

Case Study #4: Hypertension

7. What risk factors does Mrs. Sanders currently have?

Mrs. Sanders was previously a smoker. Cigarette smokers are two to four times more likely to develop heart disease than non-smokers. She also has an abnormal lipid profile, consumes more than the daily recommended amount of alcohol for females per day, and her mother died of a heart attack related to uncontrolled hypertension. She is also overweight based on her BMI of 25.8 and her current diagnosis of Hypertension puts her at a greater risk for other forms of cardiovascular disease.

13. Briefly describe the DASH eating plan.

Low sodium foods (1500-2300 mg/day), low fat dairy (2-3 servings), 4-5 servings of fruits and vegetables, 6 oz or less of lean meat, poultry or fish, 7-8 serving of grains, 2-3 serving of fats/oils, 4-5 servings of nuts, and no more than 5 servings of sweets a week.

15. Lifestyle modifications reduce blood pressure, enhance the efficacy of antihypertensive medications, and decrease cardiovascular risk. List lifestyle modifications that have been shown to lower blood pressure.

Exercise at least 150 minutes a week (30 mins a day), stop/minimize smoking, limit alcohol consumption to one drink a day, manage stress, maintain healthy BMI (<25), and limit sodium intake 1500-2300 mg/day.

16. What are the health implications of Mrs. Sanders's BMI? She is in the overweight category according to her BMI. BMI should be under 25. Overweight people are at risk of chronic diseases like heart disease and Type 2 diabetes.

17. Calculate Mrs. Sanders's resting and total energy needs.

REE = 1418 kcal/day

Total needs = $1418 \times (1.2-1.3) = 1702-1843$ kcal/day

18. What nutrients in Mrs. Sanders's diet are of major concern to you?

According to subjective data, Mrs. Sanders tried to comply with the low sodium diet prescribed to her but she found the foods to be bland and tasteless so she abandoned her efforts. Therefore, she is currently not complying with her recommended diet. When reviewing her 24 hour dietary recall two areas of concern was her consumption of high saturated fats and sodium. Many of these saturated fats were dairy products: ranch salad dressing, butter, and ice cream. She also had a glazed donut for a snack.

Additionally, the recommended amount of alcohol intake for females is 1 alcoholic beverage a day and she is currently consuming 2 beverages per day.

19. From the information gathered within the intake domain, list possible nutrition problems using the diagnostic terms.

- Excessive energy intake
- Excessive carbohydrate intake
- Limited adherence to nutrition-related recommendations
- Undesirable food choices
- Overweight

21. Interpret Mrs. Sanders's risk of CAD (coronary artery disease) based on her lipid profile.

Lipid profile shows elevated LDL, lower HDL, and elevated triglycerides. All of these are all risk factors for coronary artery disease.

32. Select two nutrition problems and complete the PES statement for each.

Limited adherence to nutrition-related recommendations related to excessive sodium intake as evidence by diagnosis of Stage 2 HTN.

Undesirable food choices related to high fat and low fiber intake as evidenced by lab results indicating high cholesterol and triglycerides.

33. When you ask Mrs. Sanders how much weight she would like to lose, she tells you she would like to weigh 125, which is what she weighed most of her adult life. Is this reasonable? What would you suggest as a goal weight loss for Mrs. Sanders?

125 lbs or 57 kg would be a bit out of reach early on, but she can certainly work towards it in the future. Her ideal body weight is 130 lbs or 59 kg. A more realistic goal would be to aim for 5-10% weight loss. Since she is currently 160 lbs, a weight loss of 16 lbs or 7 kg (10% of her current weight) is ideal. 144 lbs or 66 kg body weight goal would be a more realistic and attainable goal.

34. How quickly should Mrs. Sanders lose this weight?

Mrs. Sanders should aim to lose a pound a week (cut 500 kcal/day), and if she continues this trend for the next 4-6 months she can lose about 10% of her body weight. Losing just 5-10% can improve her current conditions.

35. For each of the PES statements that you have written, establish an ideal goal (based on the signs and symptoms) and an appropriate intervention (based on the etiology).

Sandra Chavez
Chelsea Flaherty
Laura Zimmerman
Ryan Ng

Lower blood pressure to a normal range by reducing sodium intake to under 1500 mg/day.
Lower cholesterol and triglycerides by following the DASH diet.

36. Identify the major sources of sodium, saturated fat, and cholesterol in Mrs. Sanders's diet. What suggestions would you make for substitutions and/or other changes that would help Mrs. Sanders reach her medical nutrition therapy goals?

Major sources of sodium in Mrs. Sanders' diet include the saltine crackers, added salt to side dishes, restaurant meals, salad dressing, and canned soups. Major sources of saturated fat and cholesterol in her diet include meals from pizza restaurants and steakhouses, ice cream dessert, donuts, added butter to side dishes (potato). We would recommend substituting her snack of saltine crackers for a low sodium, whole grain option preferably a cracker with 3-5 g of fiber per serving. She should also try to keep regular meals even on her bingo days or bring a high fiber and moderate protein snack to bingo to avoid binge eating afterward. Additionally, Mrs. Sanders can make choices which align more with her nutrition therapy goals when eating out. Instead of eating at pizza restaurants, she and her husband can cook together at home or choose a restaurant with healthier options. Choosing a restaurant that serves fish (like salmon), or leaner proteins instead of a steakhouse would help with making selections that are lower in sodium and saturated fat. We would also educate her on the use of seasonings, like Mrs. Dash, to brighten up meals at home without having to add more salt. Also, instead of adding butter to oatmeal substitute for a small amount of nuts or seeds. For her baked potato, substitute butter for olive oil or canola oil prior to baking to avoid adding more saturated fat to her diet.