**An Update on the Current Treatment Guidelines for Patients with Obesity**

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**BACKGROUND:** The morbidity and mortality associated with obesity and the health benefits to weight loss are well known throughout the medical profession, yet we often continue to treat related chronic conditions prior to addressing a patient’s need for weight loss. Being overweight or obese can put patients at risk for type-2 diabetes, osteoarthritis, hip/knee pain, obstructed sleep apnea, cardiovascular disease, pancreatitis, and liver disease. The risk to health increases further by the presence of increased waist circumference (>40 inches men, >35 inches women), dyslipidemia, hypertension, age less than 40 years, male sex, and a strong family history of diabetes, hypertension, or heart disease.

A healthy weight is considered a body mass index (BMI) of less than 25 kilograms per meter squared (kg/m²). Overweight patients have BMI greater than 25 but less than 30 kg/m². A BMI greater than 30 is a diagnosis of obesity, with greater than 40 kg/m² indicating severe obesity (class 3). According to the National Health and Nutrition Examination Survey (NHANES) of 2010, over one-third of the population in the United States met diagnostic criteria for obesity and the prevalence continues to climb worldwide.

Current guidelines have focused on risk stratification and earlier pharmacologic and/or surgical interventions for overweight and obese patients with concurrent risk factors. Regardless of BMI, patients with the highest risk should receive the most aggressive treatment.

<table>
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<tr>
<th>Stratifying Risk in Overweight and Obese Patients</th>
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<tr>
<td><strong>BMI</strong></td>
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<tr>
<td>Low Risk</td>
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<tr>
<td>Medium Risk</td>
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<tr>
<td>High Risk</td>
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<tr>
<td>Very High Risk</td>
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*Modifiable Risk Factors: hypertension, dyslipidemia, increased waist circumference, T2DM
Non-modifiable risk factors: age >40 years, male sex, family history of DM, HTN, or heart disease
*Behavioral modification techniques are a cornerstone of the treatment of all patients with obesity.
3 Step Approach To Treatment

Step 1: Determine BMI and the presence of risk factors

Step 2: Set specific therapeutic weight loss targets and overall goal, select treatment modality, and intensity based on risk factors

Step 3. If therapeutic targets not met, intensify lifestyle/medical/surgical modalities until goal therapeutic weight has been met

Information on Calorie Restriction

Decreased calorie intake is **MORE** beneficial than increased energy expenditure through exercise

*Health adults should get 2 hr 30 min moderate exercise (brisk walk) or 1 hr 15 min intense exercise (running) per week plus 2 days a week of strength training utilizing major muscle groups*

It takes about 22 to 25 kcal/kg/day to maintain 1 kg of body weight in an average adult

*(For a 100 kg man would take about 2200-2500 kcal/day to maintain current weight)*

There is about 20% variability on average energy expenditure in adults

*(100 kg man could require anywhere from 1760 kcal – 3000 kcal/day) from above calculation*

For most adults, restricting by 500 kcal/day should produce about 1 pound weight loss per week

*Ongoing weight loss may plateau at 3-6 months requiring further restriction due to adaptations*

Adults who have been studied in metabolic chambers have shown to require no less than 1000 kcal/day to maintain body weight

*Recommend restrictive diets of 800-1200 kcal/day. Diets less than 800 kcal/day have not shown increased weight loss results and carry increased risk for end organ damage*

When a patient claims to achieve no desired weight loss on 800-1200 kcal/day diet

*Assume that the patient is miscalculating daily caloric consumption and advise the patient to cut what they are eating in half*

**World Health Organizations Calculations for Total Energy Expenditure**

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<th>18-30 years</th>
<th>31-60 years</th>
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<tbody>
<tr>
<td><strong>Men</strong></td>
<td>BMR = (0.0630xABW(kg)+2.8957)x240 kcal/day</td>
<td>BMR = (0.0484xABW(kg)+3.6534)x240 kcal/day</td>
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<tr>
<td><strong>Women</strong></td>
<td>BMR = (0.0621xABW(kg)+2.0357)x240 kcal/day</td>
<td>BMR = (0.0342xABW(kg)+3.5377)x240 kcal/day</td>
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**Activity Factor:**

- Low: Sedentary x 1.3
- Medium: Some regular exercise x 1.5
- High: Demanding job/daily exercise x 1.7

**Total Energy Expenditure**

*TEE = BMR x Activity Factor*

BMR = Basal Metabolic Rate
Guidelines and Useful Resources

1. The American Gastroenterological Association (AGA) medical position statement and technical review on obesity: http://www.gastrojournal.org
2. American Heart Association: Weight Management: www.heart.org
5. Smart phone applications for calorie counting and exercise tracking: MyFitnessPal, LIVESTRONG, Restaurant Nutrition, LoseIt!, Endomondo, Daily Burn, MyNetDiary

OTHER REFERENCES
3. AACE Comprehensive Diabetes Management Algorithm, Endocr Pract. 2013;19(No.2)