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***Effects of greater palatine nerve anesthesia on the activity of
hyoid musculature during swallowing***

College of Sciences and Health Professions

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Abstract

Feeding is an important activity for all animals. An expansive array of sensory provide information to the brain about food handling during feeding. The brain then coordinates muscles to push the bolus into the esophagus, bypassing the airway. Previous work shows considerable coordination among sensor arrays and the nerves supplying them. Therefore it is likely that anesthetizing part of the oral cavity (in this case, the tissue covering the hard palate) will cause changes in the timing of muscles that are active during swallowing, even though these muscles are supplied by completely different nerves. We examined the timing of the mylohyoid (floor of the mouth) and thyrohyoid (a muscle that contracts during swallowing) via electromyography in three infant pigs while they drank milk from a bottle. Control data, with all sensory systems intact, were collected first, and then the tissue covering the hard palate was anesthetized. We used the electrical activity of the muscles to determine the timing of their contractions. We are still analyzing our data, but we expect to find that the muscles contract for longer periods of time, reflecting a more forceful push on the milk in the absence of sensory information to provide negative feedback.