

Valentina Mocchetti, MS, CCC-SLP^{1,3}; Reva Barewal, DDS, MS, Dipl ABDSM²; James Curtis, PhD, CCC-SLP, BCS-S^{1,4}; Anaïs Rameau, MD, MPhil, MS, FACS^{1,3}

¹Sean Parker Institute for the Voice, Department of Otolaryngology-Head & Neck Surgery, Weill Cornell Medicine; ²Department of Pulmonology and Critical Care, Oregon Health and Science University; ³Laryngology Innovations Lab, Department of Otolaryngology-Head & Neck Surgery, Weill Cornell Medicine; ⁴Aerodigestive Innovations Research Lab (AIR), Department of Otolaryngology-Head & Neck Surgery, Weill Cornell Medicine

Background

Transitional foods (TF) are a novel food texture in the International Dysphagia Diet Standardisation Initiative (IDDSI) framework. TF are foods that start as one texture (e.g., firm solid) and change into another texture with moisture or heating.¹⁻² These textures can be easily deformed and could be thought to be more efficiently and safely cleared through the pharynx during swallowing when compared to their original texture.³ However, it is currently unknown if swallowing efficiency and safety differ between TF, puree (IDDSI 4), and regular (IDDSI 7) food textures.

Aims

The primary aim of this study was to compare measures of swallowing efficiency between TF and puree food and between TF and regular food. We hypothesized that TF would exhibit greater swallowing efficiency (fewer swallows and less amount of residue) when compared to regular food, but that no differences would be present when comparing TF to puree food.

As a secondary aim, we compared swallowing safety between TF and puree food, and between TF and regular foods. We hypothesized that there would be no difference in measures of swallowing safety given suspected limited penetration/aspiration with these food textures.

Methods

- This is a retrospective study of consecutive patients seen for a FEES at a university medical center, outpatient otolaryngologist clinic.
- All FEES were completed by a speech-language pathologist during a joint interdisciplinary evaluation with a fellowship-trained laryngologist.
- FEES were included for retrospective analysis if a minimum of one trial each of puree (Mott's applesauce), TF (Savorease™ crisp), regular (Nabisco graham cracker) foods were presented.
- FEES were blindly analyzed using Visual Analysis of Swallowing Efficiency and Safety (VASES). Measures for swallowing efficiency included: number of swallows and amount of oropharyngeal, hypopharyngeal, and epiglottic residue. The measure for swallowing safety included the Penetration-Aspiration Scale (PAS).
- A total of 41 FEES were analyzed across 39 patients who had an average age of 74, a range of medical diagnoses, and a range of Functional Oral Intake Scale (FOIS) scores (2-7).
- 219 trials were analyzed including 75 puree food trials, 78 transitional food trials, and 66 regular food trials.

Transitional food texture exhibited greater swallowing efficiency when compared to puree and regular food textures in this retrospective analysis of dysphagic patients undergoing FEES

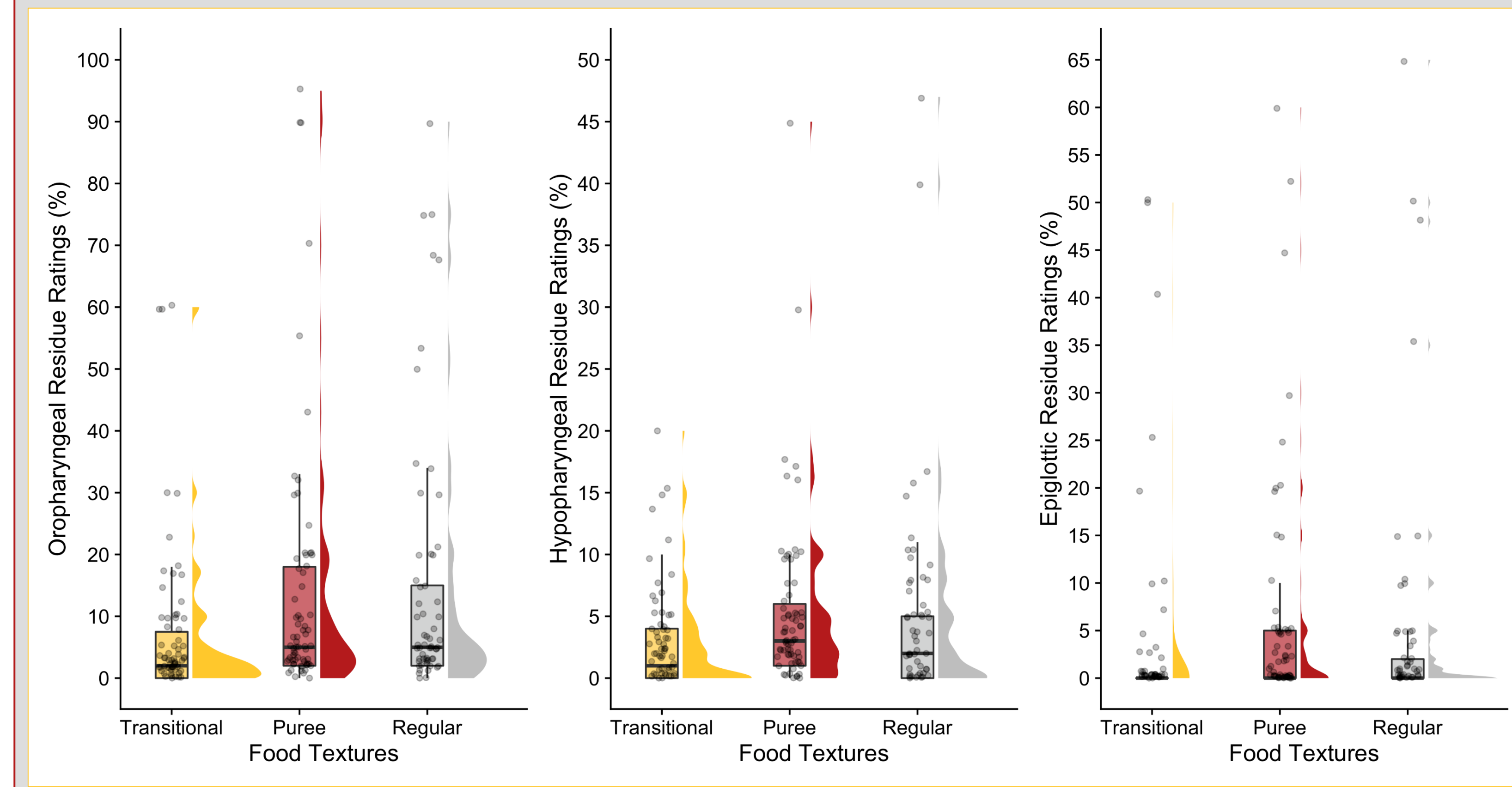


Figure 1: Oropharyngeal, hypopharyngeal, and epiglottic residue ratings (%) across TF, puree and regular texture

Results

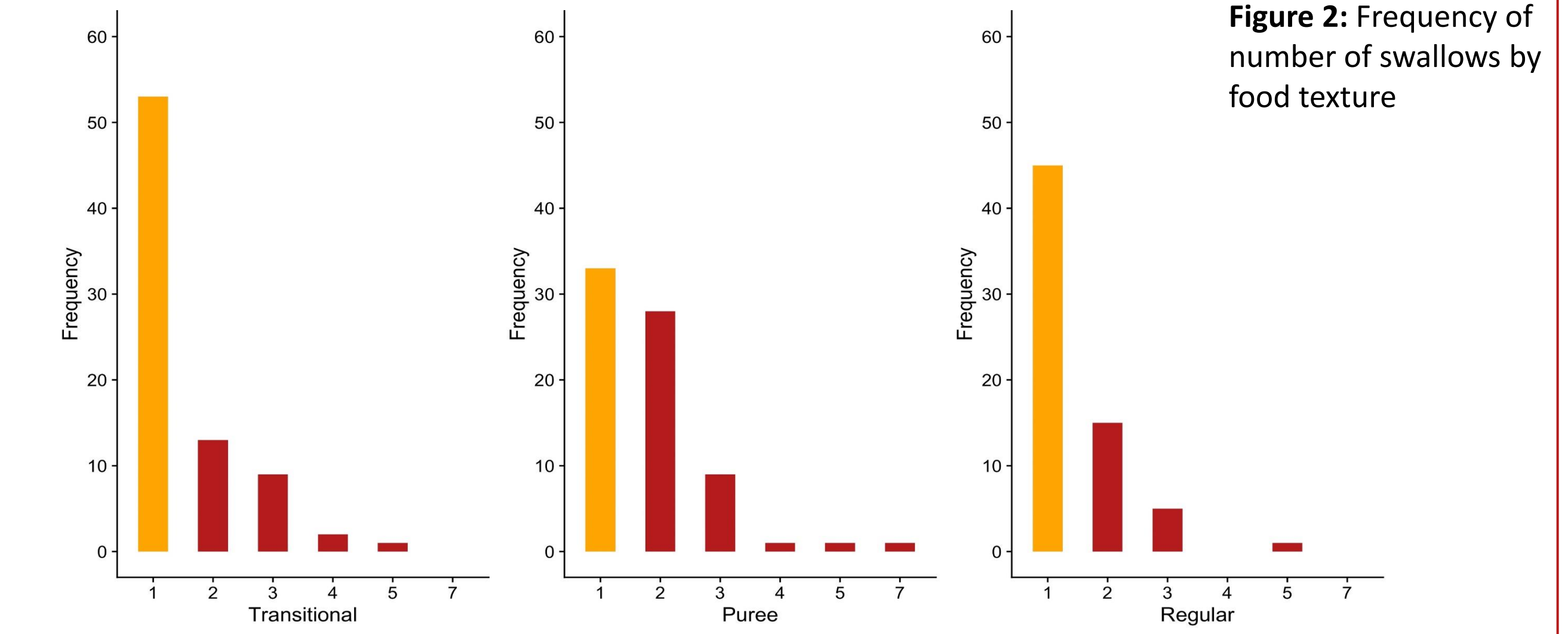


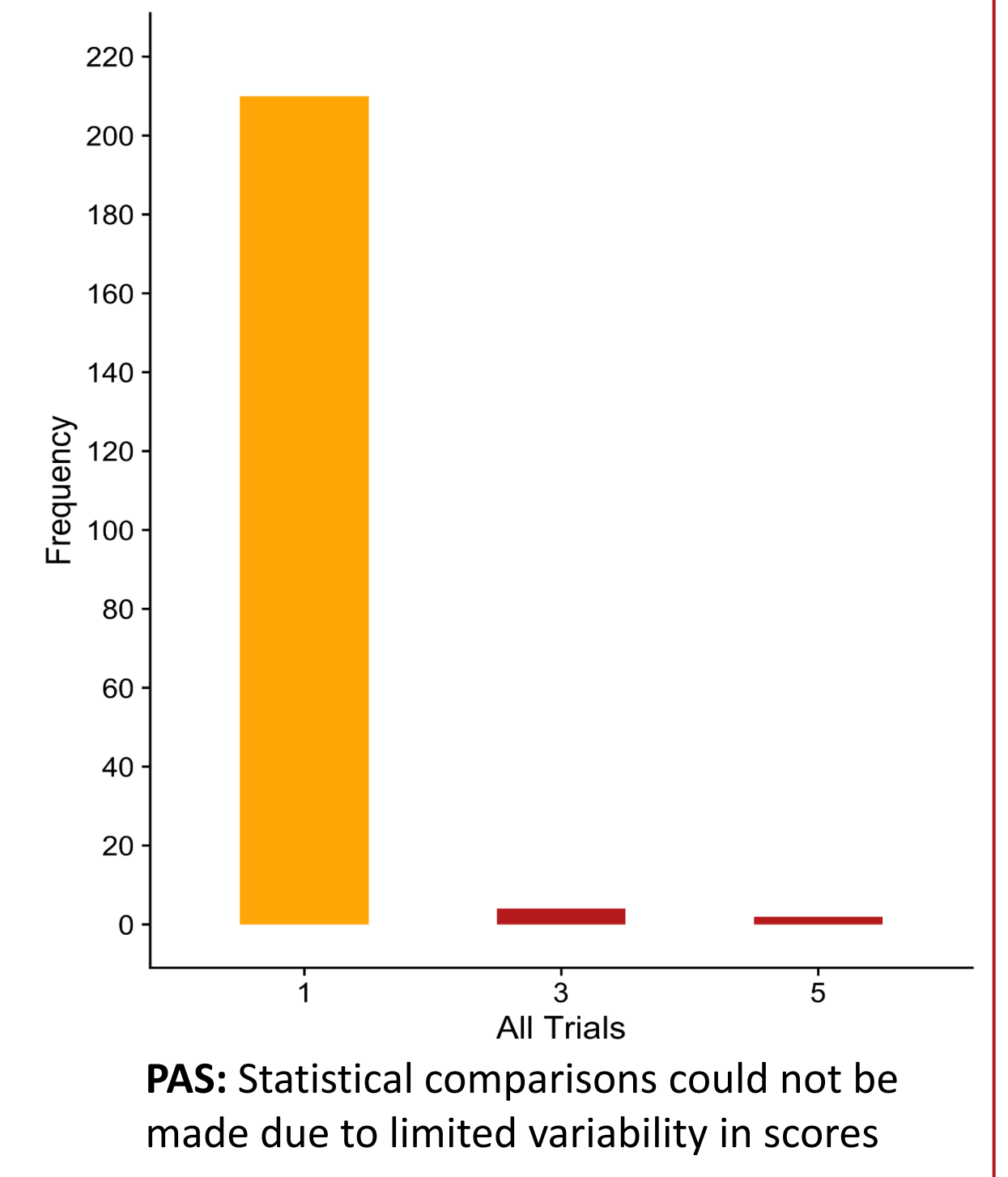
Figure 2: Frequency of number of swallows by food texture

Number of Swallows			
Predictors	Estimates	CI	p
Puree	2.6	1.24 – 5.43	0.011
Regular	0.67	0.30 – 1.48	0.319

Oropharyngeal Residue			
Predictors	Estimates	CI	p
Puree	2.3	1.70 – 3.12	<0.001
Regular	2.25	1.66 – 3.06	<0.001

Hypopharyngeal Residue			
Predictors	Estimates	CI	p
Puree	2.37	1.75 – 3.21	<0.001
Regular	1.29	0.94 – 1.77	0.115

Epiglottic Residue			
Predictors	Estimates	CI	p
Puree	1.62	1.17 – 2.25	0.004
Regular	1.43	1.02 – 2.00	0.039



PAS: Statistical comparisons could not be made due to limited variability in scores

Table 1: Measures of swallowing efficiency across trials, with TF as the reference group

Conclusions

- Primary aim:** Results from this study supported our initial hypothesis that a TF texture has more optimal swallowing efficiency outcome compared to a solid texture. Contrary to our initial hypothesis, TF texture exhibited greater swallowing efficiency when compared to puree texture.
- Secondary aim:** Results from this study supported our initial hypothesis that there are no differences in measures of swallowing safety.
- Clinical relevance:** TF may be beneficial as part of an adult outpatient FEES protocol when considering diet texture recommendations and therapeutic planning.
- Future research** should compare other puree and solid food textures to other types of TF and explore the interaction between food textures and other oral preparatory factors (e.g., xerostomia, dentition) on measures of swallowing efficiency and safety.



Contact
 Anaïs Rameau, MD, MPhil, MS, FACS
 Sean Parker Institute for the Voice
 Weill Cornell Medicine
 Email: anr2783@med.cornell.edu

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