**Orofacial Muscle Tone** 

in Younger and Older Normal Speakers

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## ABSTRACT

Abnormalities in orofacial muscle tone as a result of neuromuscular pathology may contribute to dysarthric speech. Instruments that quantify tissue stiffness could help standardize the assessment of orofacial muscle tone. Age-related changes in muscle and connective tissue also may influence tissue resistance. In the current study, the Myoton-3 was used to measure tissue stiffness in 24 healthy adults, with equal numbers of men and women in each of two age groups, 18-40 years and 60+ years. Data were collected from masseter, cheek, and lateral tongue surfaces in two positions: reclined sidelying and seated upright with head tilted. Results indicate differences in tissue resistance (as measured by stiffness and oscillation frequency of acceleration) across age, sex, and measurement site with multiple interaction effects. Older subjects exhibited higher stiffness and frequency measures than younger subjects, and sex differences varied by tissue site. Although older subjects were expected to have lower muscle tone and thinner muscle tissue due to sarcopenia, effects of fibrosis, lipomatosis, and amyoloidosis may have contributed to yield a net effect of higher stiffness in aged tissue. These data raise several considerations for the development of accurate normative data and for future diagnostic applications of tissue stiffness assessment.