



Unit 2: Fresh Produce and Foodborne Illness Risks

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Understanding how to handle fresh produce is an important step in reducing the risk of foodborne illness. Because fresh produce is often eaten raw, without the benefit of cooking to remove pathogens, implementing proper handling practices is critical. Fresh produce is often overlooked as a source of foodborne illness until there is an outbreak reported widely in the news media. From 1998 to 2008 leafy greens such as spinach, lettuce, and cabbage were the number one source of all foodborne illness outbreaks closely followed by tomatoes and melons. Even herbs such as oregano and basil can be a source of foodborne illness.

Examples of recent outbreaks include cantaloupe contaminated with listeria and spinach and mixed greens contaminated with e-coli 0157H7. The Centers for Disease Control and Prevention, or CDC, estimates that each year 1 in 6 people or about 48 million Americans will get a foodborne illness. The study also noted fresh produce was responsible for approximately 46% of all foodborne illnesses, 38% of hospitalizations, and 23% of all deaths due to foodborne illness.

Young children are at an increased risk for developing a foodborne illness since their immune systems are not fully developed. Even ingesting the smallest amounts of a pathogen can cause illness that will be difficult for them to fight off. In fact, the incidence of foodborne infection is highest in children younger than five years old. These statistics may seem scary but remember that the occurrence of foodborne illness can be minimized when you understand the causes and take the recommended steps to reduce the risk. By the end of this unit you will be able to: define foodborne illness, describe why young children are at a greater risk for foodborne illness, identify ways to purchase and receive produce safely, and identify which foods pose the greatest risk for foodborne illness in young children.

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Eating food contaminated by harmful microorganisms such as bacteria and viruses cause foodborne illness. These harmful microbes are called pathogens. And are so small they can only be seen through a microscope. Microorganisms are easily transferred to and from hands, surfaces, and foods. It is not possible to rely on your sense, sight, smell, or taste to know if they are present or if the food is safe to eat.



A great way to explore the concept of microorganisms with children is through a Glo-Germ activity. Glo Germ is a non-toxic substance that can be rubbed on hands to simulate germs.

[Film] *I'm just gonna put a little tiny drop on your hands and then we'll rub it, rub, rub, rub, rub it in and then we're gonna turn the light off and we're gonna take the magic wand and see the pretend germs. And then we'll wash our hands and we'll see how good a job we do, okay?*

We're gonna wash the germs and then we'll have the wand on again and we'll see if there's any germs left.

I see a little germ right there. Sometimes those germs are tricky, they don't like to be washed away.

Foodborne illness can also be caused by food that has been contaminated with unsafe or hazardous chemicals and foreign objects such as glass or wood. In this training we'll be focusing on foodborne illness caused by pathogens. To learn more about specific pathogens, signs and symptoms of foodborne illness refer to the Resources section of this training. In addition to see how pathogens can easily be transferred click on the Iowa State University Extension and Outreach Yuck Photos.

Click on the Sharing Board icon and take a few minutes to explore fresh produce and food safety risks sharing board questions. Once you have posted a response to a question or responded to someone else's post you will be able to continue to the training.

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One out of four outbreaks of foodborne illness can be traced to cross contamination from the hands of the person handling the food. That means we are often the source of the pathogen that causes foodborne illness.

[Film] *Hand washing is probably the number one step that you can take to prevent foodborne illness. Hands are touching everything all the time and so any kind of bacteria or germs that are on your hands can easily be transferred to a food product or another surface where then somebody else can consume the food.*

Good personal hygiene is the best way to prevent spreading pathogens and reduce the risk of foodborne illness. Good personal hygiene includes always washing hands after using the restroom and before any task involving handling or preparing foods. Group settings such as early childcare classrooms with close personal contact and shared materials make it easier for some foodborne illnesses to be transmitted. Although childcare centers follow strict regulations



for keeping toys and surfaces clean, one sick child or adult can easily and unknowingly spread pathogens to others by touching or handing toys, books, surfaces, and foods. Some pathogens such as the norovirus can even live on the surfaces of objects for days or weeks.

There are many ways that fresh fruits and vegetables are at risk for cross contamination from foodborne pathogens. On a farm sources of contamination are animal feces water, and soil. Fresh produce can easily come in contact with them and pathogens can be transferred. In transit fresh produce transported with raw meats, fish, or poultry can be cross contaminated by leaking juices. When food arrives at your center it can come in contact with pathogens on unwashed hands or equipment and surfaces that are not clean. It is important to be aware of these risks and take the steps necessary to reduce the risks of foodborne illness.

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Whether you purchase your produce from the grocery store, farm, farmers' market, or pick it from your center's garden, select fruits and vegetables with no visible bruises, holes, or torn skin. Many centers have a list of approved suppliers or sources for purchasing fresh produce who meet their standards and those set by local and state health departments. If you have a question about food safety practices call your local farmer or supplier and ask them what steps they take to ensure food safety and comply with local, state, and federal food safety practices.

[Film] We had the opportunity to meet our farmer and so we know what his facility is like. And so that by itself—some farmers may have a [HASEFF—ph. sp.] certification. Or a different certifications that may be within farming regulations. And so you might want to check on that.

After purchasing your fresh produce bring it into the kitchen and remove any visible dirt. Although gloves do not need to be worn while washing fresh produce they should be worn while preparing the produce for consumption. Before putting gloves on it is important to wash your hands first. When preparing fresh fruits and vegetables make sure they are washed thoroughly in cool running clean water from the sink. It is not recommended they be allowed to soak in a tub of water or pooled water. It not recommended to use soap, detergent, or bleach solutions when washing produce. These products may not be safe to eat and can affect the taste. As fruits and vegetables grow, microorganisms from the soil or water may get on the leaves, skin, or rinds. Be sure to wash the skin or rind and in between the leaves and stems especially with items like lettuce and celery. It is extremely important to wash produce even if they will be peeled before eating. Pathogens are easily transferred from the outside to the inside of the produce during peeling and cutting. Remove any areas that appear to be bruised and discard any fresh produce that is visibly broken or badly damaged. For items with tight leaves such as cabbage or leafy



greens you may want to remove and discard the outer most leaves. Broken or damaged areas of fresh produce can easily allow entrance of pathogens.

There are no federal regulations on which fresh produce needs to be refrigerated except for cut melons, cut tomatoes, and cut leafy greens. Because these items have been cut there is the potential that pathogens on the outside have been transferred inside. Cut melons, tomatoes, and leafy greens need to be refrigerated at 41° Fahrenheit or below. When storing fresh produce in the refrigerator make sure it is placed above and away from foods that can drip or potentially contaminate the items. Store produce that is unwashed in clean food-safe containers or plastic bags.

Now that you have learned about purchasing and handling fresh produce take a few minutes to update your Best Practices planning tool. Click on the Best Practices icon to continue the unit.

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Certain foods present an increased risk of foodborne illness for young children and should never be served at your center. These include: Unpasteurized juices and ciders, raw cheese and milk, raw egg products such as cookie dough, and raw or under cooked meats, fish, and poultry, and bean sprouts. Unpasteurized foods have not been heat treated to kill bacteria and therefore have a greater potential risk of causing a foodborne illness. Bean sprouts are also a particular concern for young children because the seeds can easily become contaminated with bacteria such as salmonella, listeria, and e-coli. The warm, dark, and moist growing environment for sprouting provides an ideal condition to promote the growth of bacteria. This makes the consumption of bean sprouts by young children particularly risky.

Now that you have learned about high risk foods take a few minutes to update your Best Practices planning tool. Click on the Best Practices icon to continue the unit.

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Eating fresh fruits and vegetables is an important part of a healthy diet and starting early in life is the best way to develop this good eating habit. But remember that contamination can occur anywhere from farm to consumer and following recommended food safety principles when serving fresh produce to reduce foodborne illness risk is important. Always wash fruits and vegetables before serving even if they will be peeled. Raw produce should be stored away from raw meats, fish, and poultry. Store cut produce in the refrigerator at 41° Fahrenheit or below. Some foods should never be served to young children such as raw unpasteurized dairy and juice

FOOD SAFETY FROM Farm & Garden



TO
PRESCHOOL

products, uncooked meats and bean sprouts. To learn more about handling and storage of fresh produce refer to the Resources section of this training.

Congratulations on completing Unit 2 Fresh Produce and Foodborne Illness Risks. The next unit Food Safety Basics for the Classroom and Kitchen will cover key food safety concepts and offer suggestions on how you may implement these practices and prevent foodborne illness in your early childcare center. What steps can you take over the next year to meet your best practices goals? Click on the Best Practices icon now and add your future goals to the Best Practices—