



Clinical Practice Guidelines for the Metabolic and Nonsurgical Support of the Bariatric Surgery Patient-2014 Update

1. Introduction

Obesity continues to be a major public health problem in Belgium, with an estimated prevalence of well above 15% in adults, as defined by a body mass index (BMI) $\geq 30 \text{ kg/m}^2$ ¹. A recent WHO report (<http://www.euro.who.int/en/nutrition-country-profiles>) puts the proportion of men and women that are obese in Belgium at 23.3% and 21.0%, respectively. Obesity has been associated with an increased hazard ratio for all-cause mortality², as well as significant medical and psychological co-morbidities. Thus obesity can be viewed as a disease state for which medical intervention is required. Nonsurgical management can effectively induce 5%-10% weight loss and improve health in severely obese individuals resulting in cardiovascular benefit³. Bariatric surgery procedures are indicated for patients with clinically severe obesity and provide significant benefit both in terms of overall survival and co-morbidities⁴⁻⁷. The ability of bariatric surgery to reduce expenditures sufficiently to achieve cost savings remains hotly debated^{8,9} and more studies are needed in this regard. However, it is clear that as the prevalence of obesity shows no signs of decline and promising pharmacological treatments for obesity have thus far failed to overcome the regulatory hurdles, the number of bariatric operations for the surgical treatment of obesity will continue to rise. This requires a comprehensive approach to clearly establish how patients should be selected for bariatric surgery, but also how they should be followed-up to avoid complications, weight regain and nutritional deficiencies. It's clear that bariatric is not a stand-alone treatment and that patients should seize the opportunity to drastically change their lifestyle to avoid weight regain and complications, such as nutritional deficiencies and dumping^{10,11}.

2. Aims of the Clinical Practice Guidelines for the Metabolic and Nonsurgical Support of the Bariatric Patient

The main aim of this guidance is to establish a clear pre- and postoperative treatment paradigm for patients undergoing bariatric surgery. The aim is threefold:

1. Establish that bariatric surgery is not a stand-alone treatment and should be offered in conjunction with nutritional, life style and medical follow-up.
2. The previous aim would in our view be enforced by modifying the reimbursement rules as to cover not only the surgery as it is now, but also the pre- and the post-operative management to encourage patients to adhere to lifestyle modifications necessary to avoid complications, weight regain and nutritional deficiencies.

3. Establish a better rationale for determining who is eligible for bariatric surgery. It has become clear that metabolic improvement is more significant and long lasting when patients are treated early-on in the development of the disease ^{4,12,13}. Therefore, it would be more sensible to treat patients with obesity at risk of cardiovascular disease and/or type 2 diabetes early in the disease onset. Metabolic syndrome is a well-known precursor of both and should therefore be integrated in the eligibility criteria for bariatric surgery ¹⁴.

3. Eligibility for Bariatric Surgery

Grade A: Patients with a BMI ≥ 40 kg/m²

Grade A: Patients with a BMI ≥ 35 kg/m² and metabolic syndrome (defined by the presence of at least three out of five symptoms or risk factors (i.e., central obesity, high blood pressure, low HDL cholesterol levels, elevated triglyceride levels, glucose intolerance) and/or type 2 diabetes and/or OSAS.

Grade C: Evidence is currently weak to offer bariatric surgery to patients with a BMI 30-34.9 kg/m² with diabetes or metabolic syndrome (limited by the number of subject studies and lack of long-term data demonstrating net benefit.

Grade D: there is insufficient evidence for recommending bariatric surgery for glycemic control alone, lipid control alone, independent of BMI criteria

Thus we propose to reimburse all patients fulfilling the criteria for which there is grade A evidence.

4. Type of bariatric surgery

At this time, there is still insufficient evidence to generalize in favor of one bariatric surgical procedure (Grade D). In general, laparoscopic bariatric procedures are preferred over open procedures (Grade B).

5. Management preoperatively (minimal number of visits)

All patients should undergo pre-operative evaluation for obesity-related co-morbidities and causes of obesity (Grade A), according to last recommendations (Table 5).

Table 5 Preoperative Checklist for Bariatric Surgery*	
✓	Complete H & P (obesity-related co-morbidities, causes of obesity, weight BMI, weight loss history, commitment, and exclusions related to surgical risk)
✓	Routine labs (including fasting blood glucose and lipid panel, kidney function, liver profile, lipid profile, urine analysis, prothrombin time/INR, blood type, CBC)
✓	Nutrient screening with iron studies, B ₁₂ and folic acid (RBC folate, homocysteine, methylmalonic acid optional), and 25-vitamin D (vitamins A and E optional); consider more extensive testing in patients undergoing malabsorptive procedures based on symptoms and risks
✓	Cardiopulmonary evaluation with sleep apnea screening (ECG, CXR, echocardiography if cardiac disease or pulmonary hypertension suspected; DVT evaluation if clinically indicated)
✓	GI evaluation (H pylori screening in high-prevalence areas; gallbladder evaluation and upper endoscopy if clinically indicated)
✓	Endocrine evaluation (A _{1c} with suspected or diagnosed prediabetes or diabetes; TSH with symptoms or increased risk of thyroid disease; androgens with PCOS suspicion (total/bioavailable testosterone, DHEAS, Δ ₄ -androstenedione); screening for Cushing's syndrome if clinically suspected (1 mg overnight dexamethasone test, 24-hour urinary free cortisol, 11 PM salivary cortisol)
✓	Clinical nutrition evaluation by RD
✓	Psychosocial-behavioral evaluation
✓	Document medical necessity for bariatric surgery
✓	Informed consent
✓	Provide relevant financial information
✓	Continue efforts for preoperative weight loss
✓	Optimize glycemic control
✓	Pregnancy counseling
✓	Smoking cessation counseling
✓	Verify cancer screening by primary care physician
*See text for abbreviations.	

Preoperative checklist thus requires a full work-up by an endocrinologist, registered dietitian (2 visits) and a psychologist, with in addition pregnancy counseling (in females) and smoking cessation counselling (smokers).

Thus we propose to reimburse dietitian (2 visits), psychologist, smoking cessation counseling, endocrinologist and gynecologist in addition to bariatric surgery to reinforce the awareness that bariatric surgery is best positioned into an overhaul of lifestyle changes. In addition, we propose to reimburse an obesity coordinator/200 operated patients (1 FTE/200 patients). When several visits are necessary it should be possible to have additional reimbursement on a case by case basis.

6. Medical clearance

A formal meeting between all involved health care workers should be encouraged.

Thus we propose to reimburse the multidisciplinary meeting between all involved health care workers to reinforce a multidisciplinary approach.

7. Optimal follow up of bariatric surgery (minimal number of visits)

Time	2 w	4w	3mo	6mo	12mo	18mo	24mo
Consult Surgeon		x		x			
Consult Dietitian	x						
Consult Endocrinologist			x		x	x	x
Consult Psychologist					x		x
Consult Gynecologist (F)					x		

It is clear that adequate follow up is needed, but still centers are not required to provide the necessary follow-up nor is it reimbursed by the reimbursement agencies.

Thus we propose to reimburse 2 years of follow-up together with bariatric surgery to reinforce the need for lifestyle changes. If more visits or necessary because issues (e.g. adaptation issues) occur

8.Rehabilitation needs post-bariatric surgery

The need for rehabilitation is well recognized in the obese population and greatly helped by surgically induced weight loss ¹⁵. In addition, there is increasing evidence that physical activity can enhance weight loss and other outcomes after bariatric surgery ¹⁶.

Thus, we propose to reimburse a consultation with the physical therapist to evaluate the need for rehabilitation path postoperatively.

Currently not reimbursed costs for which reimbursement is requested in the future (minimal number of visits)

Not reimbursed at this time	INTAKE	FOLLOW-UP
Consult Dietitian	43.28 EUR	151.48 EUR
Consult Psychologist	45.00 EUR	90.00 EUR
Smoking Cessation	45.00 EUR	
Physiotherapist	43.28 EUR	
Multidisciplinary Deliberation	79.65 EUR	
Totaal	256.21 EUR	241.48 EUR
Obesity Coordinator	346,00 EUR	

The total cost will thus become 843.69 € but the package will clearly reinforce the need for a lifestyle overhaul. Cost of consultations to endocrinologist/surgeon/gynecologist (F) will be reimbursed according to the existing rules. If more sessions are deemed necessary, this should remain possible on a case by case basis

Conclusions

This proposition is intended to increase the long-term success of bariatric surgery in Belgium, by selecting patients who are going to benefit the most of this surgery and manage them properly before and after the surgery to decrease complications, weigh regain and nutritional deficiencies.

References

1. Stam-Moraga MC, Kolanowski J, Dramaix M, De Backer G, Kornitzer MD. Sociodemographic and nutritional determinants of obesity in Belgium. *International journal of obesity and related metabolic disorders : journal of the International Association for the Study of Obesity*. Feb 1999;23 Suppl 1:1-9.
2. Berrington de Gonzalez A, Hartge P, Cerhan JR, et al. Body-mass index and mortality among 1.46 million white adults. *The New England journal of medicine*. Dec 2 2010;363(23):2211-2219.
3. Ryan DH, Johnson WD, Myers VH, et al. Nonsurgical weight loss for extreme obesity in primary care settings: results of the Louisiana Obese Subjects Study. *Archives of internal medicine*. Jan 25 2010;170(2):146-154.
4. Sjostrom L, Peltonen M, Jacobson P, et al. Association of bariatric surgery with long-term remission of type 2 diabetes and with microvascular and macrovascular complications. *JAMA : the journal of the American Medical Association*. Jun 11 2014;311(22):2297-2304.
5. Sjostrom L, Lindroos AK, Peltonen M, et al. Lifestyle, diabetes, and cardiovascular risk factors 10 years after bariatric surgery. *The New England journal of medicine*. Dec 23 2004;351(26):2683-2693.
6. Sjostrom L, Narbro K, Sjostrom CD, et al. Effects of bariatric surgery on mortality in Swedish obese subjects. *The New England journal of medicine*. Aug 23 2007;357(8):741-752.
7. Carlsson LM, Peltonen M, Ahlin S, et al. Bariatric surgery and prevention of type 2 diabetes in Swedish obese subjects. *The New England journal of medicine*. Aug 23 2012;367(8):695-704.
8. Maciejewski ML, Arterburn DE. Cost-effectiveness of bariatric surgery. *JAMA : the journal of the American Medical Association*. Aug 21 2013;310(7):742-743.

9. Weiner JP, Goodwin SM, Chang HY, et al. Impact of bariatric surgery on health care costs of obese persons: a 6-year follow-up of surgical and comparison cohorts using health plan data. *JAMA surgery*. Jun 2013;148(6):555-562.
10. Johnson Stoklossa C, Atwal S. Nutrition care for patients with weight regain after bariatric surgery. *Gastroenterology research and practice*. 2013;2013:256145.
11. Heber D, Greenway FL, Kaplan LM, et al. Endocrine and nutritional management of the post-bariatric surgery patient: an Endocrine Society Clinical Practice Guideline. *The Journal of clinical endocrinology and metabolism*. Nov 2010;95(11):4823-4843.
12. Arterburn DE, Bogart A, Sherwood NE, et al. A multisite study of long-term remission and relapse of type 2 diabetes mellitus following gastric bypass. *Obesity surgery*. Jan 2013;23(1):93-102.
13. Wang GF, Yan YX, Xu N, et al. Predictive Factors of Type 2 Diabetes Mellitus Remission Following Bariatric Surgery: a Meta-analysis. *Obesity surgery*. Aug 8 2014.
14. Wilson PW, D'Agostino RB, Parise H, Sullivan L, Meigs JB. Metabolic syndrome as a precursor of cardiovascular disease and type 2 diabetes mellitus. *Circulation*. Nov 15 2005;112(20):3066-3072.
15. Faintuch J, Souza SA, Fabris SM, Ceconello I, Capodaglio P. Rehabilitation needs after bariatric surgery. *European journal of physical and rehabilitation medicine*. Jun 2013;49(3):431-437.
16. King WC, Bond DS. The importance of preoperative and postoperative physical activity counseling in bariatric surgery. *Exercise and sport sciences reviews*. Jan 2013;41(1):26-35.