

TOOLKIT GUIDE

Obesity in adults: Second and third-level management

Part II: before and after bariatric surgery

Validated by the HAS Board on 8 February 2024

The management of bariatric surgery candidates must be incorporated within the overall medical management of patients with obesity (EC).

Bariatric surgery is a second-line treatment: following the failure of well-managed medical, nutritional, dietary and psychotherapy treatment for a period of 6-12 months (grade B), in the absence of adequate weight loss, or in the absence of maintenance of weight loss (grade B).

Bariatric surgery is indicated in adult patients following a collective decision reached after discussion and multidisciplinary consultation (EC).

Bariatric surgery may be considered in patients between 60 and 70 years of age but must take into consideration the increased risk of postoperative morbidity and mortality beyond the age of 60, the lower efficacy of the surgery on weight (grade C) and the risk of exacerbation of muscle mass loss (EC).

Indications for bariatric surgery¹

- ➔ BMI ≥ 40 kg/m² (maximum BMI reached and demonstrated during a consultation).
- ➔ BMI between 35 and 40 kg/m² along with at least one severe comorbidity likely to be improved following surgery:
 - type 2 diabetes (grade B);
 - hypertension requiring medicinal treatment (grade C);
 - hypertriglyceridemia > 5 g/L (checked several times, in the absence of any alcohol use or poor control of type 2 diabetes) and resistant to the usual treatment including nutritional measures (EC);
 - nonalcoholic steatohepatitis (NASH) or hepatic fibrosis (irrespective of fibrosis stage) (grade B). Isolated fatty liver disease is not a comorbidity retained as an indication for bariatric surgery;
 - polycystic ovarian syndrome in patients of childbearing age (EC);
 - a male or female fertility problem with planned ART, on the recommendation of the ART team (EC);
 - chronic kidney disease (up to moderate CKD: stage 3A or 3B) following the opinion of a nephrology specialist (grade C), or even severe or end-stage kidney disease with planned kidney transplantation. In the latter case, the decision must be discussed collectively on a case-by-case basis with the transplant team, and the procedure must be performed in a centre with a dialysis facility (EC);
 - Child A cirrhosis, following the approval of the hepatology specialist;
 - obstructive sleep apnoea (OSA) with an AHI ≥ 15 /h (grade C);
 - severe obesity-related asthma following the opinion of a pulmonologist, an ENT specialist and/or an allergy specialist (grade C);

¹ To be differentiated from metabolic surgery, indicated in patients with a BMI of between 30 and 35 kg/m² along with type 2 diabetes when individualised glycaemic targets are not achieved despite well-managed medical treatment, for at least twelve months.

- documented, incapacitating, chronic low back pain (EC), documented, incapacitating, osteoarthritis of the hip (grade C) or knee (grade C), following a rheumatological and/or orthopaedic opinion confirming the expected benefits of weight loss;
- incapacitating urinary incontinence not responding to therapeutic lifestyle changes combined with medicinal treatments for urinary incontinence and, if necessary, constipation, after confirmation by a gynaecologist or urologist that post-bariatric surgery weight loss is likely to improve the urinary problems (EC);
- an abdominal wall hernia or a symptomatic or complex eventration, in which weight loss is necessary prior to treatment by abdominal wall surgery (EC);
- idiopathic intracranial hypertension resistant to well-managed neurological treatment (EC);
- the presence of a motor disability with or without paraplegia. It is recommended that these surgical procedures be performed on a case-by-case basis, after consulting a physical medicine and rehabilitation physician or a neurologist. The indication for surgery must be approved at a referral MDT meeting in a level 3 obesity management centre (EC).

Contraindications for bariatric surgery

Some of these contraindications may be temporary. It must be possible to reassess the indication for surgery once these contraindications have been treated and corrected (EC).

The contraindications for bariatric surgery are (EC):

- ➔ psychiatric contraindications:
 - severe, non-stabilised psychiatric disorders (non-stabilised psychotic disorders, non-stabilised episodes of severe depression, etc.),
 - the patient's potential difficulty in adhering to long-term medical follow-up,
 - ongoing alcohol or legal and illegal psychoactive substance use disorders,
 - impulsive and/or compulsive eating disorders (binge eating, bulimic episode, binge eating disorder and bulimia nervosa);
- ➔ obesities with rare causes and obesities associated with an intellectual impairment:
 - any request for bariatric surgery from a patient with a known intellectual impairment or obesity with a rare cause (syndromic obesity; non-syndromic monogenic obesity; etc.) must be discussed in a level 3 obesity management centre, if necessary with referral to a specific national MDT (for example, at a reference centre for rare diseases including Prader-Willi syndrome and other rare obesities with eating disorders (PRADORT rare diseases reference centre (CRM));
- ➔ medical contraindications:
 - decompensated cirrhosis (or Child B or C),
 - contraindications to general anaesthesia,
 - diseases that are life-threatening in the short and medium term,
 - in the event of a cancer history: cancer prognosis assessed with the oncologist and at an oncological MDT meeting for cancers within the past 5 years.

Content of preoperative assessment and management, and postoperative follow-up and management

	Preoperative	Postoperative
Management duration	At least 6 months Preparatory components tracked and documented, with precise objectives	Life-long by one or several multidisciplinary team members in liaison with community medicine professionals
Follow-up frequency	Variable depending on the patient's specific characteristics	4 times during the first year (1, 3, 6 and 12 months postoperatively, then after 18 and 24 months, then 1 to 2 times per year for life depending on the patient's specific characteristics)

Clinical procedure

Assessment of medicinal management	Assessment of eating behaviour and dietary balance, levels of physical activity and sedentary behaviour Performance of anthropometric measurements: BMI, waist circumference Investigate for the presence of muscle mass loss (at least by muscle strength measurements) Assess the masticatory coefficient and dental status Assess and manage cardiovascular, respiratory or metabolic comorbidities. These assessments are particularly necessary since they will be indispensable in the pre-anaesthetic assessment (see recommendations text) Assess the thromboembolic risk Stop smoking at least 6 weeks before the procedure	Assessment of eating behaviour and dietary balance, levels of physical activity and sedentary behaviour (see below) Ensure that lifestyle changes have been maintained Identify a trend towards weight regain and failure of surgery Psychological follow-up (changes in body image, resocialisation, etc.)
	Assess musculoskeletal and joint condition Systematically assess the fracture risk	Reduce modifiable risk factors for bone fragility. If necessary, refer for a specialised consultation
	Ensure that breast and bowel cancer screening is properly carried out in this population	
	Talk about future pregnancy plans Provide information on the need for perioperative contraception and record this in the medical record Effective contraception is essential in the year following the surgery Systematic assay of plasma β-HCG within 48 hours prior to the surgery	Inform the patient about the possibility of a pregnancy and specific multidisciplinary follow-up Check the continuity of contraception in the year following the surgery Preconception consultation or, failing that, from the very start of the pregnancy, with an obesity specialist Coordinated multidisciplinary follow-up throughout the duration of the pregnancy
Assessment of diet and nutritional status	Systematic initial assessment of diet: analysis of eating patterns, dietary profile and eating behaviour Systematic assessment of nutritional status to correct any deficiencies Laboratory workup, including, at least: albumin, haemoglobin, ferritin, serum calcium, parathormone, 25 OH-vitamin D3, B9, B12, zinc and selenium	Dietary support (dietician and/or nutritionist) at regular intervals throughout the first year Subsequent consultations useful in the event of surgical or medical complications or weight regain, or at the patient's request Recommended protein intake of at least 60 g/day and ideally at least 1.1 g of protein/kg of ideal weight/day Regular laboratory monitoring after 3 months, 6 months, 12 months, then 1 to 2 times per year for life Laboratory workup, at least: CBC, platelets, blood electrolytes, creatinine, and plasma assays for magnesium, phosphorus, calcium, albumin, 25-(OH)-vit D3, PTH, folates, ferritin, CRP, vit B12, zinc, for all types of bariatric surgery

		Supplemented by assay of vit A and Retinol Binding Protein, vit E, vit K, copper for surgeries with a high malabsorption level
Psychological and/or psychiatric assessment	Systematic By a mental health professional (psychologist and/or psychiatrist) with experience in bariatric surgery The methods are left to the discretion of the psychologist or psychiatrist Identification of any current or past eating disorders through specific questioning must be systematic before any bariatric surgery Systematic assessment for any addictive disorders	Monitoring of psychological state (including the use of psychoactive substances) is part of all short- and long-term postoperative follow-up consultations. Systematic assessment for signs of depression, suicidal thoughts Regular assessment for the recurrence of eating disorders, particularly beyond 2 years after surgery Systematic identification of short-, medium- and, in particular, long-term addictive disorders Specific follow-up for patients who presented with eating disorders or psychiatric or addictive disorders before surgery, and for patients in whom bariatric surgery has failed in terms of their weight loss. Promote the value of continuing to abstain from smoking
Physical activity and reduction in sedentary behaviour	Implement regular, adapted physical activity, while reducing sedentary behaviour and physical inactivity	Encourage patients: - to take regular, appropriate physical exercise as soon as authorised by the surgeon to do so - to limit sedentary behaviour and physical inactivity
Patient education	Give all patients the opportunity to take part in a patient education programme and offer guidance towards acquiring the skills needed to make therapeutic lifestyle changes in terms of nutrition and physical activity	Patient education, in whatever form, is recommended for the short, medium and long term, and should be personalised It focuses on the following aspects: - individual support in terms of diet and behaviour - changes in body image and perception - regular physical exercise - sedentary behaviour - nutritional supplementation

Systematic or indication-dependent additional investigations

Upper gastrointestinal endoscopy	Systematic (at best, in the year prior to surgery) with testing for <i>Helicobacter pylori</i> by biopsy. Treatment if positive result and control of eradication essential before a Roux-en-Y gastric bypass	If gastrointestinal symptoms, including GOR symptoms In asymptomatic patients having undergone SG surgery, 5 and 10 years after the procedure
High-resolution manometry	If dysphagia and/or food obstruction	After sleeve gastrectomy or removal of a gastric band, presence of functional digestive disorder
Abdominal ultrasound	In the year before surgery: measurement of liver size Investigation for gallbladder lithiasis: - if asymptomatic lithiasis: systematic cholecystectomy is not indicated in the event of restrictive surgery. If surgery has a malabsorptive component, cholecystectomy is at the surgeon's discretion	Remains the reference investigation for gallbladder diseases The prevention of further stones using ursodeoxycholic acid is off-label

- if symptomatic lithiasis: cholecystectomy is recommended before or during bariatric surgery, irrespective of surgery type

Treatment strategy		
Treatments	Inform patients about the need for mineral (M) and multivitamin (MV) supplementation postoperatively	Systematic M and MV during the weight loss period, irrespective of surgical technique M and MV supplementation continued beyond the weight loss period depending on the results of laboratory tests and the patients' dietary profiles in the event of restrictive techniques M and MV supplementation continued life-long following surgeries with a high malabsorption level and a Roux-en-Y gastric bypass Systematic life-long vitamin D supplementation Oral calcium adapted to oral intake or laboratory tests for restrictive techniques and Roux-en-Y gastric bypass Systematic life-long oral calcium supplementation for surgeries with a high malabsorption level Life-long vitamin B12 supplementation for surgeries with a high malabsorption level and a Roux-en-Y gastric bypass
	Identify medicinal products that are contraindicated postoperatively and treatment adaptations	Modification of some treatments Adaptation or substitution of treatments as weight loss progresses (e.g., antihypertensive medication; DOACs not recommended postoperatively) Potential laboratory assays
Medical and surgical follow-up: identification and treatment of postoperative complications	-	Systematic assessment for risk factors for surgical complications Systematic assessment for clinical signs that may suggest a deficiency Specific attention paid to the risk of vitamin B1 deficiency, particularly in the event of vomiting. Probabilistic parenteral thiamine treatment i) at the slightest sign that could suggest a vitamin B1 deficiency and ii) if glucose infusion is necessary. Combine with magnesium supplementation Investigation for early dumping syndrome and late hypoglycaemia and treatment

Management of moderate to excessive weight regain and bariatric surgery failure

In the presence of weight regain following bariatric surgery, the reference criterion in terms of weight loss efficacy is the **percentage of total weight loss (EC)**. Weight regain is calculated using the following formula:

$$\% \text{ regain of total weight loss (compared with initial weight documented just before surgery)} = \frac{(\text{current weight} - \text{nadir weight})}{(\text{initial weight} - \text{nadir weight})}$$

For example, a patient weighs 140 kg (initial weight) before surgery and drops to 100 kg postoperatively. He loses 40 kg:

- a weight regain of around 10% of the total weight loss after between 2 and 5 years is an expected phenomenon (for example: 4 kg);
- a weight regain > 20% of total weight loss should prompt assessment for a recurrence of obesity-related comorbidities and a deterioration in quality of life. Aetiological investigation of weight regain (> 20% of total weight loss) after bariatric surgery should focus on:
 - reassessment of adherence to therapeutic lifestyle changes (diet, physical activity and combating sedentary behaviour),
 - assessment for symptoms of anxiety or depression or psychiatric disorders not detected preoperatively,
 - assessment for the recurrence of eating disorders,
 - a review of weight history since childhood to identify any arguments suggestive of a variant in the leptin-melanocortin pathway, if this has not already been done^{2***},
 - assessment of any gastrointestinal anatomical changes (investigations liable to evolve),
 - discussion of medicinal treatment for obesity using a drug with an MA, depending on the patient's profile.

If bariatric surgery has failed

The concept of “excess weight loss percentage < 50%” should no longer be used to define bariatric surgery failure (EC).

Bariatric surgery failure is defined from 2 years beyond surgery (EC):

- by a total weight loss <10% calculated using the following formula based on weight at the time of surgery:
$$\% \text{ total weight loss} = \frac{(\text{initial weight} - \text{postoperative weight})}{\text{initial weight}}$$
- or weight regain leading to a total weight loss < 10%;
- and/or an absence of improvement or severe re-worsening of a comorbidity having prompted the surgery.

For example, a patient weighs 140 kg before surgery and drops to 130 kg postoperatively. He will have lost a total of 10 kg, i.e. a total weight loss of 7%.

In the case of a patient who has undergone bariatric surgery and in whom the procedure is considered to have failed, it is recommended that the following points be taken into account as part of a multidisciplinary approach (EC):

- reassessment of educational needs in the presence of poor compliance with the recommended therapeutic lifestyle changes (in terms of eating patterns, dietary profile; work on hunger and satiety signals; adapted physical exercise and combating sedentary behaviour);
- assessment for mood disorders, anxiety, eating disorders, other eating symptoms (loss of control of eating, bingeing, binge eating disorder), addictive disorders or other psychiatric disorders, and proposal of specific management (psychotherapy combined or otherwise with medicinal treatment);
- a review of weight history since childhood to identify any arguments suggestive of a variant in the leptin-melanocortin pathway, if this has not already been done^{3*};

² https://www.has-sante.fr/jcms/p_3280217/fr/generique-obesites-de-causes-rares

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- discussion, with the prescribing physician, of potential treatment modifications in the presence of a treatment promoting weight gain;
- performance of a morphological assessment to look for any abnormalities related to the bariatric surgery, in the absence of any obvious cause for the failure.

If the patient remains within the criteria for failure and if the patient so requests, depending on the patient's profile, the addition of a medicinal obesity treatment using a drug with an MA, and/or performance of revision bariatric surgery if the patient meets the indications for bariatric surgery, may be discussed.

Patient information

The information provided to the patient must concern (EC):

- the risks of obesity;
- the different methods of managing obesity;
- the different surgical techniques:
 - their principle (explained as clearly as possible, using illustrations),
 - their respective benefits: weight loss estimations in the short and long term, absence of long-term data available for some techniques, benefits for health and comorbidities,
 - their respective risks and disadvantages: perioperative mortality, adverse effects, early and late complications, nutritional consequences, revision surgeries, irreversibility, clinical signs that should raise a red flag;
- the limits of surgery (particularly in terms of weight loss);
- the benefits and disadvantages of surgery in terms of daily life, social and family relationships and changes in body image;
- the benefits and disadvantages of surgery in terms of pregnancy and contraception;
- the need to make eating behaviour and lifestyle changes before and after the surgery;
- the need to implement regular, adapted physical activity, while reducing sedentary behaviour before and after the surgery;
- the need for life-long medical and surgical follow-up, given that obesity is a chronic disease and due to the risk of late complications associated with surgery;
- the need to follow a patient education programme;
- the possibility of support from patient associations;
- the possibility of having reparative and reconstructive surgery 18 to 24 months after the surgery, after weight has stabilised.

This information must lead to a shared decision, enabling a tailored patient care pathway to be constructed.