

Assessing Diets For Nutritional Adequacy

After collecting information on what a person has eaten for a day the next step is to determine if their diet is nutritionally adequate. There are several ways in which we can assess a diet for “nutritional adequacy.” Some of them are not practical in the WIC Program. We could have the WIC participant save samples of all the foods they eat and then send the samples to a laboratory to have them chemically analyzed. This would be a very slow, time consuming, and expensive process. We could also have WIC participants measure the amounts of all foods that they have eaten and then look the foods up in tables to see the amounts of nutrients that each contains. This would still be a long and tedious process. Can you imagine adding up all 52 nutrients found in 20 or 30 foods and then comparing the totals against a chart of recommendations?

To devise an easier way to evaluate diets nutritionists have classified foods into different groups. No one food contains all of the nutrients needed by the human body in the right amounts. Despite what some food advertisers may tell us, nature does not have a perfect food that provides all of the nutrients required by the human body. We need a combination of different kinds of food to have an adequate diet. Certain groups of foods (like vegetables and fruit) contain similar nutrients that are not found in other groups of foods. As an example, fruits and vegetables almost always contain some vitamin C while grains, meat and dairy products contain virtually no vitamin C. Meat and meat alternatives like beef and beans contain high amounts of iron while dairy products and most fruits and vegetables contain very little iron.

Quite Possibly Nature’s Perfect Food Bananas are sometimes advertised as nature’s perfect food because they are high in carbohydrates, low in fat, and high in potassium and vitamin B6. Bananas are an excellent snack and a good addition to a diet. They are not a nutritionally perfect food, however. Bananas are low in many nutrients including protein, calcium, vitamin A, and vitamin B12. Human breast milk comes the closest to being a perfect food, and that only holds true if you are less than 6 months of age.

By looking at the nutrients that are commonly found in various foods, nutritionist have classified foods into several groups. The groups are: dairy, meat and meat alternatives, breads and cereals, and fruits and vegetables. The fruit and vegetable group has been further divided into those that are high in vitamin C, those high in vitamin A, and “other fruits and vegetables.” Table 1 below lists the nutrients that each of these groups commonly provide. The **Daily Food Guide Screening Tools** in the appendix of this module show the foods that are contained in each food group. Diets are evaluated for “adequacy” in the WIC program by comparing the number of servings from each food group against the number of servings in an adequate diet.

Popeye and Spinach:

Remember Popeye cartoons which were designed to get children to eat spinach? Spinach is a great vegetable that is high in vitamin A, vitamin C, folate, calcium, and iron. Unfortunately, when Popeye cartoons were made we did not know that the calcium and iron in spinach are not well used by the human body. Spinach contains substances that bind calcium and iron so that they cannot be absorbed by the body. Some nutritionists have suggested that maybe broccoli would be a better vegetable for Popeye to promote. It contains many of the same nutrients, but does not have any of the substances that bind calcium and iron. Either way, broccoli and spinach are both excellent sources of many nutrients and make good additions to a diet.

Is it ok for a person to drink juice for all of their servings of fruits and vegetables each day? 100% fruit or vegetable juice are good additions to a diet. However, they do not provide all of the nutrients and fiber that are contained in whole fruits or vegetables. Juice is a convenient way to get some of your fruit and vegetable servings, but it is not a substitute for all of your fruits and vegetables.

If a person eats a diet that contains the correct number of servings from each food group they are **likely** to get an “adequate diet”- one that has all the vitamins, minerals, protein, carbohydrates, and other nutrients needed by their body. While it is likely that they would get an adequate diet, it is not always a guarantee. Under certain disease conditions a person’s body may require more of a certain nutrient than is provided by a diet with the correct number of servings. It is also possible to have a diet that is adequate in all nutrients without eating all of servings from each of the food groups. For example, a person could eat many servings of “other fruits and vegetables”, each containing some vitamin C. Because the person ate so many servings of “other fruits and vegetables” they could get adequate amounts of vitamin C without getting a serving from the high vitamin C group.

While it is possible to eat an adequate diet without eating the recommended number of servings from all food groups it is not very likely. This is especially true when a person eats a diet that is missing one entire food group.

One last point that is important to make about the food groups related to nutritional adequacy. A person should always eat a variety of foods from each of the food groups. While the food groups are designed to take into account major nutrients there are other nutrients which are generally adequate in all diets **IF** a person eats a varied diet. A person could develop a nutrient deficiency if they always eat the exact same foods each day. So within each food group a person should eat a variety of foods. For example, a person should not eat broccoli every day to get all five servings of fruits and vegetables. It would be better to eat a variety of different fruits and vegetables including broccoli.

Table 1. Major Nutrients In Each Food Group

Dairy: protein, calcium, riboflavin, vitamin B12, vitamins A & D (vitamins A & D only if fortified)

Meat and Meat Alternatives: protein, phosphorus, zinc, vitamin B6, iron, thiamin, niacin, magnesium

Breads and Cereals: Complex carbohydrates, riboflavin, thiamin, niacin, iron, protein, magnesium, and fiber (magnesium & fiber only in whole grain)

Fruits and Vegetables: potassium, folate, magnesium, vitamin C, vitamin A, fiber

Vitamin A: vitamin A

Vitamin C: vitamin C

Other Fruits and Vegetables

Sometimes people are confused about which foods belong in which groups. This happens because there are different systems for classifying foods into groups. For example, some people with diabetes use a food grouping system called the “exchange system” to evaluate their diets. In the “exchange system” potatoes are in the bread/cereal group, cheese is in the meat/meat alternative group. This is very different from the system WIC uses to evaluate diets. In the WIC system potatoes are a vegetable and cheese is dairy. Why the difference? WIC’s system (and the Food Guide Pyramid) groups foods according to their vitamin, mineral, and protein content, nutrients that are often lacking in the diets of WIC participants. The diabetic “exchange system” groups foods according to their carbohydrate, fat, and protein content because those substances need to be carefully controlled in the diet of a person with diabetes. So in terms of vitamins and minerals a potato is more like a vegetable, but in terms of carbohydrate and fat a potato is more like breads and cereals.