

## Summary of Scientific Article

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|------------------------------|---|-----------------------|----------------------------|
| <b>Title of Article:</b>     | The Effect of Appearance on the Palatability of Thickened Apple Juice A Pilot Study   |                       |                            |
| <b>Reference:</b>            | Goldberg LR, Heiss CJ: <b>The Effect of Appearance on the Palatability of Thickened Apple Juice A Pilot Study.</b> <i>Top Clin Nutr</i> 2013 28:154-162.  |                       |                            |
| <b>Origin (Country):</b>     | USA   | <b>Type of Study:</b> | Blinded Sensory Evaluation |
| <b>Publication Date:</b>     | April-June 2013   | <b>Sample:</b>        | 15 F graduate students     |
| <b>Financing:</b>            | University grant  | <b>Age Group:</b>     | 22-26 yrs                  |
| <b>Key Message:</b>          | <i>"Taste was the primary determinant of palatability for starch based agents, regardless of appearance. For gum based thickeners taste was the primary determinant of palatability when juice was not visible, but texture was the primary determinant of palatability when juice was visible"</i>   |                       |                            |
| <b>Summary:</b>              | <p><b>Purpose:</b></p> <ul style="list-style-type: none"> <li>Determine the effect of taste &amp; texture on palatability of masked vs. unmasked nectar thick apple juice using 2 starch based &amp; 2 gum based thickeners</li> </ul> <p><b>Methods:</b></p> <ul style="list-style-type: none"> <li>Thick It &amp; Thick &amp; Easy (starch); Hydra-Aid &amp; Simply Thick (gum) were whisked into 120 ml samples of apple juice according to manufacturers' directions for volume of thickener (nectar consistency), mixing &amp; standing times.</li> <li>Samples served at room temperature in 30 ml volumes.</li> <li>Panelists rated taste, texture, overall palatability on a 10 cm visual analog scale of individually, randomly labeled/served samples first with appearance masked and 5 d later with appearance unmasked. Unsalted crackers and distilled water were used to cleanse palate.</li> <li>Paired 2-tailed t-test comparing taste, texture and overall palatability of each thickener were done.</li> <li>Regression analysis for effect of appearance on overall palatability was tested, and multiple regression analysis for effect of taste &amp; texture on overall palatability.</li> </ul> <p><b>Conclusion:</b></p> <ul style="list-style-type: none"> <li><b>Masked vs. unmasked mean ratings t-test (all thickeners):</b> mean ratings for taste, texture, &amp; palatability higher for masked juices overall for all thickeners except Hydra-Aid (unmasked ratings higher). Significant differences btw masked vs. unmasked for taste (Thick It-higher masked) and palatability (Hydra-Aid-higher unmasked).</li> <li><b>Starch based thickeners:</b> taste had a greater role in overall palatability over texture (both when juice masked vs. unmasked)</li> <li><b>Gum based thickeners:</b> taste had greater role in overall palatability over texture when juice was masked; texture had a greater role in overall palatability when juice was visible. Gum thickened liquids may result in a less viscous and thus more appealing product than starch thickened liquids.</li> <li>When juice was masked, taste played a greater role in palatability regardless of thickener used. When juice was unmasked taste remained important for starch thickened juices but texture became more important for gum thickened juices.</li> </ul> |                       |                            |
| <b>Limitations of Study:</b> | <ul style="list-style-type: none"> <li>Small sample volume did not allow multiple evaluations of each thickened beverage.</li> <li>Beverage evaluated at room temperature, colder beverages may yield different results for taste and texture detection.</li> <li>Consistencies of each sample may not reflect nectar consistency as manufacturer's guidelines were followed resulting in the use of various volumes of thickener, mixing times, and holding times for each sample. These consistencies might be different from the OPDQ consistency guidelines.</li> <li>Relatively small sample size of healthy young individuals which may not reflect average patient receiving thickened liquids.</li> <li>Consistency was not measured.</li> </ul>  |                       |                            |
| <b>Comments:</b>             | <ul style="list-style-type: none"> <li>Options regarding how thickened beverages are served to patients, whether in opaque or clear glassware, should be considered. This may have a result on overall acceptance of thickened beverages and impact on hydration &amp; energy intake.</li> </ul>  |                       |                            |
| <b>Prepared by:</b>          | Heidi Ritter  | <b>Date:</b>          | July 5, 2013               |