

Unexpectedly increased anorexigenic postprandial responses of PYY and GLP-1 to fast ice cream consumption in adult patients with Prader-Willi syndrome.

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Objective: The effect of eating rate on the release of anorexigenic gut peptides in Prader-Willi syndrome (PWS), a neurogenetic disorder clinically characterized by hyperphagia and excessive obesity, has not been investigated so far.

Design and Patients: Postprandial PYY and GLP-1 levels to fast (5 min) and slow (30 min) ice cream consumption were measured in PWS adult patients and age-matched patients with simple obesity and normal-weighted subjects. Visual analog scales (VASs) were used to evaluate the subjective feelings of hunger and satiety.

Results: Fast ice cream consumption stimulated GLP-1 release in normal subjects, a greater increase being observed with slow feeding. Fast or slow feeding did not change circulating levels of GLP-1 in obese patients, while, unexpectedly, fast feeding (but not slow feeding) stimulated GLP-1 release in PWS patients. Plasma PYY concentrations increased in all groups, irrespective of the eating rate. Slow feeding was more effective in stimulating PYY release in normal subjects, while fast feeding was more effective in PWS patients. Slow feeding evoked a lower hunger and higher satiety compared with fast feeding in normal subjects, this finding being not evident in obese patients. Unexpectedly, fast feeding evoked a lower hunger and higher satiety in PWS patients in comparison with slow feeding.

Conclusions: Fast feeding leads to higher concentrations of anorexigenic gut peptides and favours satiety in PWS adult patients, this pattern being not evident in age-matched patients with simple obesity, thus suggesting the existence of a different pathophysiological substrate in these two clinical conditions.

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