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## **WE MAKE HEALTHY FOOD!**

### **A brief guide for producers of food**

#### **INTRODUCTION**

We cannot discuss health care without considering the problem of food hygiene. When food is incorrectly handled or preserved and exposed to risk of contamination it can become potentially harmful for the consumer.

In the pages that follow you will find some technical guidelines and rules to help people involved in producing and selling food understand the sensitive nature and importance of their work.

They need “**work for prevention**” by which we mean that they can help to improve health in the community.

#### **GOOD FOODS .....AND BAD**

When testing for bacteria is carried out on food we find that many micro-organisms are present. These living things are invisible to the naked eye and live on the proteins, fats and sugars of which food is made up.

These micro-organisms however have different features. Some, like the yeasts found in yogurt, vinegar, wine and cheeses are essential to the nature of the food and determine its character. Others on the contrary, spoil food and affect its taste or appearance. Some micro-organisms although they may not affect the quality, the colour, taste, texture or smell of a food, can make it dangerous to eat and cause disease in human beings. These are known as pathogenous micro-organisms.

**During the production, handling, preparation, serving, preservation and transport of food and drink there is always a risk of contamination by pathogenous micro-organisms.**

## **HOW FOOD CONTAMINATION HAPPENS**

**Workers** handing food may contaminate it in a number of ways; either directly with germs from cuts in the skin, (for example boils), infections of the mouth and respiratory system (tonsillitis and bronchitis) or indirectly, for example with bacteria eliminated with the faeces when hands are not washed thoroughly after using the bathroom.

Diseases known as oral-faecal such as salmonella, typhoid and dysentery come from the ingestion of micro-organisms present in human or animal faeces.

You don't need to be ill to transmit disease-causing bacteria into the environment.

Examples:

Salmonella may be present in the faeces of a person with no symptoms.

The cough of a healthy person can cause staphylococcus to contaminate food, multiply there and cause disease in the people who eat it.

It is not only people preparing food who are a source of micro-organisms, the **public** can also be a source of infection if food is not protected correctly as in the case of display cabinets open to the side of the public rather than the staff side.

**Raw foods** are sometimes contaminated at source, for example meat and eggs from animals harbouring germs, or vegetables irrigated and manured with slurry. These can also contaminate healthy foods during handling.

**Rats and insects** can be carriers of infection. Flies, cockroaches and mice thrive in unclean places and can transmit dangerous micro-organisms.

## **WHAT ARE THE CONSEQUENCES OF FOOD CONTAMINATION?**

To understand just how serious the problem is in this country (Italy) it should be remembered that in 1993 more than 20,000 cases of salmonella were reported.

Often these diseases are not serious but especially in children and the elderly they can sometimes cause concern, as when they take the form of localised epidemics.

**Food- transmitted diseases are not only undesirable for the unfortunate consumer of contaminated food. The owners of businesses or shops where incriminated food originates may suffer serious consequences such as suspension of their health licence, prosecution for compensation and damages or even criminal prosecution. Added to this is the effect of negative advertising.**

The most commonly found micro-organisms in food-transmitted diseases are: enterotoxic staphylococcus, salmonella, clostridium perfringens and bacillus cereus. Toxic infection from clostridium botulinum is often lethal but fortunately this toxin is uncommon.

## **HOW TO AVOID FOOD CONTAMINATION**

Bacteria can not be seen with the naked eye but we do know which pathways, living conditions and temperatures encourage their proliferation and survival.

This way we can take action to avoid food contamination.

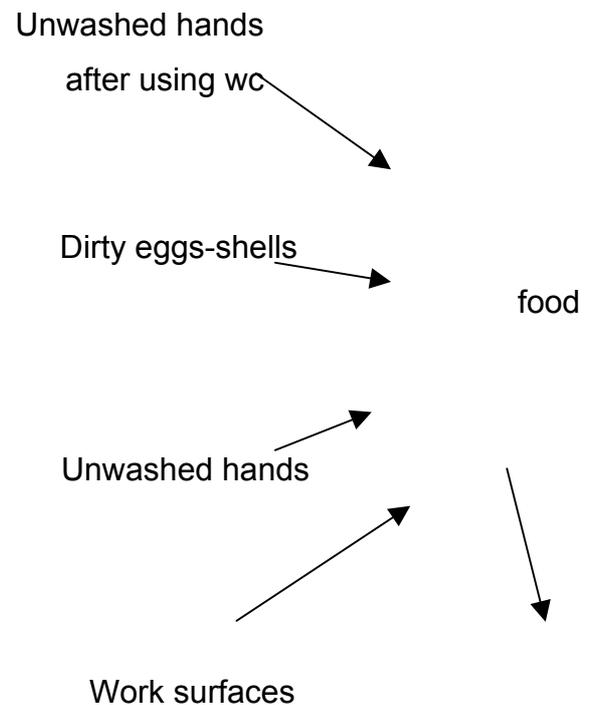
For example:

## **SALMONELLA**

### **Source**

- Faeces of apparently healthy person →
- Chicken excrement →
- Faeces of person with diarrhoea caused by salmonella →
- Raw foods contaminated at source →

### **Course**



Humans

In this example it is almost impossible to intervene on healthy people or chickens. On the other hand we can make sure of hygiene on worker's hands, egg-shells and work surfaces:

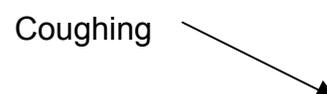
**personal hygiene, hand washing, care in the handling of eggs, cleaning of work tops.**

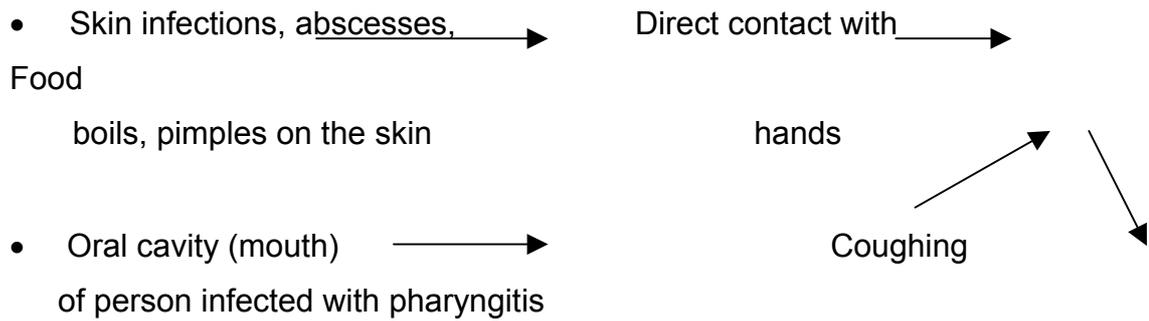
## **STAPHYLOCOCCUS**

### **Origin**

- Healthy person's oral cavity (mouth) →

### **Course**





## HUMANS

To interrupt the chain in this example we should protect against coughing and skin abscesses. When disease of the oral cavity (mouth) is present protective masks should be used and rubber gloves or fingers etc. are effective protection against contamination from broken and infected skin.

## FOODS MOST AT RISK

Germs multiply more easily in some foods than others and can reach very large concentrations in a short time depending on the composition of the food and the percentage of water, sugar, protein, fat and salt present.

Foods which provide ideal conditions for the multiplication of bacteria are:

- MEATS
- MILK AND DAIRY PRODUCTS (cream, fresh cheeses etc.)
- EGGS (sauces, custards, egg pasta, mayonnaise etc.)

Careful attention is required in preparing and preserving these foods.

To limit the risk of salmonella it is advisable not to use fresh eggs in foods that will not be cooked (e.g. mayonnaise, and some desserts).

## **PREPARING FOOD THE RIGHT WAY**

Even before production begins care should be taken to check **quality, preservation, damage to packaging** (swollen tins, rancid or unpleasant smells).

After this it is a good idea to plan work to reduce to a minimum the time food is exposed to temperatures between 10°C and 60°C. Germs reproduce most rapidly at these temperatures.

Food should be cooked in small pieces when possible so that the heat from cooking is distributed uniformly throughout the food. This is an effective way of eliminating germs.

If food is not to be consumed immediately it should be preserved in suitable containers at temperatures above 65°C or else stored in the fridge.

Great care should be taken with hygiene and preservation of creams, sauces and cakes made with fresh cream or eggs.

If producers of food, for example ice-cream parlours or confectioner's, use pasteurization techniques they should ensure that the temperatures used are capable of destroying any pathogenic germs present. For example salmonella is destroyed by heating to 66°C for 12 minutes or 60°C for 30 minutes. It is also advisable to periodically check that equipment is in good working order.

## **COOLING AND FREEZING IN FOOD PRESERVATION**

A **refrigerator** is absolutely essential in a food store or place of production. For the refrigerator to be used most effectively some basic guidelines should be observed.

- **Size suited to the needs of the workplace**
- **Separate compartments for cooling different foods: foods ready to eat, fruit and vegetables, cheeses, meats;**

- **Thermometers for checking temperatures.**

The temperature for cooling should not be above 4°C for more perishable foods (e.g. with cream fillings, yogurt, milk drinks, meats with gelatine, filled egg pasta) and 10°C for egg pastas without filling.

Cooling cooked foods at room temperature should be avoided in foods which will be eaten cold e.g. cooked meats and creams. Cooling should be as fast as possible and take a maximum of 4 hours.

Foods which will be consumed cold such as roast meats, roast beef, cooked meats, salted meats etc. should be stored at 4°C. At the time of serving a temperature of 10°C is acceptable.

Special care is needed with **FROZEN FOOD**. This is both healthy and nutritious providing that the original ingredients are of good quality, suitable freezing techniques are used and that preservation is correctly carried out from the place of production to the place of eating.

It is important to remember that freezing can only be carried out in premises with a licence.

**It is important to remember that transport of frozen food must take place without any part of the product exceeding a temperature of -18°C.**

**On receipt of goods it is therefore important to check the texture, shape and temperature of products.**

Frozen foods should be preserved in their original, unopened, labelled packaging and divided into suitable compartments in refrigerated equipment. Temperature should be uniform throughout the compartments.

In top loading fridges there should be a clear sign for maximum loads over which food should not be stored. Refrigerators of this type must be provided with thermometers.

Refrigerator compartments must not be exposed to the sun or other heat sources and must be provided with easily visible, graduated thermometers.

**When directly cooking unthawed food (still frozen) is not possible it is preferable to defrost the food at refrigerator temperature even though this process is longer**

Most bacteria reproduce easily and rapidly at room temperature whereas more time is needed at 3 - 4°C.

## **PERSONAL HYGIENE AND CLOTHES**

**People working in food preparation must be scrupulous about personal hygiene and clothing.**

According to regulations (DPR 327/80 of 26/03/80) those who are employed in the production and selling of foodstuffs must wear suitable **light coloured overalls and a hat**. These clothes must be used exclusively at work and must be kept in special individual lockers.

The wearing of overalls is generally well accepted as it is a traditional item of clothing and keeps clothes clean. Wearing hats on the other hand has been the cause of many complaints!

Hair is not a source of pathogenous micro-organisms which cause toxic infections in food if it falls on food. However finding hair in food is unpleasant and may cause you to lose a customer. Regulations about headwear are in the interests of both food operators and consumers and should be carefully observed not only to avoid a heavy fine.

Obviously **hats must be of a kind which keeps hair in check**.

People working with food must avoid contaminating food directly with microbes from broken skin on their hands, or through sneezing and coughing. Gloves and masks should be used.

Hands should be washed frequently (after having using the bathroom, after sneezing or coughing, after contact with some types of food). Sinks should be in a convenient position and equipped with **taps which can be turned on without using hands.**

## **CLEANING AND DISINFECTION**

**Disinfection cannot be effective without thorough cleaning beforehand.**

**Premises and equipment must be cleaned regularly at the end of every working cycle using hot water and detergent.**

A good detergent must:

- completely remove dirt from surfaces;
- dissolve dirt
- be simple to rinse.

**Washing in a dish-washer at temperatures above 90°C is enough to ensure sterilisation of small pieces of equipment.**

**It is advisable to sterilise premises, work surfaces and larger equipment on a regular basis after general cleaning using chlorine or quaternary ammonium products.**

It is important to follow the instructions on labels of detergents and disinfectants carefully.

## **HYGIENE AND PREMISES**

**Premises** on which food is produced and sold must always be **tidy** and **perfectly clean**. **Walls, furniture, equipment, working tools and other objects must always be clean, properly working and well maintained.**

Premises must be well lighted and ventilated.

Suitable aspirating hoods should be present, particularly in **kitchens**. Floors, walls, work and cooking surfaces must be of material which does not deteriorate, is washable and can be disinfected. Corners which are difficult to reach or to clean should be avoided.

There should be different sectors for handling meat and vegetables before cooking and a separate area for preparation of cooked foods.

In **restaurant kitchens** an area for washing dishes should be set apart, if possible with direct access to the dining area.

Logical organisation of various processes involved in food preparation and dish washing should make it possible to create separate clean and dirty flows in the kitchen and eliminate the risk of food contamination from work surfaces, utensils and working machinery.

In the initial planning stages it is advisable to contact the local services which are responsible for issuing health authorisation so that unpleasant surprises are avoided when businesses open.

Dishes should be stored in closed cupboards and protected from dust and insects.

**It is absolutely essential that a storeroom or closed-off section completely separate from foods should be used for storing cleaning products, brooms and cleaning equipment.**

**The storage area for primary foodstuffs** must be dry and ventilated, safe from insects and rodents and kept tidy and clean.

All **bathrooms** should be kept clean and provided with liquid soap, paper towels or hot air dryers.

**Waste bins** should be fitted with pedal opening lids and washed at the end of every day.

If waste is left on the premises, especially during nighttime hours, this will attract insects and rats.

To prevent risk of infestation by **insects and rats fly-nets should be used at windows and drains in sinks should be kept closed.**