

# Bariatric surgery highly cost-effective treatment for type 2 diabetes in the obese

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Bariatric surgery is an especially cost-effective therapy for managing Type 2 diabetes in moderately and severely obese patients. These findings and others were presented today at the 2nd World Congress on Interventional Therapies for Type 2 Diabetes, hosted by NewYork-Presbyterian Hospital and Weill Cornell Medical College.

Cost effectiveness is central to the larger issue of access to surgical treatment of diabetes, says Dr. Francesco Rubino, director of the Congress and director of gastrointestinal metabolic surgery at NewYork-Presbyterian Hospital/Weill Cornell Medical Center.

Today, an estimated 285 million people around the globe suffer from [Type 2 diabetes](#), and the number is expected to double by 2030, notes Dr. Rubino, who also serves as associate professor of surgery at Weill Cornell Medical College. "The need for effective, potentially curative therapies is urgent."

According to an analysis presented today at the Congress by an Australian researcher, bariatric surgery to treat Type 2 diabetes has been demonstrated to be very cost effective in the countries in which this research has been done -- the United States, United Kingdom, Australia, and in some European settings.

The review also found that several studies have determined that bariatric surgery was not only cost effective, but cost saving, says Catherine Keating, a senior research fellow from the Health Economics Unit at

Deakin University in Melbourne, who made the presentation. For obese patients diagnosed with Type 2 diabetes during the two years prior to bariatric surgery, one study found that the upfront costs of surgery would be fully recouped through the prevention of future health care costs to treat Type 2 diabetes. This study was undertaken alongside a clinical trial that found that remission of Type 2 diabetes was five times greater in surgically treated patients, relative to those receiving conventional therapies, she says.

"For this patient group bariatric surgery generates both cost savings and health benefits," Ms. Keating says. "This provides the strongest rationale yet for implementation of this treatment on economic grounds."

Treatment studies have shown that bariatric surgery, initially developed for the treatment of morbid obesity, can improve or normalize blood sugar levels, reduce or even eliminate the need for medication, and lower the risk of diabetes-related death.

A number of new cost-effectiveness studies have been discussed at the meeting, says Dr. David Reed Flum, who co-chairs the Congress's policy track. "As health care costs soar, the obligation of all those involved in this issue is to understand the way resources are currently being applied to the treatment and prevention of diabetes and to explore what the future impact on health care resources might be if surgery becomes a meaningful part of the public health response to the diabetes epidemic," says Dr. Flum, professor of surgery and health services at the University of Washington School of Medicine.

"Health ministers, economists, payers and politicians have a critical role in determining the future of this issue, and we expected a robust dialog during this track of the Congress" he says.

The studies looked at whether the costs of the surgery -- estimated at

between \$15,000 and \$24,000 in the United States -- are justified by its effectiveness and its potential to save future health care treatment for obesity-related diseases such as Type 2 diabetes.

"The effectiveness credentials for bariatric surgery are now very strong. It has been proven to reduce disease, extend life expectancy and improve quality of life," says Ms. Keating. "However, in the context of limited health care budgets, authorities around the world state that health care funding should be informed by an assessment of both treatment costs and effectiveness."

To perform her analysis, Ms. Keating examined 16 published studies that looked at the cost-effectiveness of bariatric surgery, including gastric bypass and gastric banding. Ten of those studies examined the procedures in severely obese patients (those whose body mass index, or BMI, is greater than 35) who did not have Type 2 diabetes, and six looked at patients with Type 2 diabetes whose BMI was 30 to 40 (moderately to severely obese).

Each country establishes its own measure of cost effectiveness. In the United States, the threshold for benefit is \$50,000 per quality-adjusted life year (QALY), which is defined as a year of human life with some adjustments for disease or disability.

Ms. Keating's review found that bariatric surgery was very cost effective in both populations she studied (patients without diabetes and a BMI over 35, and patients with diabetes and a BMI 30 to 40), but that it was twice as cost effective in the latter category -- the patients with Type 2 diabetes.

"This is likely because patients with diabetes have greater ill health and therefore more benefits can be achieved through surgery in terms of quality of life, life expectancy and prevention of future health care

costs," she says. "Without treatment, patients with Type 2 diabetes would endure lifelong disease and escalating health care costs."

Among the costs associated with medical management of Type 2 diabetes are treatment for complications that affect the eyes, heart, kidneys and extremities. Long-term costs include outpatient care, prescription medications and diabetes-related hospitalizations and surgeries, including amputations.

The analysis further demonstrated that using surgery to treat patients with newly diagnosed Type 2 diabetes (diagnosed less than five years before surgery) is more cost effective than using the surgery with patients whose diabetes has been established for longer than five years. For example, a 2009 U.S. study found that bypass surgery had cost-effectiveness ratios of \$7,000/QALY and \$12,000/QALY for severely [obese patients](#) with newly diagnosed and established diabetes, respectively.

"Targeting recently diagnosed diabetes is likely to be more cost effective because diabetes remission rates achieved are higher in this group than in those with established Type 2 diabetes," Ms. Keating says. "Some of the studies I analyzed, particularly those targeting therapy for patients with recently diagnosed Type 2 diabetes, have found that the costs of surgery may be fully recouped through prevention of future [health care costs](#). This excellent result is fairly rare."

Provided by New York- Presbyterian Hospital

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