Section 7

Purpose

Section 7 shows students how to incorporate snacks and fun foods into one’s diet and reminds them to find creative ways to be active.

Equipment and Materials Needed

- Reserve the computer lab. You will need one computer for each student.
- Earphones are recommended.

Procedure

- **Before class**: Make sure the computers are functional and the website is open for the students to login.
- **During class**: Use the supplemental content to answer any questions that the students may have about the content.
- **At the end of class**: Help the students successfully log off and answer any questions they may have.

Supplemental Content

A. Eating for Target Blood Glucose Levels

Whenever you eat, the food is digested and blood glucose begins to rise. In response to this, insulin levels rise, allowing the glucose to enter the cell. In diabetes, this mechanism doesn’t work well. Either there is no insulin, not enough insulin, or the insulin isn’t effective.

For these reasons, it is more important to eat regular meals, more evenly spaced carbohydrates (the main source of glucose), and approximately the same amount of food at each meal or snack each day. Then there is less variation in the blood glucose increases, and insulin increases.

Meal Planning Tools

Meal planning is beneficial for people who are obese or have Type 2 diabetes. It helps them to make healthy food choices, achieve weight and glycemic goals, and reduce risk for developing other chronic diseases.

Five types of meal planning tools are used and include:

- The plate method
- The food guide pyramid
• Preplanned menus
• The exchange system
• Carbohydrate counting

The Plate Method

This is the simplest tool and is used with low literacy clients and those with little motivation to learn more elaborate methods. Important features include:

• Breakfast: Divide the plate into fourths. One-half for starches and one-quarter for meat (protein). No vegetables are eaten and protein is optional, so the entire plate is not used.
• Lunch and Dinner: one-quarter for starches, one-quarter for meat, and one-half for vegetables.
• Fruits can be substituted for half the vegetable recommendations if a person is unwilling to eat a lot of vegetables.
• These recommendations are for a 9-inch plate.

Pre-planned Menus

The preplanned menus are the least flexible and limit the amount of decision-making that the person with diabetes needs to engage in, which can either be a benefit or a limitation. They include specific foods and portion sizes to be eaten and help to keep calories and carbohydrates within the target range if appropriate portions are eaten.

The Exchange System

The exchange system divides food into six basic groups and includes starch, fruit, milk, vegetables, meat, and fat, very similar to the food guide pyramid food groups. Foods in the same group have the same amount of protein, fat and carbohydrate and affect blood glucose similarly. Thus any food in one group can be exchanged for any other food in the same group.

To use the exchange system, first total calories are estimated and then grams of carbohydrates, protein, and fat are estimated. Thirdly, these estimates are divided between the three meals. For instance if a person requires 1800 kcal for weight maintenance, then the person should consume 50 percent calories (900 calories) from carbohydrates (225 grams), 20 percent calories (360 calories) from proteins (90 grams), 30 percent calories (540 calories) from fat (60 grams). If we divide these values by three for the meals, then a person should consume 75 grams carbohydrate, 30 grams of protein, and 20 grams of fat per meal. Lastly selections are made from the six groups to stay within the limits of recommended intake per meal.

Carbohydrate Counting
This method only takes the amount of carbohydrate at each meal and snack into account. The American Diabetes Association and the American Dietetic Association portion the food into amounts that will equal 15 grams of carbohydrate. For example, three carbohydrate units will give the person 45 grams of carbohydrate. Carbohydrate counting does not limit the total carbohydrate intake but helps to keep track of carbohydrates eaten at meal and snack times. The amount of carbohydrate intake is determined by the type of carbohydrate-counting meal plan used, the kind of medication used, and the frequency of blood glucose monitoring.

Carbohydrate counting does not help with weight management because the protein and fat intake is not monitored. If a person gains weight following the carbohydrate counting method, then an alternate plan should be adopted or a consistent amount of fat and protein should also be eaten each day.

**B. Should People with Diabetes Avoid Eating Sugar and Sweets?**

This section provides a review of previously introduced concepts about sugars and sweets in relation to diabetes, incorporating the Nutrition Facts label that was also previously introduced.

People with diabetes do not need to eliminate or restrict sucrose (table sugar) or sucrose containing foods as long as they account for them in the total carbohydrate and calories consumed for meal planning and coverage with medication. The American Diabetes Association suggests not avoiding foods naturally containing fructose, but fructose as an added sweetener should be limited. Specifically, high fructose corn syrup found in soft drinks, baked goods, and prepared desserts should be consumed in limited amounts because of the link between fructose, obesity, and insulin resistance.

**C. Snacking and Eating Out**

Both snacking and eating out can be part of a healthy diet. What is important is choosing healthy foods, or choosing smaller portions if the food is not “nutrient-dense”. Nutrient-dense means there are more nutrients like vitamins and minerals per calorie. Calorie-dense choices have more calories per serving.

The website has a few videos that show adolescents choosing healthier options, or deciding to split certain foods they like. Teachers can ask for examples, or provide their own when they have made these decisions. Students can also make their own scripts to model this behavior, much like the videos show.

**Supplemental Activity Online:** Have students visit the Fun Polace for games and activities to re-enforce concepts.
Supplemental Activities Offline: Have menus from restaurants. Practice with waiters and customers making healthy food choices. Discuss the school menu, what healthy foods are there and which ones the students like the best. Have them practice making their own healthy 2-day menu.