



Instructor's Guide

Healthy Eating: A Guide to Nutrition **Food Safety and Disease Prevention**

Introduction

This guide provides information to help you get the most out of *Healthy Eating: Food Safety and Disease Prevention*. The contents of this guide will allow you to prepare your students before using the program, and to present follow-up activities to reinforce the program's key learning points.

Across the country we consume a wide variety of food every day, but how often do we stop to think about how safe it is or who keeps it healthy? This program educates students as to the challenges in keeping the food and water supply safe, the actions we currently take to keep it so, and the additional work we can do to improve its safety in the future. Additionally, students will review how they personally can make effective and safe choices about what food to consume and appropriate ways to store and prepare it. Viewers will also review food allergies and the importance of nutritional labeling. After viewing this program, students will have a clear overview of the work it takes from all of us to keep food safe, healthy, and supporting a diverse diet meeting nutritional needs.

Learning Objectives

After viewing the program, students will be able to:

- Describe how the United States monitors and protects its food supply
- Understand what causes food poisoning and food-borne illness
- Explain how the water supply is kept safe, and how to choose between tap and bottled water
- Make good nutritional choices to support a healthy, well-rounded diet
- Describe the importance of nutritional labels in helping those with food allergies stay healthy
- List different methods of keeping our food supply even safer
- Understand how to keep food at home safe and healthy

Program Overview

The seven topics covered in this video provide a balanced and detailed look at the work of keeping food and water safe and healthy. Should we always eat organic food? Is tap water or bottled water a better choice? If I have a food allergy, how do I know that particular ingredient is not in a food I am purchasing? What foods support a healthy diet? After viewing this program, students will be able to converse intelligently on these questions, supplementing their own personal views with facts and knowledge from the video. Multiple agencies and companies work hard to keep our food safe — and there is still more work to be done. This program helps to inform students about what role they can play in keeping themselves healthy as well as what facts to consider when making decisions about foods to consume or avoid.

Main Topics

Topic 1: Who's in Charge of Food Safety?

In this introductory section of the video, viewers review the roles of different government agencies in monitoring our food supply and keeping it safe.

Topic 2: Causes of Food-Borne Illnesses

Why can foods we love sometimes make us sick? In this section, viewers review what leads to food-borne illnesses and food poisoning.

Topic 3: Drinking Water Safety

Water protection laws are quite strong, and municipalities take care to ensure safe water. However, some people still drink bottled water instead of tap. This section of the video looks into this choice.

Topic 4: Nutrition and Disease Prevention

In this section, viewers review how the various vitamins and minerals in a diverse diet help keep us healthy, as well as review how to make better food choices overall.

Topic 5: Food Allergies and Intolerance

Unfortunately, some people are allergic to different foods. Accurate nutritional labels can help them avoid these ingredients, as this section points out.

Topic 6: The Future of Food Safety

Even with a generally healthy food supply, additional actions can be taken to ensure food safety. In this section, viewers learn about some of the different methods used to keep food safe.

Topic 7: Keeping Food Safe at Home

While it's important for food suppliers to keep their products healthy, it's equally as important for us to handle food appropriately at home. This section provides some helpful pointers for doing so.

Fast Facts

- Throughout its journey from production to our tables, food has many opportunities to become contaminated. Several agencies — including the FDA, USDA, CDC, and EPA — have responsibility for overseeing the safety of the food supply and preventing this potential contamination.
- Water is key to food production, used for irrigation, in processing operations, and added as an ingredient. Therefore, it's equally as important to maintain the safety of the water supply.
- Public health departments routinely inspect restaurants to ensure they are storing and handling food safely. Common violations include improper cooking temperatures, poor employee hygiene, and contaminated surfaces.
- Farmers use herbicides and pesticides to keep crops safe. Before an herbicide or pesticide goes on the market, it must be tested and approved by the EPA.
- Growth hormones are sometimes used in the production of meat and dairy products. This is done to improve efficiency — it allows the production of more meat and dairy without the use of additional resources.
- Genetic modification of food involves the manual insertion of desirable genes into plants. In general, the FDA has determined that genetically modified foods are essentially the same as non-modified foods.
- Many bottled water producers actually fill the bottles at municipal sources — the same places from which we get tap water.
- In the 19th and early 20th century, many people suffered and died from diseases that were actually caused by a lack of nutrients and vitamins in their diet.
- The FDA requires that all processed food products display a Nutritional Facts label as well as a list of their ingredients.
- In general, we should cook meat products to a temperature of 150-160 degrees Fahrenheit to avoid potential food-borne illness from undercooking.

Vocabulary Terms

allergies: The body's response to a foreign protein. Common allergens are peanuts, tree nuts, eggs, milk, soybeans, fish, shellfish, and wheat.

CDC: Centers for Disease Control and Prevention. Has responsibility for informing the public of outbreaks of food-borne illness.

EPA: Environmental Protection Agency. Plays a role in protecting food and water supply.

FDA: Food and Drug Administration. Has primary responsibility for testing and monitoring our food supply.

herbicide: Pesticide used to kill unwanted plants, such as weeds.

iodine: Micronutrient that is important to health. Salt is often supplemented with iodine so we consume appropriate levels of it.

irradiation: Technology utilized to kill harmful microorganisms in food products.

organic food: Developed using natural production and avoiding artificial chemicals, fertilizers, or pesticides.

salmonella: Bacterial organism that causes food-borne illness/food poisoning.

USDA: United States Department of Agriculture. Has responsibility for overseeing the meat, poultry, and eggs in our overall food supply.

Pre-Program Discussion Questions

1. Have you ever gotten food poisoning? What type of food made you sick?
2. Do you drink tap water, bottled water, or both? Why?
3. Do you know anyone who does not eat meat or dairy products? Why has he or she made that choice?
4. How do people respond to and treat food allergies and intolerances?
5. Do you try to eat a balanced diet? How successful are you? Do you notice any positive effects when you succeed in doing so or negative effects when you are not successful?

Post-Program Discussion Questions

1. Who is responsible for keeping our food supply safe? Do they do an effective job?
2. How can we ensure that we keep the food in our kitchens safe and healthy?
3. What is genetic modification of food? Would you eat genetically modified food? Why or why not?
4. Why do some people try to eat mainly organic food? Are there downsides to organic food?
5. What types of illness and diseases did people suffer from before a variety of food became available to consume year-round? Is there a chance some of these could still affect people today?

Student Projects

- This program reviews the role that various government agencies — such as the FDA, CDC, USDA, and EPA — play in keeping our food and water supplies safe and healthy. Research each of these four organizations and record the following information for each: key roles and responsibilities, leadership, locations, interactions with other agencies, recent successes, and current challenges. Capture your findings in a chart to clearly indicate both the distinct responsibilities and overlapping roles of each.
- Just as it's important for food suppliers and professional restaurants to keep food products safe, it's equally as important for us to maintain safe and healthy storage and food preparation in our own homes. Create a food safety checklist for the home kitchen, covering topics such as proper food storage, appropriate cleanliness for surfaces and appliances, and safe ways to handle and prepare foods such as meat and dairy products. Compare your checklist with those of your classmates and identify any gaps or conflicting information.
- Topics such as the use of commercial pesticides, genetically modified food, and the use of growth hormones in animals can generate extensive controversy and debate. As a class, identify one key divisive issue along the lines of these topics and run an in-class debate, with students assigned to the 'pro' and 'con' sides of the argument. Debaters should research and prepare to successfully make the key points applicable to their side of the issue. Following the debate, encourage classmates to share their personal views on the topic.
- What are antioxidants and why are they important? What types of foods are called "superfoods"? Review the recent research on these two terms and make some recommendations as to how, if appropriate, to incorporate these so-designated foods into your diet. What are the benefits? Are there any downsides? Have all of the claims about antioxidants and superfoods been proven true? Keeping current recommendations, budget, nutrition, and availability in mind, make some menu suggestions to your classmates that incorporate foods containing antioxidants or superfoods.

Assessment Questions

Q1: This agency is responsible for overseeing the meat, poultry, and eggs in our food supply.

- a) EPA b) FDA c) CDC d) USDA

Q2: This agency is involved with regulating pesticides that may be used in production systems.

- a) EPA b) FDA c) CDC d) USDA

Q3: The most common causes of food-borne outbreaks are _____.

- a) pesticides b) breakdowns in the water supply
c) viruses d) food allergies

Q4: True or False: Any new pesticide or herbicide must be tested and registered with the EPA before going on the market.

- a) True b) False

Q5: The major reason that farmers use growth hormones is _____.

- a) efficiency b) taste c) regulations d) customer requests

Q6: This process occurs when biotechnicians manually insert desirable genes into plants.

- a) growth hormone injection b) use of antibiotics
c) organic farming d) genetic modification

Q7: True or False: Generally, the public water supply is not filtered or treated in any way.

- a) True b) False

Q8: Rather than being caused by microorganisms, common diseases in the 19th century such as scurvy, pellagra, and marasmus were caused by _____.

- a) vitamin and mineral deficiencies b) contaminated food supply
c) lack of exercise d) lack of medical treatment

Q9: The most common food allergies are those to _____.

- a) fresh fruit b) peanuts and tree nuts c) honey d) yogurt

Q10: Chicken, beef, and pork generally need to be cooked to this temperature range (Fahrenheit).

- a) 80-90 degrees b) 200-212 degrees c) 100-130 degrees d) 150-160 degrees

Assessment Questions Answer Key

Q1: This agency is responsible for overseeing the meat, poultry, and eggs in our food supply.

A1: (d) USDA (U.S. Department of Agriculture)

Feedback: Meat, poultry, and eggs make up approximately 20% of our country's total food supply.

Q2: This agency is involved with regulating pesticides that may be used in production systems.

A2: (a) EPA (Environmental Protection Agency)

Feedback: The EPA also sets standards for how much pesticide residue is allowed in different food items.

Q3: The most common causes of food-borne outbreaks are _____.

A3: (c) viruses

Feedback: Bacterial organisms such as Salmonella and E. coli also cause food-borne diseases.

Q4: True or False: Any new pesticide or herbicide must be tested and registered with the EPA before going on the market.

A4: (a) True

Feedback: The EPA also has to determine the maximum tolerance level that is acceptable for a residue of this pesticide or herbicide to be found in food.

Q5: The major reason that farmers use growth hormones is _____.

A5: (a) efficiency

Feedback: Growth hormones allow farmers to produce more food with fewer resources — a key goal as population and demand expand.

Q6: This process occurs when biotechnicians manually insert desirable genes into plants.

A6: (d) genetic modification

Feedback: Genetic modification can increase production, create crops with increased nutritional value, or help improve the resistance of crops to insects. The process is also a controversial topic inspiring debate.

Q7: True or False: Generally, the public water supply is not filtered or treated in any way.

A7: (b) False

Feedback: Most public water supplies are not only filtered, but also treated with chlorine and fluoride.

Q8: Rather than being caused by microorganisms, common diseases in the 19th century such as scurvy, pellagra, and marasmus were caused by _____.

A8: (a) vitamin and mineral deficiencies

Feedback: Today, these diseases have been eliminated or significantly decreased by ensuring that people eat the appropriate vitamins and minerals to ward them off.

Q9: The most common food allergies are those to _____.

A9: (b) peanuts and tree nuts

Feedback: Eight foods are responsible for 90% of food allergies: peanuts, tree nuts, eggs, milk, soybeans, fish, shellfish, and wheat.

Q10: Chicken, beef, and pork generally need to be cooked to this temperature range (Fahrenheit).

A10: (d) 150-160 degrees

Feedback: Cooking these foods to this temperature range will kill any bacteria present and help us avoid food-borne illness.