

[J Orthod](#). 2002 Dec;29(4):307-13; discussion 279.



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## **Breathing modes, body positions, and suprahyoid muscle activity.**

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**AIM:** To determine (1) how electromyographic activities of the genioglossus and geniohyoid muscles can be differentiated, and (2) whether changes in breathing modes and body positions have effects on the genioglossus and geniohyoid muscle activities.

**METHOD:** Ten normal subjects participated in the study. Electromyographic activities of both the genioglossus and geniohyoid muscles were recorded during nasal and oral breathing, while the subject was in the upright and supine positions. The electromyographic activities of the genioglossus and geniohyoid muscles were compared during jaw opening, swallowing, mandibular advancement, and tongue protrusion. **RESULTS:** The geniohyoid muscle showed greater electromyographic activity than the genioglossus muscle during maximal jaw opening. In addition, the geniohyoid muscle showed a shorter ( $P < 0.05$ ) latency compared with the genioglossus muscle. Moreover, the genioglossus muscle activity showed a significant difference among different breathing modes and body positions, while there were no significant differences in the geniohyoid muscle activity. **CONCLUSION:** Electromyographic activities from the genioglossus and geniohyoid muscles are successfully differentiated. In addition, it appears that changes in the breathing mode and body position significantly affect the genioglossus muscle activity, but do not affect the geniohyoid muscle activity.

PMID: 12444272 [PubMed - indexed for MEDLINE]