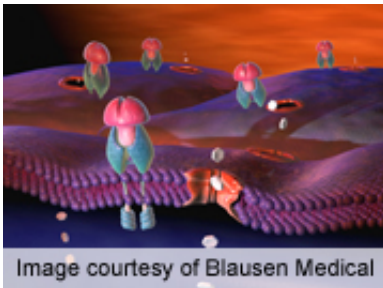


# Select sodium channel blockers have anti-diabetic effects

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(HealthDay)—Blockade of voltage-gated sodium channels (NaChs) in pancreatic  $\alpha$  cells has anti-diabetic effects, according to research published online May 8 in *Diabetes*.

Arvinder K. Dhalla, Ph.D., of Gilead Sciences in Fremont, Calif., and colleagues tested the hypothesis that the mechanism by which ranolazine, a NaCh blocker approved for use in angina, exerts anti-diabetic effects is inhibition of glucagon release through blockade of sodium channels in [pancreatic](#)  $\alpha$  cells.

The researchers found that ranolazine causes blockade of [sodium channels](#) in pancreatic  $\alpha$  cells, inhibits their [electrical activity](#), and reduces the release of glucagon. The release of glucagon in human pancreatic islets is mediated by the Na<sub>v</sub>1.3 isoform. In animal models,

ranolazine and a more selective sodium channel blocker, GS-458967, reduced postprandial and basal glucagon levels; these changes were associated with a reduction in hyperglycemia.

"The findings from the present study suggest that inhibition of  $\alpha$ -cell  $I_{Na}$  could become an attractive drug target for combination with other classes of anti-diabetic agents," the authors write.

**More information:** [Abstract](#)  
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