

# Insulin sensitivity normally highest after breakfast

26 October 2012

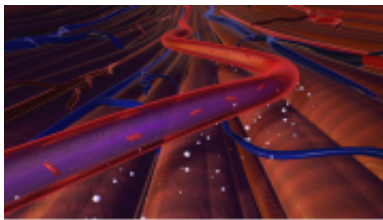


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In healthy people without diabetes, glucose responsiveness tends to be higher after breakfast, which may have implications for the design of closed-loop insulin delivery systems for diabetes patients, according to a study published in the November issue of *Diabetes*.

(HealthDay)—In healthy people without diabetes, glucose responsiveness tends to be higher after breakfast, which may have implications for the design of closed-loop insulin delivery systems for diabetes patients, according to a study published in the November issue of *Diabetes*.

To determine whether there is a diurnal pattern of [glucose tolerance](#) after mixed meals, Ahmed Saad, from the Mayo College of Medicine in Rochester, Minn., and colleagues measured postprandial glucose turnover in 20 healthy individuals without diabetes after mixed meals were ingested for breakfast, lunch, and dinner at 7 a.m., 1 p.m., and 7 p.m., respectively. Physical activity was similar in all individuals and on all days.

The researchers found that, after breakfast, glucose excursion was significantly lower, beta-cell responsiveness to glucose and disposition index was higher, and hepatic insulin extraction was significantly lower compared with other meals. Although meal glucose appearance was similar for all meals, suppression of endogenous [glucose production](#) tended to be lower and [insulin sensitivity](#) tended to be higher after breakfast (both

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"Our results suggest a diurnal pattern to glucose tolerance in healthy humans, and if present in type 1 diabetes, it will need to be incorporated into [artificial pancreas](#) systems," Saad and colleagues conclude.

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