

Washing Fresh Vegetables to Enhance Food Safety

Description

Fresh vegetables taste great and contain many of the vitamins, nutrients, and antioxidants needed for a healthy body. However, produce can also be a source of foodborne illness if it is not properly selected, stored and prepared. This lesson provides participants with simple steps to clean fresh vegetables, enhance food safety and protect their families' health.

Presenter: *Explain that fresh vegetables are always a good option when shopping. Frozen, canned or dried are also nutritious options if choices are limited.*

Learner Objectives

1. Participants will learn how to correctly choose, store, and clean fresh vegetables.
2. Participants will understand why cleaning produce is simple but important.

Benefits to the Learner

Participants will benefit from this lesson, as they will...

1. Take steps to enhance food safety and protect their families' health.
2. Optimize the nutritional value of vegetables by learning proper preparation and storage methods.

Handouts

- "Fresh Vegetable Storage and Cleaning Guide"
- "Eat Clean" refrigerator magnet
- "Eat Clean" placemats
- Goals worksheet

Materials Needed

- MyPlate mini-poster (referenced from Lesson 1)
- Fresh produce for salad (head of lettuce or bunch of romaine lettuce, tomato, cucumber and carrots)
- Colander
- Produce brush
- Cutting board
- Large bowl
- Hand soap

- Paper towels
- Sink with hot and cold water

References

- Li-Cohen, A.E & Bruhn, C.M. (2002). Safety of consumer handling of fresh produce from the time of purchase to the plate: A comprehensive consumer survey. *Journal of Food Protection*, 65, 1287-1296.
- Lynch, M.F., Tauxe, R.V & Hedberg, C.W (2009). The growing burden of foodborne outbreaks due to contaminated fresh produce: risks and opportunities. *Epidemiological Infections*, 137, 307-315.
- Scott, A. (2008). *Washing fresh fruits and vegetables*. College Station, Texas: Texas A&M, AgriLife Extension.
- U.S. government (2012). *Tips for fresh produce safety*. Retrieved from <http://foodsafety.gov>

Presenting the Lesson

Presenter: *Before starting the new lesson, ask:*

How did you do with your goal from last week?

Introducing the Lesson

Presenter: *If you are working one-on-one with a participant, start the lesson by asking the questions provided below. Allow the participant to share his or her thoughts and opinions about fresh vegetables for themselves and their families. If you are working with a group, encourage participants to begin talking with the person seated next to them. Have them ask each other the following questions and then report back to the group:*

- Do you enjoy eating fresh vegetables? If so:
 - Which vegetables are your favorites to eat?
 - How do you like to eat them? (Raw? Cooked?)
- Tell me about your family. Do they like fresh vegetables?
 - Which vegetables are their favorites to eat?
 - How do they like to eat them?
- What do you think is challenging about selecting fresh vegetables at the store, or preparing them at home?

As we begin, let's look at the USDA's (U.S. Department of Agriculture's) nutrition guide, MyPlate, to see how much produce your family should eat daily. Remember, as we learned in our first lesson, this guide recommends that half your plate should be fruits and veggies, which

can be fresh, frozen, canned or dried. All of these forms of vegetables provide vitamins and nutrients. Today, we're going to focus on fresh vegetables. If fresh vegetables are not properly prepared, they can also be a source of foodborne illness—when someone gets sick because of contaminated food. Contamination takes place when dirt, germs or other unwanted substances come in contact with the food. Contamination can be a major source of illness.

If there is some form of contamination on the food (like bacteria) that could make you sick, it is usually on the outside of the vegetable. This is why cleaning your fresh vegetables is so important. So, let's think about the ways fresh vegetables could be contaminated. How do you think this happens?

As they travel from the farm to the store, and then to your plate, fresh vegetables are handled by various people and machines in the following ways:

1. At the farm, workers or machines harvest and process the vegetables.
2. At a packaging facility, workers and machines handle vegetables as they are sorted and packaged.
3. At the grocery store, other customers may touch the vegetables when shopping for their families.

At every step along the way—from the farm to the grocery store—many safety measures are in place by farmers, packaging facilities and grocery stores to make sure that contamination does not take place, and that you and your family will not get sick when eating these foods.

However, even with these precautions, an occasional foodborne disease outbreak can occur. If you hear of an outbreak on the news, listen to and follow experts' suggestions on what to do.

However, it is also important to keep in mind that, once the vegetables leave the store with you, it is up to you to make sure your vegetables are safe. By taking some simple steps we will talk about today, you will know how to choose, handle and clean your vegetables. If you follow these simple steps, you can protect your family from possibly getting sick if there are bacteria or some other form of contamination on your vegetables.

In the Store

You cannot control what happens to vegetables before they get to the grocery store, but the first step you can take is to select vegetables that are in good condition. Avoid produce with brown spots, cuts, or bruises. These are areas with high concentrations of bacteria. As you make your selections at the grocery store, be sure to bag each type of produce separately for weighing and pricing at the cash register.

Transporting and Storage

As you select your fresh vegetables, keep them separate from any meat products in your basket or cart. Separating vegetables from meat helps to avoid cross-contamination (where bacteria from meat can infect the vegetables or vice versa). Also keep vegetables separate from meat when you bag your groceries at the store, while you transport them home, and when you store them in the refrigerator.

Preparing at Home

After coming home, food safety is now in your hands! Only you can control what goes on in your home.

Salad Preparation Activity

Presenter: *Following very simple steps to storing and preparing vegetables is an important way to minimize or eliminate the consumption of contaminated vegetables. In this activity, you will demonstrate to the participant(s) how to properly clean vegetables and prepare them for their family to eat. Once you have finished, then encourage the participant(s) to repeat the process.*

We are going to make an easy vegetable salad today. Salads are simple and nutritious for your family. But, you need to make sure that all vegetables used in the salad are properly cleaned and prepared.

Let's think about what happens once you get home. The first step is to put the vegetables away. Some vegetables should be refrigerated and others can stay at room temperature for a few days. For example, you should refrigerate lettuce and broccoli. However, tomatoes and peppers do not need refrigeration if used within a few days, and potatoes should always stay at room temperature. Put all refrigerated vegetables in the produce drawer or away from the meat.

Now let's make a salad. What is the first step you should take before beginning to prepare your salad? When you are ready to make a meal, always wash your hands with warm, soapy water, just as we learned in Lesson 8. Do you remember how we practiced washing hands? Make sure you use soap and water and wash the back of your hands and under your fingernails for at least 20 seconds.

Next, we need to clean the vegetables. Keep in mind that you should not clean fresh vegetables until you are ready to use them. Otherwise, moisture that remains after cleaning can cause mold to grow.

1. Before you begin the process of cleaning your vegetables, be sure the sink is clean. To ensure a clean sink, wash and scrub the bottom and sides of the sink with soapy water, and then rinse thoroughly with water. If you will be using a produce brush to clean your vegetables, now is also a good time to wash it with soapy water and rinse with water.
2. Remove all stickers and labels from the vegetables. For bagged produce, re-check expiration dates. Throw away any vegetables that have brown spots or look old. If the produce has listed on the package “pre-washed” or “triple washed,” you do not need to wash it.
3. If using a head of lettuce, rather than a bag of lettuce, remove any outside leaves. Outside leaves are the most likely to be contaminated, as they are the parts of the vegetables most contacted when moving from the farm, to the store, and to your home.
4. Now, hold the head of lettuce under cool running water, ensuring that all surface areas come in contact with the water. For soft vegetables like broccoli, spinach, lettuce and tomatoes, rub the vegetables with your fingertips to help remove any dirt or surface bacteria. Because carrots and cucumbers are firm vegetables, use a clean produce brush to scrub all surface areas under running water. *(There is no need to use anything other than water. Do not use bleach, soap, vinegar, or other disinfectants. Studies show these cleaners have very little effect when washing vegetables. There is also a risk of vegetables absorbing cleaning products through pores on their surface.)*
5. Cut away any bad spots and stems because bacteria and dirt can collect in these areas. You should rinse and clean vegetables like cucumbers and carrots before you peel them because, as you cut, the knife can move bacteria from the outside to the inside.
6. Now we are ready to cut up the vegetables for our salad!

There is no recommended time that vegetables should be rinsed under cool water. The primary objective is to ensure that all surfaces have been thoroughly rubbed or scrubbed and rinsed well.

Presenter: *Once you have demonstrated the proper cleaning techniques, encourage the participant(s) to rinse and rub or scrub each of the vegetables used in the salad today as you repeat and describe the proper steps.*

After-Eating Reminder

After you eat, make sure to wash down all surfaces and the produce brush using soap and water. Refrigerate any leftovers and eat them within a few days.

Wrap It Up

Let's review the steps for eating clean vegetables.

1. When you choose fresh vegetables at the grocery store, avoid produce with brown spots, cuts, or bruises.
2. Keep vegetables separate from meat in the store and at home.
3. Store vegetables in the refrigerator, if recommended.
4. Clean vegetables by rinsing and rubbing or scrubbing them under running water, covering all surface area of the vegetables.
5. Eat and enjoy!

Presenter: *Give the participants a few minutes to discuss the following questions or talk about any concerns they have. Distribute the goal sheet and have them set a goal for the week. If they have trouble coming up with a goal of their own, recommend that they practice rinsing and rubbing or scrubbing fresh vegetables that they purchase at the store, using the steps described above.*

- What are you going to do when you get to the grocery store and begin shopping for fresh vegetables?
- What are you going to do before storing the vegetables?
- How can you teach your family to clean their fresh vegetables?

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Fresh Vegetable Storage and Cleaning Guide

Consult this guide for specific food safety steps for each type of vegetable.

Most vegetables need to be refrigerated, especially after they ripen. After any vegetable has been cut or peeled, refrigerate leftovers immediately.

Vegetable	Storage	Rub with fingertips or scrub with a produce brush?	Additional tips
Avocado	Refrigerate after ripening	Scrub	
Broccoli	Refrigerate	Rub	
Carrots	Refrigerate	Scrub	
Chiles/other peppers	Storage in cool place (like basement or garage) preferred; can be refrigerated	Rub	Keep hands away from face when washing hot peppers.
Corn	Refrigerate	Rub	
Cucumbers	Storage in cool place preferred; can be refrigerated	Scrub	Rinse and scrub well to remove waxy surface. Remaining waxes are safe to eat. Rinse before peeling.
Garlic	Do not refrigerate	Scrub	
Green Beans	Refrigerate	Rub	Rinse and rub before snapping the end of the beans off.
Lettuce	Refrigerate	Rub, moving leaves	Remove outer leaves. Bagged lettuce labeled “pre-washed” does not need to be washed again
Onions	Can be refrigerated but not necessary	Scrub	Store in a well-ventilated place so that air can get to onions. Do not freeze whole onions.
Potatoes	Do not refrigerate	Scrub	Remove eyes with a knife or peeler
Radishes	Refrigerate	Scrub	
Spinach	Refrigerate	Rub, moving leaves	Bagged spinach labeled “pre-washed” does not need to be washed again
Squash	Do not refrigerate	Scrub	
Tomatoes	Refrigerate after ripening	Rub	
Zucchini / Summer Squash	Refrigerate after ripening	Scrub	Rinse before peeling

Sources:

University of Rhode Island Extension (2007). *Garden to table: Storing fresh garden produce*. Retrieved from: <http://www.uri.edu/ce/ceec/food/documents/fruitAndVegetableStorageChartFactSheet.pdf>

Tong, C. (2012). *Harvesting and storing home garden vegetables*. University of Minnesota Extension publications Retrieved from <http://www.extension.umn.edu/distribution/horticulture/DG1424.html>

Zander, A. and Bunning, M (2010). *Guide to washing fresh produce*. Retrieved from <http://www.ext.colostate.edu/pubs/foodnut/09380.html>