

AAO Foundation Award Final Report

Principal Investigator	Eung-Kwon Pae DDS MS PhD
Co-Investigator	
Secondary Investigators	
Award Type	Biological Research Category 4
Project Title	Gender differences in genioglossus muscle response to the change in pharyngeal patency
Project Year	1999
Institution	U. of Connecticut Health Center
Summary/Abstract (250 word maximum)	The genioglossus (GG) muscle's response to partial oropharyngeal occlusion was studied in age-matched, healthy awake men (n = 16) and women (n = 15). A miniature balloon was placed in the retroglossal pharynx, and the GG's electromyographic (EMG) reflexive response was evaluated in different body postures. We assumed that inflating the pharyngeal balloon and changing the body posture from upright to supine would increase pharyngeal airway resistance. Our hypothesis was that the change in airway resistance would elicit a different response in the GG muscle depending on sex. Our results showed that GG activity during natural breathing was higher in women than in men. GG EMG activity did not change upon inflation of the balloon in women. In contrast, when the balloon was inflated in the men, the GG's basal activity increased (P < .01) in both the upright and the supine positions. Women appeared to show a higher GG baseline EMG activity during spontaneous breathing at rest, while men were more responsive to the partial occlusion of the pharyngeal airway.
Were the original, specific aims of the	Yes.

<p>proposal realized?</p>	
<p>Were the results published? If not, are there plans to publish? If not, why not?</p>	<p>The results are printed in AJD & DO and Angle Orthod.</p> <p>Sex differences in genioglossus muscle response to changes in pharyngeal resistance. Am J Orthod Dentofacial Orthop. 2002 Nov;122(5):500-5.</p> <p>Heterogeneity in vertical positioning of the hyoid bone in relation to genioglossal activity in men. Angle Orthod. 2004 Jun;74(3):343-8.</p>
<p>Have the results of this proposal been presented? If so, when and where? If not, are there plans to do so? If not, why not?</p>	<p>The results were presented at IADR, in Japan, 2001.</p> <p>Blasius J, Pae E, Nanda R. (2001) Gender differences in genioglossus muscle response to the change in pharyngeal patency. J Dent Res Vol. 80 Special Issue: Abs. # 1299.</p> <p>Pae E, Blasius J, Nanda R. (2001) Role of gender in pharyngeal airway morphology in relation to genioglossal muscle activity. J Dent Res Vol. 80, Special Issue: Abs. # 1298.</p>

