

**Post-prandial anorexigenic gut peptide, appetite and glucometabolic responses at different eating rates in obese patients undergoing laparoscopic sleeve gastrectomy.**

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Abstract Although different hypotheses have been proposed, the underlying mechanism(s) of the weight loss induced by laparoscopic sleeve gastrectomy (LSG) is still unknown. The aim of this study was to determine whether eating the same meal at different rates (fast vs. slow feeding) evokes different post-prandial anorexigenic gut peptide responses in ten obese patients undergoing LSG. Circulating levels of GLP-1, PYY, glucose, insulin and triglycerides were measured before and 3 months after LSG. Visual analogue scales were used to evaluate the subjective feelings of hunger and satiety. Irrespective of the operative state, either fast or slow feeding did not stimulate GLP-1 release (vs. 0 min); plasma levels of PYY were increased (vs. 0 min) by fast and slow feeding only after LSG. There were no differences in post-prandial levels of GLP-1 when comparing fast to slow feeding or pre-to-postoperative state. Plasma levels of PYY after fast or slow feeding were higher in post, rather than pre-operative state, with no differences when comparing PYY release after fast and slow feeding. Hunger and satiety were decreased and increased, respectively, (vs. 0 min) by food intake. Fast feeding evoked a higher satiety than slow feeding in both pre- and post-operative states, with no differences in hunger. In both pre- and post-operative states, there were similar responses for hunger and satiety after food intake. Finally, LSG improved insulin resistance after either fast or slow feeding. These (negative) findings would suggest a negligible contribution of the anorexigenic gut peptide responses in LSG-induced weight loss.

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