



What You Can't See, Can Hurt

Your Kids and You!

Preventing food-borne illness in your
child care center or day care home

College of Human Ecology

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About this booklet

This booklet explains how to prevent food-borne illness in a child care facility. Each page describes a food-handling topic important in the child care setting.

We hope you find this information useful in helping you reduce the risk for food-borne illness in your child care center or family/group day care home.

What You Can't See Can Hurt Your Kids and You! is an outreach and research program of the Michigan State University College of Human Ecology.

Regulations

for child care center or day care homes

Where to get a copy of the licensing rules

There are two sets of licensing rules: one for child care centers and one for family/group day care homes. Food-handling requirements are included in each set of rules. The rules contain information on child care requirements other than food handling.

If you would like a copy of either set of rules, contact your regional Department of Social Services licensing consultant or write to:

Division of Child Day Care Licensing
Department of Social Services
P.O. Box 30037
Lansing, MI 48909
(517) 373-8300

Include your name and address and the title of the licensing rules with your request. If you work in a child care center, request **Licensing Rules for Child Care Centers**. If you work in a family/group day care home, request **Licensing Rules for Family and Group Day Care Homes**.

Licensing rules for both child care centers and family/group day care homes are continually updated. Food-handling requirements might change.

Where to find food-handling requirements in the licensing rules

Child care centers. Food-handling requirements are described under the topics of **food**, **food service sanitation**, **milk**, **formula** and **diapering**.

The section about food service sanitation refers to Act 368 of the Public Acts of 1978. This act is known as Michigan's Foodservice Sanitation Regulations. For more information about these regulations (which cover food handling more in depth than do the child care licensing rules), contact:

Shelter Environment Section
Division of Environmental Health
Michigan Department of Public Health
P.O. Box 30195
Lansing, MI 48909
(517) 335-8293

Family/group day care homes. Food-handling requirements can be found under **food** in the licensing rules.

Information presented in this booklet is consistent with the food-handling requirements described in both sets of licensing rules.

Food-borne Illness

Each day millions of children eat food prepared and served in child care facilities. The food must be safely handled to reduce the risk for food-borne illness.

What is food-borne illness?

Food-borne illness is caused by eating food containing harmful bacteria (or their toxins), viruses or parasites. These organisms are everywhere: in food; in soil and water; and in and on humans, animals and birds.

Potential victims

Annually, between 24 million and 81 million people in the United States get food-borne illness. Most cases are not life-threatening. However, each year more than 9,000 people die from food-borne illness. Serious complications are more common in high-risk populations such as young children, pregnant women, elderly persons and the chronically ill.

Prevention

- Wash your hands often.
- Keep hot food hot and cold food cold.
- Clean and sanitize surfaces that food comes in contact with.

Common symptoms

Symptoms of food-borne illness usually begin 6 to 24 hours after a person eats contaminated food. Sometimes food-borne illness is confused with what some people call stomach or intestinal flu because the symptoms are similar:

- Cramps.
- Nausea.
- Diarrhea.
- Vomiting.

Healthy adults usually recover from food-borne illness in a few days, but members of high-risk populations, such as infants and young children, are more likely to develop serious complications that could lead to death.

What are toxins?

Some bacteria form toxins (poisons). Eating food that contains toxins can cause food-borne illness. You cannot tell by looking, smelling or tasting food if toxins have formed in it.

You can prevent toxins from forming by handling food safely from the time you buy it until the time you serve it. Thorough cooking does not destroy toxins that have formed because of unsafe food handling.

Unsafe food = Food-borne illness

Unsafe Food

All food used in your child care center or day care home must be from an approved source, such as a grocery store or food wholesaler.

Because it can be dangerous to serve home-canned food, unpasteurized dairy foods and wild game, these foods can *not* be served in child care centers. Please see the licensing rules for more information.

Foods from unapproved sources have not passed a state or federal inspection and might not be safe to eat.

Special exceptions

Fresh fruits and vegetables from a garden or a farmer's market can be served *if* scrubbed thoroughly with a vegetable brush and water before use. Smaller fruits, such as berries, can be rinsed thoroughly under running water to remove surface bacteria and viruses that might be present.

Do *not* use soap or detergent when washing fruits and vegetables. Soap and detergents can leave a residue that might not be safe to eat.

What is spoiled food?

Spoiled food is food in which bacteria or molds have grown or natural chemical reactions have occurred that make the food unfit to eat. Spoilage cannot be prevented — it can only be slowed by proper storage.

You can sometimes detect spoiled food by looking at it or smelling it. Color changes and bad smells are good indicators of spoilage.

Throw out spoiled food — it can cause food-borne illness.

What is contaminated food?

Contaminated food is food that contains harmful bacteria (or their toxins), viruses or parasites. Contaminated food might also contain dirt or insects. You cannot detect contaminated food because it usually does not smell, look or taste bad.

Prevent contamination by handling food safely from the time you buy it until the time you serve it.

If you think a food is contaminated, do not taste it! Throw it out! It is unsafe to eat. It is better to waste this food than to risk food-borne illness.

Contaminated food = Unsafe food

Unsafe Food

Cans and jars checklist

Before opening cans and jars, check for:

- Leaks.
- Bulges, including bulging lids.
- Severe dents.
- Cracks.
- Loose lids.

If you detect any of these, **throw out the can or jar** and the food in it — it could contain harmful bacteria.

Throw out cans or jars that are rusty or very dirty. The food is either old or was stored in an unsafe place.

After opening cans and jars of food, **throw the food away** if you detect:

- Spurting liquid.
- Bubbles.
- Bad smells.

Gas or acid has formed, and that means harmful bacteria might be in the food.

Pets and food preparation

Do not allow cats or other pets to walk on countertops and food preparation or eating surfaces. Caged animals, such as turtles, gerbils and hamsters, should always be kept away from food preparation and serving areas.

Always wash your hands and children's hands after playing with pets. Pets might have bacteria, viruses and parasites on their bodies.

Moldy food

Like bacteria, some molds produce toxins that cause food-borne illness. If you see mold on cheeses such as cheddar, mozzarella and colby, cut away a 1-inch section surrounding the mold and throw the section out.

If you see mold on meat or poultry or in cottage cheese, jelly, jam or other semi-solid food, throw the whole food out. You cannot completely remove the mold from these types of foods, and it could cause illness.

If a slice of bread is moldy, throw out the entire loaf. The mold roots (which cannot be seen) might have spread to other slices.

Unsafe food for pets

Never feed contaminated or spoiled food to pets — it could make them sick. Throw out contaminated or spoiled food in a covered trash can so that animals cannot get it.

Storing Food

Food might be safe when you buy it, but improper storage can make it unsafe to eat.

Proper storage can slow food spoilage. More importantly, proper storage can prevent food contamination. Contaminated food is unsafe to eat.

Store unopened, non-perishable food:

- In a cool, dry area.
- On cleanable shelving that is at least 6 inches off the floor or in kitchen cupboards.
- In a tightly covered container if removed from its original packaging. Label the container, not the lid, with the name of the food. Lids can be interchangeable and might be put on the wrong container.

Never store food under any plumbing lines (especially kitchen sinks). If the lines drip, food can become contaminated.

Never store food on the floor. Dirt, rodents, insects or water that might be on the floor can contaminate the food.

Proper refrigeration

Refrigerator temperatures should be no higher than 45°F. It is even better to keep refrigerator temperatures at 40°F or colder. Store meats, fish, poultry, eggs, dairy products and food containing these products in the coldest part of the refrigerator. The coldest part is usually toward the back of the refrigerator.

Wrap raw meat, poultry and fish with plastic wrap or aluminum foil before refrigerating. Store them on the lowest shelf of the refrigerator so their juices do not drip onto other foods and contaminate them.

Bacteria and viruses might be on the surface of fresh fruits and vegetables. During cutting, bacteria and viruses on the surface could contaminate the edible part of the fruit or vegetable. To prevent contamination, wash fruits and vegetables thoroughly before handling. Store cut fruits and vegetables in the refrigerator. For the best quality, do not store bananas in the refrigerator.

Proper storage = Safe food

Storing Food

Freezer storage

Keep freezer temperatures at 0°F or colder. Freezer temperatures slow bacterial growth but do not kill bacteria. Use a refrigerator thermometer to check freezer temperatures.

Safely thawing food

- Put frozen food into the refrigerator the day before it's needed. (You will need more than one day to thaw a large piece of meat or a whole chicken or turkey.)

or

- Microwave on the thaw setting immediately before cooking.

or

- Cook thoroughly.

Never refreeze food that has been thawed. During thawing, bacteria can grow. Refreezing the food does not kill the bacteria.

Check food that children bring from home

If food needs to be kept cold, refrigerate immediately. If not, store in a clean area that is not on the floor.

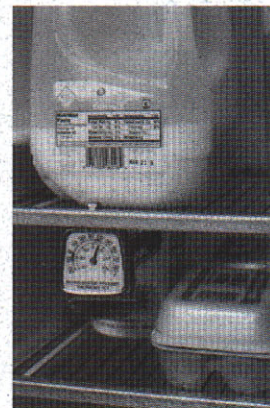
Milk

- Do not store milk in a container other than the original container.

At the dairy plant, milk is dispensed into sterilized cartons or jugs. You could contaminate the milk if you transfer it to another storage container.

How cold is your refrigerator?

Check refrigerator temperatures by putting a thermometer inside the refrigerator near the door. (You can buy a refrigerator thermometer at some grocery stores, discount stores and most restaurant suppliers.) **The refrigerator must be at 45°F or colder to slow bacterial growth. If your refrigerator is 40°F or colder, that is even better for safe food storage.** If your refrigerator temperature is higher than 45°F, adjust the setting to make it colder.



Covering food

Protect food from mold and dust by:

- Leaving it in the original packaging.
or
- Putting it into another container and then covering the container with a lid, plastic wrap or aluminum foil.

Cooking

Thoroughly cooking meat, poultry, fish and eggs decreases the risk for food-borne illness.

One of your best defenses against food-borne illness is thoroughly cooking food. Thorough cooking kills harmful bacteria, viruses and parasites that cause food-borne illness. (Cooking does not destroy toxins — poisons formed by bacteria.) Improper cooking allows harmful bacteria, viruses and parasites to survive and grow in food.

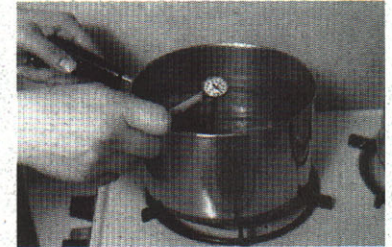
Before you begin cooking...

- Wash your hands with soap and water.

Hands can carry harmful bacteria, viruses and parasites that contaminate food and cause illness. These microorganisms are too small to see, so even hands that look clean need to be washed with soap and water for at least 20 seconds.

- Cut food on a clean and sanitized surface with a knife that is clean and sanitized.*
- Clean and sanitize* pots, pans and utensils before use.

* See page 11 for instructions on how to sanitize these items.



Cooking temperatures

Thoroughly cook food to recommended internal temperatures to kill bacteria, viruses and parasites.

	Required	Recommended
Fish and beef	140°F	140°F
Ground beef	140°F	155°F
Pork	150°F	160°F
Poultry/eggs	165°F	180°F
Leftovers	165°F	165°F

Set oven temperatures to 325°F or hotter to cook meats, fish and poultry.

Microwave cooking

Food cooked in a microwave oven might have cold spots. These cold spots can support the growth of harmful bacteria. Cook beef and fish to an internal temperature of 145°F or hotter, pork to 170°F or hotter and poultry to 180°F or hotter when using a microwave oven. Also, stir and rotate foods frequently to evenly distribute heat.

Reheat leftovers containing meat, fish, poultry, beans, rice, eggs, dairy products and potatoes to an **internal** temperature of 165°F or hotter to kill harmful bacteria.

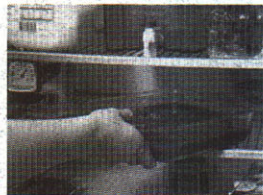
Cooking

Eggs

Eggs must be thoroughly cooked until the white and the yolk are firm (not runny). Never eat raw or partially cooked eggs — they might contain harmful bacteria.

Never let children taste batter or lick a spoon or bowl used to prepare a recipe that contains raw eggs. Foods that might contain raw or under-cooked eggs include:

- Cake batter.
- Cookie dough.
- Homemade eggnog.
- Homemade mayonnaise.
- Homemade ice cream.
- French toast.
- Quiche.



Frequently check food temperatures:

- Immediately after cooking.
- Before serving food.
- Immediately after reheating.

Clean and sanitize the "stem" of the thermometer before each use. This can be done with sanitizing solution (see page 10).

Cooking must be continuous. Never partially cook food, let it sit, then finish cooking it later. This provides conditions that allow harmful bacteria to grow and possibly toxins to be formed. (Toxins are poisons formed by some bacteria.) Toxins are not destroyed by cooking, so reheating the food later will not make it safe to eat.

Safe cooling of food

If food is cooked ahead of time, cook it completely, then cool it rapidly (within four hours).

- Put cooked food into shallow pans — about 2 inches deep.
- Cover the pans with a lid, plastic wrap or aluminum foil.
- Label the side of the pan with the date the food was cooked.
- Refrigerate immediately.
- Use within two days after cooking.
- Reheat only once.

Rapid reheating can kill bacteria (but not toxins)

- Reheat leftovers to an internal temperature of 165°F or hotter.
- Never reheat food in Crockpots or slow cookers. They take too long to heat food to safe temperatures.

Throw out leftovers that are more than two days old. They can be unsafe to eat. It is better to waste this food than to risk food-borne illness.

Buying a food thermometer

You can buy a food thermometer from some grocery stores, discount stores or most restaurant suppliers. The thermometer's temperature range should be 0°F to 220°F. Meat thermometers have a range of 130°F to 190°F.

Cleaning Up

Proper cleaning and sanitizing can reduce the risk for food-borne illness.

What is cleaning?

Cleaning is removing dirt, food and grease from a surface with soap or detergent and water.

What is sanitizing?

Sanitizing is killing harmful bacteria and viruses that can be on a surface even if it looks clean. Sanitizing is usually done with sanitizing solution.

What to sanitize

Before and after preparing food, always clean and sanitize:

- Countertops.
- Sinks.
- Highchair trays.
- Tables used for eating.
- Plastic-coated placemats.
- Plastic-coated bibs.

Bacteria and viruses on these surfaces can contaminate food. Proper sanitizing will kill bacteria and viruses.

Sanitizing with bleach

Household bleach is an approved sanitizer. It is inexpensive, effective and available at your local grocery store. Do not use scented bleaches such as fresh scent or lemon scent for sanitizing. For names of other approved sanitizers, contact your local health department.

Sanitizing solution for surfaces*

- Mix 1 tablespoon of bleach with 1 gallon of warm (not hot) water.
- Store mixture in a labeled spray bottle. It can be used for up to one week.

Sanitizing surfaces*

1. Clean surface with warm soapy water.
2. Rinse with clean water.
3. Spray surface with sanitizing solution.
4. Spread the sprayed solution over the surface with a clean paper towel.
5. Air dry. Do not rinse off the sanitizing solution.

Do not use this method to sanitize dishes, glassware, utensils, cutting boards or pots and pans. See page 11 for instructions on how to sanitize these items.

Cleaning Up

Immersion sanitizing is for:

- Dishes and glassware.
- Cutting boards.
- Utensils.
- Pots and pans.

Immersion sanitizing in child care centers

A three-compartment sink should be used for washing, rinsing and sanitizing.

- Wash dishes with warm soapy water in compartment one.
- Rinse dishes with clear water in compartment two to remove all soap or detergent.
- Immerse dishes in sanitizing solution in compartment three for at least one minute.
- Air dry in a drying rack. Do not rinse off sanitizing solution.
- Store clean and sanitized dishes in a clean area. Never store these items on the floor.

You can also use a dishwasher to sanitize.



Preparing sanitizing solution for immersion sanitizing

- Determine how many gallons of water your sink can hold.
- Half fill your sink with warm water.
- Add 1/2 tablespoon of bleach for every gallon of water your sink holds.

Immersion sanitizing in day care homes

Many day care homes do not have three-compartment sinks. You can mimic the effects of a three-compartment sink by:

- Washing items in warm soapy water.
- Thoroughly rinsing items to remove all soap or detergent.

Sanitizing

- Half fill your sink with water. Add 1/2 tablespoon of bleach for every gallon of water your sink can hold.

- Immerse items in the solution for at least one minute.

- Air dry in a drying rack. Do not rinse off sanitizing solution.

- Store clean and sanitized items in a clean area. Never store items on the floor.

Snack and Mealtime

Prevent contamination of food before, during and after snack and mealtime.

BEFORE: Snack and mealtime

- Wash your hands (and children's hands) with soap and water immediately before serving food or eating.
- Use utensils, **not** your hands, to serve food.
- Clean and sanitize counters and tabletops before serving food.

Hands can carry harmful bacteria, viruses and parasites that contaminate food and cause illness. They are too small to see, so even hands that look clean need to be washed with soap and water for at least 20 seconds.

- Keep food at safe temperatures before serving — 45°F or colder and 140°F or hotter.
- Do not put food on the table before children are ready to eat.

After cooking, keep hot food hot (140°F or hotter) by continuing to heat at a low temperature. Do not turn the burner off and let food sit until needed.

Leave cold food covered and in the refrigerator until just before serving.

DURING: Snack and mealtime

- Do not let children share the same utensil or dish when eating.
- Do not let children serve themselves from large boxes of cookies, cereal or crackers.

Children's saliva can contain harmful bacteria that can be transferred to other children. If children serve themselves, harmful bacteria and viruses on their hands can contaminate food in the box.

- Provide a clean and sanitized utensil for each serving bowl and serving dish.

Harmful bacteria and viruses that might be on utensils, tabletops or counters contaminate food. Clean and sanitize utensils, tables and counters after every use to prevent contamination.

- Do not let children eat food that has fallen on the floor.
- Do not use utensils that have fallen on the floor until they have been cleaned and sanitized.

Dirt and insects on the floor can contaminate food and utensils.

Snack and Mealtime

AFTER: Snack and mealtime

Throw out uneaten food that has been served but not eaten. Never put milk that has been poured into glasses or cups back into the original container — **throw it out!** When food has been on the table, it might have been contaminated by fingers, utensils or sneezes! The only foods that can be saved and served later are:

- Unpeeled fruits.
- Unopened nonperishable packaged food.

Food prepared but **not** served can be stored in the refrigerator and used within two days. Food containing meat, fish, poultry, eggs and dairy products must be rapidly cooled to prevent bacterial growth. Freeze food immediately after cooking for longer storage.

Rapid cooling can prevent bacterial growth

Refrigerate leftovers quickly to minimize bacterial growth.

- Put cooked food into shallow pans — 2 inches deep or less.
- Cover pans with a lid, plastic wrap or aluminum foil.
- Refrigerate immediately.
- Label the side of the pan with the date the food was cooked.

Throw out leftovers that are more than two days old — they can be unsafe to eat. It is better to waste this food than risk food-borne illness. Reheat leftovers only once. Each time you reheat leftovers, bacteria can grow.

Sanitize* these surfaces before and after snacks and meals:

- Kitchen counters.
- Tables used for eating.
- Plastic-coated bibs.
- Plastic-coated mats.
- Highchair trays.

* See page 10 for instructions on how to sanitize these items.

Field Trips

Prevent bacterial growth by keeping hot food hot (140°F or hotter) and cold food cold (45°F or colder).

Bacteria grow when food is kept at unsafe temperatures. If food is kept at unsafe temperatures for even one hour, harmful bacteria grow.

Take foods that do not need to be kept hot or cold:

- Peanut butter sandwiches.
- Jelly sandwiches.
- Cookies.
- Crackers.
- Fresh unpeeled fruit.
- Commercially dried fruit.
- Unopened cans of fruit or pudding.

Always prepare food:

- With clean hands.
- In a clean work area.
- On clean and sanitized surfaces.

Keep cold food cold

Some foods that must be kept cold include:

- Meat sandwiches.
- Tuna or egg salad sandwiches.
- Milk, cheese or yogurt.
- Opened cans of fruit.
- Peeled or cut fruits and vegetables.

Keep food cold by:

- Putting chilled food into an insulated lunch bag with a frozen gel pack or with a frozen juice box.
- Filling a cooler with ice, putting food in a leak-proof container and putting the containers into the ice.

Chill cold food in the refrigerator overnight before the field trip. Also, freeze sandwiches overnight to keep them safe. They will most likely thaw by lunch but still stay cold enough to be safe. Lettuce and other greens do not freeze well. Pack these separately and add to sandwiches before eating.

Safe food temperatures = Safe food

Field Trips

Keep hot food hot

Use a thermos to keep hot food hot for short periods.

- Fill the thermos with very hot water.
- Let the thermos sit for about 10 minutes.
- Remove water from the thermos and fill with hot food.

Soup, sloppy joe mix and casserole mixtures can be kept safely hot this way. Do not keep hot food in a thermos for more than two hours.

Check food that children bring from home

If food needs to be kept cold, be sure there is a way to do so. Pack lunches with:

- A frozen gel pack.
- or
- A frozen juice box.

You can also freeze most sandwiches to keep them safe until lunch. Hot food must be stored in a thermos until eaten but no more than two hours.

Wash hands before eating

If no water is available for handwashing before eating, pack handwashing wipes for each child. Do not let children share the same handwashing wipe — harmful bacteria and viruses could be on the handwashing wipe.

Packing tips:

- Pack food in a clean container that is washed and sanitized after every use.
- When using paper bags for food, be sure they are clean.

Caring for Infants and Toddlers

Safe food handling is critical to preventing illness in infants and toddlers.

Infants and toddlers are at high risk for food-borne illness because of their immature immune systems. When an infant or toddler eats contaminated food, he or she is likely to get sicker than an adult and the illness is likely to be more severe.

Diapering

Bacteria, viruses and parasites are present in the stools of sick and healthy people. Always wash your hands after changing diapers to prevent contaminating people and food. Never wash hands in the sink you use for food preparation.

Sanitize diapering tables after each changing to kill harmful bacteria and viruses. Although it might not be convenient, change babies only on designated diapering tables away from food preparation and service areas, never on tables or counters used for preparing or serving food.

Highchair trays

Clean and sanitize highchair trays before and after each use. The tray could be a source of bacteria and viruses that cause food-borne illness.

Baby food

- After opening, label the can or jar with the child's name and the date and time opened.
- Refrigerate unserved portions in the original can or jar.
- Throw out unused baby food within 36 hours after opening. Throwing food out one day after opening is even safer.
- Observe the "use-by" date for shelf storage of unopened jars of baby food.

Keep a permanent marker and masking tape in the kitchen to make labeling easy.

Serve baby food from a dish, not directly from a jar or can, to prevent contamination. Throw out the uneaten food served to the baby. The baby's saliva, transferred from the spoon to the food, can contain harmful bacteria.

Breast milk

- Ask parents to label each container of breast milk with the name of the child and the date and time it was pumped.
- Refrigerate and use breast milk within one day.
- Freeze breast milk for longer storage time — up to 3 to 4 months.
- Remind parents to refrigerate breast milk in a sterilized bottle.

Caring for Infants and Toddlers

Sterilizing baby bottles

Sterilizing kills all bacteria, viruses and parasites. Sanitizing does not kill all parasites. Child care centers may sterilize and reuse bottles under specific situations. See the licensing rules for a list of the situations.

- Take apart the bottle.
- Wash the bottle, nipple and ring in warm soapy water.
- Rinse thoroughly with water.
- Cover the bottle, nipple and ring with boiling water and continue boiling for five minutes.
- Remove from water with sanitized tongs and air dry on a clean, dry rack. Tongs should be sanitized using the immersion method for sanitizing described on page 11.
- When completely dry, cap bottle and store in a clean cupboard. Never cap bottles while still wet — water in the bottom of the bottle could support the growth of mold.
- Pacifiers and teething toys should also be sterilized daily.

Formula

Add formula only to sterilized bottles. Bottles that have not been sterilized might be contaminated.

Never add new formula to a half-filled bottle of formula. Bacteria and viruses in baby's saliva could be in the old formula and contaminate the new formula.

Refrigerate prepared bottles of formula and use within one day. Some harmful bacteria grow at refrigerator temperatures.

Opened cans of formula

- Cover opened cans with a clean lid or plastic wrap.
- Label the can with the date the can was opened.
- Refrigerate and use within two days or by the manufacturer's stated use time, whichever comes first.
- Feeding time should last no longer than one hour.
- Throw out leftover formula found in the bottle after the feeding. To reduce waste, fill bottles with less formula or use a smaller bottle.
- For shelf storage of unopened cans of formula, observe "use-by" dates printed on the can.



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