



State General Laboratory  
Ministry of Health



# MICROBIOLOGICAL FOOD SAFETY IN HOME KITCHENS



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Food Microbiology Laboratory

# SOURCES OF MICROBIOLOGICAL HAZARDS IN FOOD

Most microorganisms in nature are harmless and many comprise the natural normal microbial flora of humans. Some microbes, however, can cause disease (e.g. *Salmonella*, *Campylobacter*, toxigenic *Escherichia coli*, *Listeria monocytogenes*, *Bacillus cereus*, *Staphylococci*, *noroviruses*, *virus HAV* etc.)

Foodstuffs may become contaminated at various stages of the food chain:

## 1. At the farm:

- ▶ Animal feed can be contaminated with pathogenic bacteria, which can then infect the animal and, subsequently, humans through the consumption of food products.
- ▶ Parasites can infect food-producing animals.
- ▶ Milk, skin and fur of animals, as well as eggs and vegetables can be contaminated with faeces or environmental dust.



## 2. During slaughter/processing:

- ▶ Meat can be contaminated by coming into contact with animal intestines or skin.
- ▶ Microorganisms that are present in other raw farming products or on surfaces can also contaminate the food.
- ▶ Food handlers/carriers of microbes may contaminate the food.

## 3. In the kitchen:

- ▶ Microbes can be transferred from one foodstuff to another (e.g. from raw meat to the salad), due to misuse of kitchen utensils or from food handlers/carriers of microbes (poor personal hygiene).

**Despite all of the above hazards, by following the practices described below, we can eliminate the agents that cause foodborne infection and prepare microbiologically safe food at home.**

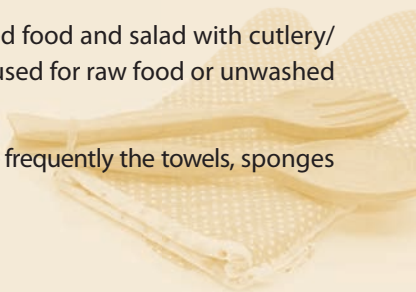
## GENERAL RECOMMENDATIONS

- ☛ When grocery shopping it is advisable to leave last all foodstuffs that are stored in the fridge or freezer. Minimise transportation time of such foods to the house (the use of an icebox is recommended), where they should be immediately stored at the appropriate temperature.
- ☛ Avoid leaving perishable and cooked food for too long at temperatures between 5-60 °C, since these conditions are favourable for the multiplication of microorganisms.
- ☛ Pregnant women, the elderly and persons with weakened immune system are advised to avoid consuming smoked fish and soft cheeses. These are high-risk food categories regarding the presence of *Listeria monocytogenes* that can lead to miscarriages and other diseases for the above population groups.



## Food preparation

- ☛ Keep countertops clean (using soap) and free of irrelevant objects.
- ☛ Keep pets away.
- ☛ Use clean cutting boards of different colour for cutting raw meat/fish and ready-to-eat food (e.g. washed vegetables).
- ☛ Never handle cooked food and salad with cutlery/utensils previously used for raw food or unwashed vegetables.
- ☛ Wash and/or change frequently the towels, sponges and the apron.



## Personal hygiene

Wash your hands and/or change your gloves:

- ◆ Before preparing food
- ◆ After handling raw food (meat or fish)
- ◆ After touching the waste bin
- ◆ After using the toilet
- ◆ After touching pets

## Washing fruit and vegetables

- ☞ Wash thoroughly the peel of fruits like watermelon and melon prior to cutting or peeling.
- ☞ Fresh vegetables are left to soak for a few minutes in a container with running drinking water and then rinsed well.



## Chilling

- ☞ Temperature must be maintained between 0-5 °C.
- ☞ Do not keep food beyond its expiry date.
- ☞ Avoid the frequent opening/closing during summer time.
- ☞ If possible, keep perishable food (e.g. cheese, cold cuts, smoked fish) at the main part of the fridge instead of the door.
- ☞ Avoid overfilling the fridge in order to ensure a uniform cooling.
- ☞ If possible store any raw meat/fish in covered containers at the bottom shelf for 24 hours maximum.



☞ Unwashed vegetables are also stored in covered containers/bags or drawers.



☞ Wash with soap and change frequently the plastic containers, in which cheese and cold cuts are stored.



☞ Prefer to defrost raw meat/fish in the fridge. If it is necessary to defrost outside the fridge, keep the duration at minimum and ensure that the food remains cold and covered at all times.

## Cooking

☞ Avoid washing raw meat so as to prevent the transfer of microbes to other surfaces.

☞ Cook food thoroughly, making sure that the inner parts are cooked well and, in the case of raw meat, that there is no blood or red colour visible.

☞ Do not leave any cooked food (especially rice and bulgur wheat) at room temperature, after it has cooled down, for more than 2 hours.

☞ When reheating cooked food, ensure that it is heated well and uniformly.

☞ In cases of packaged food products that require cooking or heating (frozen foods, infant formulae), follow the instructions of the manufacturer.



## Bibliography

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2. [http://www.who.int/foodsafety/fs\\_management/5keys\\_greek.pdf?ua=1](http://www.who.int/foodsafety/fs_management/5keys_greek.pdf?ua=1)
3. <http://www.who.int/foodsafety/publications/en>



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