

# Dentistry & Oral Care

April 18-20, 2016 Dubai, UAE

## Effect of natural mediotrusive contact on electromyographic activity of jaw and cervical muscles during chewing

Aler D Fuentes<sup>1</sup>, Rodolfo Miralles<sup>1</sup>, Hugo Santander<sup>1</sup>, Mario F Gutiérrez<sup>1</sup>, Ricardo Bull<sup>1</sup> and Conchita Martin<sup>2</sup>

<sup>1</sup>University of Chile, Chile

<sup>2</sup>Complutense University of Madrid, Spain

**Background & Aim:** The effect of a mediotrusive occlusal contact on muscular activity has been a topic of debate for decades and its clinical relevance is still unclear. The aim of this study was to analyze the EMG activity of the anterior temporalis (AT) and sternocleidomastoid (SCM) muscles during chewing in healthy subjects with or without a natural mediotrusive occlusal contact.

**Materials & Methods:** The sample included two groups of 15 subjects each (Group 1: with natural mediotrusive contact; Group 2: without natural mediotrusive contact). Bilateral surface EMG activity was recorded on AT and SCM muscles during unilateral cookie and apple chewing. AT and SCM muscle activity was normalized against the activity recorded during the maximum isometric contraction for each muscle. The partial and total asymmetry indexes were also calculated.

**Results:** EMG activity between Group 1 and Group 2 showed no significant differences in AT and SCM muscles in both sides, during cookie and apple chewing. EMG activity from AT muscle between both sides in Group 1 and Group 2 during both chewing tasks showed no significant difference. The comparison of EMG activity from SCM muscle between both sides in Group 1 showed no significant difference. For Group 2, a higher EMG activity was found on the working side during both chewing tasks. For asymmetry indices, comparisons between groups during both chewing tasks showed no significant difference.

**Conclusion:** The similar EMG pattern and asymmetry indexes observed suggest the predominance of central nervous control over peripheral inputs on anterior temporalis and sternocleidomastoid motor neuron pools.

### Biography

Aler D Fuentes received his DDS degree in 2006 from University of Talca, Chile and his Master's degree in Dental Sciences from the University of Chile in 2012. He is an Assistant Professor at the Institute for Research in Dental Sciences, University of Chile. He is currently a staff member at the Oral Physiology Laboratory, Biomedical Sciences Institute, University of Chile. He is studying for a PhD in Dental Sciences from the Complutense University of Madrid, Spain. He is author of international research papers on dental occlusion and electromyographic assessments of jaw movement.

[aler.fuentes@odontologia.uchile.cl](mailto:aler.fuentes@odontologia.uchile.cl)

### Notes: