

Clinical Lipidology Roundtable Discussion

# JCL Roundtable: Clinical management of individuals with obesity

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Weight

**Abstract:** Our topic is the evaluation and treatment of obesity in the practice of medicine. I am joined by Dr. Harold Bays who has carried out many studies of dietary and medical interventions in patients with obesity. I am also honored to have Dr. George Bray who is known for his many years of research into causes of obesity and its therapy. Our goal is bring this clinical and research experience to bear on the office practice of medicine.

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**Dr. Brown:** Our topic is the evaluation and treatment of obesity in the practice of medicine. I am joined by Dr. Harold Bays who has carried out many studies of dietary and medical interventions in patients with obesity. I am also honored to have Dr. George Bray who is known for his many years of research into causes of obesity and its therapy. Our goal is bring this clinical and research experience to bear on the office practice of medicine. All physicians know that this is an important area of concern but often find that the application of therapy is not successful.



Dr. Brown

I would like to start our discussion with the description of a patient representing a very common presentation. This is a 55-year-old postmenopausal woman, 5 feet 8 inches (1.73 m) tall with a waist size of 43 inches (99 cm) and body weight of 264 pounds (120 kg). Blood pressure is 140/90 mm Hg. Her body mass index (BMI) is 40. Her fasting plasma glucose is 105 mg/dL. Total cholesterol 225, high-density lipoprotein cholesterol 35, and low-density lipoprotein cholesterol 140 mg/dL. The plasma triglycerides are 250 mg/dL. And my first question is, what further

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information do you need about this woman to provide a plan to deal with her obesity? Dr. Bays, do you want to start?



**Dr. Bays**

**Dr. Bays:** With a BMI of 40 kg/m<sup>2</sup>, this patient is considered obese. She also has clinical findings suggestive of not only an increase in body fat (adiposity), but also dysfunction of body fat (adiposopathy). This is anatomically supported by the increase in waist circumference, and pathophysiologically

supported by findings consistent with adverse metabolic consequences (eg, elevated glucose levels [possible prediabetes mellitus], high blood pressure, and the typical adiposopathic dyslipidemia [sometimes called “atherogenic dyslipidemia,” although admittedly, elevated cholesterol alone can also be “atherogenic”]). Given this presentation, the focus should not only be on the weight of the patient, but also on the health of the patient.<sup>1</sup>

**Dr. Brown:** I assume this would focus on cardiovascular risk?



**Dr. Bray**

**Dr. Bray:** You’d get an electrocardiogram. Because this woman is significantly overweight, you’ll need to know how well she performs. If you’re going to have her exercise, at her age, which is 55, you might want to evaluate her cardiovascular competence with an exercise tolerance test because she’s is substantially over-

weight and she might well have some limitation that you’d want to consider. People at this age and of this gender have a substantially increased risk of gallstones, and I think that would be worth evaluating because 1 of the issues that can occur during weight loss particularly relatively rapid weight loss, is cholecystitis, which is usually caused by cholesterol gallstones.

**Dr. Brown:** So you would do a liver function test as a routine thing I guess, but would you would evaluate the gallbladder with imaging such as ultrasound?

**Dr. Bray:** Well, I would think about it. I would want to know more about her family history and whether she’s had abdominal pain, particularly after meals with a lot of fat. The next steps would depend on my evaluation of the woman, but I would certainly consider these tests. Liver function tests if abnormal can be helpful, but they aren’t sufficient. Ultrasound of her gallbladder might be considered.

**Dr. Brown:** What other medical diseases may already be present?

**Dr. Bays:** According to the 2013 American Society of Bariatric Physician Obesity Algorithm, the potential adverse “disease” consequences of patients with increased body fat falls into 2 categories. The first is sometimes referred to as “sick fat disease” (adiposopathy), wherein anatomically, patients with increased body fat may have adipocyte hypertrophy and visceral fat accumulation,

leading to adipose tissue dysfunction (ie, endocrinopathies and immunopathies), which in turn contribute to some of the most common diseases encountered in clinical practice (eg, type 2 diabetes mellitus, hypertension, dyslipidemia). A second category is “fat mass disease,” which includes disorders most attributable to abnormal physical forces induced by excessive body weight (eg, musculoskeletal disorders, sleep apnea). Regarding evaluation, you already have provided much of what needs to be known, with respect to BMI, waist circumference, blood pressure as well as lipid and glucose levels. The increase in liver enzymes is expected, as fatty liver is a common finding in these types of patients. Although the fasting glucose of 105 mg/dL is in the prediabetes mellitus range, you might also consider obtaining a hemoglobin A1c blood level. This is because some patients with fasting glucose levels not in the diabetes mellitus range may have elevated hemoglobin A1c levels in the range diagnostic for diabetes mellitus, particularly if they have clinically significant postprandial hyperglycemia. Other potential diagnostic testing would be dependent on the clinical presentation, such as evaluation for secondary causes such as hypercortisolism and hypothyroidism. Sex hormone testing may be appropriate for hyperandrogenemia in women and hypoandrogenemia in men. Vitamin D levels may also be appropriate, as vitamin D deficiency is common among overweight and obese patients. Other diagnostic measures to consider, depending on the presentation, include cardiac testing, sleep studies, and C-reactive protein. Finally, many obesity specialists and their patients find value in body composition tests.<sup>2,3</sup>

**Dr. Brown:** Therapy logically starts with dietary change. What types of dietary advice are practical and effective when given by the physician in the limited time of an office visit?

**Dr. Bray:** From a dietary perspective, you’d want information about meal frequency and timing. Many people have a tendency to eat very large meals late in the day. If you can get them to change some of these meal patterns, it may give you a way to help them even out their food intake. I have a particular concern about beverage intake particularly sugar-sweetened beverages that have a lot of calories in them. I think this is an important because that’s something people might change. The kinds of foods people eat and the way in which they prepare them—and whether the woman has a family she cooks for because that is going to influence the kinds of changes she can easily make. This information would give me a framework for helping her with the types of changes she might be able to make.

**Dr. Brown:** Modern medicine is in a flurry of genetic studies and related information and is attempting to apply this to many diseases. Are there any findings in the clinic that might make you think of genetic tests?

**Dr. Bays:** Not routinely. Not at her age.

**Dr. Bray:** I think the genetic issues are of concern mostly in childhood and adolescence. Once you get to be 55, there clearly is a polygenetic variability that is influencing how she responds to her diet. There is a fascinating

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