

STEPP-UP Instructors Manual

SESSION 1: BASICS OF TYPE 1 DIABETES NUTRITION

Objectives

Goals of Class:

The purpose of this class is to provide information to patients with type 1 diabetes that will help them to learn appropriate nutrition management. Specifically, the class will address why it is important to eat healthy, provide an overview of the foods groups and main food sources, carbohydrates, proteins and fats effect blood glucose. Patients' understanding of the knowledge will translate into specific skills. Patients will be frequently assessed to determine their comprehension of knowledge and acquisition of skills.

After this session, participants will be able to:

- Describe the 5 basic food groups
- Name foods from each food group and state which are healthier choices
- Explain the difference between fats, proteins and carbohydrates and the effect of carbohydrates on blood glucose
- Identify foods that contain carbohydrates

Materials Needed

- Sign-in sheet
- Pens, pencils, markers
- Name tags
- Flip chart - to keep track of “parking lot items” or questions, participant responses
- Food models or sample food items or pictures that represent all of the basic food groups
 - Items can be empty or full boxes, cans or fresh produce
- Table to place food models or wall space for pictures
- Handouts in English and Spanish:
 1. *Agenda*
 2. *Type 1 Diabetes and Nutrition*

Before the Session

- Give all participants a reminder call the day prior to class.
 - Ask them to bring water, a snack in case of low blood sugar, and bring a pen or something to write with. Instruct them on class logistics (parking, location, floor, etc.).
- Set up the classroom with enough tables and chairs. Try to arrange it in a formation that facilitates group participation (such as a circle or U shape).
- Prior to class, set up the food models for the activities [If you have assistants, they can set up food model activities while the discussion is taking place].

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Agenda	Estimated Time
I. Welcome	3 minutes
II. Introduction a. Icebreaker	10 minutes
III. Nutrition Session a. Overview of the 5 food groups. Why is it important to eat healthy? b. Overview of main food sources: Carbohydrates, Proteins and Fats c. Carbohydrates d. Proteins e. Fat f. General suggestion for healthier eating.	45 minutes
IV. Closing	2 minutes

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I. WELCOME (3 MINUTES)

- A. Greet participants as they arrive, give them a nametag to fill out.
- B. Give each participant a participant notebook with handouts

II. INTRODUCTION (10 MINUTES)

[If the space allows, set up tables and chairs in a U shape so everyone can see each other. Make the nutrition session as interactive as possible; ask questions frequently and get everyone involved.]

- A. *Welcome everyone to the program. Begin* by introducing the staff and any volunteers. We are here to learn about nutrition and what foods to eat that will help keep your blood glucose/sugar within limits and help with your diabetes.
- B. Today you will learn about:
 - Different types of foods
 - The difference between fats, proteins and carbohydrates
 - The effect of carbohydrates on blood glucose/sugar
 - The foods that have carbohydrates
 - The foods that have protein
 - The foods that have fat

We have other classes you may want to attend. They include:

- C. *Set some initial ground “rules.” [Have these already written out on the flipchart, with space to add additional rules. These can be referred to throughout the program if necessary.]*
 1. Everyone is to respect each other.
 2. One person talks at a time.
 3. Please refrain from using your cell phone and texting. If you need to make or receive a call, please step out of the room.
 4. Confidentiality—everyone should respect each other’s privacy by not talking about one another outside of the program.
 5. Note that some people prefer to say blood glucose and others blood sugar. Have your audience decide which terminology they prefer.

Ask the group if there are any other rules they would like to suggest.

Finally, we encourage all questions. NO question is a stupid question. Sometimes you might ask a question that we do not know the answer to right away. When this happens, we will write it down on this flip chart to remind us to find out the answer.

- Ask if there are any other rules they would like to add.*
- Ask if everyone in the group can agree to all of the rules.*

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D. **Icebreaker:** *Form a circle and have each person introduce himself or herself and tell the group an activity or hobby he/she likes to do. You can use a ball to facilitate the process. For example: Jackie has the ball and states: "My name is Jackie, and I enjoy gardening." Jackie would then toss the ball to someone else, and it is then that person's turn. Repeat until everyone has had a chance to introduce themselves and state an activity they enjoy.*

III. NUTRITION SESSION (45 MINUTES)

A. What is important think about when I eat and my diabetes care?

(Fast paced, keep this to 3 minutes or less)

- Healthy diets can help one reduce complications and live longer.
- Having a healthy diet includes a variety of foods: Fruits, vegetables, proteins, carbohydrates and fats.
- The type of food and the timing of meals work together with your insulin injections (boluses) to keep blood glucose within normal limits.
- Since food intake raises blood glucose, it is important to balance meals with insulin and exercise to keep blood glucose close to normal.
- Eating healthy is important to everyone.
- Your diabetes care should include healthy eating, staying active as well as taking your required insulin.

1. Do you have to avoid certain foods because you have diabetes?

"NO" A lot of people think people with diabetes can only eat certain types of food. This is not true. Some experts used to think there was a "diabetes diet." They thought people with diabetes had to avoid all foods with sugars or stop eating certain other foods. But when you have type 1, you can eat the same as everyone else.

But in order to control blood glucose, you need to know the effect different foods have on your blood glucose. There are some key recommendations of what to eat and not to eat that we will discuss a bit later. Following these recommendations is a healthier way of eating that is good for everyone even if they don't have diabetes.

B. What do food groups, MyPlate and healthy eating have to do with diabetes?

(Fast paced, keep this to 3 minutes or less)

Allow participants to respond and write their answers on board/paper.

Key concepts to add to participant response if not given.

Is anyone familiar with the various food groups? Can anyone name all five?

-Vegetables (spinach, broccoli, carrots, beets, bell peppers, etc.)

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- Fruits (apples, berries, melons, bananas, mangos, etc.)
- Grains (wheat, bread, pasta, oats, rice, etc.)
- Dairy (milk, cheese, ice cream, yogurt, etc.)
- Protein (meat, beans, legumes [things like peanuts, peas and beans], eggs, etc.
- We also need some oils or fat in our diet, but only a little bit. Oils are NOT considered a food group, but an “extra.” In small amounts, they can provide many essential nutrients.

Show a large picture or poster of MyPlate. Refer to it as you go through the lesson plan.



1. This plate comes from the U.S. Department of Agriculture and is the current tool used to teach nutrition and food guidelines. Some of you may remember this as a pyramid from when you were in school. It was revised several years ago to make it easier to understand, and to resemble an actual plate of food that you might eat.
2. Can I use MyPlate guidelines even though I have diabetes?
 - The message from MyPlate is that to have a healthy diet, **it is important to eat foods from all food groups** every day, to help your bodies grow, learn, be active, heal and stay healthy.
 - When you have diabetes, it is important to know how different foods effect blood sugar.
 - The 5 food groups can be usually be placed into 1 of 3 categories - carbohydrates, proteins or fats. We will talk about each food category and how it affects blood sugar.

C. Who has heard of carbohydrates? What are they?

(Fast paced, keep this to 5 minutes or less) Allow participants to respond and write their answers on board/paper. Key concepts to add to participant response if not given.

- Carbohydrate is a long word for sugar.
- Carbohydrates are our body’s main source of energy.
- When carbohydrates are eaten, they are broken down into glucose, or sugar, in the body. This glucose is then absorbed into the blood stream.
- Carbohydrates are the main nutrient in foods that affect blood glucose

1. Should people with diabetes just skip carbohydrates?

“NO”

- Our body needs carbohydrates.

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- If we don't eat enough, our blood glucose gets too low and we may not have any energy.
- If we eat too many at once, our blood glucose can go too high.
- By managing intake of carbohydrates – not eating too few or too many - we can control levels of blood glucose with what we eat.
- No matter where they come from, ALL carbohydrates turn into glucose.

2. What kind of foods have carbohydrate? Think about the 5 food groups of Dairy, Protein, Grains and Fruit and Vegetables. (Refer to list in handout)

- **Fruits and Vegetables** – Fruit and fruit juices including plantains, persimmons, tomato juice, prune juice, and carrot juice. Starchy vegetables (ex. corn, peas, all potato varieties).
- **Dairy** – Milk, soy milk, almond milk, cottage cheese, cheese and yogurt (including Whole fat, non-fat and reduce fat)
- **Grains** - Breads, cereals, crackers, pasta, and grains (rice, popcorn, oatmeal, wheat, rye, barley)
- **Proteins** - Meats, beans (pinto beans, black beans, lentils, and chick pea)
- Though not a basic food group - carbohydrates also come from **Sugary Foods and Drinks**: soda, fruit drinks, sports drinks, candy, cakes, cookies, chocolate, jam, jelly, honey and sugar.

3. Are all carbohydrates the same?

Not all carbs are created equal, at least not from a nutritional standpoint and how fast your blood sugar will react and how long they stay in your system. Some carbohydrates are digested very quickly and make your blood sugar rise quicker such as candy, sugar and white bread. Others are digested slowly and your blood sugar rises slower such as whole grains like whole wheat bread and oatmeal. We will talk about this more in our Carbohydrate Counting Class.

****Activity****

Food models should be placed on the table. Have the participants remove all the food models containing carbohydrates and put them aside. Review items to ensure all carbohydrate items have been removed. Discuss anything that was not in the correct place

D. Who has heard of proteins? What are they?

(Fast paced, keep this to 5 minutes or less)

Allow participants to respond and write their answers on board/paper.

Key concepts to add to participant response if not given.

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- Proteins are a chemical family found throughout the body. They build, repair and maintain organs, muscle, bone, skin, hair, and virtually every other body part or tissue.
- Proteins are essential for growth and development. They provide the body with energy and are needed to make hormones, antibodies, enzymes, and tissues.
- If you take away the water in your body, about 75 percent of the weight is left over is protein.

1. What are some good sources of protein?

Allow participants to respond and write their answers on board/paper.

Key concepts to add to participant response if not given. Talk about the different proteins and point out different meat cuts and how the proteins may be purchased. (Refer to list in handout)

- Beef: Steaks, roasts, ground beef, ribs
- Poultry: Chicken, turkey, duck, Cornish game hens
- Fish: Cod, tuna salmon, halibut, trout
- Pork: Tenderloin, chops, roasts
- Eggs: Whites and Substitutes
- Nuts: Almonds, Walnuts, and Pecans
- Tofu: Extra Firm, Firm, and Silken

Some carbohydrate-foods rich in protein

- Beans and lentils
- Nuts: Almonds, Walnuts, and Pecans

2. Does protein affect our blood sugar?

- Protein has a small, but usually not significant effect on blood sugar. Therefore, we don't focus on protein like we do on carbohydrates. However, many protein sources are either high in fat or can be prepared in high-fat ways.
- Therefore, it is important to select lean protein sources as much as possible and not fry them.

3. What else can you do to reduce the fat in proteins?

Allow participants to respond and write their answers on board/paper. Key concepts to add to participant response if not given. (Refer to list in handout)

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- Choose lean cuts of meat - look for “Loin” or “Round” in the name. If Prime is in the name it will have higher fat.
- You can also look for a percent amount to tell you how much of the meat is considered lean. For example, 93% Lean Ground Beef Patty. The higher the percent the better.
- If you eat canned protein such as tuna – look for tuna packed in water instead of oil.
- If you eat poultry such as chicken and turkey – take off the skin and eat breast meat.
- If you love bacon, and sausages, look for low fat options and eat just one piece. Canadian bacon is lower in fat than your regular bacon.

****Activity****

Food models should be placed on the table. Have the participants remove all the carbohydrates food models and put them aside. Review items to ensure all carbohydrate items have been removed. Discuss anything that was not in the correct place.

E. What is fat?

(Fast paced, keep this to 5 minutes or less)

Allow participants to respond and write their answers on board/paper. Key concepts to add to participant response if not given.

- Fat is the body’s major energy storage system. When the energy from the food you eat or drink can’t be used by your body, the body may turn it into fat for later use.
- Your body uses fat from foods for energy, to cushion organs and bones, and to make hormones and regulate blood pressure. Some fat is also necessary to maintain healthy skin, hair and nails, so you shouldn’t cut all fat out of your diet.

1. What are the 3 major types of fats in the diet?

Allow participants to respond and write their answers on board/paper.

Key concepts to add to participant response if not given by the following fat categories: saturated fat, polyunsaturated fat, and monounsaturated fat.

a. Saturated fats:

- Generally, from animal sources such as fatty meats, milk and dairy products, butter, and margarine, but we also have some that come from plant sources like coconut and palm kernel oils.

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- Known as “bad fats” associated with heart disease
- Limit your intake of saturated fat to less than 10 percent of your daily calorie intake.

b. Polyunsaturated fats:

- Comes from plants.
- Polyunsaturated fats include corn oil, safflower oil, and sunflower oil, walnuts, sesame seeds, and pumpkin seeds.
- Less than 10 percent of our daily calories should come from polyunsaturated fats.
- When you replace saturated fat with polyunsaturated fat, you can reduce your risk of heart disease.

c. Monounsaturated fats:

- Are probably the healthiest for us. They are associated with reduced risk of heart disease and do not appear to contribute to cancer.
- Monounsaturated fats are found in olives and olive oil, almond oil, canola oil, avocados, cashews, and peanut oil.

****Activity****

Food models should be placed on the table. Have the participants remove all the fat food models and put them aside. Discuss anything that was not in the correct place.

F. What other suggestion are there to eat a healthy diet?

(Fast paced, keep this to 5 minutes or less)

Allow participants to respond and write their answers on board/paper. Key concepts to add to participant response if not given.

- Try to eat a balanced food intake, with a variety of food groups and healthy and adequate portion size.
- Try to avoid skipping meals.
- Have portion sizes that will help you reach or maintain a healthy weight.
- Try to include high fiber foods such as whole grain breads and cereals, fresh fruits with the skins (apples and pears) vegetables and legumes, and grains (pasta, rice).

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- Choose leaner meats like chicken, turkey, fish, and lean beef. Focus on baked, broiled or grilled meats instead of fried.
- Choose water it is the best option. Drink calorie-free drinks instead of regular soda, fruit punch and other sugar-sweetened drinks.
 - Water infused with fresh cut fruit and herbs.
 - Example: Water with Lemon and Mint.
- Reduce intake of high calorie snack foods and desserts like chips, cookies, cakes, full-fat ice cream.
 - These items may be eaten occasionally. Reduce the amount that is eaten. Refer to your dietary team for what will work for you.

IV. Wrap Up (5 MINUTES)

Remind everyone that we will be meeting again in two week, same time and place.
Topics for next week: Carbohydrate Counting.

STEPP-UP Handouts

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I. Welcome	3 minutes
II. Introduction a. Icebreaker	10 minutes
III. Nutrition Session a. Overview of the 5 food groups. Why is it important to eat healthy? b. Overview of main food sources: Carbohydrates, Proteins and Fats c. Carbohydrates d. Proteins e. Fat f. General suggestion for healthier eating.	45 minutes
IV. Closing	2 minutes

STEPP-UP Handouts

TYPE 1 DIABETES AND NUTRITION

Why is it important to eat healthy?

To be happy, reduce complications and live longer.

Having a healthy diet includes:

- ✓ Vegetables (spinach, broccoli, carrots, beets, bell peppers, etc.)
- ✓ Fruits (apples, berries, melons, bananas, mangos, etc.)
- ✓ Grains (wheat, bread, pasta, oats, rice, etc.)
- ✓ Dairy (milk, cheese, ice cream, yogurt, etc.)
- ✓ Protein (meat, beans, legumes [things like peanuts, peas and beans], eggs, etc.)
- ✓ We also need some oils or fat in our diet, but only a little bit. Oils are NOT considered a food group, but an “extra.” In small amounts, they can provide many essential nutrients.



The type of food you eat, and when you eat work together with your insulin injections (boluses) to keep blood glucose within normal limits. Since food intake raises blood glucose, it's important to balance meals with insulin and exercise to keep blood glucose close to normal. Eating healthy is important to everyone!

* Blood glucose is also called blood sugar.



My doctor told me to avoid diabetes complications. I need to eat healthy!



Eating healthy is important to live longer, so I can enjoy my grandchildren!

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What should my diabetes care should include?

- Healthy eating,
- Staying active
- Taking your required insulin.

Do I have to avoid certain foods because I have diabetes?

- A lot of people think people with diabetes can only eat certain types of food. This is not true. Some experts used to think there was a "diabetes diet." They thought people with diabetes had to avoid all foods with sugars or stop eating certain other foods. But when you have type 1, you can eat the same as everyone else.
- But in order to control blood glucose, you need to know the effect different foods have on your blood glucose. Some foods will make your blood glucose go up very fast. Other foods will make your blood sugar go up slowly.



My doctor said that I need to control my blood sugar better. Can eating certain types of food help?

OVERVIEW OF MAIN FOOD SOURCES

The 5 food groups can be usually be placed into 1 of 3 categories - carbohydrates, proteins or fats.

Most of us enjoy eating. We don't usually think about foods by the way they affect our bodies. Instead, we choose them based on things like smell, flavor and tradition. However, in order to control blood sugar, we need to know the effect different foods have on our blood sugar. We will talk about each food category and how it affects blood sugar.

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FOOD CATEGORY SAMPLE

Carbohydrates:

Whole Grain Pasta
Rye Bread
Brown Rice
Apples
Oranges
Corn
Milk



Proteins:

Eggs
Tofu
Chicken
Turkey
Fish
Beans
Legumes

Fats:

Nuts (Walnut, Hazelnut, Brazil nut, etc.)
Avocado
Margarine
Olives
Nut Butters (Almond, Cashew, & Peanut)

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CARBOHYDRATES



- ✓ Carbohydrate is a long word for sugar (glucose).
- ✓ Carbohydrates are our body's main source of energy.
- ✓ When carbohydrates are eaten, they are broken down in the body into glucose. This glucose is then absorbed into the blood stream.
- ✓ Carbohydrates are the main nutrient in foods that affect blood glucose.

Should people with diabetes just skip carbohydrates? “NO”

- Our body needs carbohydrates.
- If we don't eat enough, our blood glucose gets too low and we may not have any energy.
- If we eat too many at once, our blood glucose can go too high.
- By managing intake of carbohydrates – not eating too few or too many - we can better control levels of blood glucose with what we eat.
- No matter where they come from, ALL carbohydrates turn into glucose.

What are the main food groups that have carbohydrates?

They include:

- **Fruits and Vegetables** – Fruit and fruit juices including plantains, persimmons, tomato juice, prune juice, and carrot juice. Starchy vegetables (ex. corn, peas, all potato varieties).
- **Dairy** – Milk, soy milk, almond milk, cottage cheese, cheese and yogurt (including Whole fat, non-fat and reduce fat)
- **Grains** - Breads, cereals, crackers, pasta, and grains (rice, popcorn, oatmeal, wheat, rye, barley)
- **Proteins** - Meats, beans (pinto beans, black beans, lentils, and chick pea)
- Though not a basic food group - carbohydrates also come from **Sugary Foods and Drinks**: soda, fruit drinks, sports drinks, candy, cakes, cookies, chocolate, jam, jelly, honey and sugar.

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PROTEINS

- ✓ Take away the water and about 75 percent of your weight is protein.
- ✓ Proteins are essential for growth and development. They provide the body with energy and are needed to manufacture hormones, antibodies, enzymes, and tissues.
- ✓ Protein builds, repairs and maintains organs, muscle, bone, skin, hair, and virtually every other body part or tissue.



What are some good sources of protein?

Examples of foods with protein:

- Beef: Steaks, roasts, ground beef, ribs
- Poultry: Chicken, turkey, duck, Cornish game hens
- Fish: Cod, tuna salmon, halibut, trout
- Pork: Tenderloin, chops, roasts
- Eggs: Whites and Substitutes
- Nuts: Almonds, Walnuts, and Pecans
- Tofu: Extra Firm, Firm, and Silken

Remember: Some carbohydrate-foods, like beans and lentils, also are a rich source of protein.

Does protein affect my blood glucose?

- Protein has a small, but usually not significant effect on blood sugar. Therefore, we don't focus on protein like we do on carbohydrates. However, many protein sources are either high in fat or can be prepared in high-fat ways.
- Therefore, it is important to select lean protein sources as much as possible. Also do not fry them.

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What else can I do to reduce the fat in proteins?

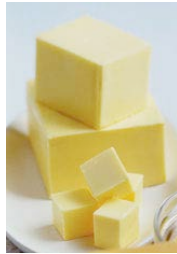
- Choose lean cuts of meat - look for “Loin” or “Round” in the name. If Prime is in the name it will have higher fat.
- You can also look for a percent amount to tell you how much of the meat is considered lean. For example, 93% Lean Ground Beef Patty. The higher the percent the better.
- If you eat canned protein such as tuna – look for tuna packed in water instead of oil.
- If you eat poultry such as chicken and turkey – take off the skin and eat breast meat.
- If you love bacon, and sausages, look for low fat options and eat just one piece. Canadian bacon is lower in fat than your regular bacon.



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FATS

- ✓ Fat is the body's major energy storage system.
- ✓ When the energy from the food you eat and drink can't be used by your body right away, the body may turn it into fat for later use.
- ✓ Your body uses fat from foods for energy, to protect organs and bones, and to make hormones and regulate blood pressure.
- ✓ Some fat is also necessary to maintain healthy skin, hair, and nails, so you shouldn't cut all fat out of your diet.



Are there different types of fat?

There are 3 major types of fats in the diet –

1) Saturated fat:

- Generally, from animal sources such as fatty meats, milk and dairy products, butter, and margarine, but we also have some that come from plant sources like coconut and palm oils.
- Known as "bad fats" associated with heart disease
- Limit your intake of saturated fat to less than 10 percent of your daily calorie intake.

2) Polyunsaturated fat:

- Comes from plants.
- Polyunsaturated fats include corn oil, safflower oil, and sunflower oil, walnuts, sesame seeds, and pumpkin seeds.
- Less than 10 percent of our daily calories should come from polyunsaturated fats.
- When you replace saturated fat with polyunsaturated fat, you can reduce your risk of heart disease.

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3) Monounsaturated fat:

- Are probably the healthiest kind of fat for us. They are associated with reduced risk of heart disease and do not appear to contribute to cancer.
- Monounsaturated fats are found in olives and olive oil, almond oil, canola oil, avocados, cashews, and peanut oil.

What are some other general suggestions for healthy eating?

- Try to eat a balanced food intake, with a variety of food from all of the main food groups.
- Try to avoid skipping meals.
- Have portion sizes that will help you reach or maintain a healthy weight.
- Try to include high fiber foods such as whole grain breads and cereals, fresh fruits with the skins (apples and pears) vegetables and legumes, and grains (pasta, rice).
- Choose leaner meats like chicken, turkey, fish, and lean beef. Focus on baked, broiled or grilled meats instead of fried.
- Choose water it is the best option. Drink calorie-free drinks instead of regular soda, fruit punch and other sugar-sweetened drinks.
 - Water infused with fresh cut fruit and herbs.
 - Example: Water with Lemon and Mint.
- Reduce intake of high calorie snack foods and desserts like chips, cookies, cakes, full-fat ice cream.
 - These items may be eaten occasionally. Reduce the amount that is eaten. Refer to your dietary team for what will work for you.



Healthy eating, physical activity and taking your required insulin can help you manage your