Electromyographic Comparison of Lips and Jaw Muscles between Children With Competent and Incompetent Lips: A Cross Sectional Study

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Abstract

Objective: This cross-sectional study evaluates the electromyographic (EMG) activity of lips and anterior temporalis muscles of children with competent or incompetent lips. Study design: Forty children were classified clinically according to their lip competence into two groups of 20 each: 1) competent lips group (CLG), and 2) incompetent lips group (ILG). Surface EMG activity of the superior orbicularis oris (SOO), inferior orbicularis oris (IOO), and anterior temporalis (AT) muscles was recorded with the children seated in the upright position during the following tasks: 1) at rest; 2) speaking; 3) swallowing; 4) puffing out the cheeks. Results: ILG showed lower EMG activity than CLG in the SOO and IOO muscles at rest, similar activity in both muscles during speaking, similar activity in the SOO muscle and lower in the IOO during swallowing. ILG showed significantly higher activity than CLG in both muscles while puffing out the cheeks. In the AT muscle, ILG showed lower activity than CLG at rest, during speaking and swallowing, whereas activity was similar while puffing out the cheeks. Conclusion: The difference in EMG activity recorded in children with incompetent lips and with competent lips suggests that the status of their musculature could affect the position and stability of their upper/lower anterior teeth.

Keywords

Author Keywords: Anterior temporalis muscle; competent/incompetent lips; electromyography; orbicularis oris muscles
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