

# Gastrointestinal surgery can be a cure for type 2 diabetes finds new long-term study

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The results of a randomized clinical trial with the longest follow up to date show that metabolic surgery is more effective than medications and lifestyle interventions in the long-term control of severe type 2 diabetes.

The study, published today in *The Lancet*, also shows that over one-third of surgically-treated patients remained diabetes-free throughout the 10-year period of the trial. This demonstrates, in the context of the most rigorous type of clinical investigation, that a "cure" for type 2 diabetes can be achieved.

Researchers from King's College London and the Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy report the 10-year outcomes of a trial that compared [metabolic surgery](#) with conventional medical and lifestyle interventions in patients with type 2 diabetes.

The study involved 60 patients with advanced type 2 diabetes and treated at a major academic hospital in Rome, Italy. The patients randomly underwent drugs plus lifestyle interventions or metabolic [surgery](#) ([gastric bypass](#) or biliopancreatic diversion). At the start of the study, all patients had severe disease, with poorly controlled blood sugar levels and more than five years history of diabetes.

The results of the study show that 37.5% of surgically-treated patients were able to maintain non-diabetic glycaemia without need for diabetes medication—a condition referred to as diabetes remission—for the duration of the 10-year study period. In 2009, American Diabetes Association defined "cure" of diabetes as a continued state of disease remission for more than five years.

Professor Francesco Rubino, senior author of the report and Chair of Bariatric and Metabolic Surgery at King's College London and a consultant surgeon at King's College Hospital in London said: "The findings from this study provide the most robust scientific evidence yet that full-blown type 2 diabetes is a curable disease, not inevitably progressive and irreversible. In addition to represent a major advance in the treatment of diabetes, metabolic surgery is our best lead to the elusive cause of the disease".

Compared to conventional medical treatment, surgery also resulted in better overall metabolic control, lower cardiovascular risk, better kidney function and quality of life. Notably, patients treated surgically had a significant lower incidence of diabetes-related complications, including cardiac, renal, and neurological adverse events. Metabolic surgery also reduced medication usage, including drugs for diabetes, [high blood pressure](#) and dyslipidaemia.

The study investigated the early and long-term safety of the different intervention strategies. Patients who underwent biliopancreatic diversion had more incidences of serious adverse events, including events associated to both disease and intervention, compared to subjects in both other groups. Patients treated by conventional medical therapy had significantly higher incidence of serious adverse events compared to patients who underwent surgery by Roux-en-Y gastric bypass.

Professor Geltrude Mingrone, first author of the report, Professor of Medicine at the Catholic University of Rome and a Professor of Diabetes and Nutrition at King's College London said: "These data corroborate the notion that surgery can be a cost-effective approach to treating type 2 diabetes. The evidence is now more than compelling that metabolic surgery should be considered as a main therapeutic option for the treatment of patients with severe type 2 diabetes and obesity."

Previous studies had shown that bariatric or weight loss surgery can induce long-term remission of diabetes in patients with very severe obesity; however, most patients who undergo traditional weight loss surgery have typically mild or recent-onset diabetes. This trial shows the potential curative effect of metabolic surgery for patients with severe disease.

Diabetes is one of the leading causes of mortality and morbidity in Western societies and significantly increases the risk of severe

COVID-19 and mortality from the virus. Despite the evidence that surgery can rapidly and dramatically improve diabetes, less than 1% of surgical candidates have access to metabolic surgery in most countries. Furthermore, metabolic surgery operations have been suspended for even longer than other elective surgical procedures during the current pandemic.

Professor Rubino added: "Metabolic surgery is arguably the most effective available therapy for type 2 [diabetes](#) and can be a life-saving option for many [patients](#). It should be appropriately prioritized in times of pandemic and beyond."

Provided by King's College London

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