

Straws, Lip Strength and Sip Sizes in Two Age Groups

Smith P

Bloomsburg University, Bloomsburg, USA

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Abstract

Purposes: Introduction: Speech-language therapists (SLTs) may vary verbal directions and straw types to modify bolus volumes and aid in bolus control. This study observed the effects of verbal instructions and different straw widths and lengths on sip size between two age groups while taking lip strength measures during straw drinking. Recent research has examined tongue strength and its role on the aging swallow but there are limited data about lip strength.

Methods: Forty-five typical healthy adults from two age groups (20 older (60-85), 25 younger (20-39)) participated in this study. Each participant took "normal" or "small" sips of room temperature water from 30 mL cups through four different straw types (long normal, short normal, long narrow, short narrow). Sip volumes were calculated by subtracting the residual amount from the original 30 ml. Maximum lip pressure was measured before sip size trials and direct lip pressure was measured using the Iowa Oral Performance Instrument (IOPI) during straw drinking trials. Data analyses included MANOVA and follow-up ANOVAs.

Results: There were no differences in maximum isolated lip pressure by age or biological sex. During straw drinking, older adults used less (31.6%) of their maximum lip pressure and took overall larger sips than did younger adults, who used more (44.7%) of their maximum, an unexpected finding. For typical length straws, there were no correlations between lip pressure measures and sip size. Clinically important, narrow straws reduced sip size, but not to the extent of a "small sip" directive.

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