

# Example by StudyDriver

Source: <https://studydriver.com/disease-and-nutrition/>

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## Disease and Nutrition Example

### Part I: The Diet

The present paper will focus on Case 001 with the goal to analyze the patient's nutrition and provide recommendations. At first glance, there is not enough information to determine the individual's daily protein intake. However, it can be concluded that the patient eats excessive amounts of carbohydrates and fats daily as his diet consists primarily of fast food. Foods that are high in sugar and fat are unhealthy for the patient since he suffers from hypertension and type II diabetes. These medical conditions are greatly influenced by one's diet and can be caused by high fat and sugar intake. J.W. is 6 feet tall and weighs 230lb, with a BMI of 31.2. The high BMI indicates obesity, which contributes to type II diabetes and hypertension and impairs the effectiveness of treatment.

Interestingly, J.W.'s diet meets the RDA for five or more micronutrients. Setiawan et al. (2016) argue that, while frying does in fact damage some micronutrients, it also enhances others. First, it has little or no impact on protein, which means that a person eating fast food each day might still have enough protein in their diet (Setiawan et al.,

2016). Secondly, frying enhances dietary fiber content due to the formation of resistant starch. Setiawan et al. (2016) add that fried foods can be a great source of thiamine, vitamin C, and vitamin E. Nevertheless, it is important to note that some crucial micronutrients, such as unsaturated fatty acids and some antioxidants, are lost during the frying process. Thus, although the patient may be obtaining enough protein, dietary fiber, vitamin C, thiamine, and vitamin E, his intake of saturated fat, sugar, and calories is too high for his age and medical condition.

## **Part II: Disease and Nutrition**

As stated above, the patient's diet negatively affects his health condition. Olawuyi and Adeoye (2018) confirm that non-communicable diseases are mainly brought on by lifestyle choices. For instance, obesity, which is J.W.'s main health concern, is caused by excessive calorie intake. Rightfully, the patient has been asked to reduce weight by losing one pound every week for the next three months. Since there is no cure for diabetes and hypertension, the patient will have to manage the conditions throughout his life using medication and proper nutrition. Hypertension and diabetes are also linked to excessive consumption of fats and carbohydrates. If the patient continues to eat fast foods, he will not lose weight, and this will negatively affect the management of his conditions. For example, a high level of fat in J.W.'s diet will lead to excessive blood cholesterol, which causes fatty deposits in blood vessels, thus increasing blood pressure and cardiovascular risks.

Excessive consumption of carbohydrates is also evident in J.W.'s case. Most types of fast food include fried potatoes and some kind of fried meat (e.g., chicken, pork, beef, etc.). As the share of potatoes in one portion is larger than the share of meat, the patient eats more carbohydrates than any other type of food. While high fat consumption influences cardiovascular health, the increased intake of carbohydrates affects diabetes type II pathophysiology. As Lee et al. (2018) explain, insulin helps to control blood sugar levels by breaking down carbohydrates. However, as J.W. suffers from type II diabetes, his cells have reduced sensitivity to insulin, or insulin resistance, which means that eating too many carbohydrates results in unhealthy blood glucose levels.

Based on the information above, the patient should eat foods that are rich in fiber, such as fresh fruits and vegetables, as they will make him feel fuller. This will help J.W. to maintain the recommended calorie deficit, leading to weight loss. Replacing high-sugar foods with complex carbohydrates, such as whole grains, will also help the patient to control blood sugar levels. In order to reduce the amount of fat in his diet, J.W. should try to prepare most meals at home with little to no oil, and substitute butter or frying oil for cold pressed olive oil, which is low in saturated fat and high in omega acids.

Additionally, the type of food J.W. eats influences the effectiveness of his medications. Currently, the patient takes 500mg Metformin twice daily for diabetes, 200 mg Metoprolol daily for hypertension, and a multivitamin. The first two drugs (metformin and metoprolol) have several side effects. For example, Metformin serves to decrease insulin resistance but may cause stomach upset and diarrhea if a patient does not maintain a healthy diet. Metoprolol can cause vomiting, constipation, heartburn, and stomach upset, the probability of which also increases with an unhealthy diet. To reduce the possibility of experiencing side effects, doctors typically recommend that patients who take these drugs refrain from foods that are high in fat and sugar and increase their daily fiber intake to normalize bowel function and promote healthy elimination.

## **Part III: Patient Education**

The patient's BMI is 31.2, and his Basal Metabolic Rate (BMR) is 1,891 calories. His CHO, PRO, and fat needs are 190-220, 83-104, and 45-70 grams per day, respectively. It would also be useful to calculate the recommended intake of certain nutrients, including sodium and calcium. A viable nutritional plan can be made from this information. The table below is a seven-day diet plan that the patient can use. This diet is based on the meal plan suggested by Zacharia and Pletcher (2016) for patients with type II diabetes.

# Day Breakfast Lunch Dinner

Monday: Cream cheese-stuffed French toast Salmon salad with white beans Grilled fish with a side of fresh or steamed vegetables

Tuesday: Oatmeal with apples and Greek yogurt Roasted turkey meat with cranberry sauce and steamed vegetables Steamed fish with vegetables

Wednesday: Oatmeal, almond milk and fruit smoothie Pasta with chicken breast meat, tomato, and spinach Grilled turkey burgers

Thursday: Veggie and goat cheese scramble Chicken and fresh vegetable salad served in pita bread Jamaican pork tenderloin with lemony green beans

Friday: Granola with nuts, seeds, and dried fruit Salad with fresh vegetables, quinoa, and parsley Beef and rice stuffed peppers

Saturday: Homemade muffins with bananas and pecans Homemade hummus with celery sticks and carrots Chicken tortilla soup

Sunday: Tomato and Basil Frittata Butternut squash and carrot soup Grilled shrimp skewers with steamed vegetables

(Source: Zacharia & Pletcher, 2016).

Additionally, there are three SMART goals that can help the patient to adhere to a healthy lifestyle and become healthier. The first goal is to lose 1lb per week, totaling to 4-5lbs every month. By reaching this goal through healthy eating and regular exercise, J.W. will be able to improve his BMI, reduce blood sugar levels, and control

hypertension. Secondly, it is recommended that the patient spreads carbohydrates evenly throughout the day. While adhering to the given meal plan, J.W. can distribute carbohydrates through portion control, which is a strategy used by nurses in inpatient settings to control the patients' nutrition. Thus, the specific SMART goal will be to eat 15% of daily carbohydrates with every meal. Finally, the third SMART goal is to eat at least two servings of lean protein on a daily basis. The main reason for this is that lean protein, such as fish, turkey, or chicken breast, creates a feeling of fullness, thus helping patients to adhere to their meal plan and achieve their goal weight.