

Diseases from food: How to prevent them in the household Presentation

Epidemiological data show that food borne illnesses occurring in the family household are more numerically advanced than those arising in other places.

Servizio Igiene Alimenti e Nutrizione wrote this booklet to inform general public about dangers and preventative measures in the family household, so as to fight the transmission of illnesses through food.

The general manager
Dott. Antonio Mobilia

INTRODUCTION

The infectious diseases caused by microbes, sometimes present in foods, are still a serious problem to the Public Health.

The danger for consumer is often linked to the kind of food and to their preparation.

Therefore the safety of food should always be taken into consideration.

The phenomenon:

“food borne illnesses”

are globally widespread and the number of cases change from place to place.



Recent research on food borne illnesses, taken in some industrialized countries, has shown that about **60% of cases are due to lack of hygiene in handling and storage of food.**

MICROBES

They are also called microorganisms and they are the most frequent cause of adulteration of foods.

They can modify the organoleptic characteristics of food (smell, colour, taste, shape and appearance), their nutritional principles (fats, proteins, sugar, vitamins), as well as their healthiness, making them dangerous for our health.

Foods' microorganisms are divided into:

Bacteria → invisible to the naked eye

Viruses → invisible to the naked eye

Mycetes → among these, yeasts and moulds visible to the naked eye, as they cover the foods' surface with a cottony coating of different colour.

Food microorganisms can be distinguished as:

Useful: those used in fermentations and maturation or seasoning of certain foods.



Harmful: those that can adulterate foods or even produce poisoning substances as "toxins" or mycotoxins.

The microbes dangerous for man and/or animals are called pathogenous.

The growth of microbes can be influenced by :

- Poor presence of water in food
- Presence or absence of air
- Acidity of foodstuffs
- Environment temperature

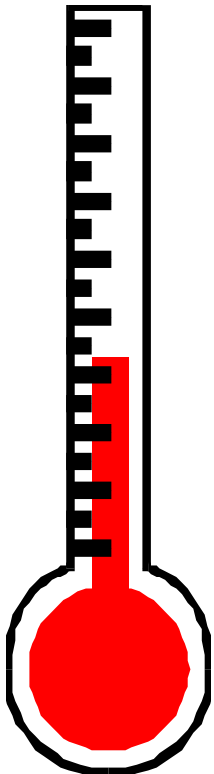
The microbes, responsible for several disorders and diseases in man, grow well in the range of:

+10/+60°C

with optimum temperature in the range of:

+30/+40° C

that are similar to those of our body temperature.

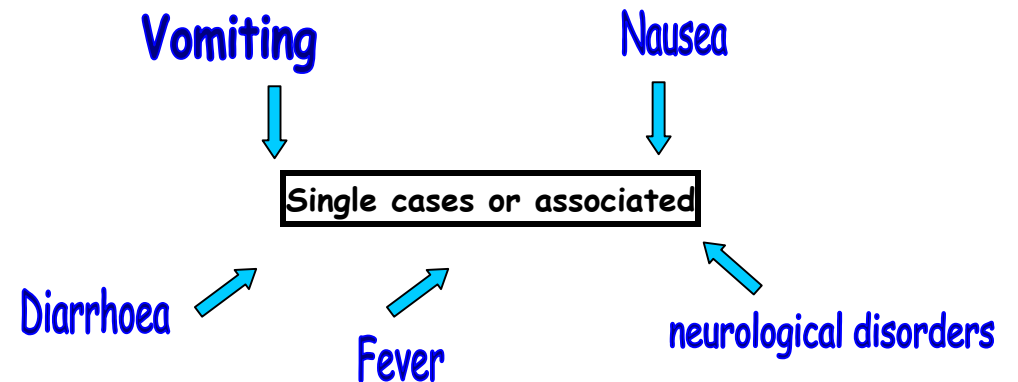


Connection among food, man and diseases



Harmful foods don't always appear adulterated,

This means that the presence of pathogenic microbes and/or their toxic substances might not come out until **the first symptoms** are felt (also after a certain period since the food has been consumed):



(for example: to lose one's bearing, double vision, facial muscle paralysis)

The damage to human health may show itself in three different ways:

Food borne intoxication

When the illness is caused by the ingestion of foods with toxins and the microbes that produce them.



Food infection

When the illness is caused by the ingestion of only pathogenic microbes in food.



Food poisoning

When the illness is due to the ingestion of huge amounts of preformed toxins or toxic substances in food.



“Food borne disease” is the common expression to refer to one of the three.

The main food borne diseases of microbial origin are:

- Food poisoning caused by Staphylococcus
- Food poisoning caused by clostridium botulinum called “botulism”
- Food intoxication caused by Clostridium perfringens and bacillus cereus
- Food infection caused by salmonella

The ingestion of tuna contaminated by histamine is reported to be one of the most frequent food borne diseases. It is better to avoid buying tuna preserved in large cans and kept at room temperature.



The seriousness of disease depends on:

The kind of microorganism found, the amount ingested, the individual sensitiveness (children, the elderly, sick persons or anyhow with health problems are at higher risk).



If you have symptoms:

You should contact your medical practitioner immediately if you have gastrointestinal or neurological symptoms after having eaten suspected food.

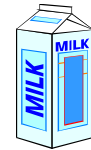
Food borne diseases are pathologies, in most cases, not serious and short-lasting but rather frequent.



The symptoms appear shortly after the meal (about 30') to 72 hours from ingestion of the food.

Where are the dangers?

Food may be contaminated by microbes at origin; this may happen for instance with milk, meat, eggs, freshly picked vegetables.



They may be contaminated all the same because of incorrect hygienic procedures after the purchase or harvest of vegetables that's means:

- transporting and/or conserving them badly
- incorrect use of utensils
- unclean utensils and equipments that will come into contact with food.
- skipping hygiene procedures of surfaces and/or of person (such as forgetting to wash one's hands before handling food or avoid touching raw food and then cooked food).

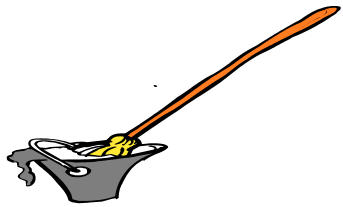


Contaminated food is therefore unsafe for human consumption.

Be careful doing shopping

At shopping stores

The cleanliness, tidiness of food shops and hygiene of staff are basic elements which guarantee good food conservation.



A dirty shop with scruffy staff and poor personal hygiene should be avoided and should be reported to ASL - "Servizio Igiene degli alimenti".

HOW THE PRODUCT APPEARS:

Be careful with visible adulterations:

- The adulterated food may change colour, smell, taste, look
- It may change consistency or it shows signs of mould
- The packaging may be broken, the can may be rusty, dented or swollen.

In these cases it is suggested not to eat the food.

Labelling

Labels should clearly indicate the ingredients and the expiry date.

If they are marked with:

"best if used by date...." it means that if the food has been properly stored it can still be consumed a few days after the date reported.

"to consume before....." or "expiry date.." it means that after the indicated date the product can not be consumed or sold.

DO NOT OVER BUY AND ANTICIPATE WHAT YOU WILL USE IN A CERTAIN PERIOD.

Buy little and often

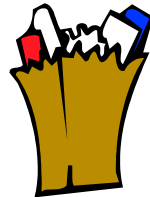
FOOD MANAGEMENT

CONSERVATION

After the purchase

The products bought can:

- be consumed immediately
- be consumed after conservation and/or further handling.



The foods may be divided into two groups:

Stable foods that do not adulterate easily and can be well conserved for a long period and at room temperature.



Perishable foods that are easily adulterated, they must be consumed within a given time and they must be conserved in a refrigerator or in a freezer.

For these foods it is recommended to check carefully the instructions given on the label and the expiry date and the conservation instructions.

Refrigeration.



Refrigerator

The temperature recommended for the conservation of perishable foods is **+ 4° C. and anyway below + 10° C.**

THE REFRIGERATOR SLOWS THE GROWTH OF MICROBES BUT DOES NOT KILL THEM

It is important to avoid overloading the refrigerator in such a way to allow that the air circulates around the food, in fact a poor ventilation speeds up the growth of moulds.

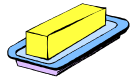
The items stored in the refrigerator should be well protected with intact wrappings or covered containers so as **to avoid mixing foods** and to prevent a cross-contamination (i.e.: infected foods and safe foods come into contact with each other).



Cooked food should be kept separated from raw food.



Since at home it is not possible to store food in more than one refrigerator, we suggest the use of shelves available in such a way that foods with penetrating smell (e.g.: fresh fish) are kept as far as possible from foods, as butter, that pick up odours.



DEEP FREEZE-FREEZER

The freezer with a temperature -18 is a good environment where to store foods for long periods. But it is very important to carry out a clear labelling plan for food containers and use them in rotation according to the principle:

"FIRST IN, FIRST OUT"

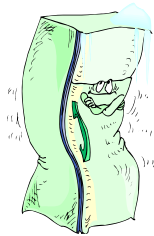
At home it is suggested to freeze the food in small portions.



DEFROST

As a rule food should be completely defrosted and cooked at once. A correct defrosting procedure allows the heat to penetrate the food thus killing the microbes.

The safest way to defrost is to place food on fridge shelves between $+4$ and $+10^{\circ}\text{C}$.



The refrigerator should be regularly cleaned and defrosted since the cooling system can not work properly if the coils are covered with a thick layer of ice.

The best distribution of food in the fridge is from top to bottom organized as follows:

- Cooked food or ready to eat food
- Meat
- Eggs, vegetables, fruit.

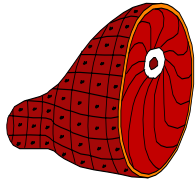
Salting:

A few microorganisms can not stand high concentrations of salt, salt stops vital activities of microbes reducing water content.



Use of sugar: at low concentration sugar can stimulate the growth of microbes that can, in their turn, acidify the environment, whereas at high concentrations it stops the microbial growth in the same way as salt.

Smoked: the smoke coming from wood contains antimicrobial and flavouring substances . The procedure is often associated with desiccation and salting.



Use of vinegar: vinegar acidifies also the product submerged, as to avoid the microbial proliferation.



Use of oil: oil itself has no action on microbes.

It can only isolate the food from air, preventing contamination and the contact with oxygen.

Therefore it is important to carry out heat and/or acidifying treatments before putting the food in oil.



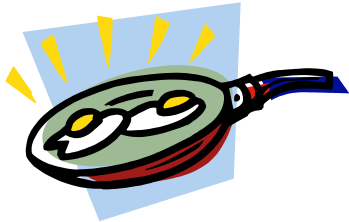
THEREFORE IF WE ARE NOT SURE OF WHAT WE HAVE BOUGHT, IT IS SAFER TO AVOID THE ABOVE METHODS.

Others conservation processes

The pasteurisation, the dehydration, freezing, lyophilising, the use of additives, vacuum-packing **are to be left to organizations that can guarantee a hygienic treatment.**

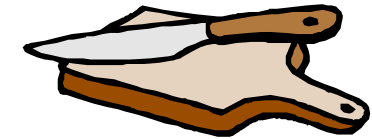
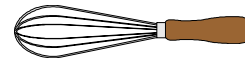
Cooking

A correct cooking procedure should reach 70 - 80° C., thus cooking food thoroughly. This simple measure guarantees the safety of food, providing it is correctly stored afterwards.



Be careful during food preparation.

They should be cooked in **little pieces** so as the whole piece reaches the same temperature. Once cooked, they should be eaten immediately.



To cut and to prepare cooked meat never use utensils and worktops that have come into contact with raw foods.

MEATS AND POULTRY

Keep in mind that the products of animal origin should never be eaten raw and, before cooking, it is better to rinse under warm water.



Wash utensils, worktops and hands carefully after their use with soap and hot water.

EGGS AND EGG PRODUCTS

Any preparation using eggs must be cooked thoroughly and eaten immediately.



When you prepare creams and sauces, where bacteria grow easily, use pasteurised eggs. Alternatively cook cream well and consume them immediately.



Eggs should be rinsed before breaking them.

"Free range" eggs are the most harmful because they are not checked.



After preparing food wash utensils, all work surfaces and hands carefully with soap and hot water.

FISH AND SHELLFISH

Avoid eating any raw fish and shellfish:

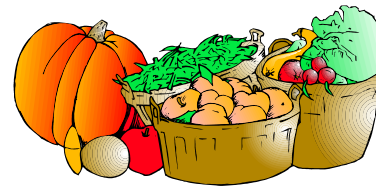
Shellfish that do not open during cooking must be thrown away.



After preparing food wash carefully utensils, all work surfaces and hands with soap and hot water.

VEGETABLES AND FRUIT

Vegetables and fruit should always be rinsed before eating even if they have been bought pre-packed.



We suggest using plenty of cold water with sodium bicarbonate dissolved in it (it is enough a teaspoon for litre of water) or to add some drops of chlorine disinfectant when rinsing vegetables.

PRESERVED FOOD



Wash products carefully in plenty of water and scrub them with food brushes. Dry them with a kitchen cloth and do not leave them on worktops, exposed to dust and insects, neither before nor after cooking.

The **worktop** should always be carefully cleaned before, during and after preparation of preserved food.

Use small jars (max 300-500 ml.), once full sterilized in boiling water closed with tap for almost 10 minutes.

Sugar content of **jams** should be almost 50% of weight.



Vegetables to be conserved in oil or without should be cooked for almost 3' in a pressure cooker.



Vinegar reduces the risk of developing the toxin that causes botulism.



In brine foodstuffs salt should be almost 10% of the weight of food.

Si ringrazia per la traduzione la Sig.ra Loredana Magni
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