



# For goodness sake...read this! Food Safety Fundamentals

## Did you know?

- > That most food poisoning is caused by tiny microorganisms called bacteria and viruses?
- > That food can look and taste fine but still make you ill?
- > That you might get sick within an hour or more than a week after eating contaminated food?

## Potentially risky foods

Some foods provide a better life for bad bacteria and so need special care. These foods are moist, not acidic and contain enough nutrients for bugs to grow. Such foods include raw and cooked meats, cooked rice, cooked vegetables, prepared salads and milk.

## Know your enemy

### Bacteria

Bacteria are single-celled organisms so small that millions can fit on the head of a pin.

There are different sorts of bacteria. Most don't cause illness. In fact some are very useful. For example, good bacteria are used to make cheese and yoghurt.

Some bacteria generally won't make you ill but do spoil foods. For example, the bacteria that send milk off. These spoilage bacteria can play a useful role in making the food inedible and so stop you eating any bad bacteria that might also be present.

Bad bacteria take many forms. Some only need a few cells to be present in food and if these find a home in your gut it might take days for them to grow to huge numbers and cause illness. Some need to be present in food in the millions to make you ill. Some of these can produce a toxin in food that isn't destroyed by cooking and can make you ill within an hour. Other bad bacteria form spores that can survive cooking and grow to large enough numbers to cause sickness if the food is improperly cooled and stored.

### Viruses

Viruses are even smaller than bacteria! Viruses in food that can make people sick can cause vomiting and diarrhoea and even hepatitis A. However you can't get a cold, the flu, AIDS or hepatitis B or hepatitis C from food.

Viruses in food that affect people are not naturally found in animals or nature. They originate only from infected people. So if viruses appear in food it will most likely mean that human sewage has contaminated the environment, often a waterway, or an infected person has handled the food.

A tricky thing about 'viral gastro' is that it can be picked up by breathing in viruses that other victims have launched into the air by vomiting or by coughing or sneezing sometime after they vomited. So vomiting and diarrhoea are not always caused by food poisoning!



## How do we defend ourselves against food poisoning? Following these 5 rules will help keep our food safe

### 1 Store potentially risky food at the right temperature

Bacteria need warmth to grow and some bacteria need to grow to large numbers to make you ill. The colder it gets the slower they grow and when the temperature falls to 5°C or colder, growth of food poisoning bacteria is so slow that it is rarely a problem. Mostly if food is left for too long at temperatures of 5°C or less, moulds or spoilage bacteria better adapted to low temperatures will spoil the food rather than cause it to become unsafe.

Some food poisoning bacteria can grow at refrigeration temperatures but, if the food has been properly handled and stored, they don't pose much risk to healthy people. Pregnant women, the elderly, young children and people who have their immune systems compromised through illness are at greater risk and need to be more wary of potentially risky foods stored in the refrigerator for any length of time.

At the other end of the scale, once the temperature reaches 60°C bacteria won't grow and will start to die off as the temperature climbs further. Between 5°C and 60°C is often referred to as the temperature danger zone!

It's important to realise that food doesn't become instantly unsafe when it is in the temperature danger zone. The bacteria still need time to grow and as a general rule it is safe for freshly prepared food to be in the danger zone for up to 4 hours. Frozen food can't become unsafe, but it will last longer at -15°C or colder.



### 2 Cook food thoroughly, and if necessary, cool it quickly

Steaks and whole joints of meat can still be pink in the middle – any nasties will be on the outside and the middle of a cut of meat, (if a fork hasn't holed it), should be free of bacteria.

Cooling cooked foods properly is important. Food poisoning incidents have occurred when potentially risky foods have been left on the stove or bench top overnight to cool for a function the next day. Spore forming bacteria can be present in these foods and make toxins so tough that even thorough reheating of the food before serving won't destroy them. Once the food has cooled to reasonably warm, about 45°C, it can be put into the fridge; it's not essential to let it cool right down. The food will cool faster in smaller containers and metal containers lose heat faster than thick plastic ones. In a commercial situation there are special rules for the cooling of potentially risky food.



### 3 Don't cross contaminate

To cross contaminate means to transfer bad bacteria from raw food to prepared food with your hands or a cutting board or a tool such as a knife or tongs.

Meat is the raw food to be most concerned about and raw chicken needs particular care. After preparing raw meat you should:

- > Wash and dry your hands thoroughly, and
- > Wash the cutting board and allow to dry and also wash any utensils or plates that were used. If you sell food, the law requires such equipment to be sanitised in a dishwasher or by using a chemical sanitiser

*While chicken is the meat most likely to contain bad bacteria, the flesh from free-swimming fish is the most likely to be free of nasties. The bugs naturally present in fish are adapted to life in relatively cold waters and don't represent such a risk to warm blooded humans. So when bacteria or viruses that make people ill get into fish they have usually been introduced by cross contamination or in the case of filter feeders like oysters, through pollution of the growing waters.*

### 4 Clean up equipment

Equipment such as mincers and mixers needs to be thoroughly cleaned to ensure there is no opportunity for nasties to survive and contaminate food the next time the equipment is used.

### 5 Use good hygiene practices

Regularly wash and dry your hands thoroughly and especially before starting food preparation, after handling raw meats or after using the toilet. The need for thorough drying of your hands can't be overlooked. If your hands remain damp it is easy to transfer moisture to fresh foods or food contact surfaces and this moisture can contain bad bacteria or viruses.



Avoid handling food if you know you are suffering from a foodborne infection or have symptoms such as diarrhoea or vomiting. It's best not to prepare food for others for 48 hours after the symptoms have ceased. For this period of time anyone who has been ill can be shedding large numbers of food poisoning organisms and even careful hand washing may not remove them all. In a commercial situation there are special rules – you have to notify your supervisor if you think you might have a food borne illness.

In your own home, if you have no choice but to prepare foods for others, endeavour to avoid hand contact with all ready-to-eat foods or preparation surfaces for ready-to-eat foods. But be careful, health departments are regularly notified of "secondary" cases of food poisoning where one member of a family initially gets ill and others follow.