University of Brescia, Gorle (BG), Italy, <sup>4</sup>Orthodontics and Gnathology, University of Turin, Turin, Italy, <sup>5</sup>Biomorfology and Biotechnologies, University of Messina Italy, Messina, Italy

**Objective:** the objective of this critical review is to summarize and update our current knowledge of the structural and functional features of periodontal mechanoreceptors and our understanding of their role in the chewing motor control.

**Methods:** the procedures for electronic searching yielded 580 initial citations. After evaluation, 30 studies were selected. The articles included in the review regarded four types of studies: electrophysiological, biomolecular, critical reviews, and clinical research.

**Results:** the results updated:

- the knowledge of the ultrastructural features and mechanotransduction characteristics of the periodontal mechanoreceptors (Iizuka et al. 2009, Rahman et al. 2011; Homna et al. 2012; Chen and Wong 2013)



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- the adaptation of periodontal mechanoreceptors, during development, to occlusion and load (Umemura et al. 2010)
- the role of the sensory feedback arising from periodontal mechanoreceptors on the chewing motor control and on the rhythmogenic properties of the central pattern generator, with particular reference to the power phase of closure (Morquette et al. 2012)
- the chewing pattern of patients with unilateral posterior crossbite malocclusion during chewing hard and soft boluses (Piancino MG et al 2006, 2009, 2012).

**Conclusion:** the updated knowledge of the neural network starting from the periodontal mechanoreceptor transduction through the chewing motor control is important for improving our understanding of the functional aspects of occlusion and malocclusions. A deeper understanding of these phenomena, will give answers to clinically important problems and encourage better therapies.

448 (180203 )

**PREVALENCE OF NEUROMUSCULAR AND CRANIOMANDIBULAR DISORDERS IN NAVY SCUBA DIVERS** [U. GARAGIOLA](#)<sup>1</sup>, G. RUFFINO<sup>2</sup>, R. SOLDO<sup>1</sup>, and G. FARRONATO<sup>1</sup>, <sup>1</sup>Dental and Surgical Biomedical Sciences Department, Dental and Stomatologic Clinic, Orthodontics and Gnathology Department, University of Milan, IRCCS Fondazione Ospedale Maggiore Policlinico, Milano, Italy, <sup>2</sup>COMSUBIN, La Spezia, Italy

Objective:

Scuba divers deal with an extreme psychophysical effort during their activities showing neuromuscular, postural and cranio mandibular disorders. The aim is to determine the prevalence of temporomandibular disorders and the neuromuscular system variations in scuba divers of the Italian Navy with commercial (CM) and personalized mouthpiece (PM), and to identify the risk factors for the development of TMD signs and symptoms before and after diving.

Method:

40 males (23-30 years) undergone to neuromuscular tests, spirometric and postural exams before and after diving, MRI and CBCT exams too.

Results: