

FOOD SAFETY & HYGIENE



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- **Food is a potential source of infection** and is liable to contamination by microorganisms, at any point during its journey from the producer to the consumer. Food hygiene, in its widest sense, implies hygiene in the production, handling, distribution and serving of all types of food. The primary aim of food hygiene is to prevent food poisoning and other food-borne illnesses, which can be grouped under the following headings.
- **The importance of monitoring of food-borne diseases** has been underlined in the WHO Sixth General Program of Work . The most important international program carrying out activities in the field of food hygiene is the Joint FAO/WHO food Standards Program



Food

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FOOD HYGIENE LEGISLATION

- Food Safety legislation is designed to protect consumers from illness and harm
- The National and European laws controlling food hygiene are:
- Food Hygiene Regulations (1950-1989)
- European Communities (Hygiene of Foodstuffs) Regulations 2000



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FOOD HYGIENE REGULATIONS (1950-89)

- Introduced in 1950. Added to and adjusted several times.
- Relates to all sectors of food industry.
- States requirements regarding food hygiene and food premises.
- Under these laws certain types of food businesses must register with HSE (Health and Safety Executive)
e.g. hotels & restaurants. Those breaking the law risk prosecution or closure.

FOOD HYGIENE REGULATIONS (1950-89)

Protects the consumer by:

- Prohibiting sale of diseased or contaminated food unfit for human consumption.
- Requiring that precautions are taken at all stages of food production i.e. importation, processing, distribution etc., to prevent contamination.
- Ensuring food premises maintain hygienic conditions regarding equipment, food waste, water supply etc.
- Ensuring food handlers observe food hygiene and safety rules and follow a HACCP system



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- Irish Food Labelling Laws are laid down by the European Communities (labelling, presentation & advertising of foodstuffs) Regulations 2002.
- Nutritional labelling is controlled by The Health (nutrition labelling for foodstuffs) Regulations 1993 and by EU directive (1990).

Classification of Food - borne Illnesses

| | |
|--|--|
| Bacterial diseases (infections & intoxications) | <p>Typoid fever, paratyphoid fever, Salmonellosis, Staphylococcal intoxication,</p> <p>Cl. perfringens illness Botulism</p> <p>b. cereus Food Poisoning</p> <p>e. coli diarrhoea</p> <p>non-cholera vibrio illness</p> <p>V. parahaemolyticus - infection, streptococcal infection, Shigellosis, Brucellosis</p> |
| Viral diseases | Viral hepatitis, Gastroenteritis |
| Parasites | Taeniasis, Hydatidosis, Trichinosis, Ascariasis, Amoebiasis, Oxyuriasis |
| Chemical poisons | Pesticides, heavy metals (arsenic, lead, cadmium, etc.) |
| Food toxins | Lathyrism, Epidemic dropsy, Aflatoxins |

FOOD SAFETY & IT'S COMPOSITION

The composition of the food may affect the health of consumer such as :

- **ADULTERATION OF FOODS**
- Adulteration of foods consists of a large number of practices - mixing substitution, abstraction, hiding the quality, putting up decomposed foods for sale, misbranding or giving labels and addition of poisons. Some forms of adulteration are injurious to health, eg., adulteration of mustard oil with argemone oil. But for the most part food adulteration has an economic rather than a sanitary significance eg., addition of water to milk.

- **FOOD FORTIFICATION**
- the process whereby nutrients are added to foods to maintain or improve the quality of the diet of a group, a community or a population'.

- **FOOD ADDITIVES**

- The concept of adding "non-food" substances to food products is not new. Pickling is a practice aimed at preserving food articles such as mango, lime and amla for fairly long periods by the addition of salt and spices. Modern science of food technology employs more than 3,000 substances - some natural (eg., saffron, turmeric) and others artificial or synthetic (eg., saccharin, sorbic acid) known as 'food additives'. Majority of the processed foods such as bread, biscuits, cakes, sweets, confectionary, jams, jellies, soft drinks, ketchup, all contain food additives.

- Food additives are defined as non-nutritious substances which are added intentionally to food, generally in small quantity, to improve its appearance, flavour, texture or storage properties. The definition also includes animal food adjuncts which may result in residues in human food and components of packing materials which may find their way into food .
- The food additives may be classified as colouring agents (eg., saffron, turmeric), flavouring agents (eg., vanilla essence), sweeteners (eg., saccharin), preservatives (eg., sorbic acid, sodium benzoate), bleaching agents (eg., chlorine) acidity imparting agents (eg., citric acid acetic acid), etc.. Uncontrolled or indiscriminate use of food additives may cause health hazards among consumers.



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FOOD SAFETY & HYGIENE

Contaminated food may be caused by:

- Unhygienic food **handlers**.
- Contact with dirty **utensils, surfaces, cloths**.
- **Bacteria transferred** from raw to cooked food.
- **Bad temperature control** during storage, preparation, cooking and reheating of food.
- Food preparation areas with **bad structural standards** that are impossible to keep clean.



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SAFE FOOD PREPARATION REQUIRES:

- Personal hygiene for food handlers.
- Kitchen Hygiene with regard to structures and procedures.
- Food Hygiene in relation to storage, preparation, cooking and reheating food.



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Food Handlers

- Food sanitation rests directly upon the state of personal hygiene and habits of the personnel working in the food establishments. **Proper handling of foods, utensils and dishes together** with emphasis upon the necessity for good personal hygiene are of great importance. The infections which are likely to be transmitted by the food handlers are diarrheas, dysenteries, typhoid and para-typhoid fevers, enteroviruses, viral hepatitis, protozoa cysts, eggs of helminthes, strepto and staphylococcal infections and salmonellosis.

- The first essential is to have a **complete medical examination** carried out of all food handlers at the time of employment. Any person with a history of typhoid fever, diphtheria, chronic dysentery, tuberculosis or any other communicable disease should not be employed. Persons with wounds, otitis media or skin infections should not be permitted to handle food or utensils. The day to day health appraisal of the food handlers is also equally important; those who are ill should be excluded from food handling. It is also important that any illness which occurs in a food handler's family should at once be notified.

- **Education of food handlers** in matters of personal hygiene, food handling, utensils, dishwashing, and insect and rodent control is the best means of promoting food hygiene. Many of the food handlers have little educational background.

PERSONAL HYGIENE FOR FOOD HANDLERS

- **Wash hands** properly using disinfectant soap and hot water :
 - Before handling food.
 - Switching from raw to cooked food.
 - After using the toilet.
 - After handling waste or pets.
 - After coughing, sneezing or blowing nose.

- Nails short, clean, no varnish, no jewellery.
- Cover cuts - coloured plaster.
- Don't cough, sneeze, smoke near food.
- Hair covered - tidy, tied back, hair net.
- Avoid touching face /hair.
- Wear protective clothing...apron gloves.
- Don't work with food if ill.

KITCHEN HYGIENE - STRUCTURAL

- All **surfaces** should be easily cleaned, non-absorbent, without joints or crevices, smooth.
- Good **lighting** system.
- Good **ventilation** - a cooler dryer room prevents microbes growing.
- Clean **water supply** and proper **drainage** .
- No access for **pests** e.g. mice, rats cockroaches.

KITCHEN HYGIENE - PROCEDURES

- Floors and work surfaces - washed and disinfected regularly.
- Cloths changed daily & washed frequently. Different cloths for different jobs.
- All equipment should be thoroughly washed, dried & kept in clean press/ drawer.
- Pets banned.
- Bins - small, covered, lined, foot operated, emptied daily, washed and disinfected weekly.
- Clean cutting surfaces after use. Use separate surfaces for raw and cooked foods.
- Food storage areas - tidy, cleaned regularly.

FOOD HYGIENE: PREPARATION

- High risk of cross - contamination during preparation because food is in contact with hands, surfaces, equipment & raw food could contaminate cooked food.
- Also food is in the danger zone i.e. between 5 - 63°C.

Rules:

- Keep danger zone time short.
- Prepare food just before cooking.
- Prepare raw and cooked food separately.
- Wash fruit and vegetables well. Keep away from meat.
- Avoid handling food - use utensils/gloves.

FOOD HYGIENE - COOKING

Cooking can destroy microbes and their toxins if temperature is high enough for the correct amount of time. Correct temperature and time depends on the food type.

Rules:

- Use clean equipment in good condition.
- Thaw meat and poultry fully before cooking.
- Cook properly - centre must reach 82°C for 20 minutes.
- Stir stews, sauces, gravies to spread heat during cooking. Keep above 73 °C until served.
- Cook made - up dishes likes pies very well to avoid cross contamination between ingredients.
- Handle food as little as possible.

REHEATING COOKED FOODS

Ideally all food should be eaten immediately after cooking, but this is not always possible.

When food is reheated, there is a risk that it may be reheated to a temperature at which bacteria can multiply. It may not be a temperature high enough to destroy them.

Reheating Rules:

- Leftovers - cooled quickly, covered, refrigerated for 2 days maximum.
- Reheat quickly to keep time in danger zone minimal.
- Heat to 100°C for 10 minutes to kill microbes.
- Never reheat more than once.
- If reheating in microwave follow manufacturers instructions for power setting and time.

HYGIENIC FOOD STORAGE

Dry Goods

Risks: microbial contamination & pests.

Rules:

- Store food in a cool, dry, well ventilated cupboard or larder.
- Use original container or glass, plastic, metal storage jars.
- Use in rotation.



HYGIENIC FOOD STORAGE

Fresh fruit and vegetables

Risks: Bacterial contamination
e.g. *E. coli.*,
mould growth, enzyme activity,
pests.

Rules:

- Store each type in its suitable place (refrigerator or room)



HYGIENIC FOOD STORAGE

Cook-Chill Foods

Risks: bacterial growth, mould growth.

Rules:

- Check date stamp.
- Store below 4°C.
- Use food in rotation.
- Fridge not too packed.
- Cover food.
- Raw below cooked.
- Cooled first.



HYGIENIC FOOD STORAGE

Frozen foods

Risks: bacterial growth if temp of -18°C is not maintained.

Rules:

- Put in freezer as soon as possible after buying.
- Freeze fresh food at -25°C and store at -18°C .
- Label with date and use in rotation.
- Do not refreeze thawed food.