

# Beta-cell sensitivity to glucose impaired after gastric bypass

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(HealthDay)—Individuals with prior Roux-en-Y gastric bypass (GB)

have blunted  $\beta$ -cell sensitivity to changes in glycemia, according to a study published online Nov. 20 in *Diabetes, Obesity and Metabolism*.

Marzieh Salehi, M.D., from the University of Cincinnati College of Medicine, and colleagues examined  $\beta$ -cell glucose [sensitivity](#) in the absence of meal stimulation and insulinotropic gut factors in 12 subjects without diabetes with prior GB surgery and seven matched non-surgical controls with normal glucose tolerance. During a graded glucose infusion, [blood glucose](#) and insulin secretion rates were measured. Insulin sensitivity ( $S_I$ ) and glucose effectiveness ( $S_G$ ) were determined.

The researchers found that GB subjects and controls had comparable  $S_I$ . During the highest dose of glucose infusion, the GB subjects had relative hyperglycemia associated with significantly reduced  $\beta$ -cell glucose sensitivity throughout both step-up (GB:  $34 \pm 6$  versus control:  $82 \pm 9$   $\text{pmol}\cdot\text{min}^{-1}\cdot\text{mM}^{-1}\cdot\text{L}$ ;  $P < 0.001$ ) and step-down (GB:  $34 \pm 6$  versus control:  $82 \pm 9$   $\text{pmol}\cdot\text{min}^{-1}\cdot\text{mM}^{-1}\cdot\text{L}$ ;  $P < 0.001$ ) glucose infusion. Reduced  $S_G$  was also seen among the GB subjects (GB:  $0.04 \pm 0.00$  versus control:  $0.07 \pm 0.01$   $\text{min}^{-1}$ ;  $P = 0.004$ ).

"In the absence of enteric stimuli  $\beta$ -cell sensitivity to changes in glycemia is blunted among individuals with GB, indicating a significant shift in a fundamental property of  $\beta$ -cell function several years after surgery," the authors write.

**More information:** [Abstract](#)  
[Full Text \(subscription or payment may be required\)](#)

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