Gastric Bypass Findings Could Lead To Diabetes Treatment

A Lund University research team has shed new light on why gastric bypass often sends diabetes into remission rapidly, opening the door to developing treatment with the same effect.

85% of patients with type 2 diabetes who undergo a gastric bypass procedure recover from the disease within a few days, showing a return to normal blood sugar levels - long before any weight loss. Until now, there have been few clues as to why this happens.

"Most previous studies have analysed samples taken from patients before and after a gastric bypass, but there is a risk that the results are misleading. They may not be attributable to the operation itself, but rather to factors such as weight loss and reduced food intake", says Nils Wierup of the Lund University Diabetes Centre in Sweden.

In a gastric bypass, food bypasses the majority of the stomach and duodenum. Just a small part of the upper stomach is connected directly to the small intestine. In some cases, the surgeon inserts a catheter into the part of the stomach that no longer has contact with food as a precautionary measure. This was what gave the researchers an opportunity to study the exact difference between food intake before and after the procedure.

The participants were given a set amount of a nutritional drink and blood samples were taken before, during and at short intervals after it was drunk. The next step was to inject the same amount of nutritional solution through the catheter over the same length of time as it had taken the patient to drink it and the same samples were taken. The food then ended up where it would have been before the gastric bypass.

The comparison revealed a major difference.

"When the patient drank the solution, the insulin levels in the blood rose almost five times as much as when it was injected into the closed-off stomach. Intestinal hormones, which play a significant role in controlling blood sugar levels, rose sharply, as did certain amino acids. There was also a major impact on blood lipids, with the levels roughly halved", says Nils Wierup, observing:

"We believe these changes are part of the answer to why gastric bypass cures type 2 diabetes. We have looked at just a few intestinal hormones. There may be a hundred or more involved in the body's complex sugar metabolism."

Jan Hedenbro, one of the surgeons in the study, adds: "If we can identify the

mechanism behind this, it will open the way for both more individually tailored operations and, in the long run, the possibility of achieving the same results with pills rather than with surgery."

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