

Bariatric Surgery The Future of Obesity Management in Adolescents

Amy L. Weiss, MD, MPH^{a,*}, Ashley Mooney, MD^b,
John Paul Gonzalvo, DO^b

^aDepartment of Pediatrics, Morsani College of Medicine, University of South Florida, 2 Tampa General Circle, 5th Floor, Tampa, FL 33606, USA; ^bDepartment of Surgery, Morsani College of Medicine, University of South Florida, 5 Tampa General Circle, Suite 410, Tampa, FL 33606, USA

Keywords

- Adolescents • Extreme obesity • Bariatric surgery • Weight loss • Gastric bypass
- Sleeve gastrectomy

Key points

- Rates of extreme obesity are rising in adolescents along with significant medical and psychological comorbidities. Medical management has disappointing results in this population.
- Bariatric surgery is safe and effective in adolescents, with similar outcomes to adults in terms of weight loss and resolution of comorbid diseases.
- A comprehensive interdisciplinary approach is recommended for an adolescent bariatric program with extensive preoperative education.
- Lifelong follow-up and nutritional vitamin supplementation are essential post-operatively after bariatric surgery to monitor weight loss and prevent malnutrition.

INTRODUCTION

Childhood obesity has nearly tripled in the past 30 years [1,2], and extreme obesity is rising in children and adolescents. The causes of obesity are complex and multifactorial, including individual, familial, societal, and environmental influences. An imbalance in energy intake compared with energy expenditure undoubtedly contributes to obesity, but even this discrepancy can be due to a

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*Corresponding author. *E-mail address:* aweiss@health.usf.edu

variety of factors. Changes in individual eating habits and societal diet composition and decreasing levels of physical activity among youth and associated increasing screen time as well as limited access to safe neighborhoods with affordable healthy food options are all contributing factors to the obesity epidemic.

Obesity has significant short-term and long-term consequences for adolescents [3]. Medically, obese adolescents have higher rates of hypertension, dyslipidemia, diabetes, and cardiovascular disease (CVD) as well as other illnesses, such as obstructive sleep apnea, polycystic ovarian syndrome, degenerative disc disease, and fatty liver disease [3]. Obese adolescents are more likely to become obese adults, who are then at higher risk for cancers and chronic diseases [3]. Adolescents can also suffer psychosocial comorbidities from obesity, including social stigmatization, bullying, poor self-esteem, mood disorders, and decreased quality of life. Nonsurgical weight management, combining diet, exercise, and lifestyle modifications, has been the mainstay of treatment of obesity in youth. Due to disappointing results from lifestyle management, however, interest in and utilization of weight loss surgery are increasing in adolescents in recent years [4].

With the increase in obesity and associated comorbidities at younger ages, there are growing concerns not only about the health of the nation but also the economic burden on the health care system [5]. As bariatric surgery becomes more common in adolescents, pediatricians and other health care providers for adolescents need to become familiar with indications for surgery, the preoperative screening process, and candidate selection as well as guidelines for adolescent surgical centers, perioperative and postoperative management of these patients, recommended follow-up, and outcomes in the adolescent population.

EPIDEMIOLOGY

Obesity is most commonly measured using the body mass index (BMI). BMI is calculated as weight in kilograms divided by height in meters squared. Adults with a BMI greater than 25 kg/m² are considered overweight, whereas those with a BMI greater than or equal to 30 kg/m² are considered obese. In children and adolescents who are still growing, overweight is defined as having a BMI at or above the gender-specific 85th percentile, and obesity is defined as having a BMI at or above the gender-specific 95th percentile on the US Centers for Disease Control and Prevention (CDC) BMI-for-age growth charts. Extreme obesity is defined as a BMI at or above 120% of the gender-specific 95th percentile on the CDC BMI-for-age growth charts.

Rates of obesity and extreme obesity in children and adolescents have risen tremendously in the past 3 decades, although obesity prevalence seems to be leveling off in some subgroups of youth in more recent years. Most recent estimates from the National Health and Nutrition Examination Survey (NHANES) are for 2011 to 2014. In children and adolescents ages 2 to 19 years, the prevalence of obesity from 2011 to 2014 was 17.0% and of extreme obesity was 5.8% [2].

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