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## IDF's view of bariatric surgery in type 2 diabetes

Diabetes mellitus has been the province of physicians, but surgeons could now have increased success in managing type 2 diabetes in obese individuals. Results with bariatric surgery in people with severe obesity and type 2 diabetes are promising.<sup>1</sup> Surgery can lead to large weight loss and remission of diabetes in many cases, and improved metabolic control in 72% of patients at 2 years and 36% of patients at 10 years.<sup>2</sup> In a recent systematic review, Meijer and colleagues showed that glycaemic control improved in the months after laparoscopic gastric banding, but improvements were more rapid and complete after laparoscopic Roux-en-Y gastric-bypass surgery.<sup>3</sup>

Type 2 diabetes is heterogeneous and progressive.<sup>4</sup> Lifestyle intervention is the first-line treatment but is successful in only a few patients,<sup>5</sup> and pharmaceutical intervention is almost always needed. Oral hypoglycaemic drugs and insulin have a role in treatment, but are not effective in many cases.<sup>4–6</sup> It is unrealistic to expect that any one agent, or even a combination of two or more agents, is the answer to controlling progression of one of the world's fastest growing epidemics.<sup>7,8</sup> Existing treatment algorithms

could lead to failure because the need for intensified therapy requires additional drugs in increasing doses.<sup>9</sup> In many cases, weight still increases, which is counterintuitive for treatment of type 2 diabetes. These issues result in a dilemma about the best strategy to maintain acceptable metabolic control and prevent progression of type 2 diabetes in obese individuals.

Therefore the appeal of bariatric surgery is unsurprising: it can have a striking effect on glycaemic control<sup>10</sup> and other cardiovascular risk factors, and is cost effective.<sup>11</sup> The International Diabetes Federation (IDF) identified a strong need for guidance of health professionals in diabetes care. As a result, an IDF group composed of medical and surgical experts met in December, 2010, to develop a position statement.<sup>11</sup> The process had four specific goals: to develop practical recommendations for clinicians about selection of patients; to identify barriers to surgical access; to suggest health policy changes that ensure equitable access to surgery when indicated; and to identify priorities for research. The group did not do a systematic review, but all guidelines and major systematic reviews written in English were accessed. All participants in the working group agreed on the position statement and had the opportunity to review and amend the final document.

A major objective of the IDF statement was to place the role of bariatric intervention into a public health, clinical, and socioeconomic perspective, and in the context of very low global uptake. In England, less than 0.5% of eligible people receive this treatment option annually.<sup>12</sup> The IDF statement recognises that bariatric surgery is an appropriate treatment for obese people with type 2 diabetes who do not achieve recommended targets with available therapies, especially in cases with other major comorbidities (eg, hypertension and dyslipidaemia). Surgery should be accepted as an option in people with diabetes and a body-mass index (BMI) of

BMI (kg/m <sup>2</sup> )	Eligible for surgery	Prioritised for surgery
<30	No	No
30–35	Yes, conditional*	No
35–40	Yes	Yes, conditional*
>40	Yes	Yes

In all cases, patients should have failed to lose weight and sustain substantial weight loss through non-surgical weight-management programmes, have failed to respond to available medical therapies, and have HbA<sub>1c</sub> of less than 53 mmol/mol (7%). BMI should be lowered by 2.5 kg/m<sup>2</sup> for Asians.<sup>13</sup> BMI=body-mass index. \*HbA<sub>1c</sub> of more than 58 mmol/mol (7.5%) despite fully optimised conventional therapy, especially if weight is increasing, or other weight-responsive comorbidities (eg, blood pressure, dyslipidaemia, and obstructive sleep apnoea) not achieving targets on conventional therapies.

**Table: Eligibility and prioritisation for bariatric surgery in type 2 diabetes according to BMI<sup>11</sup>**

at least 35 kg/m<sup>2</sup>, and should be considered as an option in patients with a BMI of 30–35 kg/m<sup>2</sup> when diabetes is inadequately controlled by optimum therapy, especially in the presence of other major comorbidities (table). Most of the recommendations of IDF are supported by the recent report from the UK's National Bariatric Surgery Registry.<sup>13</sup>

IDF stresses the need for long-term multidisciplinary care and use of safe and standardised surgical procedures. It also recommends inclusion of surgery as an option in treatment algorithms for obese people with type 2 diabetes. Full assessment of patients is needed to ensure physical and psychological suitability, taking into account not just the risks of surgery, but outlook and quality of life. People with diabetes and severe obesity have high rates of mental illness, especially depression.<sup>14</sup> Symptoms improve with weight loss, but psychological monitoring during follow-up is important. The statement addresses the morbidity and mortality associated with bariatric procedures, which is generally low and similar to that of well-accepted procedures, such as elective gall bladder surgery.<sup>11,14</sup> The 30-day mortality associated with bariatric surgery is estimated to be 0.1–0.3%, a rate similar to that for laparoscopic cholecystectomy.<sup>15</sup>

The IDF statement noted the paucity of standardised information on long-term outcomes of bariatric procedures, and recommended the need for studies to establish the duration for which surgery improves diabetes and its complications. It also suggested that studies need to document the long-term complications of surgery, and national registries of people who have undergone surgery need to be established to ensure good-quality care and monitoring of short-term and long-term outcomes.<sup>11</sup> However, high-quality data show substantial sustained weight loss and reduced mortality at 10–15 years after surgery.<sup>16</sup>

Equity of access to bariatric surgery is judged to be an important issue by IDF. The position statement recognises the plight of people with diabetes who lack insulin, drugs, and supplies to monitor diabetes, and recommends that every health system needs to establish whether the cost of surgery and its support services is economically appropriate.

So, will diabetes care change from introduction of initially riskier surgical options? Inclusion of surgery in treatment algorithms could transform diabetes care

at large, making physicians give increased attention to risk stratification, individual characteristics of patients, and responsiveness to therapies. The IDF position statement is intended to create awareness of the availability of other treatment options in type 2 diabetes; these options should be considered when existing therapies fail to achieve acceptable targets that are set to reduce complications and improve quality of life. Bariatric surgery could now be considered earlier in the treatment of type 2 diabetes and should no longer be seen as a last resort.

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The authors co-chaired the IDF position statement initiative (honorary positions). PZ and KGMMA are the co-chairpersons for the IDF Task Force on Epidemiology and Prevention of Diabetes (honorary positions). The IDF expert group meeting was supported by an unrestricted educational grant from Allergan, Ethicon, and MetaCure; these companies had no role in the discussion or preparation of the IDF position statement. PZ has received a consultancy fee from Covidien. KGMMA declares that he has no conflicts of interest. FR has received research grants from Covidien and Roche; and scientific advisory board and consulting fees from NGM Biotech. JD is a consultant for, and has received institutional research support from, Allergan.

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