investigate these and other bioactive compounds from regeneratively-grown crops.

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OR21-02-25 Oral Rehydration Solutions Improve Measures of Hydration Over a 4hr Period in Healthy Men and Women

Michael Lelko [1], Richard Bloomer [2], Jacquelyn Pence [2], Allyson Davis [2], Ebonie Allen [2], Amr Mohamed [2], Sai Chaluvadi [1], Evan Berk [3], Dana Ryan [1]

[1] *Liquid I.V., United States*
[2] *University of Memphis, United States*
[3] *Unilever, United States*

Objectives: Oral rehydration solutions (ORS) are effective in improving hydration status in healthy individuals, across a wide variety of activities including exercise/physical work, travel & heat exposure. While traditional ORS relies on sugar to accelerate hydration, other ingredients may also be able to provide a similar effect. Allulose is a naturally occurring, rare digestible, but not metabolized sugar with a structure similar to fructose & could help with hydration. We compared the hydrating effects of two commercial ORS, one sugar-sweetened (ORS) & one novel allulose-sweetened (SF-ORS), & a novel non-commercial allulose-sweetened ORS (SF-ORS*). We hypothesized that the Beverage Hydration Index (BHI) & net fluid balance for all ORS would be higher after 4hrs than water.

Methods: 28 healthy euhydrated subjects (9M/19F) between 20-45 years of age were recruited to determine the BHI & additional variables related to hydration status following the intake of three ORS or water. Subjects reported to the lab on four different days, separated by approximately one week. Each day, they consumed 1L of the following four beverages, using a randomized, single-blind, cross-over design: Water (W), sugar-sweetened ORS (ORS), allulose-sweetened ORS (SF-ORS), or non-commercial allulose-sweetened ORS (SF-ORS*). Urine was collected at the end of hours 1-4 post intake. Cumulative urine mass was measured. Fluid balance & BHI were calculated.

Results: At the 4hr timepoint, all ORS performed better than W. After 4hrs, W exhibited significantly greater cumulative urine mass when compared to ORS ($p=0.004$); SF-ORS ($p< 0.0001$); & SF-ORS* ($p< 0.0001$). Similar findings were noted for net fluid balance, with all ORS significantly outperforming W after 4hrs: for ORS ($p=0.004$); SF-ORS ($p< 0.0001$); and SF-ORS* ($p< 0.0001$). For BHI, W was also outperformed by ORS ($p=0.028$); SF-ORS ($p=0.02$); and SF-ORS* ($p=0.001$) after 4hrs.

Conclusions: All ORS resulted in improved hydration status as compared to W after 4hrs. These data suggest that ORS can prove advantageous for a variety of activities including but not limited to exercise, physical work, travel and heat exposure, where maintaining optimal fluid balance is key. The use of a novel allulose-sweetened ORS could be of improved utility, especially for those individuals who are conscious of sugar intake.

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OR21-03-25 Ultra-Processed Foods Are Not All Alike: A Novel, Objective Approach to Differentiate Among Processed Foods Including Those Classified As NOVA 4

Richard Black [1], Silvia Berciano [1], Shazia Sathar [1], Shavawn Forester [2], Emily Reyes [2], Zhaoping Li [3], Britt Burton-Freeman [4], Adam Drewnowski [5]

[1] *WISEcode, United States*
[2] *Nutrient Institute, United States*
[3] *University of California, Los Angeles, United States*
[4] *Illinois Institute of Technology, United States*
[5] *University of Washington, United States*

Objectives: Develop the WISEcode UPF™ (Wc-UPF), a data driven nuanced and objective approach to distinguish among all processed foods. Compare Wc-UPF to NOVA, particularly NOVA 4/ultra-processed, across the dataset and within select grocery categories.

Methods: A database of 100,243 commercial foods (5,041 ingredients) was used. The Wc-UPF score was based on three components (higher = more processed): i) number of processed ingredients, weighted based on processing and health risks; ii) percent energy from added sugars; iii) a penalty for ingredients with significant health concerns. All foods were also classified per NOVA criteria. Also, the distribution of foods based on NOVA classification and Wc-UPF levels were compared in 7 (of the 138) Doordash™ grocery categories (bagels, condiments, dressing, easy heat, ice cream, tortillas & wraps, yogurts), a total of 9,545 foods.

Results: Of the 100,243 commercial foods, 3.3% were classified as NOVA 1, 0.3% as NOVA 2, 1.3% as NOVA 3, and 95.1% as NOVA 4. Five levels emerged from the raw Wc-UPF scores: minimal (0–3), light (4–6), moderate (7–10), ultra (11–15), super-ultra (>15). Combining ultra and super-ultra captured what are commonly referred to as ultra-processed foods. The distribution across the 5 Wc-UPF levels from minimal to super-ultra was somewhat uniform, at 19.6%, 15.6%, 22.5%, 19.7% and 22.6% respectively. Additionally, Wc-UPF scores pointed to a range of processing levels within NOVA 4 ultra-processed: combining ultra and super-ultra levels captured 44.7% of the foods, with minimal, light and moderate levels being 15.7%, 16.4% and 23.2% respectively. Of the 9,545 foods in the 7 Doordash™ grocery categories assessed, all but 18 foods were classified as NOVA 4. However, Wc-UPF levels varied widely between food categories, yogurt having the fewest ultra and super-ultra foods (12.4% of 1,810 products) while ice cream had the highest (71.3% of 4,037 products).

Conclusions: Wc-UPF and the dataset underpinning its development offer a high resolution approach that differentiates among ultra-processed foods, likely having important implications for health. This tool can support research into the health impact of processed foods, assist in product development, and help regulators establish evidence-based policies.

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OR21-04-25 Effects of Food Processing and Nutritional Quality on Energy Intake, Satiety, and Ingestive Behaviors in Young Adults

Alexandra B Larcom [1], Ingrid E Lofgren [1], Kathleen J Melanson [1]