CME

Management of Obesity: Office-Based Strategies

Michelle K. Keating, DO, MEd; Rachel K. Woodruff, MD, MPH; and Erin M. Saner, MD

Obesity in the United States is increasing, with the most recent national data indicating a prevalence of 41.9%. Obesity is generally considered a body mass index (BMI) of 30 kg per m^2 or greater; however, increased waist circumference (female: 35 inches or greater; male: 40 inches or greater) may be a more accurate indicator of obesity, particularly in older adults. For patients who are overweight or obese, the history should include whether patients are taking medications that can increase weight and identifying comorbid conditions contributing to or resulting from obesity. Clinicians should also ask about previous weight-management strategies and whether they were effective. Initial laboratory testing includes a complete blood count, metabolic profile, lipids, thyroid-stimulating hormone and A1C levels, and additional testing as needed. The Obesity Medicine Association recommends that weight management incorporate five pillars: behavioral counseling, nutrition, physical activity, pharmacotherapy, and, when appropriate, bariatric procedures. Pharmacotherapy with anti-obesity medications such as glucagon-like peptide-1 receptor agonists, sympathomimetics, and others should be considered for any patient with a BMI of 30 kg per m^2 or greater and for any patients who are overweight (i.e., BMI of 27 kg per m^2 or greater) with metabolic comorbidities. Referral for bariatric surgery should be considered for patients who meet the criteria. Successful management requires individualized support systems with periodic follow-ups through each phase of treatment.

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Obesity is a chronic, multifactorial condition that has genetic/epigenetic, metabolic, hormonal, cultural, socioeconomic, and neurobehavioral causes. In the United States, the prevalence of obesity has increased markedly since the early 2000s. In the 2021 National Health and Nutrition Examination Survey, the data indicated an obesity prevalence of 41.9%.[1]

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Obesity was recognized as a chronic disease by the American Medical Association in 2013 and contributes to several conditions, including hypertension, hyperlipidemia, type 2 diabetes mellitus, coronary artery disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, and cancers (e.g., endometrial, breast, prostate, colon).[2,3]

Despite the importance of obesity management, less than one-half of adults meeting the criteria for overweight and obesity received weight-loss counseling between 2011 and 2018.[4,5] Other studies have found negative perceptions and resistance among clinicians to prescribing anti-obesity medications and counseling on surgical options for weight management.[6,7]

Several professional groups, including the U.S. Preventive Services Task Force, have released guidelines for the evidence-based management of obesity.[8-12] This article reviews office-based strategies for the prevention, identification, and management of obesity in primary care.

HISTORY

Clinical guidelines recommend screening at least annually for obesity in all adults.[8-10] Weight-classification categories using

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body mass index (BMI), waist circumference, and body fat percentage are listed in Table 1.[8,10]

Initiating a Patient-Centered Approach

A patient-centered approach to initiating obesity evaluation and management begins with the 5A's (ask, assess, advise, agree, and assist).[10,13] Clinicians should always start by asking permission to discuss weight management with a patient before moving on to the next step, assessing readiness for change. Assessment involves evaluating a patient's readiness for change and includes the patient's history. Clinicians should then advise patients on the risks associated with excess weight and the benefits of modest weight loss. Patients and clinicians should use shared decision-making to agree on realistic treatment strategies and goals. Clinicians should assist patients in identifying barriers to progress and arranging appropriate resources, referrals, and follow-up to aid in addressing those barriers.[10,13]

Clinicians should recognize and avoid stigmatizing language such as "morbidly obese," "ideal weight," or "weight problem" in favor of reframing the discussion on holistic well-being and creating a sustainable lifestyle.[14] Bias surrounding obesity often deters patients from seeking care and reinforces unhealthy behaviors.[15] Implicit bias training and continuing education initiatives help prepare clinicians for successful patient-centered care.[14,15]

General History

Clinicians should ask about weight-change patterns over a patient's lifetime while discussing previous weight-management strategies and whether they were effective because this can help plan future management. The family history should focus on obesity and related metabolic conditions. The social history should include tobacco, alcohol, and illicit drug use and the availability of social support.[10]

Clinicians should ask about previous treatment with anti-obesity medications. It is also important to review the patient's past and current medications to determine if prescribed weight-promoting medications may have contributed to the patient's weight gain (Table 2).[10,16]

Nutrition History

The nutrition history should include questions about meal timing, content, portions, and preparation methods, which can help identify eating habits that might benefit from change. Consideration should also be given to performing appropriate screening for disordered eating such as binge-eating disorder, bulimia nervosa, or nighttime eating disorder.[10]

WHAT'S NEW ON THIS TOPIC

Obesity

Less than one-half of U.S. adults who meet the criteria for overweight and obesity received weight-loss counseling from 2011 to 2018.

A study of semaglutide (Wegovy) found that participants regained two-thirds of their original weight lost 1 year after discontinuation of therapy, highlighting the need for long-term management.

A 2020 meta-analysis found that bariatric surgery was associated with lower all-cause mortality and a decreased risk of developing several common obesity-related conditions.

TABLE 1

Weight Classifications

Classification	Body mass index (kg per m²)	Waist circumference (inches)	Body fat %
Underweight	< 18.5	—	—
Normal	18.5 to 24.9	Female < 35 Male < 40	Female < 32% Male < 25%
Overweight	25.0 to 29.9 > 23 in people of Asian descent*	Female ≥ 35 Male ≥ 40 People of Asian descent†: Female ≥ 31 Male ≥ 35	Female ≥ 32% Male ≥ 25%
Class I obesity	30.0 to 34.9 > 27.5 in people of Asian descent*		
Class II obesity	35.0 to 39.9 > 32.5 in people of Asian descent*		
Class III obesity	≥ 40.0 > 37.5 in people of Asian descent*		

*—Guidelines do not differentiate among people of Asian descent for body mass index.

†—The World Health Organization and International Diabetes Federation cutoff values for waist circumference do not differentiate among people of Asian descent and are concordant.

Information from references 8 and 10.

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Physical Activity

Barriers to engaging in physical activity are common and unique to each patient. Clinicians should assess for physical limitations and mood disorders that may influence physical ability or motivation to exercise. Clinicians should also seek to better understand each patient's lifestyle or work schedule to identify barriers and develop appropriate strategies for increasing physical activity if needed.[10]

Behavioral Assessment

While health care professionals are screening their patients for disordered eating and mood disorders, they should also evaluate them for learned eating behaviors. These include an individual's habitual patterns of food and beverage consumption. Clinicians should also evaluate patients for life stressors, emotional triggers, and associated reward responses to eating.[10]

TABLE 2

Common Medications That Contribute to Weight Gain or Loss

Medication class	Weight promoting	Weight neutral/variable	Weight reducing
Antidepressants	Tricyclic antidepressants, paroxetine	Citalopram, venlafaxine, desvenlafaxine (Pristiq), duloxetine (Cymbalta), escitalopram, fluoxetine, sertraline	Bupropion
Antihistamines	Diphenhydramine, cetirizine, fexofenadine	—	—
Antipsychotics/ mood stabilizers	Chlorpromazine, clozapine, olanzapine (Zyprexa), quetiapine, risperidone, brexpiprazole (Rexulti), lithium, thioridazine	Aripiprazole, haloperidol, ziprasidone, paliperidone (Invega)	—
Cardiovascular agents	Atenolol, metoprolol, propranolol, calcium channel blockers	Angiotensin-converting enzyme inhibitors, carvedilol (Coreg), dihydropyridine calcium channel blockers	—
Chemotherapies and anti-inflammatory agents	Tamoxifen, cyclophosphamide, methotrexate, aromatase inhibitors, corticosteroids	Nonsteroidal anti-inflammatory drugs	—
Diabetic agents	Insulin, meglitinides, sulfonylureas, thiazolidinediones	Dipeptidyl pepitidase-4 inhibitors	Alpha-glucosidase inhibitors, glucagon-like peptide-1 receptor agonists, metformin, pramlintide (Symlin), sodium-glucose cotransporter-2 inhibitors
Hormones	Estrogens, intramuscular progestins, corticosteroids	Intrauterine or oral progestin, combined oral contraceptives	Testosterone
Hypnotics	Zolpidem*	Medications in the benzodiazepine class, trazodone	—
Seizure medications	Carbamazepine, gabapentin, pregabalin (Lyrica), valproate	Lamotrigine, levetiracetam, phenytoin, oxcarbazepine	Felbamate, topiramate, zonisamide

*—Zolpidem may increase the risk of sleep-related eating disorders.

Information from references 10 and 16.

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PHYSICAL EXAMINATION

Following an examination of the patient's general physical health, their waist and neck circumference should be measured and their BMI should be calculated to quantify the degree of obesity.

Recommended Measurements

Physicians should measure waist circumference because central adiposity (35 inches or greater for women; 40 inches or greater for men) is related to an increased incidence of metabolic disease (Figure 1). Waist circumference can be a more accurate indicator of obesity than BMI, particularly in older adults, because they can have a normal BMI due to decreased muscle mass (sarcopenia) and loss of bone density despite excess adipose tissue.[8,10,17]

Physicians should measure neck circumference because an increased circumference is often found in patients with sleep apnea, which is associated with obesity.[18] The STOP-BANG questionnaire (https://www.mdcalc.com/calc/3992/stop-bang-score-obstructive-sleep-apnea) uses the neck circumference measurement to identify patients who may have sleep apnea.[19] Oropharyngeal examination can be performed for Mallampati scoring (https://www.mdcalc.com/calc/3989/modified-mallampati-classification); this can identify patients with sleep apnea who may have difficult airway management during bariatric surgical treatments for obesity.[20]

FIGURE 1

Waist circumference measurement. Locate iliac crests of the patient *(black rectangles)*. Wrap tape measure around the waist just above the iliac crests. Let the tape measure rest against the skin; do not pull taut. Have the patient inhale and then exhale. Measure the waist circumference after exhalation.

Laboratory and Diagnostic Testing

During the initial evaluation, recommended laboratory studies include a complete blood count, comprehensive metabolic panel, lipid profile, and thyroid-stimulating hormone and A1C levels.[10] These values can be used with additional testing to evaluate secondary causes of obesity and other risk stratification (eTable A).

MANAGEMENT

The Obesity Medicine Association recommends treatment that involves five pillars: (1) behavioral counseling, which can include motivational interviewing and referral to an intensive weight-management program, (2) nutrition counseling, including a focus on eating habits that might benefit from change, (3) increasing physical activity, including helping patients to address barriers, (4) pharmacotherapy, and (5) bariatric procedures, when appropriate.[10] Figure 2 shows a stepwise approach to obesity management.

Behavioral Counseling

Behavioral therapy can assist with optimizing lifestyle changes, and intensive behavioral interventions are recommended by the U.S. Preventive Services Task Force and the American Academy of Family Physicians for patients with a BMI of 30 kg per m^2 or greater; however, other important anthropometric thresholds

TABLE 3

Recommendations for Adult Physical Activity

Moderate-intensity aerobic activity should total at least 150 minutes per week *or* vigorous-intensity aerobic activity should total at least 75 minutes per week (additional health benefits can be seen with moderate-intensity aerobic activity of 300 minutes or more per week)
Moderate-intensity (or higher) activities with muscle-strengthening involving all major muscle groups 2 or more days per week
Older adults should also incorporate multicomponent activities, including balance training, as part of a weekly regimen
When older adults cannot meet a minimum of 150 minutes per week of moderate-intensity aerobic activity due to chronic conditions, they should be as physically active as they are able

Information from reference 27.

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(e.g., increased waist circumference) are not mentioned in these guidelines.[10,21]

Patients who meet the criteria for obesity should be counseled to participate in an intensive weight-management program.[10-12] Counseling in these programs, and by primary care clinicians, should encourage establishing accountability systems through tracking, journaling, and partnering with friends, family, and their health care team. Motivational interviewing and nutrition/physical activity prescriptions are a way to set SMART (specific, measurable, attainable, realistic, time-based) goals with patients. These goals should be tailored to the patient by recognizing their eating patterns, hunger cues, snacking habits, opportunities for portion control, and opportunities for increased physical activity.[10]

Having patients keep logs and diaries that record their body weight, food eaten, physical activity, and sleep can give them and their clinicians insight into potentially modifiable behaviors.[10] Prioritizing mental health and sleep habits promotes successful weight loss and maintenance.[22,23] Clinicians should celebrate weight loss with patients, but also non–scale-related benefits such as increased energy, having clothing fit better, improved sleep, increased physical activity, and the ability to reduce medication use.[10]

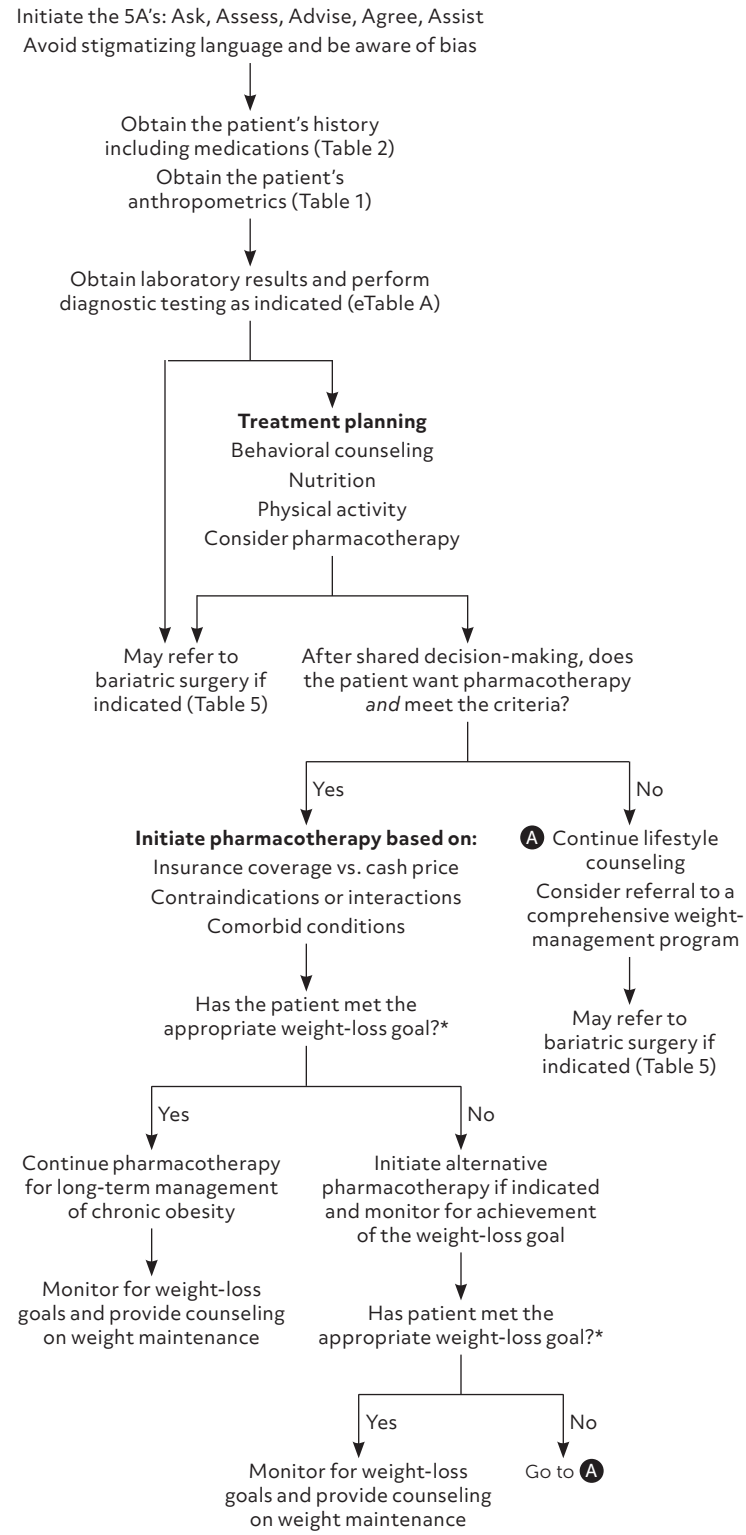
Nutrition Counseling

Clinicians should consider cultural preferences, financial barriers, and geographic limitations to food access when formulating a nutrition plan.[10] Regardless of these factors, ultra-processed and sugary foods or beverages should be limited or avoided. Sugar substitutes may be used; however, their use is controversial because of contradictory data on their effects on insulin resistance, gut health, and the potential to cause weight gain rather than weight loss.[10,24,25]

Calorie counting is a widely used strategy. By using calorie trackers, patients can better understand the influence of food choices and portions on overall energy intake. Appropriate caloric intake goals range from 1,000 to 1,500 kcal per day for women and 1,200 to 1,800 kcal per day for men.[9,10]

Fasting is another caloric restriction strategy that may facilitate positive metabolic adaptation.[10] Patients can consider commercial weight-loss programs, with Weight Watchers and Jenny Craig demonstrating

FIGURE 2



Patient-centered approach to obesity management.

*—A 5% weight loss achieved after 12 weeks of a medication at a maximum tolerated dose or based on individualized goals.

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TABLE 4

Pharmacotherapy for Obesity Management

Class of medication	Medication	Formulation and titration	Potential weight loss
Glucagon-like peptide-1 receptor agonists	Liraglutide (Saxenda)	0.6 mg, 1.2 mg, 1.8 mg, 2.4 mg, and 3.0 mg daily May increase dosages weekly Slower titration may improve gastrointestinal adverse effects and tolerability	7% to 8% of body weight
	Semaglutide (Wegovy)	Subcutaneous injection: 0.25 mg weekly for 4 weeks, then titrating up to 0.5 mg, 1.0 mg, 1.7 mg, and 2.4 mg for 4 weeks each; 2.4 mg continues weekly	15% to 16% of body weight
Glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonist	Tirzepatide (Zepbound)	Subcutaneous injection once weekly	22% to 23% of body weight
Lipase inhibitor; impairs digestion of dietary fat	Orlistat	Alli: over the counter; 60 mg with each fat-containing meal; do not take more than 3 capsules daily Xenical: prescription; take 120 mg with each fat-containing meal; do not take more than 3 tablets daily Dose may be taken during the meal or within 1 hour of completing the meal	5% of body weight
Opioid antagonist/aminoketone antidepressant	Bupropion/naltrexone (Contrave)	Tablets: 90-mg bupropion/8-mg naltrexone Week 1: one tablet in the morning Week 2: one tablet in the morning and one tablet in the evening Week 3: two tablets in the morning and one tablet in the evening Week 4+: two tablets in the morning and two tablets in the evening	5% to 6% of body weight
Sympathomimetic; schedule IV stimulant	Phentermine	Phentermine HCL, 18.75 mg or 37.5 mg orally in the morning May try 18.75 mg twice daily	5% to 12% of body weight
Sympathomimetic; schedule IV stimulant/antiepileptic	Phentermine/topiramate (Qsymia)	Starting dosage: 3.75-mg phentermine/23-mg topiramate per day; at 14-day intervals, increase as needed; recommended dosage: 7.5 mg/46 mg per day; maximum dosage: 15 mg/92 mg per day; when discontinuing, requires gradual taper to prevent seizure	10% of body weight

*—Estimated lowest GoodRx price for 1 month's treatment. Actual cost will vary with insurance and by region. Generic price listed first; brand name price in parentheses. Information obtained at https://www.goodrx.com (accessed April 12, 2024; zip code: 66211).

Information from references 10, 16, and 30-43.

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Contraindications/ drug interactions	Adverse effects	Short-term or long-term	Approximate cost per month without insurance*
Personal or family history of medullary thyroid cancer or multiple endocrine neoplasia type 2; do not use with sulfonylureas	Abdominal pain, constipation, decreased appetite, dizziness, fatigue, headache, hypoglycemia, increased lipase levels, nausea, vomiting	Long-term	$1,300
Personal or family history of medullary thyroid cancer or multiple endocrine neoplasia type 2; discontinue sulfonylureas and consider decreasing other glucose-lowering therapies	Abdominal pain, constipation, decreased appetite, dizziness, fatigue, headache, hypoglycemia, increased lipase levels, nausea, vomiting, acute pancreatitis, acute cholecystitis	Long-term	$1,300
Personal or family history of medullary thyroid cancer or multiple endocrine neoplasia type 2; discontinue sulfonylureas and consider decreasing other glucose-lowering therapies	Nausea, diarrhea, vomiting, constipation, dyspepsia, abdominal pain, decreased appetite, gallbladder problems, hypoglycemia	Long-term	$1,000
Cholestasis, chronic malabsorption syndrome; may decrease absorption of cyclosporine, oral contraceptives, antiepileptics, thyroid hormones, warfarin	Fecal incontinence, flatus, oily stools, increased risk of gallstones and kidney stones, malabsorption of fat-soluble vitamins (A, D, E, K), rare cases of pancreatitis and severe liver injury	Long-term	$280 (Alli: $50; Xenical: $730)
Avoid use with uncontrolled hypertension, seizure disorders, drug or alcohol withdrawal, or opioids	Nausea, constipation, headache, vomiting, dizziness, insomnia, dry mouth, diarrhea	Long-term	— ($200)
Avoid use with alcohol, hyperthyroidism, uncontrolled hypertension, seizure disorder, glaucoma, history of cardiovascular disease	Headache, hypertension, rapid or irregular heart rate, tremor, overstimulation	Short-term (12 weeks) After 12 weeks supported by data and guidelines, especially in patients with low cardiovascular risk	$10
Avoid use with alcohol; increased risk of hypokalemia when used with loop or thiazide diuretics	Paresthesia, dizziness, dysgeusia, insomnia, constipation, dry mouth	Long-term	— ($170)

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consistent clinically significant effectiveness.[26] eTable B summarizes common dietary approaches for weight management.

Physical Activity Counseling

An exercise prescription can be helpful for patients. Table 3 provides physical activity goals recommended by the 2018 Physical Activity Guidelines for Americans.[27] A previous *American Family Physician* article reviewed specific guidelines for exercise prescriptions in older adults.[28]

Clinicians should encourage patients to keep timed activity logs to track their progress.[10] Decreasing periods of inactivity is an important goal. Interspersing walking and other activity breaks during otherwise sedentary periods and taking the stairs instead of elevators can improve overall health.[10,29]

During periods of active weight loss, strength training (e.g., weightlifting) can preserve and increase lean muscle mass and improve body composition. Core training (i.e., exercises focused on abdominal and back muscle groups) can further improve posture, balance, and stability, which may lead to greater functional mobility.[10]

Pharmacotherapy

Pharmacologic treatments for obesity are indicated in conjunction with lifestyle measures. Pharmacotherapy should be offered to patients with a BMI of 30 kg per m^2 or greater and those with a BMI of 27 kg per m^2 or greater with any metabolic comorbidities (e.g., hypertension, type 2 diabetes, dyslipidemia).[8-10] Pharmacologic therapies for obesity should not be used during pregnancy.[9,10]

If 5% weight loss is not achieved after 12 weeks of a medication at a maximum tolerated dose, an alternative medication should be recommended.[8-10] Current guidelines do not specify which medications are indicated for first-line management of obesity. Pharmacotherapy should be individualized for each patient, considering factors including comorbidities, insurance coverage, and medication availability. Newer anti-obesity medications have variable insurance coverage and may be cost prohibitive. Table 4 describes the administration, dosing, contraindications, adverse effects, and cost of pharmacotherapy for obesity management.[10,16,30-43]

Orlistat, phentermine, and phentermine/topiramate (Qsymia) have the lowest out-of-pocket costs in the United States.[44] However, the use of orlistat (which decreases the absorption of dietary fat) requires supplementation of fat-soluble vitamins due to its effects on absorption.[33] Phentermine is sympathomimetic (i.e., stimulates brain receptors that decrease appetite) and is approved for long-term use when combined with the anticonvulsant topiramate.[34,35] Bupropion/naltrexone (Contrave) reduces hunger via stimulation of the brain satiety or reward center; however, it cannot be used in patients

TABLE 5

Threshold BMI Levels for Consideration of Bariatric Surgery

American Society for Metabolic and Bariatric Surgery* and International Federation for Surgery of Obesity and Metabolic Disorders (2022)	American Association of Clinical Endocrinology/American College of Endocrinology, The Obesity Society, American Society for Metabolic and Bariatric Surgery,* Obesity Medicine Association, American Society of Anesthesiologists (2019)	American College of Cardiology/American Heart Association/The Obesity Society (2013)
BMI ≥ 35 kg per m^2	BMI ≥ 40 kg per m^2	BMI ≥ 40 kg per m^2
BMI ≥ 30 kg per m^2 with type 2 diabetes mellitus	BMI ≥ 35 kg per m^2 with obesity-related comorbidity	BMI ≥ 35 kg per m^2 with obesity-related comorbidity
BMI ≥ 30 kg per m^2 without substantial or durable weight loss or comorbidity improvement using nonsurgical methods	BMI 30 to 34.9 kg per m^2 and type 2 diabetes with inadequate glycemic control despite optimal lifestyle and medical therapy	
Persons of Asian descent*:		
BMI ≥ 25 kg per m^2 with type 2 diabetes		
BMI ≥ 25 kg per m^2 without substantial or durable weight loss or comorbidity improvement using nonsurgical methods		
BMI ≥ 27.5 kg per m^2		

BMI = body mass index.

*—American Society for Metabolic and Bariatric Surgery guidelines do not differentiate among Asian ethnicities.

Information from references 9, 55, and 56.

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SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	Evidence rating	Comments
Weight management should incorporate five pillars: nutrition, physical activity, behavioral counseling, pharmacotherapy, and, when appropriate, bariatric procedures.[10]	C	Consensus guideline
Patients who meet criteria for obesity should be counseled to participate in an intensive weight-management program.[10-12]	B	U.S. Preventive Services Task Force recommendation
Pharmacologic therapies for obesity are indicated with lifestyle measures and should be offered to nonpregnant patients with a body mass index ≥ 30 kg per m^2 and to those with a body mass index ≥ 27 kg per m^2 with any metabolic comorbidities (i.e., hypertension, type 2 diabetes mellitus, or dyslipidemia).[8-10]	B	Consensus guideline, randomized controlled trials, observational studies, systematic review
Bariatric surgery should be considered for patients who meet the recommended threshold criteria.[9,55,56]	B	Consensus guideline, observational studies, systematic review

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to https://www.aafp.org/afpsort.

with uncontrolled hypertension, seizure disorders, bulimia, or patients who currently receive opioid therapy.[31]

Glucagon-like peptide-1 (GLP-1) receptor agonists are among the newest anti-obesity medications and include the U.S. Food and Drug Administration–approved drugs, liraglutide (Saxenda) and semaglutide (Wegovy).[45] These medications work by stimulating the release of insulin from the pancreas and simulating GLP-1 receptors in the brain, thereby inducing satiety; they also slow gastric emptying. The SELECT trial demonstrated a reduction in cardiovascular events among patients with obesity and underlying cardiovascular disease.[46] Data from a study of semaglutide found that participants regained two-thirds of their original weight lost 1 year after discontinuation, whereas another study demonstrated sustained weight loss over 4 years, highlighting the need for long-term management.[47,48] Another study identified an increased risk of pancreatitis, gastroparesis, and bowel obstruction for liraglutide and semaglutide compared with bupropion/naltrexone.[49] Clinicians should counsel patients about the risks associated with GLP-1 receptor agonists.

Tirzepatide (Zepbound) is a GLP-1 receptor agonist combined with a glucose-dependent insulinotropic polypeptide that received U.S. Food and Drug Administration approval for weight management in December 2023.[37] Options for anti-obesity medication are expected to grow in the coming years because several are currently in clinical trials.[50]

Device Therapy

An orally administered hydrogel, Plenity, was approved by the U.S. Food and Drug Administration in 2019 as a class II medical device for obesity treatment. The gel, which is not systemically absorbed, mixes with food in the stomach and intestines, creating a larger volume and a sensation of satiety. Contraindications include gastroesophageal reflux disease, peptic ulcers, esophageal anomalies, strictures, and inflammatory bowel disease.[32,43]

Dietary Supplements

Limited evidence supports dietary supplements (e.g., green tea, chromium, garcinia) for weight loss.[51] Human chorionic gonadotropin (hCG) is marketed over the counter for weight loss but was deemed inappropriate for weight management in 2016, and efforts continue for the removal of homeopathic hCG as an option for weight-loss management.[52,53]

Bariatric Procedures

A 2022 article in *American Family Physician* outlined types of bariatric procedures and included laparoscopic sleeve gastrectomy, Roux-en-Y gastric bypass, laparoscopic adjustable gastric band, and duodenal-ileal bypass with sleeve.[54]

Bariatric surgery should be considered for patients who meet the recommended threshold criteria.[9,55,56] However, these criteria currently differ among professional organizations (Table 5).[9,55,56] Notably, the American Society for Metabolic and Bariatric Surgery has lowered their recommended BMI threshold from 40 to 35 kg per m^2.[55]

A 2020 meta-analysis found that bariatric surgery was associated with lower all-cause mortality and a decreased risk of developing several common obesity-related conditions.[57] Similarly, in a 5-year follow-up study, bariatric surgery was more

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effective than medical treatment for resolving hyperglycemia in patients with type 2 diabetes.[58]

Contraindications to bariatric surgery include an increased risk for surgical complications, inflammatory bowel disease, gastric ulcer, gastrointestinal motility disorder, current pregnancy, planned pregnancy in the next 2 years, alcohol or substance use disorder, uncontrolled depression, psychosis, or eating disorder, and being unable to engage with lifestyle changes.[10]

WEIGHT-LOSS GOALS AND MAINTENANCE

Achieving a normal BMI is an unrealistic goal for most patients, and therapy should focus on improving health and quality of life. Modest weight loss is associated with benefits in obesity-related disease-oriented outcomes. A 10% weight loss can yield clinically significant improvements in A1C and lipid levels and reductions in hepatic steatosis.[8-10,13]

Intensive efforts to maximize weight loss in the first 3 to 6 months of a weight-management program, including participation in biweekly or monthly sessions, lead to improved success as part of a comprehensive weight-management plan.[9,10,22] Weight plateaus are common after the first 6 months of weight loss and should prompt a reassessment of management approaches, behavioral barriers, and feasibility of goals.[13] For patients unable to meet realistic goals of therapy in a primary care setting, referral to a weight-management specialist is appropriate.[10]

Clinicians should encourage patients to continue the strategies they used during active weight loss to achieve long-term success in maintaining goal weight. The chronic relapsing and remitting nature of obesity puts patients at risk of relapse upon withdrawal from medical therapy.[10,23,47] Physical activity requirements for weight maintenance should increase toward 300 minutes or more of moderate-intensity aerobic activity, and resistance training should also continue and increase.[9,13,29] Long-term lifestyle modifications proven to help maintain successful weight loss and prevent weight gain are summarized in Table 6.[10,12,22,23,59]

TABLE 6

Lifestyle Modifications for Successful Weight Loss and Maintenance

Avoid processed and sugar-sweetened foods and beverages
Be conscious of caloric intake
Break your fast with protein and make protein a priority
Celebrate non-scale victories
Continue recommended medications
Continue self-monitoring with frequent weigh-ins
Dedicate time to structured aerobic activity and resistance training
Eat more low-glycemic fruits and vegetables
Ensure adequate sleep (7 to 8 hours) to minimize cravings and advance activity goals
Establish an accountability system
Find small opportunities to keep moving
Follow up frequently with primary care
Make your goals SMART (specific, measurable, attainable, realistic, time-based)
Prepare more meals at home
Prioritize your mental health and stress management

Information from references 10, 12, 22, 23, and 59.

This article updates previous articles on this topic by Erlandson, et al.[16]; Rao[60]; and Berke and Morden.[61]

Data Sources: A PubMed search was completed in Clinical Queries using the key terms obesity, obesity evaluation, weight-loss pharmacotherapy, anti-obesity medications, bariatric surgery, nutrition, physical activity, obesity cost, weight-loss supplements, obesity behavioral therapy, weight-loss goals, and weight maintenance. The search included meta-analyses, randomized controlled trials, clinical trials, reviews, and guidelines. Also searched were the U.S. Preventive Services Task Force website and Essential Evidence Plus. We critically reviewed studies that used patient categories such as race or gender but did not define how these categories were assigned, stating their limitations in the text. Search dates: February 1, 2024, and May 21, 2024.

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