



Train-the-Trainer and Resource Toolkit for Executive Order 13-06 and the Dietary Guidelines for Americans

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Training produced by the





This toolkit is intended as a simple, step-by-step guide for individuals to train others about [Executive Order 13-06](#) and menu changes to align with the United State Department of Agriculture (USDA) and Department of Health and Human Services' [Dietary Guidelines for Americans](#). Individuals teaching this material can follow the talking points in each section to deliver trainings to others.

The toolkit aims to help individuals involved with the Department of Corrections increase their understanding of Executive Order 13-06 and the Dietary Guidelines for Americans. Ultimately, we hope that as more individuals understand and implement the guidelines, support for healthy eating will increase and the nutrition of the incarcerated and the larger community will improve.

The Department of Health is available to answer questions about this toolkit or any of the materials included. Please contact the Nutrition Coordinator at Choosewell-Livewell@doh.wa.gov for more information.

All material, except where otherwise noted, came from the USDA's MyPlate, the Dietary Guidelines for Americas or the Executive Order 13-06 itself.



Table of Contents

Introduction:	4
Section One: Training Materials	5
Training Outline:	6
Core Training Material	7
Part One: Introductions and Ice Breaker Activities (5-10 minutes)	7
Part Two: Set the Agenda (1-2 minutes).....	7
Part Three: Introduction to the Executive Order (1-3 minutes).....	8
Part Four: Basics of the Dietary Guidelines for Americans (25-30 minutes).....	8
Part Five: Activities to Review Material (3-5 minutes).....	18
Commonly Asked Questions and Answers (5-10 minutes).....	21
Section Two: Supplementary Resources.....	25
Supplementary Resources Index	27
Additional Information about the Guidelines.....	28
What’s the deal with vegetables?	28
Why eat fruit?	29
What is a whole grain?	30
What are my protein needs?	30
Why eat fish?.....	31
Why should I eat beans?	32
Why is fiber important for me?	33
Additional Information about Nutrition	35
How does diet affect disease?	35
Tips for Picking Healthy Items from the Commissary.....	36
Does Eating Plant-Based Protein Affect my Ability to Exercise?.....	36
Other Potential Benefits of Following a Healthy Diet:.....	37
Can Following a Healthy Dietary Pattern Save on Healthcare Costs?.....	39
One-Page and Four-Page Toolkit Summary Handouts.....	41
Where to get more information?	47

Introduction

The US Department of Agriculture and the US Department of Health and Human Services work hard to update the Dietary Guidelines for Americans every five years. At the state level, Washington's Governor, Jay Inslee, also recognized the importance of quality nutrition by signing Executive Order 13-06, and the Washington State Department of Health promotes nutrition education through training materials like this toolkit. But it is only through individuals like you, working directly in food services across Washington, that these efforts make an impact. Simply put, this work cannot happen without you! When you deliver effective and clear trainings, attendees will be better advocates for high quality nutrition throughout the Department of Corrections. We are glad to partner with you to help those involved with the Department of Corrections increase their understanding of nutrition.

Simply put, we cannot do our work without you!

Training Outline

How to use this training guide:

There are five parts to the core training materials, plus a section for commonly asked questions. The core training materials are the most essential materials to be included during trainings. **Throughout the core training materials, text in *italics* is meant to be read out-loud, while text that is not italicized is meant to guide the presenter in delivering the training.**

Throughout the core training materials, presenters will see this symbol, when they are meant to ask the audience questions. These are important moments for the audience to integrate what they are learning. In the supplementary materials section, there is a one-page and a five-page handout that you may decide to print for your participants to help them learn.



Use the core training materials and the accompanying supplementary resources to deliver trainings that work best for your audience. Trainings run for an average of 60 minutes, but could be longer if there are many questions, or if you decide to review supplementary information during the training.

CORE TRAINING OUTLINE	
Part One: Introductions and Ice Breaker Activities (optional)	5-10 minutes
Part Two: Set the Agenda	1-2 minutes
Part Three: Introduction to the Executive Order	1-3 minutes
Part Four: Basics of the Dietary Guidelines for Americans <ul style="list-style-type: none">• Why and how they are developed• Who they are meant for and who uses them most• Overview of the guidelines• The menu changes at the facility• The benefits of the changes	25-30 minutes
Part Five: Activities to Review Material	3-5 minutes
Commonly Asked Questions and Answers	5-10 minutes
Total time:	40-60 minutes

Core Training Material

Part One: Introductions and Ice Breaker Activities (5-10 minutes)

When participants arrive, welcome them into the room. Once everyone is settled and present, have everyone, including you, introduce themselves. Introductions help participants feel comfortable and ready to learn.

Introduction: First, introduce yourself. Share what your role is within the Department of Corrections. Share with everyone how you got involved in this training.

Ice Breaker Activities (options): Starting at one end of the room, ask each participant to share their name. Ask them to answer one or all of the questions below.

- Invite participants to share why they are involved in the training.
- Invite participants to share a favorite food or meal that is served at the facility.
- Invite participants to share one thing they hope to learn from today's training.

Part Two: Set the Agenda (1-2 minutes)

Sharing an agenda with participants helps them get oriented to what they are about to learn. An agenda creates a broad overview of everything you are about to discuss.

Share the following with participants:

The first thing we are going to talk about today is Executive Order 13-06, a directive passed in 2013 that affects the food and beverages served by state agencies.

Next, we'll talk about a set of nutrition guidelines called the Dietary Guidelines for Americans. These are the guidelines that the Executive Order is based on.

Then we'll cover why you may have seen changes to the mainline meals to better comply with the directive, or changes that you will start to see.

We'll also talk about how these changes can help improve the way you feel and move around, and your overall health.

Throughout the training, I will give you chances to ask questions.

The hope is that by the end of this training, you will better understand how the state directive applies to you, what healthy food is, and how these changes impact you.

Part Three: Introduction to the Executive Order (1-3 minutes)

The changes at your facility happened because a directive was signed by our state governor. This information is useful for participants because it helps them understand that individuals at your facility did not create these changes – they are changes happening throughout Washington State.

Share the following with participants:

Executive Order 13-06, titled “Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities,” was signed by the governor in 2013. It is a directive that applies to state agencies in Washington, including the Department of Corrections and the people they serve.

The directive requires the Department of Corrections to serve healthy food and drinks, based off a set of food guidelines called the Dietary Guidelines for Americans, which we will review today.

This directive has led to menu changes at correctional facilities across the state, some that you may have noticed and some you may not have.

One of the goals of this directive is to make sure that healthy foods and beverages are in the meals served to custodial populations.

Part Four: Basics of the Dietary Guidelines for Americans (25-30 minutes)

In this section, you will teach participants about the guidelines that are shaping the menu changes at your facilities. To help participants stay interested, there are several questions that you may choose to ask the audience throughout this section.

Begin by asking the audience:



What do you think makes up a healthy diet?

Try to be encouraging of participants’ answers. It’s okay if they mention a food that is not part of this training. The questions in this section are designed to make everyone think and keep them interested in the material.

Share the following with the audience:

We are now going to discuss the Dietary Guidelines for Americans. We think it might help for you to know a little bit about the history of the guidelines so you can understand where they come from and who makes them. After that, we’ll talk about what the guidelines say.

Why were the Dietary Guidelines developed? *Diets are very important for our health. What we eat is directly connected to how we feel, whether or not we get sick, and how long we live. There*

is a lot of information in the news and on the internet about diets. Some of this information is true and based off science, while some of it is false and based off rumors or myths.

Ask the audience:



What are some of the diets that you have heard of?

Allow the audience to explore the diets that they know of for a few minutes. If they need prompting, some diets you might mention include: the Ketogenic Diet (Keto) or other low-carbohydrate diets (such as Atkins), the Paleo diet, the South Beach diet, Weight Watchers, the Mediterranean Diet, the DASH diet and many more!

As you can see, there are a lot of diets to pick from. How can someone pick a diet and know if it's really good for their health? The federal government believed the general public, as well as federal programs, needed guidance about which dietary patterns were best for health. They decided to develop a set of nutrition guidelines for the whole country based on the best available nutrition science.

How are the guidelines developed? Who develops them? *Back in 1990, the federal government started bringing together nutrition experts from around the country to read all of the research on diets and nutrition and come up with recommendations for the public. This information was used to create the first Dietary Guidelines for Americans. The process is repeated every 5 years because what we know about nutrition changes with new science. This way, the guidelines are always science-based and up-to-date.*

Who uses the guidelines throughout the country? Almost all trained nutrition professionals use these guidelines, including dietitians and other health professionals. The guidelines are also the basis of all food programs run by the federal government.

The governor and the state of Washington chose these guidelines to help make healthy food available for state employees and custodial populations because they come from the best scientific information we know about diets.

Before explaining what is in the guidelines, it's important to help your audience understand a few key terms related to nutrition. That way, everyone will be able to understand what you are teaching them. Share the following with the audience:

Before we can talk about what is in the actual guidelines, we are going to quickly review some basic nutrition terms and information. These will help us all understand what the guidelines say.

- *Nutrition experts talk about food in many different ways – one way is to talk about food groups such as vegetables, meats, fruits, grains and dairy. Most of us are probably*

familiar with talking about food this way.

- *Another way nutrition experts talk about food is by the three major nutrients that the foods we eat are made of. These are carbohydrates, protein and fats.*
- *Finally, nutrition experts also talk about food based on what's in them, mainly vitamins and minerals – both of which our bodies need. Different foods have different amounts of vitamins and minerals.*

Ask the participants the following question:



Why do we need protein? How is it used in our bodies?

The participants may answer the question by talking about muscles, weight lifting or being strong. You should also tell them:

Protein is one of the three major nutrients that make up the foods we eat. Protein is used for all muscles, including muscles in our organs, like our heart. It is also used for enzymes and even for our bones. Enzymes are substances that help our bodies work. For instance, enzymes break food down into nutrients so our bodies can use them. Our bodies can also use protein to give us energy throughout the day.

Another key nutrient is carbohydrates. Carbohydrates give us our quickest energy, which is important for our mood and brain health. In fact, our brains are one of the biggest users of carbohydrates in our bodies! We typically only use other nutrients for energy in emergencies and for short periods of time. Carbohydrates are also where we get fiber. Fiber is a substance that we cannot digest. It acts like a broom for our digestion and helps with easy bowel movements. Fiber helps keep us full and keeps our energy stable throughout the day.

Fats are nutrients that have some really important functions in our bodies. Fat coats our brain and spinal cord and protects them. Each of our nerves is coated with a fatty substance, and fat is essential so our nerves can keep working. Fat also makes linings and barriers between cells and body parts. Some fats are linked to heart disease, like trans fats and saturated fats. Other fats, like omega 3 fatty acids, help prevent heart disease and keep our brains healthy.

Vitamins and minerals are found in different amounts in different foods. They perform a wide variety of functions in the body – all of which are very important for staying healthy. We need each vitamin and mineral in different amounts. When nutrition experts make food recommendations, they usually recommend foods that are high in different vitamins and minerals to make sure we get enough of what we need. This helps to prevent diseases and keep our bodies healthy.

The amount of energy a food has is measured as calories. 70-80% of all the calories our bodies need are used by our organs - just to keep us alive! What are the rest used for? Things like digesting our food, keeping our bodies at the right temperature, and being active.

Take a moment to review the information that you just read with the participants. This will help make sure they understood what you told them and give them a chance to ask questions. Review the information by asking the following question:



What do you think was most interesting about what you just learned? Was anything surprising or new to you?

Helpful tip: It's a great idea to have something picked out that you think is interesting about the last section. If you have a quiet audience, this can help start the conversation. For example, you could point out that it surprised you to learn that our brains are coated in fat, or that 70-80% of our energy is used just to keep us alive!

Next, share with the audience:

Now let's talk about what the Dietary Guidelines for Americans actually say. The guidelines have seven key recommendations, which we will review one-by-one.

#1 - The guidelines recommend that we eat a variety of vegetables, such as dark green, red and orange, and starchy vegetables.



Why eat more vegetables? Vegetables give us lots of vitamins and minerals without a lot of calories. Different colors and types of vegetables have different amounts of vitamins and minerals, which is why it's important to eat a variety. Vegetables are also an important source of fiber, which helps with our digestion. The main categories of vegetables are: orange and red, dark green, starchy and an "other" group, which features things like onions.

For example, orange and red colored vegetables, such as carrots, are a great source of vitamin A. We use vitamin A to help with our vision. Dark green vegetables, such as broccoli and romaine lettuce, are full of vitamin K. Vitamin K helps to stop bleeding if we get injured. Starchy vegetables, such as potatoes, are a great source of potassium. Potassium helps us maintain a healthy blood pressure, which is good for our heart. Beans are considered both a vegetable and a protein and are a great source of fiber. We'll talk more about beans later.

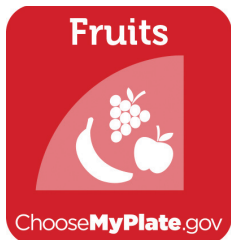
Ask the participants:



What are some of your favorite vegetables?

Continue discussing the guidelines:

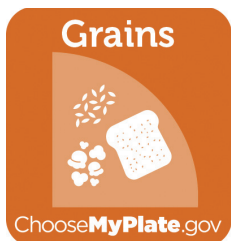
#2 - The guidelines recommend that we eat a variety of fruits.



Why eat more fruit? Similar to vegetables, different types of fruits give us different nutrients that are important for health. Eating fruits with little or no added sugar helps keep our energy and blood sugar more stable.

Fruits can be whole, pureed (like apple sauce), sliced or 100% juice. Like whole fruit, juice has many vitamins and minerals. However, juice is low in fiber. Fiber slows down the digestion of the natural sugar present in fruit, which keeps our energy and blood sugar more stable. Since juice doesn't contain fiber, whole and pureed fruit is a better choice. Whole, sliced and pureed fruits are high in fiber. One of the major nutrients we get from fruits is vitamin C. Vitamin C is important for the health of our blood vessels. Vitamin C is also important for preventing colds and flus.

#3 - The guidelines recommend that we eat grains, at least half of which are whole grains.



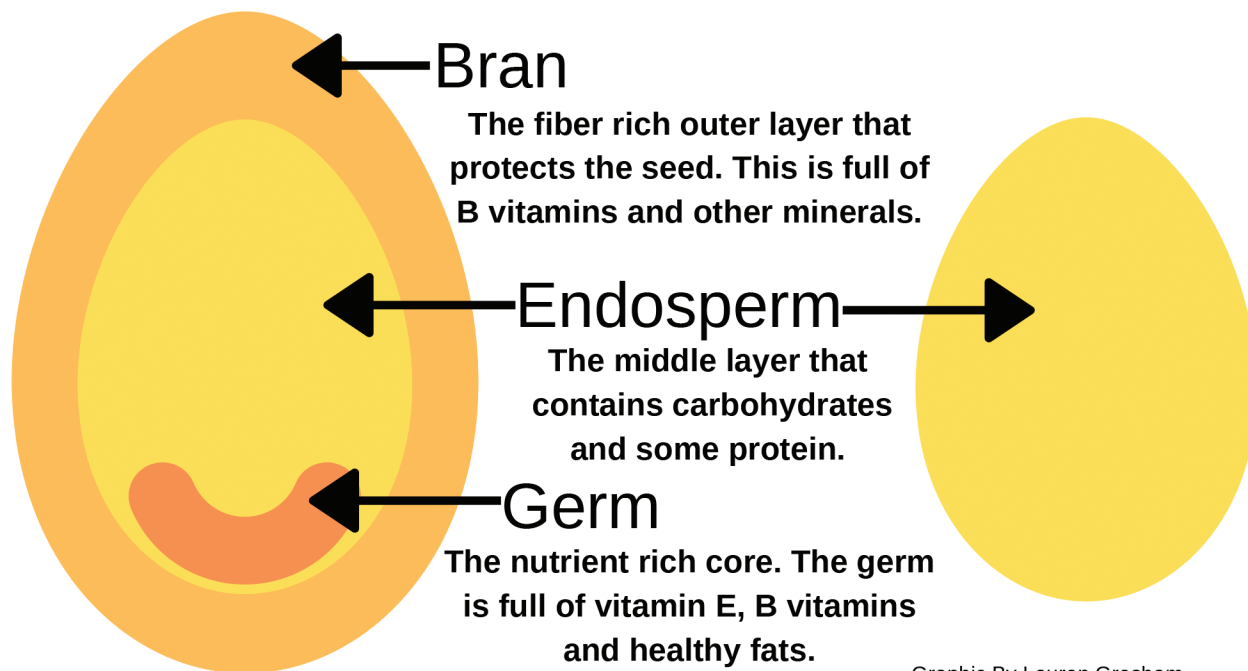
Why eat more whole grains? Whole grains have more vitamins and minerals. A grain kernel has three main parts; a core layer called the germ, the middle layer called the endosperm and an outer layer called the bran. The bran and the germ are where most of the vitamins and minerals are. Whole grains use all three layers and may be healthier for you. When the outer layer and the core are removed, the grain is called a refined grain. Enriched grains refer to refined grains that have had some vitamins and minerals added back to them.

Examples of whole grains are brown rice, oatmeal, and whole grain wheat. Whole grains are another important source of fiber. They help you stay full for longer periods of time. Both whole grains and enriched refined grains can have lots of different vitamins and minerals.

Structure of a Grain

Whole grain

Refined Grain



#4 - The guidelines recommend that we eat a variety of protein, including lean protein.



Protein can come from both animal foods and plant foods. By eating different types of proteins, and not just animal protein, we get different vitamins and minerals. Some proteins are called lean because they have lower amounts of saturated fat. Plant proteins are often the lowest in saturated fat and have no cholesterol, which is better for our heart. We do not need to eat animal protein at every meal for us to get all the protein we need.

Examples of lean protein foods are fish, chicken, eggs, beans, nuts, seeds and soy. Fish is a great protein source and also a great source of omega three fatty acids, which are important for preventing heart disease. Fiber is important for digestion and most protein is low in fiber. An exception- beans! Beans are both high in protein and fiber! Beans are also high in iron, which we need for our blood cells, and zinc, which may help us prevent colds.

Ask the audience:



Can you eat a mostly plant-based diet and still be an athlete? What do you think?

In fact, there are many sports professionals who eat plant-based diets, including athletes that play in the NBA, NFL, as well as UFC fighters and triathletes!

Next, share the names of some famous athletes that eat a plant-based diet:

The following are some examples of famous athletes that eat a plant-based diet:

- *Nimai Delgado - a professional body builder.*
- *Rich Roll - a top contestant in the 2008 and 2009 Ultraman World Championships.*
- *David Carter - former NFL defensive lineman and plant-based diet activist. He played for the Cardinals, Cowboys, Raiders, Jaguars and Bears from 2011-2015.*
- *Griff Whalen - NFL wide receiver.*
- *There are many UFC fighters that only eat plant-based diets, including Nick Diaz and Mac Danzig.*

Ask the audience:



Did this surprise anyone?

Discuss this briefly with the group before moving on.

#5 - The guidelines recommend limiting saturated fats.



Saturated fats are the type of fats most connected to heart disease, while unsaturated fats (which are found mostly in plant foods) might actually protect us from heart disease. Saturated fats are also high in calories and can contribute to weight gain and heart attacks.

Examples of foods that may be high in saturated fats are cheese, butter and some desserts. Examples of foods that are high in unsaturated fats include canola oil, peanut butter and avocados.

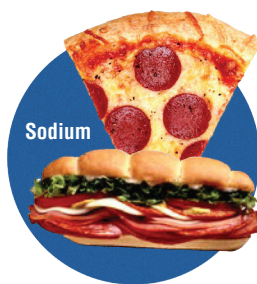
#6 - The guidelines recommended limiting added sugar.



Added sugar is sugar that is not naturally found in a food. Added sugar can be table sugar (also called “sucrose” or “glucose”), honey, maple syrup, or corn syrup. In fact, there are MANY types of sugars that can be added to foods. Added sugar adds calories but does not add nutrients that make us healthier. They may contribute to weight gain, heart disease, diabetes and some types of cancers. Sugar may also contribute to teeth problems.

Examples of foods that are usually high in added sugars include sugary drinks, cookies, candy and desserts.

#7 - The guidelines recommend we limit added salt.



Salt is also referred to as sodium. Lots of salt in our diet can increase our risk for high blood pressure. High blood pressure can damage our kidneys and our eyes, and may lead to heart attacks and strokes. Most of the salt in American’s diets comes from highly processed foods, not from the salt shaker. The recommended amount of salt is no more than 1 teaspoon of salt per day.

Examples of foods that may be high in salt are chips, pretzels, soy sauce, ketchup, pickles and cheese.

These are the main recommendations of the Dietary Guidelines for Americans. Take some time to make sure no one has any questions before moving forward in the training. Ask the audience:



Those are the seven major recommendations that make up the Dietary Guidelines for Americans. Does anyone have any questions about the recommendations?

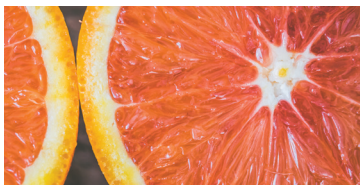
Try to answer questions using the materials you just shared. You may choose to repeat information that you have already said. There is also a list of commonly asked questions on page 21 that has answers to commonly asked questions. You can choose to let participants know there are more handouts in the toolkit they can look at after the class. If you do not know the answer to the question, it's okay to say so. Make a list of questions you can't answer and see if the answers are given later on in the training. You can share this list with a food service manager, Correctional Industries staff member, or contact the Department of Health. Contact information can be found at the beginning and end of the toolkit.

Next, share with the audience:

Based on the Dietary Guidelines for Americans and the Executive Order, the Department of Corrections has been making changes to the meals being served at all state correctional facilities. These changes are based on the Dietary Guidelines and are meant to help the Department of Corrections better follow the Executive Order. They are also meant to serve healthy food and beverages to the people who are eating mainline meals at the facilities. The main menu changes being made are:



- *Bigger portion sizes of vegetables. For example, at dinner, ½ cup of carrots might be changed to 1 cup of carrots, which equals two servings of vegetables instead of one. Broccoli, tomatoes and sweet potatoes have been added to the menus to increase vegetable diversity.*



- *More fruit is being served.*



- *More whole grain foods are now on the menus. Biscuits, tortillas and pizza are being made with whole grains instead of refined grains. Brown rice is being served instead of white rice.*



- *More lean and plant-based proteins have been added to the menu, especially fish and beans.*



- *Less high-salt snacks (such as chips) are being served.*
- *Less foods with added sugar are being served (such as cookies and desserts).*

The next section discusses some of the benefits of following a diet based on the Dietary Guidelines for Americans. This information may help some people understand other reasons why these changes are being made.

Share with the audience:

With the menu changes, it's possible that people eating mainline meals, as well as the whole facility, may notice some positive changes. Some of the benefits that might happen from eating a menu that follows the Dietary Guidelines include:

- *Foods that meet the guidelines have more vitamins and minerals. This can help keep people from getting sick. These menus also have less refined grains and sugar. This can help avoid the energy ups and downs people may have had from eating foods that have added sugar or less nutrients (also called a "sugar crash"). Having more stable energy can also help to improve a person's mood throughout the day, provide more energy for exercising, and help with sleep. Foods that meet the guidelines are also higher in fiber. Fiber helps with digestion and makes going to the bathroom more comfortable.*
- *Longer term, people who eat foods that follow the Dietary Guidelines have been shown to have lower rates of many chronic diseases such as diabetes, hypertension, heart disease and some cancers. Eating well can help people live longer and be healthier throughout their lives. It can even save money on costly medications or doctor's bills by not getting those diseases in the first place!*

This is the end of new material that will be shared during this training. Now is a good time to summarize the key points that have just been taught. A summary is really important to help your audience understand what the most important take home message are.

Share with the participants:

This is the end of the material that this training will cover. I will now take a moment to review the main points of the training to help us all remember what we have learned today.

The Dietary Guidelines for Americans come from two federal agencies. The recommendations are based off of the latest nutrition science and are made by some of the country's top nutrition experts.

These guidelines are used by health and nutrition experts, as well as by the federal government for their nutrition programs.

The guidelines recommend eating a large variety of vegetables and fruits, whole grains, and lean and plant-based protein foods, including fish and beans. They also recommend decreasing added sugar, saturated fat and salt which are often found in sugary drinks, chips and desserts.

The main changes to the menu include serving more fruits, vegetables and whole grains (including different varieties of vegetables), serving more lean and plant-based proteins like fish and beans, and decreasing salty snacks and sweets.

These changes could improve the health of people who are eating the meals served at facilities, including helping people have more stable energy throughout the day, better sleep and easier digestion. These changes may also keep people from developing some chronic diseases, such as heart disease and diabetes.

Part Five: Activities to Review Material (3-5 minutes)

The final part of the training should include an opportunity to review what everyone has learned. Use the questions below to guide a conversation about what was presented in the training, but don't feel like you have to limit the conversation to only these points. Encourage people to share their thoughts, ideas and questions. Answers to some of the questions are included to help you if needed.

First, share with the audience:

We are now going to take some time to review what we just learned. I am going to ask some questions to help guide our discussion. There are no "right" or "wrong" answers. This is a chance for you to share what you learned, talk about what you found to be most interesting, and ask questions.

Below are some questions you may ask the audience. We have included brief answers below the questions to help you guide the conversation. Ideally, participants will be able to answer the questions with similar material to the answers we have provided below:



What is the Executive Order 13-06?

The Executive Order is a directive passed by the Governor in 2013. It requires the Department of Corrections to serve healthy food and drinks, based off a set of food guidelines called the Dietary Guidelines for Americans.



What are the Dietary Guidelines for Americans?

The Dietary Guidelines for Americans are a set of nutrition guidelines created by the United States Department of Agriculture and the US Department of Health and Human Services. These agencies look at the very best research and science on nutrition information. That information is used to make recommendations that inform federal food programs throughout our country, and forms the foundation of what most health and nutrition professionals use.

The guidelines have seven recommendations which are: eat a variety of fruits and vegetables, make at least half of your grains whole grains, eat a variety of lean and plant-based proteins, and limit saturated fat, salt and added sugars.



Can you give examples of whole grains?

Some whole grains include: brown rice, oatmeal, whole wheat pizza crust, whole wheat biscuits and whole grain bread.



What are the different groups of vegetables?

The main groups of vegetables are orange and red, dark green, starchy and “other”.



What menu changes might we see in the mainline menus?

More servings of fruits and vegetables, more whole grains, more lean and plant protein (like fish and beans), fewer salty snacks and less sugary foods, like cookies. Vegetables that have been added to the menus include broccoli, tomatoes and sweet potatoes. Whole grains that have been added to the menus include whole wheat pizza, whole wheat tortillas and whole grain biscuits.



What are some of the health benefits of these changes?

Less likelihood of getting sick, more stable energy, easier digestion, better sleep and less risk of chronic diseases such as diabetes, heart disease and some cancers.



What did you learn about nutrition today?



What did you think was particularly interesting about the training?

To conclude the training, you should invite the audience to ask questions. We have included some answers to commonly asked questions in the next section. You can always return to a previous section and see if you can find the answer there. Also, we have produced some handouts about different nutrition topics, which you can find in the supplementary resources at the end of this training. If you do not know the answer to the question, it's okay to say so. Make a list of these questions and share it with a food service manager, Correctional Industries staff member, or contact the Department of Health. Contact information can be found at the beginning and end of the toolkit.

Once you answer whatever questions you have time for, thank your audience for their attention and participation.

Tell your audience:

This concludes our training. Thank you so much for coming and participating in this training. If you have more questions, you can discuss them with _____ (your response will depend on the audience that is being trained. For example, you may want to direct them to ask questions to a food service manager, a correctional industries staff member, or the Department of Health. They may also be able to access the toolkit and review the additional information provided in the next two sections. If this is the case, let them know where and when they can access the toolkit).

Commonly Asked Questions and Answers

(5-10 minutes)

Below is a list of commonly asked questions with brief answers. Additional answers may be found throughout the toolkit or in the supplementary resource section. If there are questions that you cannot answer, please contact your supervisor at the Department of Corrections. The Department of Health is also available to answer additional questions. Please see the end of this toolkit for contact information.

Why is it so important that foods within the same food group are substituted on the menu when something else isn't available?

When a substitution is made that isn't in the same food group, or when changes are made to recipes (like changing ingredients or adding water), people may no longer be getting enough of all of their vitamins and minerals. For this reason, it's important to always swap one type of food for another (for instance, substituting one dark green vegetable like romaine lettuce for another dark green vegetable like broccoli) and to not change recipes or add water to soups. Over time, not making the right substitution could affect someone's health. As you learned in the training, certain foods and varieties of foods have different nutrients, vitamins and minerals. These are things that everyone needs to have in certain amounts to stay healthy. The menus that the Department of Corrections has made are written to make sure everyone gets the right number of vitamins, minerals and nutrients they need.

How much protein do I need?

The amount of protein a person needs depends on many things, including their body size and body type, how often someone is physically active, and their health status (whether someone has any medical conditions, injuries or diseases). The average person needs about 0.36 grams of protein for every pound of body weight. For example, a man weighing 200 pounds needs 72 grams of protein per day ($200 \times 0.36 = 72$). This comes out to around 10-14% of your total calories¹. For the menus served in correctional facilities, Department of Corrections provides 10-20% of calories as protein, which is more than enough for almost everybody. And despite what you may have heard, plant-based proteins are just as good as animal proteins.

What is the difference between plant and animal protein? Is one better than the other?

Protein is made up of tiny pieces called amino acids. We need a variety of amino acids to build the many structures in our bodies. Think of a house – to build a house, you need windows, doors, plumbing, electricity, furniture and more. In the same way, we need lots of different protein parts to help build and maintain our bodies. Animal proteins are called “complete proteins” because they have all of the amino acids we need. Plant proteins are called “incomplete

¹ Dwyer J. Nutrient Requirements and Dietary Assessment. In: Jameson J, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. eds. *Harrison's Principles of Internal Medicine*, 20e New York, NY: McGraw-Hill; <http://accessmedicine.mhmedical.com.buproxy.bastyr.edu:2048/content.aspx?bookid=2129§ionid=192282939>. Accessed March 06, 2019.

proteins” because they contain some, but not all of the amino acids. However, if you eat a variety of plant foods, you will still get all of the amino acids your body needs.

Animal proteins and plant proteins also contain different amounts of nutrients. Animal proteins tend to be higher in saturated fat, a type of fat that the Dietary Guidelines suggest we limit because it increases our risk of heart disease. Plant-based protein tends to be lower in fat but high in fiber and other vitamins and minerals. Plant-based proteins have a lot of important health benefits that animal-based proteins do not have, so it’s good to eat a combination of both types of proteins, unless you are a vegetarian or vegan and do not eat animal protein. For more information about vegetarian/vegan diets, see below.

Can I be a vegetarian and still be muscular and fit?

Vegetarian diets are diets without meat products (like beef, chicken and pork). Some vegetarian diets still include fish, milk and eggs even though they come from animals. Diets that have no animal products in them are called vegan diets.

It is perfectly healthy to eat a plant-based diet, and you can be muscular and fit even if you don’t eat animal protein. If you only eat plant-based proteins, you need to eat a variety of plant foods to make sure you get all of the amino acids you need (see question above). There is more information on vegetarian diets in the supplementary resources.

What is a starchy vegetable? What can I substitute for a starchy vegetable when I need to replace one?

Starchy vegetables are one of the types of vegetables that are included in the Dietary Guidelines. These vegetables are high in a variety of vitamins and minerals, as well as fiber, and can be part of a healthy diet. If your facility runs out of a starchy vegetable, you need to substitute it with a different starchy vegetable to make sure the menus still have the same nutrition. Starchy vegetables include: Potatoes, yams, butternut squash, green peas and corn.

Is soy okay for my health?

To understand the answer to this question, there are a few things we need to understand first. 1) Soy contains a molecule that is very similar to estrogen. This plant-based estrogen acts similar, but is weaker, than our natural estrogen. 2) Men and women both have estrogen in their bodies. 3) Estrogen is really important in the body. One of the most important things estrogen does is build bone in the body. Estrogen helps prevent osteoporosis (which is when your bones get really thin and you have an increased risk of fractures). 4) Many Asian cultures have been eating soy foods for hundreds of years. Soy is not a new food. Soy consumption has been linked to less prostate cancer.^{2 3 4}

² Van Die, M. D., Bone, K. M., Williams, S. G., & Pirotta, M. V. (2014). Soy and soy isoflavones in prostate cancer: A systematic review and meta-analysis of randomized controlled trials. *BJU International*, 113(5 B), 119–131. <https://doi.org/10.1111/bju.12435>

³ Messina, M. (2010). Soybean isoflavone exposure does not have feminizing effects on men: A critical examination of the clinical evidence. *Fertility and Sterility*, 93(7), 2095–2104. <https://doi.org/10.1016/j.fertnstert.2010.03.002>

⁴ Zheng, X., Lee, S.-K., & Chun, O. K. (2015). Soy Isoflavones and Osteoporotic Bone Loss: A Review with an Emphasis on Modulation of Bone Remodeling. *Journal of Medicinal Food*, 19(1), 1–14. <https://doi.org/10.1089/jmf.2015.0045>

Do I need to worry about the plant estrogens in soy foods?

Because soy has plant-based estrogen, many people have concerns that this food is bad for men. The science shows that those concerns are a myth. Plant-based estrogens have a weaker signal in the body than our natural estrogen and actually have some health benefits. Research has shown that plant-based estrogens are great for many things, including preventing bone loss and prostate cancer.

What is TVP (textured vegetable protein)?

Textured vegetable protein is protein that has been extracted from different vegetable sources, commonly soy beans. The protein is processed to have a texture that allows it to be used as a meat substitute. Some nutrients may be added to the textured vegetable protein (which can be helpful for people at risk for deficiencies), while other nutrients, such as excess fat, are often removed. For some people, textured vegetable protein can be an important way to get their required nutrients.

Is TVP bad for me?

Textured vegetable protein is not bad for you and for some people, it is an important source of protein and nutrients. When the nutrients of textured vegetable protein were compared to the nutrients contained in beef, textured vegetable protein had some benefits. The protein content and various minerals (calcium, iron and some B vitamins) were higher in textured vegetable protein. Textured vegetable protein is usually made from soy beans. Consumption of soy products has some benefits for reducing heart disease, bone loss (osteoporosis) and prostate cancer.^{5 6}

Don't beans lead to a lot of flatulence (gas)?

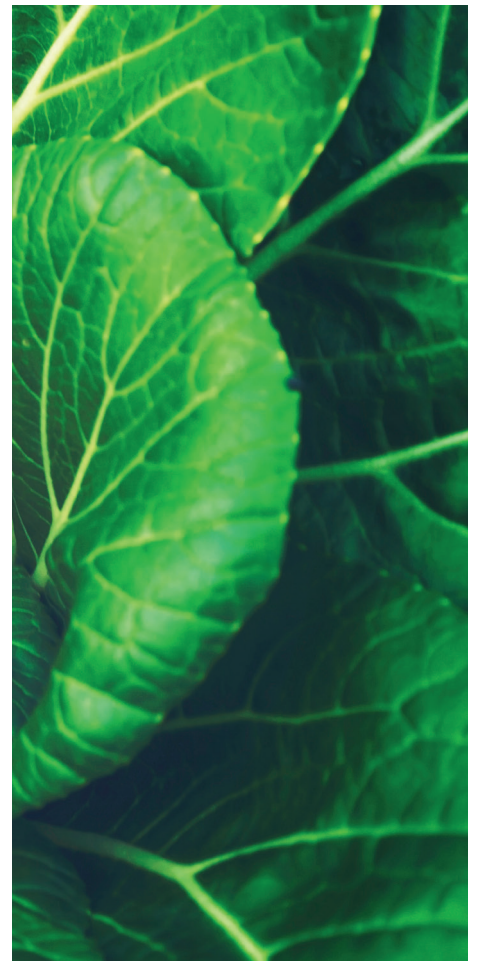
For some people, particularly if they are not used to eating lots of fiber, they may initially experience more gas and bloating when they increase their fiber intake. Other people may not have this problem. For most people, this problem is likely temporary. Eating fiber is really important. The Dietary Guidelines for Americans recommend eating plenty of fiber, even if it may cause some gas in the beginning.

Beans are full of fiber, which can be challenging for some people to digest. People do not absorb fiber in the same way as other nutrients. Instead, fiber acts like a broom in the intestines, which helps keep bowel movements easy and regular. Fiber also helps provide food for important bacteria that live inside our digestive systems. These bacteria actually help make some vitamins that keep us healthy. Fiber also binds to fat and helps remove it from our bodies. This can help lower the risk for heart disease.

⁵ Riaz, Mian N. *Textured Soy Protein and Its Uses*. Texas A&M University, 27 June 2016, www.researchgate.net/profile/Mian_Riaz/publication/265996879_Textured_Soy_Protein_and_Its_Uses/links/57711cb308ae842225ac01e4/Textured-Soy-Protein-and-Its-Uses.pdf.

⁶ Osho, S. M. (2003). *Comparative studies on organoleptic and nutritional characteristics of beef and texturized vegetable protein*. African Journal of Livestock Extension. 2003 2 75-80. ISSN: 1596-4019.

Section Two: Supplementary Resources



Supplementary Resources Index

This section has several one-page handouts about various nutrition and health topics. Some of the one-page handouts give more information about topics discussed in the Core Training Materials. Other handouts provide information about other nutrition and health topics that have not already been discussed in this toolkit. These handouts can be used outside of the toolkit as a resource to help others build their understanding about nutrition.

Additional Information about the Guidelines.....	28
What’s the deal with vegetables?	28
Why eat fruit?	29
What is a whole grain?	30
What are my protein needs?	30
Why eat fish?.....	31
Why should I eat beans?	32
Why is fiber important for me?	33
Additional Information about Nutrition	35
How does diet affect disease?	35
Tips for Picking Healthy Items from the Commissary	36
Does Eating Plant-Based Protein Affect my Ability to Exercise?	36
Other Potential Benefits of Following a Healthy Diet:.....	37
Can Following a Healthy Dietary Pattern Save on Healthcare Costs?.....	39
One-Page and Four-Page Toolkit Summary Handouts.....	41

Additional Information about the Guidelines

What's the deal with vegetables?



Vegetables give us lots of vitamins and minerals without a lot of calories. Vegetables are important for keeping a healthy body weight by helping us feel full and satisfied. They are a great source of fiber, which keeps our digestion healthy. Vegetables are also high in folic acid, which is important for making blood cells, and vitamin C, which helps skin heal.

Vegetables may be fresh, frozen, canned, dried, juiced, cooked or raw. Canned vegetables can be really healthy. However, canned vegetables can be very high in sodium. Sodium can increase blood pressure, which strains the heart. It's a great idea to read the labels on canned goods and choose canned vegetables that are lower in sodium. Freezing vegetables can preserve nutrients, especially if they are frozen right after they are harvested. Because of this, some frozen vegetables may have more nutrients than fresh vegetables. For example, if those fresh vegetables have travelled a long distance or have been stored for a long time after harvest, those fresh vegetables may have less nutrition.

Freezing vegetables can preserve nutrients, particularly if they are frozen right after being harvested.

Nutrition professionals recommend that you “eat the rainbow” - which means to eat different colored fruits and vegetables.

There are five major groups of vegetables: Dark-green, red and orange, beans and peas, starchy and other. Different colors and types of vegetables give us different vitamins and minerals. It is important that we eat all the different types throughout the week. This is why many health professionals suggest that you “eat the rainbow” – meaning that you eat lots of vegetables that are different colors so that you get all of your vitamins and minerals. It is also why if one type of vegetable runs out at your facility, you should replace that vegetable with something in the same group (for instance, substituting one dark green vegetable for another).



Dark Green Vegetables: Dark green vegetables are an important source of vitamin K, which is used to stop bleeding when we get injured. Examples include: broccoli, collards, mustard greens, kale, spinach, romaine, and other dark leafy greens.



Orange and red vegetables: Orange and red colored vegetables are a great source of vitamin A. We use vitamin A to help keep our vision healthy. Examples include: carrots, pumpkin, red peppers, tomatoes and sweet potatoes.

Additional Information About the Guidelines (continued)



Beans and peas: Beans and peas are considered both a vegetable and a protein, because they have the benefits of both food groups. They are a great source of fiber, which helps with easy bowel movements and keeps our digestion healthy. Examples include: Black, garbanzo (or chickpea), kidney, pinto, soy beans (also called “edamame”), black-eyed peas and split peas.



Starchy vegetables: Starchy vegetables, such as potatoes, are a great source of potassium. Potassium can help keep blood pressure within a healthy range, which helps keep our hearts healthy. Examples include: Corn, green peas, white potatoes, and yams.



Other vegetables: Some vegetables are so unique, they are in their own group. They also provide unique nutrients that make them important. For example, cabbage contains the mineral Sulphur, which is critical for removing waste from our bodies. Examples include: Asparagus, beets, cabbage, cauliflower, celery, cucumbers, green beans, green peppers, iceberg lettuce, mushrooms, onions and zucchini.

Why eat fruit?



Fruit is full of vitamins and is naturally low in fat, salt and calories. Different types of fruit give us different nutrients that are important for health, which is a good reason to “eat the rainbow” – or eat a variety of different colored fruits.

Eating a diet that is rich in fruits and vegetables may help prevent heart attacks, strokes and certain types of cancers. Certain fruits are high in vitamin C, which is important for our blood vessels, for skin healing, and for our teeth and gums. Some fruits are high in potassium, which helps keep our blood pressure low. Fruit is high in fiber which helps keep our digestion healthy. Diets high in fiber may reduce the risk of heart disease, obesity and diabetes.



Fruits high in vitamin C: Oranges, grapefruit, mango, melons, and strawberries.

Fruits high in potassium: Bananas, prunes, peaches, apricots, cantaloupe, honeydew melon and orange juice.

Fruit may be eaten fresh, canned, frozen, dried, whole, cut-up, pureed (as in applesauce) or as 100% juice. Eating fruits with little or no added sugar helps keep our energy and blood sugar more stable. Although 100% juice comes from only fruit, it’s a good idea not to drink too much. When fruit is juiced, much of the fiber is removed and the natural sugar gets concentrated. For instance, one glass of orange juice can contain the sugar from 3 to 4 oranges! Without the fiber, the sugar gets absorbed quickly and can make our energy crash later on.

What is whole grain?



A grain kernel has three main parts; a core layer called the germ, the middle layer called the endosperm and an outer layer called the bran. The bran and the germ are where most of the vitamins and minerals are. Whole grains use all three layers and may be healthier for you. When the outer layer and the core are removed, the grain is called a refined grain. Enriched grains refer to refined grains that have had some vitamins and minerals added back to them. Not all refined grains are enriched with vitamins, so some refined grains are missing important nutrients.

Whole grains are higher in fiber. Fiber is important for maintaining a healthy weight. Fiber is also important for digestive health and to prevent heart disease. If you need to substitute a food that's whole grain, use another whole grain food in its place. That way, everyone will get the nutrition they need.

Examples of whole grains: Bread products made primarily from 100% whole grains (such as whole-wheat breads, buns, rolls, biscuits and tortillas), brown rice, oatmeal, popcorn, quinoa, rolled oats, whole rye, whole-wheat crackers, whole-wheat pasta, and wild rice.

Examples of enriched grains: Enriched white bread, corn bread, regular pasta, bagels, white rice, cornflakes, puffed cereal, most pretzels, crackers and cookies.

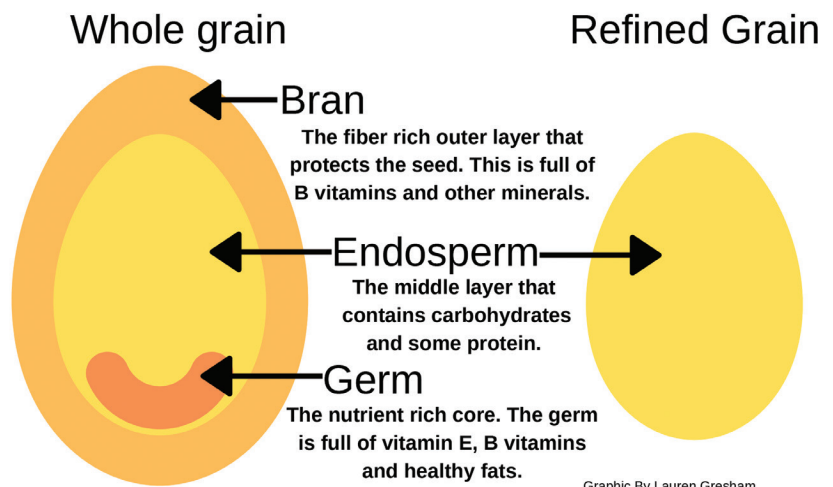
What are my protein needs?



Proteins are built from amino acids. Amino acids are a tiny piece of a protein. Similar to building a house, you need different types of amino acids to build all the proteins in your body.

Protein can come from animals and plants. Animal proteins are called “complete proteins” because they have all of the amino acids we need. Plant proteins are called “incomplete proteins” because they contain some, but not all of the amino acids. However, if you eat a variety of plant foods, you will still get all of the amino acids your body needs. Plant-proteins also provide vitamins and minerals. Animal proteins can be higher in saturated fat and cholesterol, which is connected to heart disease. We do not need to eat animal protein at every meal in order to get all the protein we need. Vegetarians can be healthy eating only plant-proteins.

Structure of a Grain



Additional Information About the Guidelines (continued)

Some proteins are called lean because they are low in saturated fat. One example of a lean protein is fish. Fish may help lower the risk of heart disease because they contain a healthy fat called omega 3 fatty acids.

Some important nutrients we get from animal and plant proteins include B vitamins, which helps us form blood cells and helps our brains stay healthy. Protein rich foods are often high in iron, which is important for blood cells as well. Magnesium is also high in many protein foods, which helps our muscles and bones stay healthy.

We do not need to eat animal protein at every meal to be healthy.



Most protein is low in fiber. Fiber is essential for digestion. An exception—beans! Beans are high in both protein and fiber. They are also high in iron, which is important for our blood cells. Beans also have lots of zinc, which may help prevent colds.

Examples of protein foods: Meat, fish, chicken, eggs, beans, nuts, seeds and soy.

Why eat fish?



Fish is a terrific source of lean protein. Fish is also an important source of a type of fat called omega 3 fatty acids. The other common type of fatty acid is called omega 6 fatty acid. Omega 6 fatty acids are found in vegetable oils, such as sunflower and canola oils. Omega 3 and omega 6 fatty acids are both important for staying healthy, but most people do not consume enough omega 3 fatty acids. Eating two servings of fish per week is an easy way to increase the omega 3 fatty acid in your diet.

Omega 3 fatty acids have a lot of great research showing they prevent heart disease and obesity. There is also some interesting research suggesting that omega 3 fatty acids help prevent brain diseases and support brain functions, like learning and cognition⁷. Some fish can be high in a brain toxin called mercury. It's important to eat fish that is high in omega 3 fatty acids and low in mercury.

Omega 3 fatty acids, which are high in fish, may help prevent heart disease.



Best fish choices include fish that is high in omega 3 fatty acids but also low in mercury: Salmon, trout, tilapia, catfish, pollock, mackerel, herring, and sardines.

⁷ Derbyshire, E. (2018). Brain Health across the Lifespan: A Systematic Review on the Role of Omega-3 Fatty Acid Supplements. *Nutrients*, 10(8), 1094. <https://doi.org/10.3390/nu10081094>

Why should I eat beans?



Beans and peas are a unique food group because they are considered a vegetable and a protein. They are considered a vegetable because they have vitamins and minerals similar to vegetables. Like vegetables, beans are high in fiber. Beans are also high in protein, so they fit in the protein group too. Most other protein-rich foods are low in fiber. So, beans are special because they have fiber, which is important for digestion, and they have protein, which is essential to build strong bodies.

Beans are high in iron and folate, which is important for our blood cells. Beans are also high in zinc, which may help prevent colds, as well as potassium, which can help lower blood pressure. Eating beans can help us lower the amount of fat in our blood, which is important for heart disease.⁸ Because beans are so healthy, eating beans is recommended for everyone, even people that eat animal protein regularly.

Because beans are so healthy, everyone is recommended to eat beans!



Examples of beans and peas: Kidney beans, pinto beans, black beans, lima beans, black-eyed peas, garbanzo beans (chickpeas), split peas and lentils.

⁸ Thompson, H. J., McGinley, J. N., Neil, E. S., & Brick, M. A. (2017). Beneficial effects of common bean on adiposity and lipid metabolism. *Nutrients*, 9(9), 1–12. <https://doi.org/10.3390/nu9090998>

Why is fiber important for me?



Fiber is a type of carbohydrate. A carbohydrate is one of the major building blocks that make up the foods we eat. Carbohydrates give us energy faster than the other major nutrients (proteins and fats).

People do not absorb fiber in the same way as other nutrients. Fiber is bulky and thick, and acts like a broom in the intestines. This helps keep bowel movements easy and regular. Because fiber is bulky, it helps our food digest more evenly, which helps keep our energy stable. Fiber helps us feel full and satisfied without adding extra calories.

Fiber is helpful for preventing heart disease because it soaks up extra fat during digestion. Fiber can reduce constipation and may reduce diabetes. Fiber also helps provide food for important bacteria that lives inside our digestive systems. These bacteria help make some of the vitamins our bodies need, including vitamin K. The fiber we don't digest is eaten by these bacteria and keeps them healthy, which keeps us healthy.

Fiber reduces the risk of getting heart disease and diabetes.



Because fiber is so important for our health, the Dietary Guidelines for Americans recommend that everyone eats a diet rich in fiber.

Examples of foods high in fiber: Fruits, vegetables, whole grains, and beans.

Additional Information about Nutrition



How does diet affect disease?

A hundred years ago, what was making Americans unhealthy was mostly infectious diseases. Some of the leading causes of death were pneumonia, influenza (the flu), tuberculosis (TB) and diarrhea-causing infections. Now that we have clean drinking water, vaccinations, better hygiene and antibiotics, fewer people die from these types of diseases.

Instead, our leading causes of death today are chronic, preventable diseases such as heart disease, stroke, kidney disease, diabetes, and cancer. These diseases usually develop over a much longer period of time and are more related to our behaviors (such as whether we exercise, what we eat and if we smoke tobacco) than our environments.

About half the American population, roughly 117 million people, have a chronic preventable disease. Obesity can increase the risk for many of these diseases, and rates of overweight and obese children and adults in the US continues to rise. Research shows that most people gain weight while they are incarcerated^{9 10 11}.

Lots of research shows that eating a healthy diet like the one recommended by the Dietary Guidelines for Americans, as well as regular physical activity, can help prevent chronic diseases. Newer research suggests that a healthy diet may even reduce the risk of birth defects and brain diseases, like Alzheimer's. Preventing chronic diseases and keeping custodial populations healthy is one of the reasons the Executive Order was passed, and why changes are being made to menus at the facilities.

⁹ Johnson, C., Chaput, J.-P., Diasparra, M., Richard, C., & Dubois, L. (2018). Canadian federal penitentiaries as obesogenic environments: a retrospective cohort study. *CMAJ Open*, 6(3), E347–E352. <https://doi.org/10.9778/cmajo.20180044>

¹⁰ Gates, M. L., & Bradford, R. K. (2015). The impact of incarceration on obesity: Are prisoners with chronic diseases becoming overweight and obese during their confinement? *Journal of Obesity*, 2015. <https://doi.org/10.1155/2015/532468>

¹¹ Baldwin BA, N., Clarke MD MPH, J. G., & Roberts MS, M. B. (2016). Weight Change during Incarceration: Groundwork for a Collaborative Health Intervention. *Journal of Health Care for the Poor and Underserved*, 27(3), 1567–1576. <https://doi.org/http://dx.doi.org/10.1353/hpu.2016.0144>

Tips for Picking Healthy Items from the Commissary

A healthy diet is the result of many small healthy choices over time. Those small choices add up over the years and hopefully, give us better health.



Many diets label food items as “good” or “bad.” We often crave the “bad” foods, particularly if we forbid ourselves from ever eating those foods. Most people find it difficult to avoid the forbidden foods forever. Once people decide to eat the “bad” foods, they often overeat them. All foods can be part of a healthy diet, no foods are good or bad. Rather than thinking of food as “good” or “bad”, it may be helpful to think of food as healthy, healthier and healthiest. Less healthy food can be included in a well-balanced diet. The goal of a healthy diet is to make the healthier or healthiest choice most of the time.

To support you in picking out the healthiest items from the commissary, there is a symbol on the commissary list that puts the food into groups. The symbol shows the least healthy choice (the limited category), the moderately healthy choice (the better category), and the healthiest options (the best category). Ideally, you would pick snacks from the best and better choice categories most of the time. These snacks are the most likely to help you stay healthy. Snacks from the limited category should be viewed as treats and comfort foods. Ideally, treats and comfort foods are eaten moderately.

The symbols for the healthy and healthiest choices on the commissary list are:



Some examples from the best (healthiest) category include raw almonds and other nuts, brown rice, peanut butter, dehydrated vegetables, canned salmon, and some granola bars. Examples from the better (second healthiest) category include dehydrated black beans, low sodium ramen, pickles and trail mix.

Does Eating Plant-Based Protein Affect my Ability to Exercise?

It is a common myth that we need lots of animal protein to be fit and to enjoy exercise. In fact, there are some very famous athletes that only eat plant-based diets. Some of those athletes include: Nimai Delgado (a professional body builder), Rich Roll (a top contestant in the 2008 and 2009 Ultraman World Championships), David Carter (former NFL defensive lineman), Griff Whalen (NFL wide receiver) and many UFC fighters, including Nick Diaz and Mac Danzig.

Protein is made up of amino acids. Those small amino acids are found in both animal foods *and* some plant foods. Plant foods that contain higher amounts of amino acids are called “plant-based proteins.”

David Carter, former NFL defensive lineman only eats a plant-based diet. He has played for the Cardinals, Cowboys, Raiders, Jaguars and Bears. His nickname is “the 300-pound vegan”.



We need a variety of amino acids so that we can build and maintain the many structures in our bodies. When we build a house, we need windows, doors, flooring and furniture. Likewise, when we build all the tissues and structures of our bodies, we need different amino acids to make those structures and help them function.

Vegetarian diets are diets without meat products (like beef, chicken and pork). Some vegetarian diets still include fish, milk and eggs even though they come from animals. Diets that have no animal products in them are called vegan diets.



There is a lot of research that shows vegetarian diets are just as good as non-vegetarian diets for people who exercise and work out, like athletes. Vegetarian diets are full of anti-oxidants. Anti-oxidants are substances that help heal our bodies from different types of stress and damage. During intense exercise, we can cause short-term damage to our bodies. For example, when we lift weights, we create tiny rips in our muscles. If we have the right nutrition and antioxidants, our bodies can repair those rips easily. Some vegetables (like beans) have protein and anti-oxidants that help repair this damage. These foods are really good for exercise.

Vegetarian diets have also been connected to lower rates of heart disease, which is also important for staying physically fit¹². The Academy of Nutrition and Dietetics, which is the world's largest organization of food and nutrition professionals, recognizes that vegetarian diets can be healthy and can help prevent a variety of diseases, including heart disease, diabetes, cancer and obesity. They also state that a well-planned vegetarian diet can be appropriate for all stages of life, including for athletes and people interested in their fitness¹³.

Vegetarian diets
can be as healthy as
diets that include
animal products.

The menu changes at the Washington correctional facilities include adding more plant-based protein sources, such as beans. The best science shows that plant-based proteins are very healthy for people that care about their fitness.

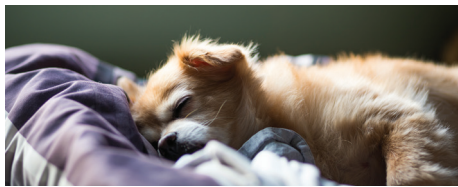
Other Potential Benefits of Following a Healthy Diet:

A very large amount of scientific research is used to develop the Dietary Guidelines for Americans. It includes studies with hundreds of thousands of people. Research this thorough allows us to make strong statements about healthy diets. However, some areas of research about nutrition are newer, so there may be less studies about them. Although we may start to see connections between nutrition and different topics, we still have a lot to learn. Three of these newer research topics include how diets affects sleep, how diets affects depression, and how diets can affect the way we behave.

¹² Barnard, N. D., Goldman, D. M., Loomis, J. F., Kahleova, H., Levin, S. M., Neabore, S., & Batts, T. C. (2019). Plant-based diets for cardiovascular safety and performance in endurance sports. *Nutrients*, *11*(1), 1–10. <https://doi.org/10.3390/nu11010130>

¹³ Melina, V., Craig, W., & Levin, S. (2016). Position of the Academy of Nutrition and Dietetics: Vegetarian Diets. *Journal of the Academy of Nutrition and Dietetics*, *116*(12), 1970–1980. <https://doi.org/10.1016/j.jand.2016.09.025>

Diet and sleep:



Sleep is very important for our health. Our brains and bodies do a lot of recovering when we sleep. Lack of sleep is connected to many chronic, preventable diseases (including heart disease and diabetes) as well as issues learning.

Our brains need protein and vitamins to make the different brain chemicals that help us sleep. A few studies have shown that when people eat protein at night, it helps improve their sleep¹⁴. There is also a little bit of research that links eating fruits, vegetables and fish with better sleep quality¹⁵. If our blood sugar is not stable, we can wake up in the middle of the night because our bodies need energy. Fiber, whole grains, lean protein and plenty of fruits and vegetables are all part of keeping one's blood sugar stable.

A healthy diet can also help prevent chronic diseases that can interrupt sleep. Diets high in saturated fat and added sugars increase the risk for obesity and heart disease. Both heart disease and obesity are connected to a sleep disease called obstructive sleep apnea. Obstructive sleep apnea is a disease where people stop breathing during sleep. Obstructive sleep apnea increases the risk for other health problems, including an early death. We still have a lot to learn about how our diets can affect our sleep, but based on what we know, eating a healthy diet may play a role in getting a good night's sleep.

Diet and depression:

The human brain talks to itself and other parts of the body through chemicals called neurotransmitters. These brain chemicals are made from proteins and different vitamins and minerals. If we do not have the nutrients we need to make these chemicals, we may experience more mood issues, such as depression.

Our mood is connected to our sleep, appetite, physical pain, and overall energy level, so it's an important part of being healthy. There are two large scientific studies that have looked at diet and depression. In one study with over 250,000 people, eating fish was shown to lower the likelihood of being depressed¹⁶. Another study looked at thousands of people and found that diets that are high in vegetables and fish decreased the risk for depression¹⁷. It seems from this research that our diet may have an impact on our mood.

In one study,
eating fish
lowered depression
significantly.

¹⁴ Knowlden, A. et. all (2016). Systematic Review of Dietary Interventions Targeting Sleep Behavior. *The Journal of Complementary and Alternative Medicine*. DOI: 10.1089/acm.2015.0238

¹⁵ Onge, Marie-Pierre, et al. (2016). Effects of Diet on Sleep Quality. *Advances in Nutrition*. doi:10.3945/an.116.012336

¹⁶ Marventano, S., Mistretta, A., Grosso, G., Micek, A., Pajak, A., Castellano, S., & Galvano, F. (2016). Dietary n-3 PUFA, fish consumption and depression: A systematic review and meta-analysis of observational studies. *Journal of Affective Disorders*, 205(2016), 269–281. <https://doi.org/10.1016/j.jad.2016.08.011>

¹⁷ Molendijk, M., Molero, P., Ortuño Sánchez-Pedreño, F., Van der Does, W., & Angel Martínez-González, M. (2018). Diet quality and depression risk: A systematic review and dose-response meta-analysis of prospective studies. *Journal of Affective Disorders*, 226(September 2017), 346–354. <https://doi.org/10.1016/j.jad.2017.09.022>

Diet and behavior in the incarcerated:

There is a lot that is unknown about the relationship between diet and our behavior, including aggressive behavior. Aggressive behavior is behavior that causes physical or emotional harm to others, including verbal and physical abuse.

There are only a few small research articles that have looked at nutrition and aggressive behavior in incarcerated persons. In one study, incarcerated persons were given multi-vitamins and omega 3 fatty acids from fish while other people were not given those nutrients. The people that were given the extra nutrition committed 26.3% fewer behavioral offenses, including violent attacks against other people¹⁸. In another study of incarcerated youth, youth that were given multi-vitamins committed an average of one behavioral offense in four months, versus nearly two in the group that did not get vitamins¹⁹.

Improved nutrition may also help individuals recover from substance abuse. In one study, men undergoing substance abuse treatment were given omega 3 fatty acids. The anger and anxiety scores of the men decreased significantly during the study²⁰.

We still have a lot to learn about this topic. The few small studies we have give us clues that nutrition and aggressive behavior may be related.

Can Following a Healthy Dietary Pattern Save on Healthcare Costs?



There is often not enough money for health programs. Communities may need to make choices about which programs are most important. There is an entire type of science that looks at the costs and rewards of health programs. Information from this science shows that money spent on nutrition programs saves money from being spent on healthcare.

Malnutrition is defined as being underweight, having too few nutrients to make healthy blood cells (called anemia) or having low protein that prevents the body from making everything it needs. People that are malnourished are more likely to need extra visits to the doctor. These people are more likely to have trouble healing wounds, and they can get more infections.

There are many studies that have looked at the costs of increasing vitamins and minerals in malnourished people. When these people are given extra nutrients, they are less likely to die, their healthcare costs decrease, and the length of their hospital stay decreases. They also rate themselves as being happier in their lives. Overall, the extra nutrition saves the community money. In fact, the average savings are estimated to be around 12.2% when malnourished people are given extra vitamins and minerals!

¹⁸ Gesch, C. B., Hammond, S. M., Hampson, S. E., Eves, A., Martin, J., & Crowder, M. J. (2012). Influence of supplementary vitamins, minerals and essential fatty acids on the antisocial behavior of young adult prisoners: Randomized, placebo-controlled trial Influence of supplementary vitamins, minerals and essential fatty acids on the antisocial, 22–28. <https://doi.org/10.1192/bjp.181.1.22>

¹⁹ Schoenthaler, S. J., & Bier, I. D. (2000). The Effect of Vitamin-Mineral Supplementation on Juvenile Delinquency Among American Schoolchildren: A Randomized, Double-Blind Placebo-Controlled Trial. *The Journal of Alternative and Complementary Medicine*. <https://doi.org/10.1089/acm.2000.6.7>

²⁰ Buydens-Branchey, L., Branchey, M., & Hibbeln, J. R. (2008). Associations between increases in plasma n-3 polyunsaturated fatty acids following supplementation and decreases in anger and anxiety in substance abusers. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 32(2), 568–575. <https://doi.org/10.1016/j.pnpbp.2007.10.020>

Additional Information About Nutrition (continued)

It is unknown exactly how the current menu changes might impact the health of people eating food from the Department of Corrections. Poverty is a risk factor for not having enough food. Many incarcerated persons have experienced poverty during their lifetimes. The menus at the Department of Corrections have been designed to ensure that everyone gets all the nutrients they need. Based on the research, the menu changes may lower healthcare costs while improving the wellbeing of the incarcerated.^{21 22}

²¹ Jarrett, Nicole C; Adeyemi, Sherry A; Huggins, Thomas *Journal of Health Care for the Poor and Underserved*; Feb 2006; 17, 1; ProQuest pg. 70

²² Naberhuis, J. K., Hunt, V., Bell, J., Partridge, J., Goates, S., & Nuijten, M. (2017). Health care costs matter: a review of nutrition economics & is there a role for nutritional support to reduce the cost of medical health care? *Nutrition and Dietary Supplements, Volume 9*, 55–62. <https://doi.org/10.2147/nds.s126232>

One-Page and Four-Page Toolkit Summary Handouts

Your facility may benefit from printing these one-page and four-page summary handouts for workshop participants.



One-Page Summary of Executive Order 13-06, the Dietary Guidelines for Americans and the Menu Changes Within the Department of Corrections

The Executive Order 13-06:

Executive Order 13-06 was signed in 2013. The directive requires the Department of Corrections to serve healthy food, based off a set of guidelines called the Dietary Guidelines for Americans.

The Dietary Guidelines for Americans:

The Dietary Guidelines for Americans are updated every five years by the federal government. The government reads through the best scientific information we have about nutrition to create the guidelines. The guidelines are used for all federal nutrition programs and by many health professionals. The seven key guidelines that apply to the Department of Corrections are:

- Eat a variety of vegetables, such as dark green, red and orange and starchy vegetables.
- Eat a variety of fruit.
- Eat grains, at least half of which are whole grains.
- Eat a variety of protein, including lean protein, such as fish, beans, nuts and soy.
- Limit saturated fat, which is high in whole milk cheese, butter and some desserts.
- Limit added sugar, which includes table sugar, honey, maple syrup and corn syrup.
- Limit added salt. Salt is high in foods like chips, pretzels, soy sauce, ketchup and cheese.

Menu changes within the Department of Corrections:

In all twelve Department of Corrections facilities throughout Washington, the menus are being changed to follow Executive Order 13-06. The menu changes include the following:

- Bigger portion sizes of vegetables. Broccoli, tomatoes and sweet potatoes have been added to increase vegetable diversity.
- More fruit is being served.
- More whole grain foods are now on the menus. Biscuits, tortillas and pizza are being made with whole grains. Brown rice is being served instead of white rice.
- More lean and plant-based proteins have been added to the menu, especially fish and beans.
- Less high-salt snacks (such as chips) are being served.
- Less foods with added sugar are being served (such as cookies and desserts).

Why should I eat the new mainline meals?

Our diet contributes to our risk of developing many diseases, including heart disease, diabetes and cancer. Diets that follow the Dietary Guidelines for Americans can lower our risk of getting these diseases. Small changes to our diets, made over long periods of time can have really important health benefits.

Please see the complete “Train-the-Trainer and Resource Toolkit for the Executive Order 13-06 and the Dietary Guidelines for Americans” to learn more.

Four-Page Summary of Executive Order 13-06, the Dietary Guidelines for Americans and the Menu Changes Within the Department of Corrections

The Executive Order 13-06:

Executive Order 13-06 was signed in 2013. The directive affects the food and beverages served by state agencies throughout Washington. The directive requires the Washington Department of Corrections to serve healthy food, based off a set of guidelines called the Dietary Guidelines for Americans. This directive has led to menu changes at correctional facilities throughout the state.

The Dietary Guidelines for Americans:

Diets are very important for our health. What we eat is directly connected to how we feel, whether or not we get sick and how long we live. There is a lot of information in the news and on the internet about diets. Some of this information is true and based off science, while some of it is false and based off rumors or myths.

The federal government believed the general public, as well as federal programs, needed guidance about which dietary patterns were best for health. They decided to develop a set of nutrition guidelines based on the best available nutrition science for the whole country. The Dietary Guidelines for Americans are updated every five years by the federal government. The government reads through the best scientific information we have about nutrition to create the guidelines. The guidelines are used for all federal nutrition programs and are used by many health professionals.

In order to talk about the actual guidelines, it's helpful to know a few nutrition concepts first:

- Nutrition experts talk about food in many different ways – one way is to talk about food groups such as vegetables, meats, fruits, grains and dairy.
- Another way nutrition experts talk about food is by talking about the three major nutrients that the foods we eat are made of. These are carbohydrates, protein and fats.
- Nutrition experts also talk about food based on what's in them, mainly vitamins and minerals – both of which our bodies need. Different foods have different amounts of vitamins and minerals.
- Protein is one of the three major nutrients that make up the foods we eat. Protein is used for all muscles, including muscles in our organs, like our heart. Our bodies can also use protein to give us energy throughout the day.
- Another key nutrient is a carbohydrate. Carbohydrates give us our quickest energy, which is important for our mood and brain health. In fact, our brains are one of the biggest users of carbohydrates in our bodies! Carbohydrates are also where we get fiber. Fiber is a

substance that we cannot digest. It acts like a broom for our digestion and helps with easy bowel movements. Fiber helps keep us full and keeps our energy stable throughout the day.

- Fats are nutrients that have some really important functions in our bodies. Fat coats our brain and spinal cord and protects it. Each of our nerves is coated with a fatty substance, and fat is essential so our nerves can keep working. Some fats are linked to heart disease, like trans fats and saturated fats. Other fats, like omega 3 fatty acids (found in fish), help prevent heart disease and help keep our brains healthy.
- Vitamins and minerals are found in different amounts in different foods. They perform a wide variety of functions in the body – all of which are very important for staying healthy. We need each vitamin and mineral in certain amounts. When nutrition experts make food recommendations, they usually recommend foods that are high in different vitamins and minerals to make sure we get enough of what we need. This helps to prevent diseases and keeps our bodies healthy.
- The amount of energy food has is measured as calories. 70-80% of all the calories our bodies need are used by our organs - just to keep us alive! What are the rest used for? Things like digesting our food, keeping our bodies at the right temperature, and being active.

Now that we have discussed some basic nutrition concepts, here are the seven key guidelines that apply to the Department of Corrections:

Guideline One: Eat a variety of vegetables, such as dark green, red and orange and starchy vegetables.



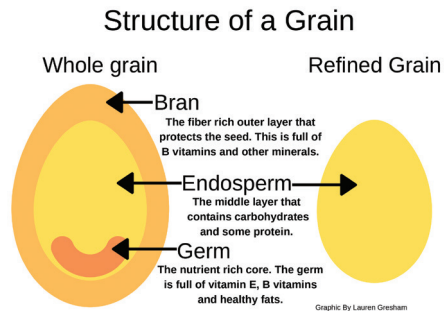
Why eat more vegetables? Vegetables give us lots of vitamins and minerals without a lot of calories. Different colors and types of vegetables have different amounts of vitamins and minerals, which is why it's important to eat a variety. Vegetables are also an important source of fiber, which helps with our digestion. The main categories of vegetables are: orange and red, dark green, starchy and an "other" group, which features things like onions.

Guideline Two: Eat a variety of fruit.



Why eat more fruit? Similar to vegetables, different types of fruit give us different nutrients that are important for health. Eating fruits with little or no added sugar helps keep our energy and blood sugar more stable.

Guideline Three: Eat grains, at least half of which are whole grains.



Why eat more whole grains? Whole grains have more vitamins and minerals. A grain kernel has three main parts; a core layer called the germ, the middle layer called the endosperm and an outer layer called the bran. The bran and the germ are where most of the vitamins and minerals are. Whole grains use all three layers and may be healthier for you. When the outer layer and the core are removed, the grain is called a refined grain. Enriched grains refer to refined grains that have had some vitamins and minerals added back to them.

Guideline Four: Eat a variety of protein, including lean protein, such as fish, beans, nuts and soy.



Protein can come from both animal foods and plant foods. By eating different types of proteins, and not just animal protein, we get different vitamins and minerals. Some proteins are called lean because they have lower amounts of saturated fat. Plant proteins are often the lowest in saturated fat and have no cholesterol, which is better for our heart. We do not need to eat animal protein at every meal for us to get all the protein we need.

Guideline Five: Limit saturated fat, which is high in whole milk cheese, butter and some desserts.

Saturated fats are the type of fats most connected to heart disease, while unsaturated fats (which are found mostly in plant foods) might actually protect us from heart disease. Saturated fats are also high in calories, and can contribute to weight gain and heart attacks.

Guideline Six: Limit added sugar, which includes table sugar, honey, maple syrup and corn syrup.



Added sugar is sugar that is not naturally found in a food. Added sugar can be table sugar (also called “sucrose” or “glucose”), honey, maple syrup, or corn syrup. In fact, there are MANY types of sugars that can be added to foods. Added sugar adds calories but does not add nutrients that make us healthier. They may contribute to weight gain, heart disease, diabetes and some types of cancers. Sugar may also contribute to teeth problems.

Guideline Seven: Limit added salt. Salt is high in foods like chips, pretzels, soy sauce, ketchup and cheese.

Salt is also referred to as sodium. Lots of salt in our diets can increase our risk for high blood pressure. High blood pressure can damage our kidneys and our eyes, and may lead to heart attacks and strokes. Most of the salt in American's diets comes from highly processed foods, not from the salt shaker. The recommended amount of salt is no more than 1 teaspoon of salt per day.

Menu changes within the Department of Corrections:

Throughout all twelve Department of Corrections facilities throughout Washington, the menus will continue to change to follow the Executive Order 13-06. The menu changes include the following:

- Bigger portion sizes of vegetables. Broccoli, tomatoes and sweet potatoes have been added to increase vegetable diversity.
- More fruit is being served.
- More whole grain foods are now on the menus. Biscuits, tortillas and pizza are being made with whole grains. Brown rice is being served instead of rice.
- More lean and plant-based proteins have been added to the menu, especially fish and beans.
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Why should I eat the new mainline meals?

Our diet contributes to our risk of developing many diseases, including heart disease, diabetes and cancer. Diets that follow the Dietary Guidelines for Americans can lower our risk of getting these diseases. Small changes to our diets, made over long periods of time can have really important health benefits.

What about food from the commissary?

To support you in picking out the healthiest items from the commissary, there is a symbol on the commissary list that puts the food into groups. The symbol shows the least healthy choice (the limited category), the moderately healthy choice (the better category), and the healthiest options (the best category). Ideally, you would pick snacks from the best and better choice categories the majority of the time. These snacks are the most likely to help you stay healthy.

Please see the complete "Train-the-Trainer and Resource Toolkit for the Executive Order 13-06 and the Dietary Guidelines for Americans" to learn more.

Where to get more information?

The Dietary Guidelines for Americans can be found at: <https://health.gov/dietaryguidelines/2015/>. Please note, this website is mostly intended for health and nutrition professionals.

Executive Order 13-06 “Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities, can be found by visiting: https://www.governor.wa.gov/sites/default/files/execute_order/eo_13-06.pdf

The United States Department of Agriculture has created a website called “MyPlate” which has additional resources on the Dietary Guidelines for Americans. This website includes nutrition information for all ages as well as activities, tips, tools and recipes. MyPlate is intended to be used by everyone, not just health professionals. Visit this website to learn more: <https://www.choosemyplate.gov>

If you have any further questions, contact the Nutrition Coordinator at the Washington State Department of Health:

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