

PATIENT SELECTION CRITERIA: CLINICAL CONSIDERATIONS FOR ELEVATED BMI

The Centers for Disease Control and Prevention (CDC) define an adult's body mass index (BMI) as weight in kilograms divided by the square of height in meters.¹ By the year 2030, an estimated 42 percent of Americans will be obese and 11 percent will be severely obese.² As the number of obese patients seen in the ambulatory and office-based ("ambulatory") settings increases, the number of surgical and invasive procedures ("surgery") suitable to be safely performed in these settings is also increasing.³



Elevated BMI and Ambulatory Surgery

The diagnosis of obesity alone is not a contraindication to ambulatory surgery.⁶ There is insufficient evidence recommending one "cut-off" BMI above which it's not safe to have surgery in the ambulatory setting.^{5,7} Determining the appropriateness of the ambulatory setting for an obese patient is a multifactorial decision that involves several considerations. For example, an elevated BMI is often correlated with other comorbidities, such as obstructive sleep apnea (OSA), coronary artery disease, diabetes, and hypertension.^{3,5-8} Additionally, obese patients are more likely to experience wound infections, unplanned hospital admissions, and respiratory complications.^{4,5,9}

Whether an obese patient is a candidate for surgery in the ambulatory setting depends on the patient's specific comorbidities, type of procedure, anesthetic required, proceduralist's experience, facility's available standard and emergency equipment, established facility policies and procedures, and the anesthesia professional's discretion.^{2,5,6} While there is insufficient evidence to issue clinical guidelines or recommendations, a facility can establish a multidisciplinary team of experts to develop a patient selection policy that is appropriate for the facility's patient population.

Preanesthesia and Preoperative Assessment and Evaluation

Airway accessibility is one of the main concerns of anesthesia professionals when providing care to an obese patient.^{9,10} Obesity increases the risk for difficult mask ventilation and difficult tracheal intubation by 30 percent.^{7,10,11} For obese patients, the anesthesia professional should document or verify documentation of the patient's cardiac assessment and a [STOP-Bang questionnaire](#) to screen for OSA.⁷ The preanesthesia assessment and evaluation, along with patient optimization based on comorbidities, may reduce the risk of perioperative complications.⁵

Recommendations from Expert Opinion

- **Patients with Class 2 obesity and above (BMI >35)** are at greater risk of difficult or failed intubation. During the preanesthesia assessment and evaluation, perform a clinical examination, including evaluation of the patient's mouth opening, head and neck deformities or masses, dentition, neck range of motion, and temporomandibular joint mobility.¹⁰
- **Patients with Class 3 obesity (BMI of >40)** are more susceptible to perioperative events such as airway complications and sudden cardiomyopathy leading to increased mortality. Consider this during the preanesthesia and presurgical/preprocedural assessment and evaluation and the development of the anesthetic plan.^{5,7}

- **Super obese patients (BMI >50)** face an increased mortality risk when combined with comorbidities. Select these patients with caution and carefully evaluate whether a hospital may offer a safer alternative to the ambulatory setting.^{6,7}

Other Considerations

- Position the patient in a semi-upright or ramped position.^{4,10}
- Calculate pharmacologic agents based on ideal body weight (IBW) as opposed to actual body weight, as adipose tissue has relatively low blood flow.^{4,12} To determine the patient's IBW, the anesthesia professional can use one of the known equations by Devine (1974), Robinson et al., (1983), or Miller et al. (1983).¹³
- Avoid or titrate opioids carefully if the patient has a confirmed or suspected diagnosis of OSA.^{2,4}

Disclaimer: Please note the information in this document is not written as requirements or standards. These considerations are largely based on expert opinion, as there is limited evidence to develop formal guidelines. This resource is for information only and is not medical or legal advice. These considerations may be used as reference when developing facility policy. CRNAs practice in accordance with professional ethics, scope and standards of practice, sound professional judgment, the best available evidence, the best interests of the patient, and applicable law.

1. Centers for Disease Control and Prevention. Adult body mass index (BMI). <https://www.cdc.gov/obesity/adult/defining.html>. Published 2020. Accessed August 3, 2020.
2. Kataria T, Cutter TW, Apfelbaum JL. Patient selection in outpatient surgery. *Clin Plast Surg*. 2013;40(3):371-382.
3. DeJohn P. Providing safe care for obese patients in the ASC. *OR Manager*. 2012;28(1).
4. Haecck PC, Swanson JA, Iverson RE, et al. Evidence-based patient safety advisory: patient selection and procedures in ambulatory surgery. *Plast Reconstr Surg*. 2009;124(4 Suppl):6S-27S.
5. Lee JW. Considerations in treating obese patients in office-based anesthesia. *Minerva Anesthesiol*. 2018;84(11):1318-1322.
6. Joshi GP, Ahmad S, Riad W, Eckert S, Chung F. Selection of obese patients undergoing ambulatory surgery: a systematic review of the literature. *Anesth Analg*. 2013;117(5):1082-1091.

7. Moon TS, Joshi GP. Are morbidly obese patients suitable for ambulatory surgery? *Curr Opin Anaesthesiol*. 2016;29(1):141-145.
8. Acevedo A, Leon J. Ambulatory hernia surgery under local anesthesia is feasible and safe in obese patients. *Hernia*. 2010;14(1):57-62.
9. Cullen A, Ferguson A. Perioperative management of the severely obese patient: a selective pathophysiological review. *Can J Anaesth*. 2012;59(10):974-996.
10. Soliman M, Straker T. Airway management in the morbidly obese patient. *Anesthesiology News*. <https://www.anesthesiologynews.com/Review-Articles/Article/07-20/Airway-Management-in-the-Morbidly-Obese-Patient/59064>. Published 2020. Accessed August 3, 2020.
11. Benalcazar DA, Cascella M. Obesity Surgery Pre-Op Assessment And Preparation. In: *StatPearls*. Treasure Island (FL)2020.
12. Wijeyesundera D, Finlayson E. Preoperative evaluation. In: *Miller's Anesthesia*. Vol 1. Philadelphia, PA: Elsevier; 2020:918-998.
13. Pai MP, Paloucek FP. The origin of the "ideal" body weight equations. *Ann Pharmacother*. 2000;34(9):1066-1069.

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