# The 5 second rule

## and other kitchen do's and don'ts

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This booklet is not intended to provide medical advice, nor to be a definitive source of food safety standards, and does not replace professional journals in the area of food safety. For more in depth knowledge, I suggest you look at The Food Code published by the United States Food and Drug Administration (FDA) every four years as a guide or model from which health jurisdictions nationwide can develop their food service sanitation standards. The Food Code represents best practices regarding safe food storage, handling, and preparation. Another great resource is www.foodsafety.gov.

**When it comes to safe food handling practices,** it may be hard to distinguish wisdom from urban legends, or nuggets of truth from old wives tales. So, congratulations on your decision to pursue the importance of food safety in the household! You are on your way to creating a **Simply Safe Home Kitchen.**

A Nurse Practitioner at a perinatal center says: **"About 60% of all the childhood illnesses brought to my office were actually foodborne illness coming from the home."**

Bill Marler, an attorney who makes his living suing companies over foodborne illness outbreaks, claims: **"There is not one foodborne illness outbreak I've been involved with in 20 years where it couldn't have been prevented had people been paying attention."**

Food safety has taken a giant leap in importance in the past few years, thanks sadly to some major foodborne illness outbreaks that killed dozens of people. Seemingly simple and non-dangerous cantaloupes became the biggest foodborne illness in American history, killing 43 people in 2011. Every day there's an outbreak, some large, some small, but usually preventable. Nationally, the latest numbers from the Centers for Disease Control indicate 47.8 million illnesses, 127,000 hospitalizations and 3000 deaths per year in the U.S.; globally, a billion illnesses and over 2 million deaths. Surely we can do better, both in restaurants and at home. To be honest, I tell my classes that the most dangerous place to eat is at home. You know it; you see some scary things when you enter the kitchens of others—and presumably they cleaned up for you.

**The President's Council on Food Safety says:** "While every player in the flow of food from farm to table (consumer) has some degree of responsibility for food safety, **you (the person who prepares the food) are the last line of defense before food reaches the consumer (your family).** Because of this, you have a significant share of the responsibility for ensuring safe food."

## The author's background relevant to this booklet

For over 10 years, I've traveled the world teaching a largely military audience, with locations from the White House and Camp David, to Iraq and Afghanistan, ships and bases in Japan, Germany and Italy. With several food safety books produced, I decided it was time to do something for the families, so they would understand what they can do to improve the level of food safety in the home. I've taken the same training I give to chefs and managers and put similar concepts into a smaller package of information that I hope is an easy read, makes sense, and will help you to do a better job for your family. AND, when you pass the test at the end you'll get a certificate which says you are the Person In Charge of a Simply Safe Home Kitchen.

## Author

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I'm your
P.I.C.K

# what to do

## Choose your Person In Charge of the Kitchen (PICK)

Commercial foodservice establishments in most cities in the U. S., require that a PIC be in the facility at ALL times that the place is open. Why is that? Because it only takes one person, and one mistake, to cause a foodborne illness outbreak. And guess what? The bacteria don't know if they are in a restaurant or in a home, so the same hazards exist. The advantage for you, is that you don't have a lot of employees to train, but the couple you have, need to know at least some of this information. And you need to be the Food Safety Sheriff of them, aka the PICK.

**So, I suggest you designate someone in the household as the PICK. (Could be the wife OR the husband.)** The PICK will be the one responsible for ensuring that the whole family follows the principles we discuss in this booklet, **ensuring that:**

- Everyone **washes their hands** properly and frequently
- Food is **purchased from safe sources,** and gotten home at proper temperatures. Especially if you are in a hot climate, use insulated bags
- Cooking and cooling of foods Is done like we discuss in this program
- **Everyone Is sanitizing** equipment, utensils, cutting boards and tabletops
- **Cross contamination** is understood and prevented

## Have the PICK learn what a PICK should know

The PICK's areas of knowledge should include:

- Identifying how **personal hygiene** can prevent foodborne illness
- Describing actions the family has to take to **prevent the transmission of foodborne disease** by a sick family member
- Explaining the relationship between **temperatures and times** in cooking & cooling food

- Explaining the hazards of **eating raw or undercooked** meat, poultry, eggs & fish

- **Stating the temperatures** for cooking, refrigerated storage, hot holding, cooling and heating potentially hazardous foods

- Describing **how to prevent foodborne illness** by the management and control of the following:
  a. Cross contamination
  b. Hand contact with ready-to-eat foods
  c. Handwashing
  d. Maintaining clean conditions

- **Training the kids to defeat the "bugs."** Tell them they have a role in the battle to beat bugs into submission. We need them to engage, have fun, and understand that it is important. Teach them how to clean and sanitize utensils and food-contact surfaces of equipment and make them WANT to join the fight for family food safety. Engage roommates and ALL family members in the fight. Their long-term well-being is impacted by foodborne illnesses.

- Identifying major **food allergens** and what symptoms they may produce

**So, let's get started...**

## Practice personal cleanliness and hygiene

Included in this category are proper handwashing, fingernails, jewelry, clothing and preventing contamination.

### HOW to Wash Your Hands

- Rinse under **warm** (110° F.) water

- Apply soap

- Rub vigorously

- Rinse under **warm** water

- Dry with disposable paper towels (not your dish towel)

- Use the paper towel to turn off the faucet (In a restaurant, do that plus use it to open the door)

- From start to finish, that process should take 20 seconds (sing Happy Birthday twice). Do I do that EVERY time I wash my hands? Frankly no. But if your next task is preparing dinner, absolutely. Because getting rid of SOME of the germs doesn't do the job.

### WHEN to Wash Your Hands

- Before you start to work with food

- If you step away to answer the phone, pet the dog, change a diaper, go to the bathroom, take a smoke break, empty the trash

- When you change from one type product to another, such as from

preparing the chicken to making the salad. (Why? Because you are going to cook the chicken to kill bacteria, but you won't be cooking the salad.)

- If you cough, sneeze, scratch your nose or worse

## If YOU are Sick

**Restaurants would not allow people to work, or at least put restrictions on whether they could work directly with the food, if they had these symptoms:**
Vomiting, diarrhea, sore throat with fever, coughing, sneezing, runny nose, jaundice or open/draining wounds. **So, in your home,** when you have one of those symptoms, you need to at least double up your efforts to wash your hands, sanitize, cover coughs, etc.

## Personal Habits and Clothing

- **Keep your fingers out of your mouth.** The next time you eat out, or maybe in your own household, check how many people are licking their fingers. Drives me crazy. Why? How clean are your fingers? What if someone has hepatitis or some other communicable disease. Well, they lick their fingers, they touch the plate, the waiter touches the plate, then touches your plate, and now you may have the hepatitis virus. **So DON'T DO THAT.**

- **Don't touch the rim of glasses.** The same thought process applies to grabbing someone's glass by the lip. So they've been doing whatever they did – maybe going to the bathroom, touching that other persons dirty plate, scratching whatever, touching money, and now they grab your glass by the lip. **DON'T DO THAT.**

- **Keep your fingernails trimmed and clean.** If you have long fingernails, get a box of disposable gloves and use those when you have your hands in the food. Otherwise, the bacteria from the chicken is there when you make the salad.

- **If you wear rings – take them off before getting your hands into the food.** Commercially, only a plain wedding band is allowed to be worn and I suggest you do the same. Your engagement ring can harbor lots of bacteria and cross contaminate other foods.

- **Bandage cuts and cover the bandage.** Your cut has bacteria, which can grow in the food.

- **Don't wipe your hands on your apron** – paper towels are better.

- **If your apron is dirty, change it** – that dirt probably includes bacteria. And don't go to the bathroom with your apron on.


Happy birthday to you...
Happy birthday to you...

# what to know

## What causes food-borne illness?

**The Centers For Disease Control says these are the key risk factors:**

- Food obtained from unsafe sources (your cousins' hunting trip, the boat at the pier, anything that isn't a "regular" source where we all go shopping)
- Inadequate cooking temperatures
- Improper holding temperatures, while the food sits waiting to be prepared or eaten or put back in the refrigerator
- Contaminated equipment
- Poor personal hygiene – dirty hands, clothing, body
- **Failure to wash hands properly is the single biggest cause of foodborne illness.**

Similarly, causes of foodborne illness in a restaurant or in your home, are typically due to poor time and temperature control — how long the food sits out in the "danger zone" *(explained on page 11)*; cross contamination from one product to another, or from you to the food or vice versa; improper cleaning and sanitizing; and poor personal hygiene.

The consumer watchdog Center for Science in the Public Interest (CSPI) found that households were responsible for 1/3 as many foodborne illness outbreaks as restaurants, so it MAY be safer to eat at home, unless you live in one of the 12,000 households where they found outbreaks. The point being, no matter where you eat, bacteria and other hazards exist.

**So what can, should and will you do about that?**

- Control the time food is in the danger zone, and how long you cook it to the proper temperature
- Avoid cross contamination
- Practice proper cleaning and sanitizing procedures
- Practice proper hygiene techniques

## Who are we MOST worried about?

Then there's the discussion of when do we need to be EXTRA careful with our food prep activities. And that would be when we are feeding:

- A pregnant lady, though we are more concerned with the baby than the lady
- The elderly – their immune system is diminished, thus from the same amount of bacteria that a 30 year old is fine with, a 70 year old might get sick
- Very young children – their immune system isn't built up yet. From 0 to 2 the mothers' immune system protects the child, but still during those years and for some time after.

## What does cross contamination mean?

The transfer of germs between items, most commonly from raw foods to cooked or ready to eat foods (things you buy ready to eat, you won't cook them). Typically that happens from:

- The hands of those touching the food
- Equipment or utensils
- Any food contact surface (like a cutting board, a table, a dirty glass)

### Clean and Sanitary

Let's be blunt – it is vital to keep your household clean and sanitary, in order to avoid foodborne illness. The two most obvious benefits to a clean and sanitary environment are to eliminate the chances of contamination and the attraction and harborage of pests.

## General symptoms of foodborne illnesses can include:

- Headache
- Nausea
- Vomiting
- Diarrhea
- Dehydration
- Abdominal pain
- Fatigue
- Fever

**Infections** – are caused by eating food that contains disease causing bacteria that grow in the intestine. Symptoms usually take 24-72 hours to show up.

**Intoxications** on the other hand are caused by eating food that contains a harmful toxin from the bacteria or man-made chemicals like bleach. Symptoms show up right away. The problem with toxins is that you can't cook them out, you need to throw it out if you suspect toxins.

You would find Ciguatoxin in snapper, grouper, barracuda and Jack. And scombrotoxin in fish with high histamine levels – tuna, bonito, mahi mahi and mackerel.

**Bacterial growth** – bacteria can double in number in just 20 minutes. If it is hot and humid, that can go down to 10 minutes. Meaning if you leave some chicken on the counter, the bacteria doubled while you talked on the phone for 10 minutes.

**Bacteria prefer:**

- Foods that are high in proteins or carbohydrates like meats, poultry, seafood, dairy products, cooked rice, beans and potatoes
- Foods that are neutral or mildly acidic, that means a pH of 4.6 to 7. Some examples of acidity:
  - milk is 6.6
  - tomato juice is 4.5
  - vinegar is 2.2
  - lemon juice is 2.0

Salsa has been a consistent source of problems, so one way to keep it safe would be to add lemon juice to get it down below 4.6. You can get test strips to check the pH level.

**Moisture**

Disease-causing bacteria can only grow in foods that have a water activity higher than .85, which would include cheddar cheese. Believe it or not, bread (.95) has more water activity than jams (.8) – so, now you know why bread gets mold. Meat and fish are .99. Pure water would be 1.0.

**Temperature**

Bacteria grow well between 41° F. and 135° F known as the **"Danger Zone."** So, your job is to keep the food out of that danger zone. The WORST part of the range is 70° F to 135° F. Whether you are cooking, cooling, preparing or storing food, keep it out of this temperature range.

**Potentially hazardous foods**

Fish • poultry • red meat • dairy products • eggs • refried beans • cooked rice • raw seed sprouts • cut melons • garlic in oil mixture • cilantro

**Ready-to-eat foods are foods that are edible without washing, cooking or further preparation**

## Bacteria That Should Concern You

**Campylobacter** – even food service professionals never heard of this one, yet it is the 2nd highest frequency bacteria. It's found in raw poultry and meat. Prevention is by cooking to the proper internal temperature; avoiding cross contamination between raw and cooked product; and washing your hands after touching the raw poultry and meat. It is estimated that 100% of all raw poultry is or was contaminated with Campylobacter jejuni—meaning, you need to take good care of your poultry.

**Listeria** was the cause of the huge cantaloupe illness in 2011 which killed 33 people directly and contributed to the deaths of 10 more. It is found in deli meat, raw meats and poultry, hot dogs, seafood salads and raw vegetables. To prevent it, cook to proper temperature; prevent cross-contamination; clean and sanitize; don't leave foods in the frig too long.

**Staphylococcus** – Found in foods that require extensive food preparation and handling, pre-cooked, ready-to-eat foods, vegetable & egg salads, milk & dairy products. Prevention is by ensuring wounds are properly covered, proper handwashing, proper tasting techniques and proper temperature controls. 50% of us have staph in our mouth, nose or throat.

**Botulism** – The most deadly of the foodborne illnesses. Though rare, we do see cases of botulism. To prevent it watch out for metal cans, vacuum packages and glass jars – check them for:

- Leaks
- Bulges
- Dents
- Broken seals/damage around seams
- Penetrating rust
- Missing labels

## The Big Five "Bugs"

**There are five diseases that are easily transferable to food, each of which we will cover briefly in this course.** While their name isn't particularly important to you, I mention them so that when you see something on TV about outbreaks, you'll have a sense of what they are talking about and listen to the report to see how you can prevent that from happening to you and your family.

**The big five are: Salmonella, Shigella, E. coli, Hepatitis A and Norovirus**

**Salmonella** – This one you have heard of. Commonly found in raw or undercooked eggs, poultry, beef or pork, dairy products and cream-filled deserts. Prevention is by cooking to proper internal temperature, cleaning and sanitizing food-contact surfaces, washing hands and preventing cross-contamination.

**Shigella** – Found in poultry, milk & dairy, raw vegetables and ready-to-eat foods. Prevention is to cook foods to proper temperature, and prevent cross contamination.

**E. coli** – Found in raw or undercooked ground beef and raw vegetables. The meat is usually contaminated during the slaughtering process. Prevent by cooking ground meats to at least 155° F. for 15 seconds, practicing good personal hygiene and avoiding cross contamination

**Hepatitis A** – comes from infected workers who don't wash their hands properly after using the restroom, shellfish harvested from polluted waters, raw and partially cooked shellfish, deli meats, produce/salads. Prevention is by good personal hygiene habits; cooking seafood to the proper temperature; proper handwashing; and of course those with Hepatitis need to stay out of the kitchen.

**Norovirus** – If you've been around awhile, you may have heard of the Norwalk Virus, same thing. It is found in ready-to-eat foods and shellfish from polluted waters. Food preparers pass it along, especially when they don't wash their hands after going to the bathroom.

The experts at the Centers for Disease Control and Prevention say that Norovirus is responsible for at least half of all cases of stomach flu annually. And they believe that most foodborne outbreaks of Norovirus illness are caused by contamination of food by a food worker just before the food is served.

**Then there are Parasites** – If you go hunting, count on the deer or elk you shot having parasites—meaning that wouldn't be a good meat to eat below proper cooking temperature. Also seafood, especially salmon, cod, haddock, crab and shrimp, tend to have them. You can kill the parasites with proper cooking temperature.

## Controlling Foodborne Illness

**Controlling TIME and TEMPERATURE are the most critical ways to ensure food safety.** You have a clock for the time, but do you have a food thermometer? You should, otherwise you are trusting that the oven thermometer is correct, which probably it isn't right on. ALWAYS check the temperature of your meat and especially always check that your chicken made it to 165° F.

**Getting raw meats home.** When transporting raw meat from the store to home, the government says you should get it home within 2 hours of purchase, and make that 1 hour if it is more than 90° F in your car.

**Holding food in the temperature danger zone** – You can keep food in the danger zone (41° F to 135° F) for up to 4 hours. That counts when you had it in the car heading home, took it out to process it, and took it out to cook it – *total* time: four hours.

# what to have

## The most important tool you must have: A calibrated food thermometer

You need to **calibrate your thermometer** from time to time. Probably once every couple of months would be okay – in a commercial kitchen they are told to calibrate theirs daily or if they drop it.

### How to Handle Your Thermometer

- Make sure it is calibrated
- Clean and sanitize the device before and after each use to avoid cross-contamination
- Insert the probe into the thickest part of the product and wait for the temperature to stabilize

### How Do You Calibrate Your Thermometer?

1. Fill a glass with crushed ice and water.
2. Locate the sensing portion on the device—it's the dimple on the stem.
3. Submerge the thermometer stem or probe in the water, up to the dimple, for 30 seconds.
4. Hold the calibration nut and rotate the thermometer head until it reads 32° F.


GRADE A FRESH
RADE A FRESH
BROWN EGGS

# how to purchase

**GIGO** – You're probably familiar with that term. Garbage In – Garbage Out. That works for food too. If you buy garbage, you're going to have problems. So when you buy something like meat and produce, inspect it when you buy it and again when you get it home. The first thing to do is to look, touch, smell, and sometimes taste the products to determine the quality of the food.

**Look at the food quality characteristics:**

- Color
- Texture
- Signs of spoilage (slime/mold, etc.)
- Package (no tears/dents, etc.)
- Smell – your nose knows! Smell for any "off-odors"
- Check the product for texture changes or abnormalities like soft or mushy when it should be firm
- And when in doubt – THROW IT OUT

## Buying Poultry

**Fresh poultry must be:**

- Purchased at 41° F or below
- Have the appropriate color/no discoloration
- Flesh should be firm and elastic to the touch, not stick or slimy
- Smell fresh with no off odors

## Buying Seafood

**Fish should be:**

- Purchased at 41° F or below
- Have bright red and moist skin, and shiny skin
- Have clear, bulging eyes
- Firm flesh, elastic to the touch
- A mild pleasant odor
- For shellfish, make sure the shells are closed and unbroken

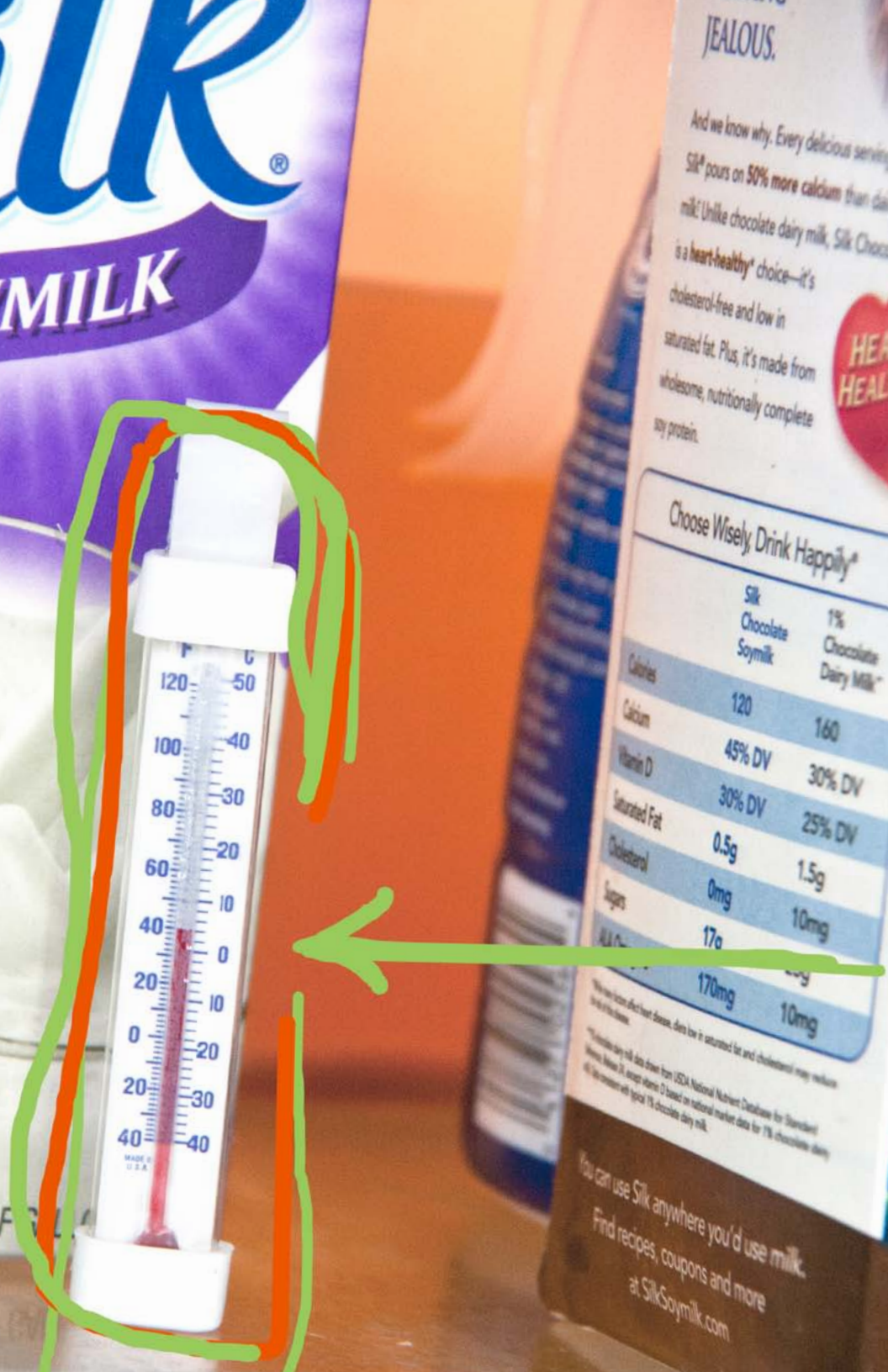
## Purchasing Fresh Fruits and Vegetables

At a food safety seminar a few years ago, the former head of the government's food safety efforts said that the problem with produce is that the consumer thinks it was grown in the grocery store aisle.

Back in the day, we knew we just took it out of the field—maybe dug it out of the ground—so we KNEW it had to be washed really well. Now we THINK that someone washed it, if it was ever dirty. The truth is, no they didn't, so YOU have to do that. Harmful bacteria that may be in the soil or water where produce grows may come in contact with fruits and vegetables and contaminate them.

## Produce Buying Tips

- Purchase produce that is not bruised or damaged as bacteria can hide in these spots and spread rapidly to the rest of the product.
- When selecting fresh-cut produce — such as a half a watermelon or bagged salad greens — choose items that are refrigerated or surrounded by ice.
- While shopping and checking out, keep fresh fruits and vegetables separate from meat, poultry and seafood.
- Bag fresh fruits and vegetables separately from meat, poultry and seafood products.
- At home, place fresh fruit and vegetables and anything that requires refrigeration immediately in the refrigerator, especially anything that has been pre-cut or peeled.
- Scrub firm produce, such as melons and cucumbers, with a clean produce brush.
- For packages that say pre-washed, such as chopped lettuce in a sealed bag, while the FDA says they do not need to be re-washed, commercially we always suggest that they re-wash the product because of uncertainty that it was washed properly at the factory. So we suggest you re-wash just to be safe, as long as YOU don't contaminate the product with improper washing procedures, like not washing your hands first.
- Sprouts – Sprouts that are not cooked and are commonly served on salads, wraps, sandwiches, and Asian food may contain bacteria. Unlike other fresh produce, seeds and beans need warm and humid conditions to sprout and grow, and these conditions are also ideal for the growth of bacteria, including Salmonella, Listeria and E. coli. Rinsing sprouts first will not remove bacteria, because it is inside the product. Therefore, kids, the elderly, pregnant women and persons with weakened immune systems should avoid eating raw or lightly cooked sprouts of any kind (including onion, alfalfa, clover, radish and mung bean sprouts.) The only solution is to cook them thoroughly. When eating out, ask that raw sprouts not be added to your food.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# how to store

## Storage Tips

- Store perishable fresh fruits and vegetables (like strawberries, lettuce, herbs, and mushrooms) in a clean refrigerator at a temperature of 41° F or below.
- Refrigerate all produce that is purchased pre-cut or peeled.
- **How long can you keep things you made?** Let's say you made some taco meat mix, or tuna salad, and you are going to use some now and use the rest in a few days. How long can you keep that product in the refrigerator? 7 days maximum from when you made it, and assuming you keep it properly in the refrigerator.

## Preparation Tips

- Begin with clean hands. Wash your hands for 20 seconds with warm water and soap before and after preparing fresh produce.
- Cut away any damaged or bruised areas on fresh fruits and vegetables. Produce that looks rotten should be discarded.
- All produce should be thoroughly washed before eating. Wash fruits and vegetables under running water just before eating, cutting or cooking.
- Even if you plan to peel the produce before eating, it is still important to wash it first.
- Washing fruits and vegetables with soap or detergent or using commercial produce washes is not recommended.
- Scrub firm produce, such as melons and cucumbers, with a clean produce brush.
- Drying produce with a clean cloth towel or paper towel may further reduce bacteria that may be present.
- In between steps, put the food back in the refrigerator if it will be ignored for a while.

## Refrigeration Can Slow Bacteria Growth

- Make sure your refrigerator is working properly, and always have a thermometer in it so you can be sure it is holding temperature.
- Don't leave the door open while you answer the phone.
- Store potentially hazardous foods at or below 41° F.

- Don't overload the refrigerator. Stack items so the cold air can circulate round them and cool the products.
- Don't line the shelves with such things as aluminum foil, which prevents the air from circulating.
- Never place large quantities of HOT foods directly into the refrigerator.
- Store raw products on the bottom shelf, so they won't drip onto cooked and ready-to-eat foods.
- Basically, the same rules apply to your freezer. Foods in there should be 0° F or below.

## Thawing Methods:

- **In a refrigerator** – this by far the preferred method to thaw frozen products as it keeps food out of the danger zone (below 41° F). Allow 1 day for every 4 lbs of whole poultry, 1 day for a 1 lb package of meat, poultry or seafood and 2 or more days for roasts, steaks or ham.
- **In a microwave,** continuing to heat the product until it is fully cooked either in the microwave or perhaps transferred to an oven or stovetop once thawed. What you can't do is thaw in the microwave and then put it in the refrigerator to continue cooking later.
- **Completely submerged in cool (70°F or less) running water.** Clean and sanitize the sink first. Note the RUNNING word, not sitting water and not hot water. Why not hot water? Because then you are cooking the outside of the product, leading to bacterial growth.
- **As part of the cooking process,** like hamburgers
- **NEVER THAW FOODS AT ROOM TEMPERATURE!** Why is that? Because the food is getting too warm on the outside while you wait for the inside to defrost, and bacteria is thus growing rapidly.
- **To thaw turkey in the refrigerator:**

Keep the turkey wrapped and place it in a pan; let stand about 24 hours for each 5 pounds of turkey. Let large turkeys stand a maximum of 5 days in the refrigerator. The giblets and neck are customarily packed in the neck and body cavities of frozen turkeys. They may be removed from the cavities near the end of the thawing period to expedite complete thawing of the bird. If desired, the giblets and neck may be refrigerated and reserved for use in Giblet Gravy.

**To thaw turkey in cold water:**

Make certain that the turkey is in a leakproof package or a zipper-seal plastic bag. This prevents bacteria in the surrounding environment from being introduced into the food, and prevents the poultry tissues from absorbing water, resulting in a watery product. Change the cold water every 30 minutes. Approximately 30 minutes per pound of turkey are required for thawing. After thawing in cold water, the turkey should be cooked immediately.

## Cooling

Cooling is the act of reducing the temperature of properly cooked food to 41° F or below. When it comes to temperature abuse, improper cooling is the most common cause of foodborne illness. People tend to cool the products too slowly. So if you make something and you want to put some or all of it away to serve later, you need to get it cooled rapidly.

Once the product reaches 135° F, you have a total of 6 hours to get the food down to 41° F.

- You have 2 hours to get it from 135° F down to 70° F.
- You then have an additional 4 hours to get the product down to 41° F or lower.

**Rapid cooling can be achieved by:**

- Using shallow pans, 3 inches or less
- Separating large batches into smaller batches
- Stirring the product while it is cooling
- Using an ice bath (ice in a large bowl and put the smaller bowl with product in it in the large bowl). You only need to do this if you have a LARGE pot full of something thick like chili.

## Cold-holding and hot-holding

When you are holding hot food to be served later—maybe when the guests finally arrive, or the guys finish their card game—you need to hold the food at 135° F or higher.

For cold food, you want to keep it at 41° F or lower.

How do you know what the temperature is? You own one of those food thermometers.

Does it matter if you don't hold food at the right temperatures? Remember on page 11 we said bacteria double every 10 minutes. So 1000 tiny "bugs" become 2,000 in 10 minutes and 64,000 in one hour. So, yes, it matters.

## Safe Cooking Temperatures

**To reduce or destroy food-borne illness bacteria, you need to cook the various foods to specific minimum temperatures for a minimum amount of time.**

**Poultry, stuffed meats, microwaved food, and re-heated foods 165° F for 15 seconds**

**Ground beef and ground pork**
155° F for 15 seconds

**Eggs, beef/pork, fish**
145° F for 15 seconds

**Beef roast (medium), pork roast, ham**
145° F for 15 seconds

# how to clean

**When you are done cooking, you are not done with food safety.**

- Wash your hands frequently. For example, when you are clearing dishes prior to the next course, wash your hands because the dirty plates have the bacteria from your guests or family. So don't contaminate the next course and make bad worse.
- Don't pick up ready-to-eat foods with your bare hands. Use disposable gloves or probably more likely use tongs and spoons.

## Equipment and Utensils

Stainless steel is the preferred material. There are very specific limitations on the use of certain materials like cast iron, lead, copper, galvanized metal, and wood.

**A cast iron surface** can be used for cooking and serving – the old cast iron skillet. What you don't want to do is cook the food and let it sit and get cool in there, because bacteria live in those pockmarks. So cook in it, keep it hot, and serve it.

**For cutting boards,** the debate continues, but you should have a hard maple, close-grained wood for your cutting board, or food grade plastic. Either way, cracks and cuts hold bacteria and are dangerous, so make sure the surface is smooth enough that you can clean and sanitize it properly. When you can't, get it re-surfaced or get rid of it.

**Galvanized metal** looks like the metal garbage cans. You may find galvanized metal pitchers from time to time. If you put acidic products in there, you could get a chemical reaction and make some folks seriously sick.

**Washing the dishes, pots and pans**

Use the dishwasher – personally, I like doing the dishes by hand; not sure why. But, when you put them in the dishwasher, they get sanitized with the nice hot water, so that may be better and surely better than a bad hand washing job.

**Sanitizing**

Other than your dishwasher, you are highly unlikely to have a way to sanitize the pots, pans and dishes, therefore, you need to be sure you are washing in nice hot water, and rinsing well so there's no residue left.

## Cleaning and Sanitizing

**Cleaning** means removing soil and food particles from equipment, utensils, cutting boards, counters, etc.

**You scrub until you don't see any soil or food debris, and using these techniques:**

- Use warm/hot water with any household soap or detergent.
- Scrub vigorously to remove dirt and soil. Use a brush if the item is not smooth or has hard to reach corners, such as toys and bottles.
- Change the water when it looks or feels dirty, after cleaning bathrooms and diaper changing area, and after cleaning the kitchen.
- Always clean the least dirty items and surfaces first (for example, countertops before floors, sinks before toilets).
- Always clean high surfaces first, then low surfaces.
- Disposable towels are preferred for cleaning. If using reusable cloths/rags, launder between cleaning uses. DO NOT use sponges since they are hard to clean.
- Clean completely on a regular schedule and spot clean as needed.

**When using cleaning, sanitizing, or disinfecting products ALWAYS:**

- Consider the safety of children.
- Choose a product appropriate for the task.
- Follow the label instructions for mixing, using and storing solutions.
- Read the warning labels.
- Store these products safely out of reach of children
- Clean soiled surfaces and items before using sanitizers or disinfectants.

**Sanitizing** is reducing the number of harmful germs to a safe level. The surface has to be clean before it can be sanitized, because the sanitizer only kills bacteria it can find. If the bacteria is under a clump of dirt, it won't get killed. You can use heat or a chemical to sanitize. At home we mostly use a chemical. Bleach is safe when used as directed, is effective against germs when used at the proper concentration and is inexpensive if you make your own solutions.

**When using a bleach solution as a disinfectant,** you can put 2 ounces of bleach in a gallon of water. That is good to disinfect surfaces that will not have contact with food or the mouth (such as changing tables, potty chairs, activity tables, floors).

**When using a bleach solution as a sanitizer,** mix 1 Tablespoon of bleach in a gallon of water. Use to disinfect mouthed toys and other objects, eating utensils, and food-contact surfaces.

**Procedures for sanitizing or disinfecting:**

- Clean first with soap or detergent and water
- Rinse
- Spray the area thoroughly with the bleach solution
- Wipe the area to distribute the disinfectant evenly using single-service, disposable paper towels
- Discard the paper towels in a plastic-lined container
- Allow the surface to air dry
- Wash your hands

**Dishwashers** – The water temperature should reach 180° F. If at the end of the cycle when the machine is opened the dishes are too hot to touch, then the items are sanitized.

**Wiping Cloths** – VERY important! One of the scourges of the home kitchen are the things you use around your sink – sponges, dish towels and wiping cloths. They don't belong crumpled up in the sink for days on end. Easy enough to have a small container with sanitizer in it, and keep the wiping cloth in there. And consider changing it at least every other day, if not every night. Sponges can't be used commercially, so beware at home; do your best to keep them clean.

**How often to clean and sanitize** Commercially, they have to clean food contact surfaces that are used with potentially hazardous foods at least every four hours. At home you don't have that urgent a need, but here's some **instances that SHOULD cause you to clean and sanitize:**

- Before each use with a different type of raw animal food such as beef, fish, lamb, pork or poultry
- Each time you change from working with raw foods to working with ready-to-eat foods
- Between uses with raw fruits and vegetables and with potentially hazardous foods
- At any time when contamination might have occurred, like the package of meat dripped some blood on the counter. Don't just wipe it

## Concerning Children

- Objects that come into contact with children need to be cleaned and disinfected frequently. Like the edges of tables that they might chew on, high chair trays, utensils they like to bang and put in their mouth.
- Treat all body fluids as infected because disease-causing germs can be present even in the absence of illness.
- Children who do not show symptoms of illness may be as infectious as those children who do have symptoms.

## Food Allergens

Seven million people in the U.S. have food allergies. A food allergy is the body's negative reaction to a particular food protein. The problem is that we don't always know we are allergic; we just know we might be sick a lot. Every 3 minutes, a food allergy reaction sends someone to the emergency room.

**The big culprits in the food allergy world, accounting for 90% of food-allergic reactions in the U.S. are:**

- Milk, egg and soy products
- Wheat proteins (Are you seeing the Gluten Free aisle in the grocery store?)
- Peanuts and tree nuts
- Fish and shellfish

This is a whole study by itself, so I won't attempt to re-create all that information, nor even highlight it, because danger lurks here and I am not qualified. But let me send you in the direction of the Food Allergy & Anaphylaxis Network (FAAN), which has great information: http://www.foodallergy.org/. The section, "About Food Allergies" has lots of information about each of the 8 products listed above.

**From the FAAN web site, here are a few tips that are in line with this booklet:**

*Tips for Keeping Safe at Home*

- Learn how to read food labels and make sure everyone in the family can, too. Keep our "How to Read a Label" fact sheet pinned up on your refrigerator or on your pantry door.
- All family members should wash their hands before and after eating to avoid contamination.
- Scrub down counters and tables after food preparation and after meals. To effectively remove food protein from surfaces, wash the surfaces with soap and water.
- Practice proper food preparation to avoid cross-contact. Thoroughly clean counters, cutting boards, knives, slicers, spoons, measuring cups, mixing bowls and other food prep equipment between foods. Have separate sets of utensils for handling safe and unsafe (allergen-containing) foods. Some families use separate dishes (usually designated by different colors), too.
- Separate safe and unsafe (allergen-containing) food by designating specific shelves in the pantry and refrigerator and storing all foods in sealed containers.
- Label either the problem foods or the safe ones — whichever is easier.
- Create allergen-free zones in your home, or restrict eating to the kitchen and dining room only.

Beware of airborne allergens when cooking; keep a safe distance from

the cooking area and allow the air to clear for 30 minutes afterward before entering the room.

## Pest Control

The problem with pests – roaches, flies, mice and rats, is that they carry disease with them. So you don't want them to become part of the family. Don't accept them as a fact, no matter how prone your neighborhood is to having them. YOU can beat them.

**First – prevent them from getting in** by making sure your door and window screens fit properly and don't have holes in the mesh. Also check the doors for cracks, holes and crevasses. Insects and rodents can enter through the tiniest of openings.

**Second – KEEP IT CLEAN!** Don't attract them in the first place! Eliminate all food and water sources. Don't store things, especially boxes, on the floor in the kitchen area and make sure trash is picked up in the cabinets, closets and cupboards and that the corners on your counters don't provide dinner for the pests.

**Third – You really do need the help of a licensed pest control operator.**

**Ants** – If you have ants it is because you are feeding them. Don't feed them and they will go to the neighbors' house where the food is more plentiful.

# Crash-course summary

So what is the MINIMUM you need to know?

- **PICK** a person to be in charge of food safety in the household.
- The key to life is **hand washing** – the more you do, the safer your family is. Warm water, 20 seconds, dry with a paper towel if you are preparing foods.
- **Cross contaminating** is another key to foodborne illness – you should be using plenty of bleach or commercial product to reduce the chances of spreading bacteria from one food or person to another food or person.
- **Use paper towels,** not dish towels, to wipe your hands, clean up spills, etc.
- **Wash vegetables and fruits** VERY well, especially cantaloupes – they contain dirt and bacteria which your family will eat if you don't wash them first.
- Keep your **dishrag in** a pan or bucket of **sanitizer.**
- Know the **Big 5 bacteria** and in what foods you find those bacteria, so you can be extra careful with those foods.
- Know the **Big 8 allergy-inducing foods,** so you can get a sense that every time you give your child that product they get symptoms.
- Know the general **symptoms of foodborne illness.**
- Make sure you own a **calibrated and sanitized** meat thermometer and a food temperature thermometer.
- You must follow **standards when purchasing food,** ensuring the product is safe when you buy it.
- **Cooking temperatures,** including re-heating and microwaving, are critical. Be sure you know what gets cooked to 145° F, 155° F and 165° F.
- **Thaw products properly,** and NOT at room temperature.
- **Keep food out of the danger zone,** which is 41° F to 135° F.
- **Clean AND sanitize** everything that touches food, and know how to do both properly.
- AND... food and utensils are NOT necessarily clean because they've only been on the floor for 5 seconds or less!!