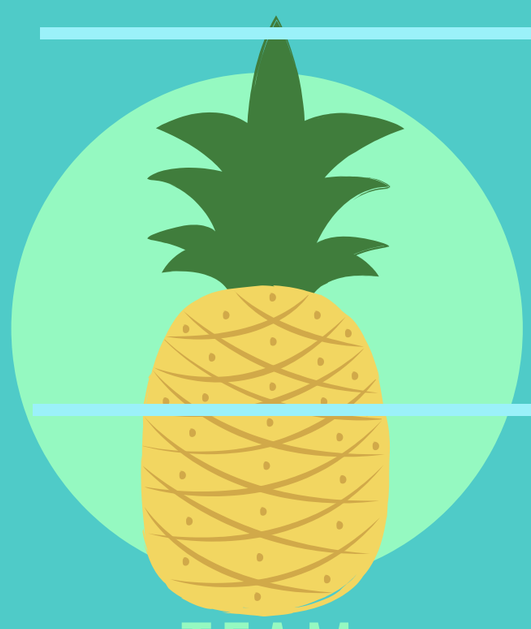
PRELIMINARY RESULTS ON THE USE OF ORAL REHYDRATION SOLUTION IN THE FORM OF GELATO FOR REHYDRATION OF CHILDREN WITH ACUTE GASTROENTERITIS



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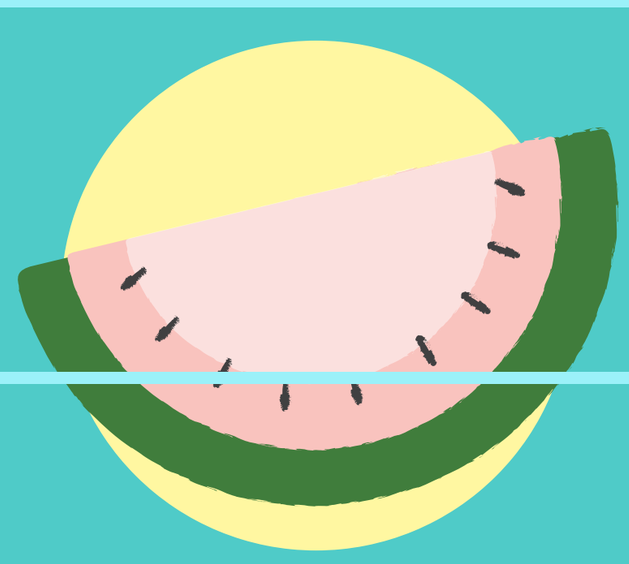
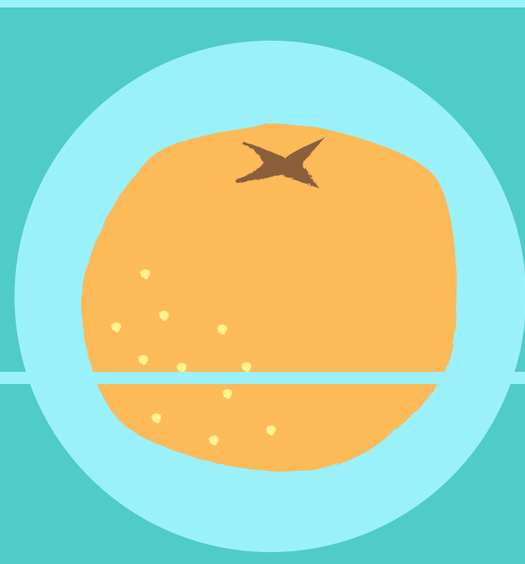


BACKGROUND

Oral rehydration solution (ORS) is used to reverse dehydration. Successful dehydration treatment is to replenish the lost water and electrolytes by consuming ORS, containing both electrolytes and glucose, because sodium and glucose transport in the small intestine are coupled. However, clinical practice show that children refuse ORS due to its salty-sweet taste and unpalatability.



PURPOSE

We hypothesized that freezing ORS containing a fruit/berry juice to a likeable texture in “gelato” form could promote oral rehydration. This form has not previously been trialed for rehydration fluid administration.

RESULTS

36 children (1-15 years old) were enrolled in the study. Fourteen (39%) children did not tolerate any amount, 22 (61%) ate ORS gelato. Seven patients (19.4%) ate ≥10 g/kg/h (ORS consumption rate needed for acute dehydration phase). Mean amount eaten was 4.6 grams per weight kg (SD 5.78 g/kg) - the rate needed for maintenance rehydration.
There is a statistically significant correlation with the willingness to eat the gelato and a reported likeness of taste (Spearman rho value 0.639, p<0.001).

CONCLUSIONS

Our results show that ORS can be successfully administered frozen as gelato. The small sample size is the major limitation of this study. Additional research is needed before we can test ORS gelato in clinical set up.

METHODS AND MATERIALS

Apple and strawberry juice was the base and crystalline NaCl, water and glucose was added to the concentrations recommended by the WHO ORS standard and revised formulas.
All ingredients were pasteurized at 80 oC and cooled to 4 oC in a shock freezer. The gelato made in a Maestro HE. It was kept at -20 oC in a Gelato Coolbox and served at -12oC.
Portions of 200 g were given to children at the Infectiology and Emergency units.
WHO standard recipe: 90 mmol/L Na+, 20 mmol/L K+, 80 mmol/L Cl- and glucose111 mmol/L.
WHO revised formula: 70 mmol/L Na+, 20 mmol/L K+, 60 mmol/L Cl- and glucose 75 mmol/L.

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