

Child Care Training and Resource Kit Food Safety – Teacher’s Notes

Why is Food Safety Important?

- millions of cases of foodborne illness each year
- approximately 5,200 death

Children under 5 years old are more susceptible

- ** underdeveloped immune systems
- ** serious complications

Food Safety is important to prevent foodborne illness.

Foodborne illness: any illness caused by eating
contaminated food:
often misdiagnosed as “flu”

How many have had a 24-hour stomach flu? Maybe it was a foodborne illness caused by contaminated food.

Who gets foodborne illnesses?

- **Anyone can get a foodborne illness.**
- **Illnesses more serious in high-risk populations (infants, children, elderly, those with compromised immune systems)**
- **Children under 5 are more susceptible because they have underdeveloped immune systems which can lead to serious complications, even death.**

OBJECTIVES

- **Principles of Food Safety**
 - *Sanitation and Cross-Contamination
 - *Food Safety Temperatures
- **Infant Food Safety**
- **Question and Answer**
- **Food Worker Card Test**

Objectives of this class

Food Safety Principles

- Learn basic food safety and how to prevent foodborne illnesses, discuss general sanitation issues and preventing cross-contamination

Infant Food Safety

- Learn infant food safety including how to use and store infant formulas, breast milk, and infant foods

Question and Answer Time

Food Worker Card Test

- Don't Stress, just pay attention
- First card is good for 2 years
- If renewed before expiration (or within 14 days of expiration), good for 3 years

Food can become unsafe in many ways

How many can you find?

How Many Food Safety Mistakes Can You Find?

- Tasting from spoon
- Meat thawing at room temp.
- Milk on counter
- Flies in kitchen
- Petting cat while eating
- Pot handle turned outward
- Sneezing on food

(I have recently acquired “The Case of the Rubber Chicken” video available from the WSU Cooperative Extension to use at this point in presentation)

What Causes Foodborne Illness?

- **Chemical**
- **Viruses**
- **Bacteria**
- **Parasites**
- **Mold**

Chemicals

- Store completely away from food, must be labeled
- Follow the instructions on the label
- In restaurant (below) vs. in child care (out of reach, up)

Viruses

- Spread by our hands – prevention is handwashing
- Hepatitis A – passed via fecal-oral route, children can be asymptomatic, 15 to 50 days before showing symptoms

Bacteria

- Many types, too small to see, are everywhere
- E.coli (hamburger), Salmonella (poultry)
1993 – 604 cases; 43 hospitalizations, 4 child deaths – King Co.

Parasites

- Worms, found in pork (trichinella) and fish (raw sushi)
- Controlled by cooking hot enough to kill them

Molds

- Don't let things sit around too long, don't taste

What Bacteria Need to Grow

** Food

** Water

** Temperature

** Time

Focus on bacteria – most common cause of known foodborne illnesses.

Bacteria need certain things in order to multiply.

Food – they need an adequate substance on which to grow

Water – they need moisture

Temperature – bacteria grow best when they aren't too hot or too cold

Time – when they are in the right temperature range, they need enough time to multiply to numbers that can make us sick

at 90 F = 30 minutes

at 70 F = every hour

at 50 F = every 3 hours

at 40 F = every 4 hours

Potentially Hazardous Food

- **High in Protein**
- **Contains Moisture**
- **Low Acid**

Milk, eggs, dairy products

Meat, poultry, fish, shellfish

Cooked potatoes, beans, rice

Cut melon, sprouts

The foods bacteria can grow in are called Potentially Hazardous Foods (PHF).

These foods:

- are high in protein
- contain moisture
- are low in acid (nothing grows in lemon juice/ketchup)

Review Categories (HANDOUT)

Quiz: Steak is a PHF . . . what about beef jerky? (no, low moisture content)
Dry rice & beans? (no, but cooked they are)
Eggs? (yes), raw cookie dough (yes),
in the shell (yes, salmonella)
Dry baby formula? (no), add water? (yes)
What about mayonnaise? (no) tastes tangy = acidic

CLEAN IT!

Sanitation

Cross-contamination

Dishwashing

Now talk about next section –

Handwashing

- **Unclean hands are the most common source of food contamination**
- **Food can become contaminated by: hands, diapers, hair, clothing, coughs, sneezes, and infected cuts**
- **Teach children to wash their hands**

When working with food, always start with clean hands. Unclean hands are the number one (#1!) way that food becomes contaminated.

Hands must be washed when:

- After using the restroom
- After diapering or helping child use toilet
- Immediately before food preparation
- After coughing, sneezing, touching hair/face
- After wiping child's nose
- After touching raw meat, fish, poultry, or eggs
- After handling pets
- After switching tasks (answer phone, etc.)
- Before eating

Children need to wash hands too.

Diapering: Keep completely separate from kitchen activities.

Handwashing

Steps of Handwashing:

In a restaurant – designated hand sink only used for this

Review six steps –

Just rinsing doesn't work
Use paper towels, not cloth, jeans, shirt front, etc.

Double handwashing if in the restroom is a good practice.

1. Wash hands in the restroom
2. Wash hands again before preparing food.

Clean and Sanitize

- **Clean and sanitize cutting boards, knives, and counter tops**
- **Sanitizing solution**
 - >>1 teaspoon bleach/gallon of cool water
 - >>1/4 teaspoon bleach/quart of cool water
- **Let it air dry**

Cleaning: getting off the dirt you can see

Sanitizing: getting ride of the germs you can't see

Sanitizing solution:

in a restaurant, make up large quantities
(1 teaspoon/gallon cool water)

use cool water – hot makes bleach evaporate
store wiping cloths in the bucket

if using a spray bottle:
(1/4 teaspoon/quart cool water)

use a clean paper towel to dry or,

Let the surfaces air dry to give the bleach time to work. Must have at least 1 minute of contact time.

Where Germs Lie in Wait

- Sponges
- Dish Towels
- Used Paper Towels
- Sinks
- Aprons
- Cutting Boards
- Wooden Utensils
- Blender Jars
- Countertops
- Tabletops

Sponges – people forget about them, better to use a wiping cloth that can be frequently thrown in the wash (Story: in one home, all surfaces were heavily contaminated until the 6th day of testing. That day a new sponge was being used.)

Cloth towels – can spread bacteria from one surface to another; better to let dishes air dry

Used paper towels – use once then throw away

Sinks – used for multiple purposes, needs to be sanitized between uses (i.e. thawing chicken/washing vegetables)

Aprons – apron is a barrier to keep germs from your clothes off food prep surfaces and to protect your clothes from stains, not to be used as a place to wipe your hand

Cutting boards – as they get older, they get cracks & crevices that can harbor bacteria, not sanitized between uses

Wooden utensils – bacteria hide in cracks, discard when cracked

Blender Jars – hard to take apart and hard to clean

Countertops – sanitize frequently to prevent cross-contamination

Hands – worst of all!! Soap and water is the solution!!

Dishwashing

- **Wash, Rinse, Sanitize, Air Dry**
- **Dishwasher may or may not sanitize**

Dishwashing sequence:

Wash	in hot soapy water
Rinse	in hot clean water
Sanitize	in bleach solution (1 tsp/gallon) or in very hot water (180 F)
Air Dry	

Repeat the sequence out loud about three times.

Avoid Cross-Contamination

- **Wash hands**
- **Keep Raw Meat and drippings away from all other foods**
 - >> store below other foods
 - >>store in a high-sided container
- **Serve cooked foods on clean platters**

Raw meat, fish, and poultry contain large numbers of bacteria; therefore, must be very careful about handling.

- wash hands
- store: away from all other foods (exp. ready-to-eat foods)
 - store below-required in restaurants
 - store in a high-sided container
 - ready-to-eat foods should be on top if possible

All foods in the refrigerator should be kept covered with non-absorbent material (lid, foil, plastic wrap) to prevent contamination.

- serve on a fresh plate, not one that held raw meat
- good idea to use a separate cutting board for raw meats and vegetables

Keep It Clean!

- **No pets in food areas**
- **No diapers on the drain board**

Pets

wonderful additions to a child care
don't belong in a kitchen, don't allow on counter
animals carry germs including salmonella (esp.
turtles, lizards, etc.)

Diapers

keep all diapering activities completely separate
from the kitchen (changing, handwashing, garbage
should not be kept near any food preparation area)

Always wash your hands and the child's hands

Safe Food Temperatures

Next section

The Danger Zone

This is the DANGER ZONE.

- Between 45 and 140 F
- Bacteria grow very rapidly in this temperature range.
- Room temperature is in the middle of the danger zone.

To keep food safe and children healthy, foods must be kept out of this temperature range so that bacteria will not grow quickly to numbers that can cause illness.

The longest time potentially hazardous foods should be out at room temperature is 2 hours (1 hour in hot weather). This means making sure cold foods stay cold.

Keep Cold Foods Cold

Keeping potentially hazardous foods cold means making sure they stay at 45 F or below – out of the danger zone.

Some ways to make sure the food stays cold and bacteria won't grow rapidly is by;

**putting groceries away immediately,
marinating meats in the refrigerator, not the counter
and using a cooler/ice packs for field trips**

Let's follow some food preparation steps in your home and child care kitchens and review the food safety principles along the way.

Proper Thawing

Let's say you have some meat that you want to cook, but it's frozen.

There are 4 ways to thaw foods safely – can you name them?

1. in the refrigerator – if raw meat put a platter under the meat to catch any liquids
2. under cold running water – if it's a large turkey, thaw it in the sink in cool, changing water every 30 minutes
3. in microwave – be careful, microwave can start the cooking process
4. cook food frozen – should be less than 4" thick and will need to be cooked longer.

Leaving it on the counter is NOT safe = danger zone.

Cooking Temperatures

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Now that the food is thawed, we need to make sure that it is thoroughly cooked to kill the bacteria.

Cooking temperatures are determined by what type of bacteria is typically found on that food:

poultry(chicken, turkey, duck) = salmonella = 165 F

ground beef = e. coli O157:H7 = 155 F

pork and pork products = parasite/trichinella spiralis = 150 F

all other foods = 140 F

Because of these bacteria and children's susceptibility, children should **NOT** be fed;

- raw or undercooked meats, fish, poultry
- raw shellfish, undercooked eggs(cookie dough)
- unpasteurized milk or juices
 - home canned low-acid foods (botulism)

What is the only way to tell if food is cooked hot enough?

Use a Thermomter

The only way to make sure foods are thoroughly cooked is to check it with a stem thermometer.

Hand out thermometers

Stem thermometers are different than meat thermometers;

- measures 0-220 F = measure cold temperatures too
- insert stem in up to the dimple, read, remove
- can be calibrated to ensure accuracy

Keep Hot Food Hot

We're done cooking our meat and we've checked the temperature with our stem thermometers;

Review

If we are cooking chicken,	what is the correct temp?	165 F
meatloaf?	155 F	
ham?		150 F
fish or beef?	140 F	

Once food is cooked, you need to keep it hot if you are not going to serve it right away. Put it in the oven on warm or keep the burner on low. Food needs to be kept out of the danger zone and that means keeping hot foods hot at 140 F or above.

This is called the "hot holding" temperature.

Cool It Quickly

After the kids are done eating and there are some leftovers that have not been served, they must be cooled quickly to 45 F or below within 4 hours.

What are some things we can do to make sure the food cools quickly?

- **place immediately in refrigerator, leaving uncovered near the top of the shelf because it is uncovered.**
- **cut food into small pieces and place in small containers**

If you are going to make a cold salad (such as potato, macaroni, or tuna), make sure all the ingredients that go into that salad are PRE-CHILLED to 45 F or below before combining so that when combined, the entire salad is out of the danger zone.

Reheat It Even Faster

We are now ready to use those leftovers we previously cooled. Since we are taking foods through the danger zone yet again, we have to go to a higher temperature and do it faster.

Leftovers need to be reheated to 165 F or higher.

You have 1 hour to do this safely.

This means you need to something that can do the job, such as an oven, stovetop, or microwave. If you have a large mass of food, you may need to divide it into smaller amounts to get it heated within 1 hour. Crock pots, slow cookers, and (in restaurants) steam tables won't work and should not be used for reheating.

Microwave Safety Tips

Most homes today and many centers have microwaves and it would be hard to live without them.

Use only microwave-safe containers.

Add salt after cooking because salt draws liquid out of the food and therefore interferes with the cooking process.

Food continues to cook after the oven has turned off – allow for adequate standing time (5 to 20 minutes).

Use your thermometer to make sure that leftovers reach 165 F; try it – it can take longer than you think.

To clean, it helps to boil a glass of water – moisture will make it easier to remove splatters and spills.

Infant Food Safety

Next Section

Even a small dose of harmful bacteria can make a tiny baby sick.

Infant Food Safety - Formula

Formula is a potentially hazardous food – bacteria can grow very well. Infants are very susceptible to bacteria. So the same principles apply – keep the formula at 45 F or below and don't leave it out at room temperature (2 hours max).

- **Small refrigerators – door is most often not 45 F**
- **Don't keep bottles around long (date) and make sure each child's bottle is labeled to prevent mix-ups**
- **If parents don't send bottles, mix them on demand, not ahead of time.**
- **Microwaves heat unevenly – may result in hot spots and burns (plastic liner seams may weaken, burst on baby).**
- **If child has from a bottle, throw the remainder out – harmful bacteria from baby's mouth enters bottle and multiplies.**
- **Discard or send home at the end of the day.**

Infant Food Safety - Breastmilk

Breast milk is also a potentially hazardous food.

Same principles apply;

- **wash hands,**
- **keep cold at 45 F**
- **don't' leave out for more than 2 hours**
- **thaw in cool water**

Make certain all bottles are labeled and dated, so you know who to give the bottle to and when to throw it out. Breast milk can be stored for 48 hours. Can be frozen and length of time frozen varies based on source (shortest time is said to be 2 weeks, but some longer is okay). Once frozen breast milk is thawed, it must be used within 24 hours. Do not refreeze.

Infant Food Safety – Baby Foods

Jars of baby food also require some special care:

Listen for “popping” sound when opening to make sure the seal is intact.

Jars are small, but if baby isn’t going to eat the entire jar in one sitting, don’t use the jar as a serving dish. Bacteria from baby’s mouth would contaminate the food in the jar and can give the infant food poisoning. Transfer a small amount to a separate dish. If baby wants more, use a clean spoon to get some more food from the jar. If there are leftovers in the serving dish, discard. The safe leftover food in the opened jar can be kept refrigerated for 24 hours, and then should be discarded.

Microwaving is not recommended. In the jar, food can be 48 F by glass sides and up to 170 F to 200F in the middle. Foods should be 90 F to 120 F, no hotter. If food is microwaved, stir and let it sit for at least 30 seconds.

For Children Under 12 Months

These guidelines are particularly for children under 1 year.

Foods which may cause choking: read list

Are any surprising?

Hard candy (this should apply to older children as well)

Foods which are not for babies: read list

Are any surprising?

Honey may contain botulism which can lead to severe illness or even death. Older children and adults can handle this type of botulism

Goat's milk and low fat milk is hard to digest, children need the fat from milk, goat's milk low in folate needed for brain development.

Keeping Food Safe Is Up To You

Keeping foods safe is up to you, whether it is in your child care setting or food prepared for you own family at home.

Temperature Review

Review

Questions??
