

DIAGNOSIS AND MEDICAL MANAGEMENT OF OBESITY				
DIAGNOSIS		COMPLICATION-SPECIFIC STAGING AND TREATMENT		
Anthropometric Component (BMI kg/m <sup>2</sup> )	Clinical Component	Disease Stage	Chronic Disease Phase of Prevention	Suggested Therapy (based on clinical judgment)
<25 <23 in certain ethnicities waist circumference below regional/ethnic cutoffs		<b>Normal weight</b> (no obesity)	<b>Primary</b>	<ul style="list-style-type: none"> <li>• <b>Healthy lifestyle:</b> healthy meal plan/physical activity</li> </ul>
<b>25–29.9</b> 23–24.9 in certain ethnicities	Evaluate for presence or absence of adiposity-related complications and severity of complications <ul style="list-style-type: none"> <li>• Metabolic syndrome</li> <li>• Prediabetes</li> <li>• Type 2 diabetes</li> <li>• Dyslipidemia</li> <li>• Hypertension</li> <li>• Cardiovascular disease</li> <li>• Nonalcoholic fatty liver disease</li> <li>• Polycystic ovary syndrome</li> <li>• Female infertility</li> <li>• Male hypogonadism</li> <li>• Obstructive sleep apnea</li> <li>• Asthma/reactive airway disease</li> <li>• Osteoarthritis</li> <li>• Urinary stress incontinence</li> <li>• Gastroesophageal reflux disease</li> <li>• Depression</li> </ul>	<b>Overweight stage 0</b> (no complications)	<b>Secondary</b>	<ul style="list-style-type: none"> <li>• <b>Lifestyle therapy:</b> Reduced-calorie healthy meal plan/physical activity/behavioral interventions</li> </ul>
<b>≥30</b> ≥25 in certain ethnicities		<b>Obesity stage 0</b> (no complications)	<b>Secondary</b>	<ul style="list-style-type: none"> <li>• <b>Lifestyle therapy:</b> Reduced-calorie healthy meal plan/physical activity/behavioral interventions</li> <li>• <b>Weight-loss medications:</b> Consider if lifestyle therapy fails to prevent progressive weight gain (BMI ≥27)</li> </ul>
<b>≥25</b> ≥23 in certain ethnicities		<b>Obesity stage 1</b> (1 or more mild to moderate complications)	<b>Tertiary</b>	<ul style="list-style-type: none"> <li>• <b>Lifestyle therapy:</b> Reduced-calorie healthy meal plan/physical activity/behavioral interventions</li> <li>• <b>Weight-loss medications:</b> Consider if lifestyle therapy fails to achieve therapeutic target or initiate concurrently with lifestyle therapy (BMI ≥27)</li> </ul>
<b>≥25</b> ≥23 in certain ethnicities		<b>Obesity stage 2</b> (at least 1 severe complication)	<b>Tertiary</b>	<ul style="list-style-type: none"> <li>• <b>Lifestyle therapy:</b> Reduced-calorie healthy meal plan/physical activity/behavioral interventions</li> <li>• <b>Add weight-loss medication:</b> Initiate concurrently with lifestyle therapy (BMI ≥27)</li> <li>• <b>Consider bariatric surgery:</b> (BMI ≥35)</li> </ul>

a. All patients with BMI ≥25 have either overweight or obesity stage 0 or higher, depending on the initial clinical evaluation for presence and severity of complications. These patients should be followed over time and evaluated for changes in both anthropometric and clinical diagnostic components. The diagnoses of overweight/obesity stage 0, obesity stage 1, and obesity stage 2 are not static, and disease progression may warrant more aggressive weight-loss therapy in the future. BMI values ≥25 have been clinically confirmed to represent excess adiposity after evaluation for muscularity, edema, sarcopenia, etc.

b. Stages are determined using criteria specific to each obesity-related complication; stage 0 = no complication; stage 1 = mild to moderate; stage 2 = severe.

c. Treatment plans should be individualized; suggested interventions are appropriate for obtaining the sufficient degree of weight loss generally required to treat the obesity-related complication(s) at the specified stage of severity.

d. BMI ≥27 is consistent with the recommendations established by the US Food and Drug Administration for weight-loss medications.

**Abbreviation:** BMI = body mass index.

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CHECKLIST OF WEIGHT-RELATED COMPLICATIONS: SCREENING AND DIAGNOSES IN PATIENTS WITH OVERWEIGHT/OBESITY		
Weight-Related Complication	Basis for Screening and/or Diagnosis	Suggested Secondary Testing When Needed To Confirm Diagnosis, Stage Severity, or Guide Therapy
Prediabetes	Fasting glucose; A1C; 2-hour OGTT glucose	If fasting glucose is 100-125 mg/dL, a repeat elevated fasting glucose completes diagnosis of IFG; however, 2-hour OGTT should also be performed to exclude diabetes and IGT. Fasting and 2-hour OGTT should be performed if initial fasting glucose is normal and A1C is elevated, or in high-risk patients based on family history or metabolic syndrome.
Metabolic Syndrome	Waist circumference, blood pressure, fasting glucose, triglycerides, HDL-c	Initial evaluation completes diagnosis; use OGTT to test for IGT or diabetes.
Type 2 Diabetes	Fasting glucose; A1C; 2-hour OGTT glucose; symptoms of hyperglycemia	Overtly elevated (i.e., $\geq 200$ mg/dL) or a repeat fasting glucose $\geq 126$ mg/dL completes diagnosis. If fasting glucose and/or A1C is consistent with prediabetes, 2-hour OGTT should be performed to test for diabetes. A1C should be performed to help guide therapy.
Dyslipidemia	Lipid panel (total cholesterol, HDL-c, triglycerides, LDL-c, non-HDL-c)	Lipid panel completes diagnosis; lipoprotein subclasses, apoB100 may further define risk.
Hypertension	Sitting blood pressure	Repeat elevated blood pressure measurements to complete diagnosis; home blood pressure or ambulatory blood pressure monitoring may help complete testing.
Cardiovascular Disease	Physical exam; ROS; history and medical records	Additional testing based on findings and risk status (e.g., ankle-brachial index, stress testing, coronary artery calcium score and the MESA risk score calculator, arteriography, carotid ultrasound).
NAFLD / NASH	Physical exam; LFTs	Imaging (e.g., ultrasound, MRI, elastography) and/or liver biopsy needed to complete diagnosis.
PCOS and Female Infertility	Physical exam; ROS; menstrual and reproductive history	Hormonal testing (e.g., androgen levels, SHBG, LH/FSH, estradiol), ovulation testing, imaging of ovaries, may be needed to complete diagnosis.
Male Hypogonadism	Physical exam; ROS	Hormonal testing (total and free testosterone, SHBG, LH/FSH, prolactin) as needed to complete diagnosis.
Obstructive Sleep Apnea	Physical exam; neck circumference; ROS	Polysomnography needed to complete diagnosis.
Asthma / Respiratory Disease	Physical exam; ROS	Chest X-ray and spirometry may be needed to complete diagnosis.
Osteoarthritis	Physical exam; ROS	Radiographic imaging may be needed to complete diagnosis.
Urinary Stress Incontinence	Physical exam; ROS	Urine culture, urodynamic testing may be needed to complete diagnosis.
GERD	Physical exam; ROS	Endoscopy, esophageal motility study may be needed to complete diagnosis.
Depression, Anxiety, Binge Eating Disorder, Stigmatization	History; ROS	Screening/diagnostic evaluation or questionnaires based on criteria in Diagnostic and Statistical Manual of Mental Disorders; referral to clinical psychologist or psychiatrist.
Disability	Physical exam; ROS	Functional testing may be helpful.
Additional Evaluation Relevant to the Differential Diagnosis of Obesity		
Interpretation of BMI	Physical exam to ensure that BMI value is indicative of excess adiposity	Assess muscularity, edema, volume status, pregnancy, third space fluid accumulation, sarcopenia, large tumors, lipodystrophy, etc. Bioelectric impedance, air/water displacement plethysmography, or dual-energy absorptiometry scan may be considered.
Obesity Secondary to Hormonal Disorder	Physical exam; ROS	TSH for suspected hypothyroidism; salivary/serum/urine cortisol for hypercortisolism if clinical findings or symptoms present.
Iatrogenic Obesity (e.g., secondary to medications)	Review current medications and medication history	Withdraw offending medication and/or substitute with weight-neutral alternative. Follow-up assessment may be needed to complete diagnosis.
Genetic Syndrome	Physical exam; ROS; family history	If clinical findings are suggestive, genetic testing of patient and perhaps family members may be needed to complete diagnosis.

**Abbreviations:** A1C = glycated hemoglobin; BMI = body mass index; FSH = follicle-stimulating hormone; GERD = gastroesophageal reflux disease; HDL-c = high-density lipoprotein cholesterol; IFG = impaired fasting glucose; IGT = impaired glucose tolerance; LFTs = liver function tests; LDL-c = low-density lipoprotein cholesterol; LH = luteinizing hormone; MRI = magnetic resonance imaging; NAFLD = non-alcoholic fatty liver disease; NASH = non-alcoholic steatohepatitis; OGTT = oral glucose tolerance test; PCOS = polycystic ovarian syndrome; ROS = review of symptoms; SHBG = sex hormone-binding globulin; TSH = thyroid-stimulating hormone.

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