

Basic Nutrition Trainer's Guide

What trainees should know by the end of training:

1. Trainees will be able to describe digestion, absorption, and metabolism in their own words.
2. Trainees will be able to identify the defining characteristics of each of the six categories of nutrients.
3. Trainees will be familiar with the health benefits of fiber and be able to provide recommendations to participants to help increase their intake of fiber.
4. Trainees will be able to explain what empty calories are, and discuss healthy options with participants to reduce their "empty calorie" consumption.
5. Trainees will be able to be familiar with "good" and "bad" fats and be able to substitute foods that are high in saturated and trans fats with foods high in polyunsaturated and monounsaturated fats.
6. Trainees will be able to recommend food sources that are high in vitamin A, vitamin C, iron, and folic acid to participants.
7. Trainees will be able to describe the relationship between calcium and iron absorption and recommend good food sources of each to participants.
8. Trainees will be familiar with the benefits of water and be able to provide recommendations to reduce the risk of dehydration for at-risk populations.
9. Trainees will be able to describe the difference between empty calorie and nutrient dense foods.
10. Trainees will be able to offer recommendations for healthy weight loss consistent with the Dietary Guidelines (ChooseMyPlate.gov).
11. Trainees will be able to describe the difference between food allergies and food intolerances.
12. Trainees will be able to read food labels and educate participants on how to use them while shopping.
13. Trainees will be able to identify ineffective weight loss strategies, and be able to work with participants to develop goals to improve their health.

Live Training Needed

- Review available nutrition education materials that reinforce the concepts found above.
- Discuss availability of fluoridated water in local agency service area and how to address fluoride intake during assessment and education.
- Briefly discuss food security vs food insecurity and how food access can differ by location or socioeconomic status.
- Discuss not labeling foods as "good" or "bad" and other ways to describe them when speaking with participants.
- Since the course was created, another allergen was added to the major allergens list: sesame. There are now 9 major allergens- wheat, fish, dairy, eggs, peanuts, soy, tree nuts, shellfish, sesame.

Suggested Exercises to Prepare for Observations

The following are recommended exercises to help trainees prepare for stage 3 Observations. They can be completed in any order, and may be repeated as often as needed for the trainee to grasp the concepts presented. Additional practice exercises can be found in the Stage 3 training resources.

Trainee Check-In

Have a discussion with the trainee about their thoughts and feelings related to the information presented in the course. Was there anything that surprised them about what they learned? Did they find any of the information difficult to accept? How comfortable are they feeling with offering education on these topics?

Verbal Practice

Have trainee explain the following to the trainer:

- The processes of digestion, absorption, and metabolism
- List the 6 types of nutrients (carbohydrates, fat, protein, vitamins, minerals, and water) and describe each one
- What are the health benefits of fiber, and what foods contain fiber
- What types of foods are nutrient dense and why
- Why unsaturated fats are a better choice than saturated fats
- Why folic acid is important before and during pregnancy
- Examples of foods that contain calcium and iron, and the relationship between how calcium and iron are absorbed
- Why staying hydrated is important and tips for staying hydrated
- The difference between a food allergy and a food intolerance
- The different factors that influence weight loss
- Why we focus on health behaviors instead of weight status at WIC

Observe

Have trainee observe you or another staff member offering nutrition education to participants.

Role Play

Have trainee practice the following skills with you or another staff member:

- Identifying areas where a participant's reported dietary intake could be improved
- Offering education on these specific areas
- Discussing how to use food benefits to increase nutrient intake

Role Play Ideas

Digestion

A participant shares that she notices her child often needs to poop soon after eating. She is worried that he isn't getting enough nutrients from the food he eats because everything seems to move through his digestive tract so fast.

Things trainee may cover:

- Assess growth of child and usual frequency/consistency of stool
- Basic digestion, including how long it usually takes and how nutrients are absorbed

Carbohydrates

A participant states that they heard on social media that they should be limiting their carbohydrate intake, so they have been cutting down their intake of fruits, grains, and starchy vegetables like potatoes and corn.

Things trainee may cover:

- Benefits of and nutrients in carbohydrate-containing foods
- Carbohydrates are the body's preferred energy source
- Where to find sources of credible nutrition information

Fiber

A participant tells you that she eats these foods on most days:

Breakfast- A bowl of cereal with milk, or eggs and toast

Lunch- A sandwich on white bread, a salad, or leftovers from dinner

Dinner- Pork, chicken, or beef with pasta or rice and a steamed veggie

Snacks- Crackers or cookies

What recommendations could you give her to increase her fiber intake?

Things trainee may cover:

- What foods tend to be high in fiber vs not (whole grains, fruits, vegetables)
- Higher-fiber replacements for current food choices (for example, choosing whole grain bread or cereal and eating fruit as a snack instead of crackers or cookies)

Fat

A participant shares that they want to start the keto (high-fat) diet and wants to know why WIC doesn't provide many high-fat foods in the food package.

Things trainee may cover:

- Risk of heart disease with diet that is too high in saturated fat
- Targeted nutrients in WIC food package (iron, fiber, calcium, folic acid/folate, etc) and health benefits of food in food package

- Lack of evidence on safety/efficacy of ketogenic diet unless recommended by healthcare provider

Protein

A participant shares that they have heard that plant foods don't contain any protein.

Things trainee may cover:

- Plant foods do contain protein, but they may not be complete proteins.
- Animal sources of protein are complete proteins, but plant sources of protein also have may health benefits.
- Vary plant sources of protein to get all essential amino acids.

Hydration

A mom shares with you that her child doesn't like to drink water and only enjoys juice and milk.

Things that trainee may cover:

- Signs of dehydration in children
- Assessing for appropriate amount of juice/milk intake
- Tips to make drinking water more attractive to child (getting them a special water bottle, flavoring water with fruit, etc).
- Foods high in water

Weight loss

A participant comes to WIC with a goal to lose 50 pounds.

Things trainee may cover:

- Assess participant's reasons for weight loss goal
- Realistic expectations regarding weight loss
- Factors that affect weight besides calories in/calories out
- Assess for presence/absence of healthy habits
- Setting goals for behavior change

Allergy

A participant shares that their child was recently diagnosed with an egg allergy.

Things trainee may cover:

- Avoiding products with eggs
- Reading food labels to know what contains eggs
- Omitting eggs from WIC food package

Health Claims

A participant shares with you that she gives her child (who has ADHD) a daily herbal supplement in addition to his prescribed medication. She says that the supplement bottle states it was “clinically studied” and that the supplement helps with memory and focus.

Things trainee may cover:

- Discussing supplements with healthcare provider
- Supplements may interact with medications
- Lack of regulation of dietary supplements

Guidebook Answers

Estimated seat time for course/guidebook: 3 hours

Module 1 Notes

What happens in each part of the gastrointestinal (GI) tract?

Part of (GI) tract	What happens in each part of the gastrointestinal (GI) tract?
Mouth	<ul style="list-style-type: none"> • Teeth chew and crush food • Mix with enzymes in saliva (begins chemical breakdown of food)
Stomach	<ul style="list-style-type: none"> • Mixes with stomach acid and enzymes to continue breakdown of foods • Food is now called chyme • Takes 1-4 hours
Intestines	<ul style="list-style-type: none"> • Pancreatic enzymes added and breakdown of nutrients finalized • Nutrients are absorbed through walls of intestine • Waste product exit body • Takes 3-10 hours

Term	Definition
Digestion	The breakdown of food into nutrients.
Absorption	When nutrients travel through the intestinal cells into the bloodstream.
Metabolism	The process by which nutrients from food are used to generate energy.

Name	What % of daily calories should come from this nutrient?	How many calories per gram does it contain?
Carbohydrates	45-65%	4 calories per gram
Fat	20-35%	9 calories per gram
Protein	10-35%	4 calories per gram

Module 2 Notes

Carbohydrates

Type	What is it? What does it do in the body?	Food sources
Sugars	There are many different types of sugar that are all converted to glucose (blood sugar). Sugars can be natural or added sugars, and it's better to eat foods with natural sugars.	<ul style="list-style-type: none"> • Apples • Milk • Chocolate • Candy • Baked goods
Starches	Starches are made by plants, which combine glucose molecules to store energy. Starch is broken down into glucose.	<ul style="list-style-type: none"> • Wheat • Rice • Oats • Quinoa • Corn • Beans • Peas • Potatoes • Yams
Fiber	<p>Fiber isn't broken down for energy.</p> <p>Soluble fiber dissolves in water and dissolves into a gel. It lowers blood cholesterol and blood sugar.</p> <p>Insoluble fiber doesn't dissolve in water. It adds bulk to stool, reduces constipation, and may prevent diseases like colorectal cancer.</p>	<p>Soluble:</p> <ul style="list-style-type: none"> • Oats • Barley • Beans • Legumes • Fruit • Carrots <p>Insoluble:</p> <ul style="list-style-type: none"> • Whole wheat flour • Wheat bran • Nuts • Many vegetables

1. What are the health benefits of foods that contain fiber?

They lower blood sugar and cholesterol, reduce constipation, and may help prevent diseases like colorectal cancer.

Fat

Type	What is it? What does it do in the body?	Food sources
Saturated fat	They are solid at room temperature and may raise “bad” cholesterol levels, leading to a higher risk of heart disease.	<ul style="list-style-type: none"> • Red meat • Whole milk • Cheese • Butter • Cream
Unsaturated fat	<p>They are liquid at room temperature and usually come from plant sources. They can be monounsaturated or polyunsaturated, have health benefits, and should be consumed the most of all fat types.</p> <p>Omega 3 fatty acids: a specific kind of unsaturated fat that reduces risk of heart disease and is needed for brain and eye development.</p>	<ul style="list-style-type: none"> • Avocados • Olives • Peanuts • Vegetable oils • Nuts • Seeds <p>Omega 3 fatty acids:</p> <ul style="list-style-type: none"> • Fish • Flaxseed • Soybeans • Walnuts • Canola oil
Trans fat	They are rarely found in nature and created by adding hydrogen to oils. This makes them solid at room temperature with a higher shelf life. They increase risk of cardiovascular disease.	<ul style="list-style-type: none"> • Fast food • Frozen entrees • Store-bought baked goods

2. What are some examples of heart-healthy foods that contain fat?

- Avocados
- Olives
- Nuts
- Seeds
- Fish
- Soybeans
- Canola oil

Protein

Type	What is it? What does it do in the body?	Food sources
Protein	They are made of amino acids. They build and maintain body tissue, produce enzymes and hormones, repair cells, and transport nutrients and oxygen. They can also be used for energy when needed by the body.	<ul style="list-style-type: none">• Nuts• Seeds• Beans• Tofu• Peas• Oats• Red meat• Poultry• Eggs• Seafood• Milk• Yogurt• Cheese

3. What does it mean for a nutrient to be “essential”?

An essential nutrient isn't made by the body and must be consumed in food.

4. What are the differences between fat-soluble and water-soluble vitamins?

Fat-soluble vitamins don't dissolve in water and absorb better when eaten with fat. They are stored in the liver and fat tissue and can be toxic if taken in excess.

Water-soluble vitamins dissolve in water and aren't stored in large amounts in the body.

Vitamins

Name	What does it do in the body? Why is this nutrient important?	Food sources
Vitamin A	A fat-soluble vitamin that helps us resist infections and keeps the eyes, skin, and internal organs healthy.	<ul style="list-style-type: none"> • Liver • Melon • Carrot • Broccoli • Eggs • Pumpkin • Capsicum • Spinach • Apricot • Papaya • Tomato • Mango
Vitamin C	A water-soluble vitamin that boosts immunity, protects memory, increases absorption of iron, may reduce the risk of heart disease, and helps with healing.	<ul style="list-style-type: none"> • Cantaloupe • Bell pepper • Broccoli • Pineapple • Kiwi • Grapefruit • Brussels sprouts • Strawberry • Papaya • Cabbage • Orange • Raspberry
Vitamin D	A fat-soluble vitamin that strengthens bones, helps control inflammation, and boosts the immune system.	<ul style="list-style-type: none"> • Fish • Liver • Eggs • Fortified dairy • Orange juice • Cereal • Supplements <p>The body can also make vitamin D.</p>
Folate (folic acid)	Makes new cells, forms hemoglobin, and protects against heart disease.	<p>Folate:</p> <ul style="list-style-type: none"> • Green leafy vegetables • Oranges • Orange juice • Dried beans • Peanuts • Avocados <p>Folic acid: enriched grain products</p>

5. Adequate folate/folic acid intake prevents the birth defect known as **neural tube defects** [or spina bifida].

Minerals

Name	What does it do in the body? Why is this nutrient important?	Food sources
Calcium	It forms and maintains bones and helps muscles contract. People who don't get enough calcium may have impaired growth. People with dairy allergies, lactose intolerance, or who follow a vegan or calorie-restricted diet may be at risk of insufficient calcium intake. Calcium and iron compete for absorption, so calcium and iron supplements shouldn't be taken together. Excess calcium supplementation can lead to kidney problems.	<ul style="list-style-type: none"> • Dairy products • Beans • Leafy green vegetables • Nuts • Seeds Calcium-fortified foods like: <ul style="list-style-type: none"> • Soy milk • Tofu • Orange juice
Fluoride	Fluoride strengthens tooth enamel and helps prevent tooth decay.	Fluoridated water
Iron	Prevents and fights infections, promotes brain development, and is part of hemoglobin. Not consuming enough iron leads to iron deficiency anemia, which is more common among pregnant women and growing children. Diets high in calcium, low-iron foods, foods like coffee, tea, and chocolate, or calorie-restricted diets increase someone's risk of developing iron-deficiency anemia. Heme iron is more easily absorbed than non-heme iron, and consuming a food that contains iron with another food that contains vitamin C can increase absorption of iron.	Heme iron: <ul style="list-style-type: none"> • Beef • Pork • Chicken • Seafood Non-heme iron: <ul style="list-style-type: none"> • Beans • Vegetables • Tofu • Raisins • Apricots • Prunes • Fortified cereals
Sodium	Is an electrolyte needed for electrical transmissions in the body. Sodium is added at the table and during manufacturing and processing of foods. Many Americans get too much sodium in their diets. All kinds of salt have the same amount of sodium.	Salt (all kinds)

6. Too much sodium raises someone's risk of **high blood pressure (hypertension)**.

7. Which two minerals compete for absorption in your body?

Calcium and iron.

Water

What does it do in your body?	What foods are high in water?
<ul style="list-style-type: none"> Regulates body temperature Aids in digestion Removes waste Main component of blood 	Fruits and vegetables

8. What are some common signs of dehydration?

In adults	In children	In infants
<ul style="list-style-type: none"> Headache Dizziness Fainting Tiredness Feeling thirsty Muscle weakness Dark yellow urine Urinating little 	<ul style="list-style-type: none"> Unusually sleepy or drowsy Crying, but without producing tears Dry mouth Dry or sticky tongue High fever 	Dry diaper for 3 hours or longer

Module 3 Notes

1. What makes a food nutrient-dense? List a few examples of nutrient-dense foods.

They have high levels of micronutrients and are minimally processed. Examples are whole grain foods and fresh fruits and vegetables.

Food Group	Examples of Foods in This Group	General Dietary Recommendations
Fruits and Vegetables	Any fruit or vegetable!	Have half your meal be fruits and vegetables, and eat many different colors to get a variety of nutrients.
Protein	<ul style="list-style-type: none"> Meat Seafood Beans Nuts Seeds Peanut butter Tofu 	Vary your protein foods.
Dairy	<ul style="list-style-type: none"> Milk Yogurt Cheese 	Consume skim or 1% dairy.
Grains	<ul style="list-style-type: none"> Wheat Barley Oats 	Make at least half your grains whole.

2. What are the differences between whole grains, refined grains, and enriched grains?

Whole grains are minimally processed and contain the endosperm, bran, and germ. Refined grains have the bran and germ removed, along with most of the fiber and micronutrients. Enriched grains have some of the micronutrients added back.

3. What are the top 8 allergenic foods?*

1. Wheat
2. Fish
3. Dairy
4. Eggs
5. Peanuts
6. Soy
7. Tree nuts
8. Shellfish

***sesame was added as a major allergen since the course was created**

4. What is the difference between a food allergy and a food intolerance?

Food allergies are an immune system response to a food and can be life-threatening. Food intolerances don't trigger an immune response but can cause physical discomfort like bloating, abdominal pain, or diarrhea.

5. Why is BMI not the best indicator of someone's overall health?

It doesn't consider body composition; someone with a lot of muscle mass may be overweight. Also, it doesn't take into account lifestyle behaviors or other indicators of someone's health.

6. Instead of weight loss, what should be your main focus when talking with WIC participants?

The main focus should be on encouraging participants to have healthy eating and physical activity habits, whatever their body size.

Practice Activities

Scenario 1

You are speaking with the caregiver of Mateo, a 1-year-old boy. His hemoglobin was low (not within the nutritionist range) when it was tested today. His caregiver says that Mateo drinks a lot of milk, around 48 oz a day. He enjoys cereals, bread, some fruits and vegetables like apples and carrots, beans, and eggs, as well as other dairy foods like cheese and yogurt.

1. What suggestions can you give Mateo's caregiver to increase his intake of iron-rich foods?

Suggested answers:

Increase intake of foods like meat, beans, vegetables, tofu, raisins, apricots, prunes, or iron-fortified cereals.

2. What suggestions can you give Mateo's caregiver to increase absorption of iron from the food he eats?

Suggested answers:

Reduce the amount of milk he is drinking; not have dairy foods at the same time as foods containing iron; offer a food containing vitamin C at the same time as foods containing iron.

Scenario 2

You are talking with Darren, the father of 4-year-old Lila. He mentions that she needs lactose-free milk because she has a dairy allergy.

1. What kind of questions would you ask next to determine if Lila truly has a dairy allergy?

Suggested answers:

What happens when she eats other dairy products, like yogurt or cheese? What has the doctor said about what she should eat? Has she been to the allergist for testing?

2. How would you handle the situation differently if Lila has a dairy allergy vs an intolerance?

Suggested answers:

If she has an allergy, issue dairy alternatives and refer to doctor and nutritionist. If she has an intolerance, assess how much dairy she can tolerate and tailor package appropriately.

Scenario 3

Emika, a WIC participant, tells you that this is what she normally eats in a day:

Breakfast - A fried egg with sausage, two slices of toast made from white bread, butter, and orange juice

Lunch - A double cheeseburger with lettuce, tomato, and pickles, and French fries

Dinner - Fried chicken with mashed potatoes, steamed peas, and a dinner roll

Snacks - Potato chips, Oreo cookies, applesauce

1. What nutrients might Emika be getting too much of?

Suggested answers:

- Sodium
- Saturated fat
- Enriched grains

2. What nutrients might Emika need more of?

Suggested answers:

- Fiber
- Micronutrients
- Unsaturated fat
- Whole grains

3. What general suggestions could you give her to improve her eating habits?

Suggested answers:

Choose whole grain bread for toast in the morning; vary breakfast options to include other sources of protein; try whole fruit instead of juice; have fresh fruits or vegetables as a side with lunch; choose a different entree with lunch; have grilled chicken instead of fried chicken; choose nutrient-dense snacks such as nuts, fruits, or vegetables

Food Label Practice

Review the food labels below and answer the following questions.



Nutrition Facts	
Serving Size 1 Pouch (90g)	
Amount Per Serving	
Calories 45	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Sodium 0mg	0%
Total Carbohydrate 12g	4%
Dietary Fiber 1g	4%
Sugars 8g	
Protein 0g	
Not a significant source of saturated fat, trans fat, cholesterol, vitamin A, vitamin C, calcium and iron.	
* Percent Daily Values are based on a 2,000 calorie diet.	



Nutrition Facts	
Serving Size 3 oz. (85g)	
Servings per container About 4	
Amount Per Serving	As Served
Calories 35	Calories from Fat 0
% Daily Value	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 65mg	3%
Total Carbohydrate 8g	3%
Dietary Fiber 2g	8%
Sugars 5g	
Protein 1g	
Vitamin A 120%	Vitamin C 10%
Calcium 2%	Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
Calories: 2,000 2,500	
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

1. Which food product would be the better choice (per serving) for a participant trying to increase their fiber intake?

Answer:

Carrots.

2. Which food product contains more Vitamin A (per serving)?

Answer:

Carrots.

3. Which package contains more total calories if all the servings in the package were consumed at one time?

Answer:

Carrots.