

Guideline Recommendations for Obesity Management



Donna H. Ryan, MD^{a,*}, Scott Kahan, MD, MPH^b

KEYWORDS

- Obesity guidelines • Weight management • Lifestyle intervention
- Obesity pharmacotherapy • Diet • Bariatric surgery • Medication

KEY POINTS

Primary care practitioners should be aware of the following practice recommendations:

- Body mass index (BMI) is a valuable part of the electronic health record, but it is a screening measure, not a diagnostic measure. The diagnosis of obesity is the presence of abnormal excess body fat that impairs health. Consider the patient's genetics and ethnicity as part of BMI and waist circumference and do not treat on BMI alone. Consider comorbidities and health risk when determining the intensity of treatment approach.
- Modest or moderate weight loss can produce health benefits. For more serious complications, more weight loss may be needed. For patients with severe obesity and complications, bariatric surgery should be considered.
- There are multiple pathways to dietary success. Prescribe a diet the patient can adhere to and that has health benefits. Successful lifestyle change requires skills training. Patients should have access to counseling sessions with at least 14 sessions over 6 months and follow-up for one year.
- Medications approved for chronic weight management can help patients better adhere to the diet plan and can help sustain hard-won weight loss. Medications should be prescribed and success evaluated at 12-16 weeks. If patients are successful, medications should be continued.
- Obesity is a complex, chronic disease and life-long management is indicated.

^a Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70130, USA;

^b Johns Hopkins Bloomberg School of Public Health, National Center for Weight and Wellness, Washington, DC, USA

* Corresponding author.

E-mail address: ryandh@pbrc.edu

INTRODUCTION

Responding to the growing epidemic of obesity and obesity-related chronic diseases, over the last 4 years numerous guidelines and position statements have been published to assist practitioners in addressing obesity in their patients. In particular, 3 major guidelines published by United States governmental health agencies and professional societies offer valuable, and mostly consistent, recommendations for primary care providers. Related to the problem of increasing obesity prevalence are increasing rates, observed globally, of type 2 diabetes and other obesity-associated disease, creating an enormous global health burden. Thus far, no country has been successful in reversing obesity prevalence.¹

Primary care practitioners acknowledge that obesity is a major driver of the chronic disease burden, but managing weight effectively can be challenging, especially in primary care settings. The pathophysiology that drives weight gain in susceptible individuals and makes weight loss and weight loss maintenance difficult is a barrier to primary care physicians in a busy office practice.^{2,3} The public health challenge has also stimulated drug discovery and approval, with 4 new medications approved by the US Food and Drug Administration (FDA) for chronic weight management since 2012. Primary care providers need knowledge and skills in the following areas:

- Diagnosis of obesity and overweight, and staging of disease
- Recognition and treatment of obesity-related comorbidities
- Determining which therapy or therapies is or are appropriate for an individual patient
- Management of weight loss, including:
 - Effective delivery of lifestyle intervention (diet, physical activity, and behavior modification)
 - Consideration of obesity pharmacotherapy, in appropriate patients
 - Weight-centric prescribing: avoiding medications that promote weight gain in favor of weight-neutral or medications that produce some weight loss
 - Appropriate prescription of medications approved for chronic weight management
 - Referral to specialty care (eg, obesity medicine specialists and/or bariatric surgical procedures) and
- Prevention of weight regain in patients who are successful with weight loss.

Three obesity guidelines are discussed in this article. Targeting primary care providers, the US National Institutes of Health and the American Heart Association, American College of Cardiology, and The Obesity Society (AHA/ACC/TOS) sponsored systematic evidence review and guidelines around 5 critical questions on assessment and management of obesity.⁴ The Endocrine Society (ENDO) sponsored systematic evidence review and guidelines targeting pharmacotherapy, reviewing medications that promote weight gain and medications approved for obesity management.⁵ The American Association of Clinical Endocrinologists (AACE) also published obesity guidelines in 2016,^{6,7} which are particularly relevant for endocrinologists and for guidance on patients with more severe obesity and metabolic complications of obesity, such as diabetes (**Table 1**). This article reviews and compares findings and recommendations across these guidelines, identifies areas of controversy and concordance, and suggests how primary care practices may make use of the most appropriate recommendations for their circumstances. **Table 1** describes, in abbreviated language, the methodology, focus, key recommendations, whether those recommendations are broad or targeted, and areas of controversy for each of the documents.

Table 1
Comparison of recent clinical treatment guidelines for diagnosis and management of obesity in adults

2013 AHA/ACC/TOS⁴ (Based on Systematic Evidence Review Sponsored by National Heart Lung and Blood Institute

2015 ENDO Obesity Pharmacotherapy⁵

AACE 2016⁶

Methodology: stringent; systematic evidence review; graded recommendations

Methodology: stringent; systematic evidence review; graded recommendations

Methodology: literature review and consensus of expert endocrinologists; targets treatment recommendations

Focus, narrow: 5 critical questions

- Benefits of weight loss
- Risks of excess weight
- Best diet for weight loss
- Efficacy of lifestyle intervention approaches
- Efficacy and safety of bariatric surgery

Focus, narrow: 2 topical areas

- Medications approved for weight loss
- Weight effects of medications used for chronic disease management

Focus, broad

- 9 broad clinical questions and 126 recommendations
- Complication-centric approach to management
- Emphasis on identifying comorbidities with more detailed screening recommendations
- Grading system identifies severity of disease and severity of comorbidity profile directs intensity of treatment

Recommendations: both broad and narrow; Narrow around 5 questions; Broad around, the treatment algorithm, “Chronic Disease Management Model for Primary Care of Patients With Overweight and Obesity” based on evidence statements and expert opinion

Recommendations: broad; target an overall approach to medicating the patient with obesity, both to augment weight loss efforts and to minimize weight gain effects of medications for chronic disease prescription

Recommendations: broad and comprehensive, with focus on staging severity of disease as a guide to treatment planning; more severe disease warrants more aggressive approach

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Table 1
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2013 AHA/ACC/TOS⁴ (Based on Systematic Evidence Review Sponsored by National Heart Lung and Blood Institute

Key points:

- BMI is screening tool; waist circumference is a risk factor
- It is not necessary to achieve normal weight; health improvements begin with modest weight loss
- There is no magic diet
- Lifestyle-intervention counseling conducted face-to-face in 14 or more sessions over 6 mo is the gold standard for weight loss intervention
- Bariatric surgery should be discussed with patients who meet criteria and would benefit from it, and referrals should be made

Areas of controversy:

- Does not include race-specific BMI cutpoints to assess risk
- BMI 30 indicates medical intervention regardless of health status

2015 ENDO Obesity Pharmacotherapy⁵

Key points:

- Weight-centric prescribing should be done for chronic diseases; in prescribing for chronic diseases, avoid medications that promote weight gain in favor of those that are weight neutral or are associated with weight loss
- Medications are useful adjuncts to diet and exercise, when prescribed appropriately
- Choosing which medication to use is a shared decision of prescriber and patient

Areas of controversy:

- Does not indicate stepped approaches to medicating for chronic weight management; eg, all medications given equal consideration for first-line therapy

AACE 2016⁶

Key points:

- Complications of excess body weight should direct intensity of treatment and urgency of treatment
- Medications for chronic weight management may be used initially (without lifestyle-alone attempt) for patients with more severe disease manifestations as an adjunct to lifestyle (multicomponent) measures
- Individuals without comorbidities or risk factors are stage 0 and no medical intervention is required

Areas of controversy:

- Specialist focus; no recommendations for screening and early intervention in context of care across the lifespan
- Confusion caused by BMI 25 <30 and risk factors being designated as obesity

BMI 25 <30 means BMI at least 25 and up to 30 kg/m². This is usually classified as overweight, but in this guideline, it can be “obesity”.

Guidelines Methodology Determines Scope

To understand the differences among guidelines, one must understand the methodology used to generate recommendations. There is a movement to make the development process for all guidelines more rigorous.^{8,9} Guidelines that use more rigorous methodology take longer to develop, require painstaking steps and costs to assemble, and are presumably more trustworthy; however, they are necessarily limited in that they can only address a small number of critical questions. Guidelines that use this more rigorous methodology, such as those from AHA/ACC/TOS⁴ and ENDO,⁵ are by necessity more narrow but are more authoritative. Those that skip the step of formulating critical questions use less formal literature review and rely more on expert opinion of specialists (AAACE⁶) are not held to the same strict constraints of evidence review methodology and can give broader recommendations and be more timely in an attempt to be more relevant to practitioners. The methodological approach informs the range of recommendation and strength of recommendation possible, as indicated in [Table 1](#).

This discussion emphasizes discrepancies across the guidelines and explains how both approaches may be relevant in primary care and specialty offices.

Diagnosis of Obesity and Staging of Disease: Selecting Appropriate Candidates for Medical Intervention

All guidelines⁴⁻⁶ use body mass index (BMI) as a screening measure. What is new, compared with guidelines of the past, is that the BMI-centric approach is fading in influence in all guidelines and BMI is not the sole director of treatment choice.

It is important that primary care providers understand that the diagnosis of obesity should not be made based on BMI alone.^{10,11} BMI is a measure of body size. Obesity should be defined as a condition in which excess abnormal body fat impairs health.¹⁰ BMI correlates well with total body fat on a population basis and has utility in tracking populations.¹² In the United States, BMI is a core measure available through the electronic health record at every visit; therefore, the BMI is here to stay. But BMI is only the first step in evaluating risk associated with excess weight. The second step in determining need for and intensity of medical management is to screen for other risk factors related to excess weight and to make a decision to offer medical treatment based on a combination of body size (BMI) and other risk factor assessment.

The AHA/ACC/TOS guidelines⁴ emphasize the importance of including waist circumference as a risk factor to determine need for weight loss. In those guidelines, the cutpoints for waist circumference are 35 inches (89 cm) for women and 40 inches (101 cm) for men. Those guidelines also use the standard cutpoints for BMI (overweight is BMI ≥ 25 <30 kg/m² and obesity is BMI ≥ 30 kg/m²). However, different populations have more propensity for visceral fat accumulation, which is associated with greater metabolic risk than subcutaneous fat and, therefore, are at increased risk for comorbidities. In Asians, the cutpoint for overweight is BMI greater than or equal to 23 kg/m² and for obesity it is BMI greater than or equal to 25 kg/m² and the waist circumference cutpoint is 31.5 inches (80 cm) for women and 35 inches (89 cm) for men.¹² In general, it is recommended that slightly lower waist circumference cut-offs are used for Asian, ethnic Central and South American, Sub-Saharan African, and Middle East populations.⁶

All guidelines agree that patients with excess weight and associated health risks should be treated for obesity. However, there is a discrepancy in guidelines for patients with BMI greater than 30 but without clear metabolic health risks. The AHA/ACC/TOS guidelines endorse medically directed, intensive weight loss intervention to improve

health risk in all patients with BMI greater than 30, even if no comorbid risks are present, based on the rationale that there is likely to be progression over time to develop risk factors and comorbid conditions. In contrast, the AACE guidelines⁶ highlight that individuals with BMI greater than 30 kg/m² but without metabolic risk factors, which is often referred to as metabolically healthy obesity, would not necessitate intensive weight reduction therapies. Given that the AACE guidelines are written primarily for endocrinologists, this discrepancy makes sense because patients are not seeking treatment from endocrinologists for a well patient visit. Most importantly, this is likely to be an area in which clinical judgment should play a central role in determining the intensity of intervention. Certainly, specialist care is not appropriate for medically directed weight loss in individuals without any associated health risks; but lifestyle intervention may be appropriately prescribed by primary care providers for individuals with BMI greater than 30 kg/m², even without associated health risk, to prevent further weight gain.

Controversy concerning the guidelines can arise when individuals have comorbidities or risk factors related to excess body fat and have BMI less than 25 kg/m². This can be the case in certain racial groups, especially Asians, and all guidelines acknowledge this fact. Although no formal evidence review supports such a recommendation among US immigrants from South Asia and China, the AHA/ACC/TOS guidelines⁴ do support such an approach for Asians.

Choice of Initial Treatment Approach

The AHA/ACC/TOS guidelines⁴ emphasize that comprehensive lifestyle intervention is the cornerstone for treating obesity and adjunctive therapies are reserved for individuals with more health risk who do not succeed with weight loss and maintenance. In clinical practice, most individuals have already tried self-help approaches before medical intervention is contemplated. The AACE guidelines⁶ introduce staging (obesity stages 0, 1, and 2) that links severity of disease at presentation to degree of intensity of intervention. If comorbidities or risk factors are mild, AACE terms this obesity stage 1. If the associated comorbidities are moderate or severe, the term is obesity stage 2. This approach promotes the concept that the intensity of treatment needs to match the severity of disease, rather than the patient's size or BMI. However, AACE uses the term obesity for individuals with weight-related comorbidities and BMI greater than 25 kg/m², which is somewhat confusing. Still, the principle is sound: for individuals at higher risk, more intensive approaches are justified; for individuals with low health risks, overly aggressive intervention may not be warranted.

Primary care practitioners should take away several important principles from these somewhat different approaches. First, there is more urgency to intervene when patients have health risks or comorbidities associated with excess body weight; the greater the health risk, the greater the urgency, and the more justification for higher intensity approaches. Additionally, the patient's weight management history can be used to determine choice of treatment plan. Patients do not need to fail at behavioral management under the observation of the health care provider; a history of struggle should be enough justification to add adjunctive treatment, such as pharmacotherapy. Finally, because the goal of weight loss is improvement in health and quality of life, the targeted health goal should be the rationale for determining intensity of approach and for judging success of intervention.

Comprehensive Lifestyle Intervention

It is clear that medical advice to "just eat less and exercise more" is not effective for most patients to succeed at weight loss. Comprehensive lifestyle intervention includes building a skill set of behavioral knowledge and strategies to achieve and maintain

sustainable improvements in food intake and physical activity. The AHA/ACC/TOS guidelines systematic evidence review⁴ of lifestyle intervention was conducted to support inclusion of intensive behavioral therapy for weight management as a part of medical practice. It demonstrated that when these components are delivered in face-to-face (group or individual) sessions, with at least 14 sessions over 6 months and continued monthly follow-up thereafter, then average weight loss of 8% of baseline weight at 1 year is expected.⁴ This degree of weight loss is clinically meaningful because it translates into clinically significant improvements in blood pressure, lipids, glycemic control, and reduction in risk for progression to type 2 diabetes.⁴ Based on these and other findings, the US Preventive Services Task Force¹³ has recommended that individuals with obesity and cardiovascular disease risk factors should be referred for intensive behavioral therapy and the Centers for Medicare and Medicaid Services now covers intensive counseling in primary care for Medicare patients.^{14–16}

When in-person interaction is challenging, telephone-based or Web-based counseling and commercial programs can be used as alternatives, although less average weight loss should be expected.⁴

Diets for Weight Loss

The entrenched belief that there is a magic diet has stimulated studies that have focused on various macronutrients compositions, including low-fat diets, low-carbohydrate or high-protein diets, low glycemic-index diets, balanced deficit diets, vegetarian, vegan, and various diets based on dietary patterns and eliminating 1 or more major food groups. To address this issue, the creators of the AHA/ACC/TOS guidelines performed a systematic evidence review of 17 dietary patterns and showed that no diet type was superior in terms of ability to produce and sustain weight loss⁴ (**Box 1**). Thus, there are many pathways to successful weight loss regardless of which diet is chosen. In all of the diets that were studied, the best predictor of success was dietary adherence. Thus, providers are advised to recommend diets according to patient preference to improve adherence to achieve reduced caloric intake and weight loss. This does not mean that diet composition is not important but merely that negative energy balance is the key factor in promoting weight loss. Referral to a registered dietitian is endorsed by the AHA/ACC/TOS guidelines⁴ when the dietary recommendation has a specific health target.

Physical Activity

Increased physical activity is an essential component of a comprehensive lifestyle intervention. The AHA/ACC/TOS guidelines⁴ typically prescribe increased aerobic physical activity (eg, brisk walking) for greater than 150 minutes per week (equal to >30 min/d, most days of the week). This echoes the 2001 and 2009 American College of Sports Medicine Position Stand,¹⁷ which also supported 200 to 300 minutes per week for long-term weight loss and moderate-intensity physical activity between 150 and 250 minutes per week to be effective to prevent weight gain, although that intensity will provide only modest weight loss.¹⁷ This Position Stand found that resistance training does not enhance weight loss but may increase fat-free mass, promote loss of fat mass, and is associated with reductions in health risk. Existing evidence indicates that endurance physical activity or resistance training, even without weight loss, improves health risk.¹⁷

Pharmacotherapy

The best source for authoritative recommendations on medications for obesity comes from the ENDO guidelines.⁵ Foremost is the consideration of the role of medications in

Box 1**Dietary approaches with evidence of weight loss efficacy**

- European Association for the Study of Diabetes guidelines–style diet targeting food groups, without formal prescribed energy restriction target but realized energy deficit
- Higher protein (25% of total calories from protein, 30% of total calories from fat, 45% of total calories from carbohydrate) with provision of foods that realized energy deficit
- Higher protein Zone diet (5 meals per day, each with 40% of total calories from carbohydrate, 30% of total calories from protein, 30% of total calories from fat) without formal prescribed energy restriction but realized energy deficit
- Lacto-ovo-vegetarian-style diet with prescribed energy restriction
- Low-calorie diet with prescribed energy restriction
- Low-carbohydrate diet (initially <20 g per day carbohydrate) without formal prescribed energy restriction but realized energy deficit
- Low-fat vegan style diet (10%–25% of total calories from fat) without formal prescribed energy restriction but realized energy deficit
- Low-fat diet (20% of total calories from fat) without formal prescribed energy restriction but realized energy deficit
- Low-glycemic-load diet, either with or without formal prescribed energy restriction
- Lower fat ($\leq 30\%$ fat), high dairy (4 servings/day) diets with or without increased fiber and/or low-glycemic index or load foods (low-glycemic load), with prescribed energy restriction
- Macronutrient-targeted diets (15% or 25% of total calories from protein; 20% or 40% of total calories from fat; 35%, 45%, 55%, or 65% of total calories from carbohydrate) with prescribed energy restriction
- Mediterranean-style diet with prescribed energy restriction
- Moderate protein (12% of total calories from protein, 58% of total calories from carbohydrate, 30% of total calories from fat) with provision of foods that realized energy deficit
- Provision of high-glycemic-load or low-glycemic-load meals with prescribed energy restriction
- The American Heart Association style Step 1 diet (with prescribed energy restriction of 1500–1800 kcal per day, <30% of total calories from fat, <10% of total calories from saturated fat)

Dietary approaches are listed in alphabetical order.

Adapted from Jensen MD, Ryan DH, Donato KA, et al. Guidelines (2013) for managing overweight and obesity in adults. Obesity 2014;22(S2):S75; with permission.

weight gain. An important part of evaluation of the patient with obesity is reviewing the medication list to ensure that the patient is not taking drugs that contribute to weight gain and to modify if possible, when medications associated with gain are found. Many medications in use for common chronic diseases may contribute to weight gain, and changing medications to weight-neutral alternatives, when possible, is advised. **Table 2** describes some of the medications commonly prescribed chronically and their weight effects.

All of these guidelines support pharmacotherapy as an adjunct to lifestyle changes to help patients who struggle with behavioral management alone. Across all guidelines,^{4–6} the indications for adding pharmacotherapy to a weight loss effort are a history of failure to achieve clinically meaningful weight loss and/or to sustain lost weight,

Table 2

Medications associated with weight gain and alternatives

Indication or Class	Weight Gain Associated with Use	Weight Loss or Weight Neutrality Associated with Use (Weight Reduction in Parentheses)
Antidepressants, mood stabilizers, or tricyclic antidepressants	Amitriptyline Doxepin Imipramine Nortriptyline Trimipramine Mirtazapine	(Bupropion) Nefazodone Fluoxetine (short-term) Sertraline (<1 y)
Antidepressants, mood stabilizers, or SSRIs	Fluoxetine? Sertraline? Paroxetine Fluvoxamine	
Antidepressants, mood stabilizers, or MAO inhibitors	Phenelzine Tranylcypromine	
Mood stabilizer	Lithium	
Antidiabetic medications	Insulin (weight gain differs with type and regimen used) Sulfonylureas Thiazolidinediones Sitagliptin? Mitiglinide	(Metformin) (Acarbose) (Miglitol) (Pramlintide) (Exenatide) (Liraglutide) (SGLT 2 inhibitors)
Antihypertensive medications	α -blocker? β -blocker?	ACE inhibitors? Calcium channel blockers? Angiotensin-2 receptor antagonists

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Table 2
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Indication or Class	Weight Gain Associated with Use	Weight Loss or Weight Neutrality Associated with Use (Weight Reduction in Parentheses)
Antipsychotics	Clozapine Risperidone Olanzapine Quetiapine Haloperidol Perphenazine Quetiapine	Ziprasidone Aripiprazole
Anticonvulsants	Carbamazepine Gabapentin Valproate	Lamotrigine? (Topiramate) (Zonisamide)
Contraceptives	Injectable progesterone Oral progesterone	Barrier methods Intrauterine devices Oral contraceptives preferable to injectable
Endometriosis treatment	Depot leuprolide acetate	Surgical treatment
Chronic inflammatory diseases	Glucocorticoids	Nonsteroidal antiinflammatory drugs Disease-modifying antirheumatic drugs
AIDS treatment	Antiretroviral therapies	Monitor body weight, body fat distribution, and cardiovascular risk factors

Abbreviations: ?, refers to uncertain or unknown effect on weight; SSRI, selective serotonin reuptake inhibitor.

From Apovian CM, Aronne LJ, Bessesen DH, et al. Pharmacologic management of obesity: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2015;100(2):342–62; with permission.

in patients who meet regulatory prescribing guidelines (BMI ≥ 27 kg/m² with 1 or more obesity comorbidities or a BMI >30 kg/m² with or without metabolic consequences).⁴⁻⁶

The ENDO guidelines on pharmacotherapy for obesity provide recommendations that serve as guiding principles.⁵ First, effective behavioral support for weight loss should be provided in all patients. Obesity pharmacotherapy reinforces diets that result in an energy deficit, and combining medication and behavioral therapy leads to significantly greater weight loss than either alone. Second, the patient should be familiar with the drug and its potential side effects (Table 3). Third, if less than 5% weight occurs after 3 months, a new treatment plan should be considered because the patient is not likely responding to the medication. No single medication is effective in every patient, similar to treatment of other comorbidities that primary care providers treat on a daily basis. Finally, if medications result in improvement in health and weight, they should be continued long term. Medications approved for chronic weight management and their profiles are found in Table 3.

Bariatric Surgery

The AHA/ACC/TOS guidelines⁴ offers the strongest recommendation yet that physicians should be proactive to identify and refer patients who would benefit from bariatric surgery. Adult patients with BMI greater than or equal to 40 or BMI greater than or equal to 35 with obesity-related comorbid conditions meet basic criteria for surgery. Bariatric surgery leads to substantial long-term weight loss, improves many obesity-related comorbid conditions, and reduces mortality. Safety of these procedures has been well-studied and is not significantly higher than routine abdominal surgeries. For patients with type 2 diabetes, bariatric surgery, especially Roux-en-Y gastric bypass surgery, is particularly effective. A recently published position statement offers additional guidance in using bariatric surgery for patients with obesity and poor control of type 2 diabetes.¹⁸ These guidelines recommend that, for patients with type 2 diabetes, bariatric surgery should be recommended for those with BMI greater than or equal to 40 kg/m² and patients with BMI of 35.0 kg/m² to 39.9 kg/m² in the presence of poor glycemic control. This position statement goes even further, to suggest that patients with poor glycemic control could be considered for surgery even with BMI as low as 30 kg/m².

SUMMARY

The current menu of guidance around obesity management is revealing of progress in the field. The focus is on health risk assessment, not just body size. The various guidelines emphasize the importance of a multilayered approach to addressing the obesity epidemic. There is a need to intervene earlier, in primary care settings, with lifestyle intervention. Further, those interventions will only be effective if they are intensive behavioral therapy approaches. The guidelines emphasize the chronic nature of obesity and the need for long-term care. The guidelines debunk the notion of a magic diet and emphasize the importance of comprehensive approaches to lifestyle change: diet, physical activity, and behavioral changes. Further, the guidelines acknowledge the need for stepping up care when patients struggle and to add adjunctive approaches to lifestyle intervention when indicated. Practitioners now have the first guidelines based on a systematic evidence review of how and when to use medications in patients with obesity.⁵ The growing evidence base for the role of bariatric surgery as a treatment approach for patients with severe obesity should lead health care providers to be more proactive in recommending these procedures. Future guidelines

Table 3
Medications approved in United States for chronic obesity management

Drug, Generic Name

• Dose • Route of Administration	Mechanism of Action⁵	≥5% Weight Loss Efficacy at 1 y	≥10% Weight Loss Efficacy	Common Side Effects⁵	Contraindications and Warnings⁵
Orlistat • 120 mg tid, before meals Or • 60 mg tid before meals • Oral	Pancreatic lipase inhibitor; blocks absorption of dietary fat	In 5 studies, orlistat = 35.5%–54.8%; vs Placebo = 16%–27.4%	In 5 studies, orlistat = 16.4%–25.8%; vs Placebo = 3.8%–9.9%	<ul style="list-style-type: none"> • Steatorrhea • Oily spotting • Flatulence with discharge • Fecal urgency • Oily evacuation • Increased defecation • Fecal incontinence 	<ul style="list-style-type: none"> • Contraindicated in pregnancy • Warning: ↑ cyclosporine exposure • Liver failure (rare) • Requires coadministration of multiple vitamin • Increased risk of gall bladder disease • Increased urine oxalate; monitor renal function
Lorcaserin • 10 mg bid Or • 20 mg qd • Oral	5-HT _{2C} serotonin agonist with little affinity for other serotonergic receptors; reduces food intake	In 2 studies combined, lorcaserin = 47.1%; vs Placebo = 22.6% Difference from placebo = 24.5%	In 2 studies combined, lorcaserin = 22.4%; vs Placebo = 8.7% Difference from placebo = 13.8%	<ul style="list-style-type: none"> • Headache • Dizziness • Nausea • Dry mouth • Fatigue • Constipation 	<ul style="list-style-type: none"> • Contraindicated in pregnancy • Use with caution with SSRI, SNRI, MAOIs, St John's wort, triptans, bupropion, dextromethorphan
Phentermine or topiramate ER (Phen/TPM) • 7.5 mg/46 mg qd • 15 mg/92 mg qd, indicated as rescue • Oral, once daily dosing (requires titration)	Sympathomimetic Anticonvulsant (GABA receptor modulation, carbonic anhydrase inhibition, glutamate antagonism); reduces food intake	In 2 studies, Phen/TPM (3 doses) = 45%–70%; vs Placebo = 17%–21% Difference from placebo = 27.6%–49.4%	In 2 studies, Phen/TPM (3 doses) = 19%–48%; vs Placebo = 7% Difference from placebo = 11.4%–40.3%	<ul style="list-style-type: none"> • Insomnia • Dry mouth • Constipation • Paresthesias • Dizziness • Dysgeusia 	<ul style="list-style-type: none"> • Contraindicated in pregnancy • Fetal toxicity; monthly pregnancy test suggested • Contraindicated with hyperthyroidism, glaucoma • Do not use with MAOIs or sympathomimetic amines • Acute myopia (rare)

<p>Naltrexone SR or bupropion SR (NB)</p> <ul style="list-style-type: none"> • 32 mg/360 mg • Oral; bid dosing (requires titration) 	<p>Opioid receptor antagonist and dopamine and noradrenaline reuptake inhibitor; reduces food intake</p>	<p>In 3 studies, NB = 44.2%–62.3%; vs Placebo = 17%–43% Difference from placebo = 14%–25%</p>	<p>In 3 studies, NB = 15%–35%; vs Placebo = 5%–21% Difference from placebo = 10%–14%</p>	<ul style="list-style-type: none"> • Nausea • Constipation • Headache • Vomiting • Dizziness 	<ul style="list-style-type: none"> • Boxed warning: suicide risk in depression • Contraindicated in pregnancy • Contraindicated in seizure disorders, uncontrolled hypertension, glaucoma • Do not use with opioids, MAOIs • Hepatotoxicity (rare)
<p>Liraglutide</p> <ul style="list-style-type: none"> • 3.0 mg • Injection; once daily dosing (requires titration) 	<p>GLP-1 receptor agonist; reduces food intake</p>	<p>In 2 studies, liraglutide = 62% and 49%; vs Placebo = 34.4% and 16.4% Difference from placebo = 32.6% and 22.6%</p>	<p>In 2 studies, liraglutide = 22.4% and 33.9%; vs Placebo = 5.5% and 15.4% Difference from placebo = 16.9% and 18.5%</p>	<ul style="list-style-type: none"> • Nausea • Vomiting • Diarrhea • Constipation • Headache • Dyspepsia • Fatigue • Dizziness • Abdominal pain 	<ul style="list-style-type: none"> • Boxed warning: thyroid C-cell tumors in rodents • Contraindicated with personal or family history of medullary thyroid cancer or multiple endocrine neoplasia • Pancreatitis • Hypoglycemia in diabetes • Increased risk of gall bladder disease

Abbreviations: GABA, gaba amino benzoic acid; GLP, glucagon-like peptide; MAOI, monoamine oxidase reuptake inhibitor; NB, naltrexone/bupropion; SR, sustained release.

Mechanism of action, dosing, efficacy (range in proportion of treated individuals who achieve >5% and >10% during phase 3 clinical trials), common side effects and safety issues. Information from product labels, except where noted. The efficacy data are obtained from the US FDA product labels.

Data from Apovian CM, Aronne LJ, Bessesen DH, et al. Pharmacologic Management of obesity: An Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2015; 100(2):342–62.

should include a focus on obesity devices, for which 5 (ie, 3 types of gastric balloons, an electrical stimulating system, and a gastric aspiration device) have been approved by FDA since 2015.¹⁹ There are guidelines for primary care and for specialist care, with specialist care targeting patients with obesity-related complications. The menu illustrates that one size does not fit all in terms of where to go for advice. Still, there is remarkable concordance in the overall direction of the guidelines, with all making an emphatic statement that it is an obligation for all health care providers to participate in obesity management. These guidelines are not mandates, and should be interpreted with clinical judgment.

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