

Electromyographic activity evaluation and comparison of the orbicularis oris (lower fascicle) and mentalis muscles in predominantly nose- or mouth-breathing subjects.

[Dutra EH](#), [Maruo H](#), [Vianna-Lara MS](#).

Pontifical Catholic University of Paraná, Curitiba, Brazil. dutra@u.washington.edu

INTRODUCTION: The objective of this study was to evaluate and compare the electromyographic (EMG) activity of the orbicularis oris--lower fascicle (LOO) muscle and the mentalis muscle (MT)--in predominantly nose-breathing (PNB) and mouth-breathing (PMB) subjects. **METHODS:** Thirty-four subjects, 22 PNB and 12 PMB, with Class II Division 1 malocclusions were evaluated in 2001 (T1) and again in 2004 (T2), 2 years 5 months later. The age ranges of the sample were 11 years to 14 years 11 months at T1, and 13 years 4 months to 16 years 6 months at T2. EMG activity was recorded with bipolar surface electrodes at rest and during 12 movements; data were processed and normalized by the EMG highest value. The Student t test and the Mann-Whitney nonparametric test were used to compare the mean values and the variables between the observation times.

RESULTS: Greater EMG activity of the MT was observed in the PMB group at rest and swallowing at T1 and T2. At T2, increased EMG activity of the LOO at blowing and pronunciation of the phoneme \b\ was observed as well as a greater increment of EMG activity of this muscle at blowing, pronunciation of the phoneme \m\, and chewing in the PMB group. In addition, greater EMG activity of the MT at chewing in the PMB group was observed at T2. **CONCLUSIONS:** These results suggest that mouth breathing influences EMG activity of the LOO and MT muscles.

PMID: 16769489 [PubMed - indexed for MEDLINE]