

#1 Hint:

This patient is obese, with a BMI of 35 kg/m^2 , which confers high risk for complications of obesity, including hypertension, type 2 diabetes mellitus, and cardiovascular disease, independent of the presence or absence of other risk factors. The presence of other risk factors, including smoking, existing hypertension, dyslipidemia, or diabetes, would certainly further increase her risk, but she is already at high risk; it would be appropriate to initiate treatment of her obesity before obtaining additional laboratory testing.

The optimal initial management of obesity includes changes in both diet and exercise. Typical physical activity accounts for only 15% of daily caloric expenditure. Exercise may increase this caloric expenditure somewhat, but not enough to achieve sustainable weight loss. Current dietary recommendations include a balanced diet with a negative caloric balance of 500 to 1000 kcal/d. A negative caloric intake of this scale will result in a 0.5 to 1.0 kg (1 to 2 lb) per week weight loss over the initial 6 months of the diet. Diets rich in fat tend to be high calorie, and saturated fats in particular are implicated in cardiovascular risk. Recommended diets generally include less than 30% caloric intake from fat. Convenience and snack foods tend to be rich in fats and refined sugars and are very calorie-dense. Minimizing these foods is essential for weight loss. Excessive alcohol consumption is incompatible with weight loss. Very-low-calorie diets and rapid weight loss are potentially harmful. Diets rich in protein and fat and very low in carbohydrates (the Atkins' Diet) are effective for weight loss, largely by limiting caloric intake, but are of uncertain safety in terms of their effect on lipids.

Exercise is an essential component of sustainable weight loss. Patients who succeed with weight loss achieve lasting changes in habits of diet and daily exercise. Exercise has additional salutary effects on cardiovascular risk independent of weight loss.

Pharmacologic therapy with sibutramine or orlistat, although successful in short-term weight loss, is generally reserved for patients who have not achieved weight loss goals after trials of diet and exercise alone. These agents are most successful when coupled with diet and exercise. Weight lost is typically regained following cessation of pharmacologic therapy.

There is considerable interest in the potential of bariatric surgery to achieve sustainable weight loss. Concomitant strides are being made in the endocrinology of weight and appetite control. Leptin seems to be a hormone responsive to stores of body fat, and the recently discovered hormone ghrelin seems to signal preprandial hunger and satiation.

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#2 Hint:

The standard of weight loss against which dietary interventions are compared is counseling for exercise and a balanced low-calorie diet. Against this standard, very-low-calorie diets are more difficult to adhere to and have not been found more effective at 1 year. Low-fat and low-carbohydrate diets have limited evidence to support their long-term efficacy. Low-carbohydrate diets, in particular, have not been well evaluated in persons older than 53 years of age or in those with comorbid conditions. There is

evidence from randomized, controlled trials that participation in Weight Watchers proprietary program leads to a loss of 3.2% of initial weight at 2 years. The Weight Watchers program recommends a balanced low-calorie diet, exercise, and behavioral modification.

Obesity is defined by the World Health Organization (WHO) as patients who have a BMI of 30 kg/m² or greater. This patient has class II obesity. There are 3 classes of obesity. The WHO has defined success in management of the obese patient as a reduction in initial weight of 5% to 15%. This patient has several risk factors for cardiovascular disease, including obesity, hypertension, and hyperlipidemia. Obesity is also a risk factor for breast cancer among postmenopausal women. Therefore, weight reduction is an important intervention with respect to risk factor modification in this patient.

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#3 Hint:

Surgery is recommended as a treatment option for patients with a BMI of 40 kg/m² or greater and who have been unable to maintain weight loss with exercise and diet with or without drug therapy and who have obesity-related comorbid conditions, such as hypertension, impaired glucose tolerance, diabetes mellitus, hyperlipidemia, and obstructive sleep apnea. This patient meets these criteria. Gastric bypass surgery has proven efficacy in weight loss, with one meta-analysis demonstrating a 61.2% loss of excess weight (95% CI, 58.1 to 64.4). The effects of sibutramine and orlistat are substantially more modest than gastric bypass surgery, resulting in less than a 5-kg (11-lb) weight loss at 1 year in clinical trials. Low-carbohydrate and fat-restricted diets have limited evidence to support long-term efficacy and safety. Other benefits of gastric bypass surgery include improved social and economic status and improved control of chronic diseases, but no cardiovascular mortality benefit from gastric bypass has been established. Patients considering gastric bypass surgery should receive counseling about the long-term side effects of this procedure, including the possibility for reoperation, gall bladder disease, and malabsorption. In addition, surgical risks include a 30-day postoperative mortality rate of 2%.

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#4 Hint:

Obesity is associated with an increased risk for total mortality and chronic conditions, including coronary artery disease, stroke, type 2 diabetes mellitus, heart failure, dyslipidemia, and hypertension. In trials studying the effects of diet and exercise in obese patients with impaired glucose tolerance, weight loss of approximately 5% at 1 year decreased progression to type 2 diabetes and improved control of lipid levels and hypertension. However, there is no evidence of benefits in cardiovascular mortality or overall mortality from this level of modest weight loss. Although improvement in control of cardiovascular risk factors, including hypertension, glucose intolerance, and hyperlipidemia, have been demonstrated with modest degrees of weight loss, improvement in clinical symptoms such as those caused by osteoarthritis has not been

documented with modest weight loss. Social and economic benefits have been demonstrated in quality-of-life studies in patients after substantial weight loss from bariatric surgery but not from modest weight loss owing to dietary interventions.

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