

6 Safety Procedures and Nutrition

CATERING IN THEORY

Health and safety

HACCP

The **Hazard Analysis and Critical Control Point**, or **HACCP**, is a recognised way of making sure food safety hazards in all food businesses are managed responsibly and continuously. It is a self-regulating system introduced in the EU in 1993 and has been a legal requirement since 1st January 2006. The hazard analysis addresses three main types of risk in food production:

- **biological hazard**: when foods become dangerously infected by bacteria;
- **physical hazard**: through foreign bodies from factory machines (metal or plastic) or natural hazards like bones in fish;
- **chemical hazard**: when chemicals like cleaning fluids or pesticides contaminate food.

Critical control points must be frequent and correctly documented. They can be done by hand or using **CAM, computer-aided manufacturing** (computer software to control the correct functioning of machinery).

HACCP principles

All food businesses must have an HACCP plan to make sure food is safe to eat. The HACCP process makes use of two main charts:

- flow charts: diagram representing the sequence of operations, actions or equipment in an industrial process.
- decision trees: a treelike diagram illustrating the choices available to a decision maker.

1st principle: hazard analysis. Identify any hazards that must be avoided, removed or reduced;

2nd principle: identification of CCP (critical control points). These are the points when you need to prevent, remove or reduce a hazard in your work process;

3rd principle: set critical limits for each CCP;

4th principle: monitoring the CCPs to check that critical limits are adhered to;

5th principle: intervene to resolve any problems with CCPs;

6th principle: implement controls to ensure your plan is functioning correctly;

7th principle: keep detailed records of your plan and interventions for possible inspections by Health and Safety authorities.

Food transmitted infections and food poisoning

Foodstuffs are a very good breeding ground for microbes because of their chemical and physical characteristics, but not all microorganisms have a negative effect on food. For fermented products (wine, yoghurt, salami, etc.) **lactic bacteria** are fundamental to reducing PH and therefore increasing food preservation times. Biological hazards can render food inedible or harmful to humans. **Pathogenic bacteria** or **spores** colonise the intestine, producing toxins which make us ill. They can grow thanks to the presence of oxygen in foodstuff and can develop in foods such as meat, fish, eggs, dairy products. Room temperature also facilitates bacterial growth and reproduction.

Food contamination: risk and preventive measures (1)

Cured meat and vegetable preserved in oil

Risks: bacterium botulinum, which grows in the absence of air.

Prevention: wash vegetables carefully and add vinegar to preserve. Use only cured meat treated with sodium nitrate.

Cooked meat

Risks: clostridia, occurring during the slaughtering process and not fully eliminated by cooking meat, roasts, meatballs, etc.

Prevention: cool meat products quickly within three hours or maintain a high temperature until the meat is served.

Long-life canned food

Risks: contamination from altered or damaged packaging of meat, vegetable or fish products in oil.

Prevention: do not store food in metal cans, but in a well-aired and dry place.

Deep-frozen food

Risks: bacterial growth caused by sudden changes in temperature.

Prevention: do not overload fridges or freezers, allow food to cool before refrigerating or freezing, clean and defrost units to stop the formation of condensation or frost.

Food contamination: risks and preventive measures (2)

Flour, cereals, bakery products and nuts

Risks: insect infestation, for example from weevils or contamination by mycotoxins from mould.

Prevention: keep foods perfectly sealed at below 15° C, do not allow them to expire and avoid humidity.

Fruit and vegetables

Risks: residual pesticides.

Prevention: request documentation from all wholesale trade suppliers.

Mushrooms:

Risks: dangerous and sometimes lethal toxins.

Prevention: purchase mushrooms in sealed packaging from regulated sellers.

Fish products

Risks: anisakis, a parasitic worm found in fish which can cause serious health problems.

Prevention: suppliers should provide documentation that products are parasite-free; remove fish intestines before cooking.

Diet and nutrition

The eatwell plate

We should eat at least five portions of **fruit and vegetables** a day. They contain vitamins and minerals and are low in fat and calories.

Carbohydrates like **potatoes, bread, rice and pasta** give us energy but also fibre, calcium and vitamin B. Wholegrain varieties are particularly healthy.

Milk, cheese and yoghurt provide good sources of protein and high levels of calcium, vital for strong bones.

Meat, fish, eggs and beans are full of protein, vitamins and minerals.

We should avoid too much fatty or sugary food like cakes, biscuits or chocolate and we should have water instead of fizzy and sugary drinks.

Organic food and GMOs

The term "organic" refers to the way farmers grow and process agricultural products. **Organic food or drink** is produced in a safe soil without artificial chemicals and it is not genetically modified. Animal products labelled organic are not given antibiotics or growth hormones. Organic food is said to be tastier, better for people, other animals and the environment, it is **sustainable**.

Genetically Modified Organisms (GMOs) are plants or animals whose genes (and DNA) have been changed to give it a particular quality that they do not usually have. People in favour of GMOs say they offer chemical-free protection from pests and diseases and increase nutrients in foods. On the contrary, people against GMOs say they are expensive, could be a risk to human health, lead to the loss of biodiversity and to climate change.

The Mediterranean diet

Many experts consider this diet to be one of the healthiest in the world. People living in the Mediterranean coastal region, from Spain to Middle East, tend to be healthy and have long lives. Mediterranean cuisine is based on vegetables, fruit, olives, pulses, whole grains, olive oil, fish, a little dairy and wine. The Mediterranean lifestyle generally includes regular physical activity. This diet emphasises low-fat, low-cholesterol and high-fibre foods. Nuts, fish and olive oil provide healthy monounsaturated fats which do not rise cholesterol levels the way saturated fat does. Most foods are fresh and seasonal, preparation methods tend to be simple and food are rarely deep-fried.

The Mediterranean diet is now included among UNESCO's intangible cultural heritages as it is a way of life. It promotes social interaction, exchange of

knowledge and culture, respect for the environment and biodiversity, as well as the development of traditional skills as fishing and farming.

Teenagers and diet

Adolescence is a time of rapid growth and the primary dietary is for energy. This means plenty of starchy carbohydrates, like bread, rice, pasta, cereals, couscous and potatoes, at least five portions of fruit and vegetables every day, two or three portions of dairy products, two servings of protein, such as meat, fish, eggs, beans and pulses, not too many fatty and sugar-rich foods. It is important to eat regular meals (including breakfast), take regular exercise and drink six to eight glasses of fluid a day.

Sports diets

According to Britain's double Olympic gold medal Mo Farah it is important not to skip breakfast in the morning (a sugary cereal to receive a sugar rush). For lunch and dinner, he usually eats pasta, steamed vegetables and grilled chicken. Throughout the day, he tends to eat small meals or snacks (raw fruit and vegetables, nuts, maybe toast and peanut butter or a hard-boiled egg). After training, he sometimes drinks a yoghurt drink or a milkshake. For the amateur athlete, it is important to maintain a healthy balance between carbohydrates and protein and do regular gym and running routines.

Food allergies and intolerances

- **Food allergy:** when the immune system generates a bad reaction to specific proteins found in food. It can be caused by gluten, crustaceans, eggs, fish, peanuts, soybeans, milk and tree nuts.
- **Food intolerance:** bad reaction to a sort of food or ingredient every time a person eats it. It is different from food allergy because it generally affects the digestive system and not the immune system. Food intolerance can be caused by cow's milk, alcohol, gluten (which leads to coeliac disease), chemical preservatives or additives in food and drinks.

Allergies produce specific symptoms which usually develop within minutes after eating the food while an intolerance produces more general symptoms that can develop several hours after eating. The symptoms of food allergy can be life-threatening, whereas the symptoms of food intolerance are not usually dangerous.

Eating disorders

Eating disorders include a range of conditions that can affect someone physically, psychologically and socially. The most common disorders are:

- **Anorexia nervosa:** trying to keep weight as low as possible by starving yourself or by exercising excessively;
- **Bulimia:** trying to control weight by eating a lot in public and then vomiting in private;
- **Binge eating:** overeating in order to deal with emotional experiences.

Risk factors include family history of eating disorders, depression, being criticised for your eating habits, body shape or weight, having stressful situations or an anxiety disorder, low self-esteem, bad experiences and difficult relationships with family or friends.

Alternative diets

- **Macrobiotic diet:** eating a simple, healthy diet to live in harmony with nature and prevent serious illnesses. Low in fat and cholesterol, but it can lack nutrients like calcium, protein and iron. It includes organic whole grains, locally-grown organic, seasonal fruit and vegetables, pulses, soya, seeds, nuts, etc.
- **Vegetarian diet:** not agreeing with killing animals for food, intensive farming or religious reasons. No fish or meat, but it can have products derived from animals such as eggs, milk, cheese, yoghurt. Healthy diet but it lacks vitamin B12 found naturally in animal products.
- **Vegan diet:** avoids any animal products or products derived from animals. No fish, meat, eggs, butter or cheese, but only nuts, fruit, vegetables, seeds and pulses. Low-fat diet but it can lack nutrients such as vitamin B12, calcium and iron.
- **Raw food diet:** based on the belief that the healthiest food is uncooked or cooked below 40° to 46° C. It generally excludes fish or meat but they can be eaten raw as carpaccio or sashimi. Rawists eat raw fruit, vegetables, germinated cereals and pulses, nuts, raw milk, honey. Healthy way of eating, but it can be dangerous because bacteria are not killed during cooking.
- **Fruitarian:** less common diet, based on the principles of Indian Ayurvedic philosophy. This diet consists in eating only fruit, nuts, spices and oils. It can be good for weight loss, but can be bad for the immune system.
- **Dissociated diet:** based on the idea of separating carbohydrates and proteins within the same meal. It helps you lose weight very quickly, but it is not a well-balanced diet because of the elimination of dairy products.

CASE STUDY

Slow Food

Slow Food was founded in 1986 by Carlo Petrini to prevent the opening of a McDonald's restaurant in Piazza di Spagna in Rome. It preserves traditional and regional cuisine using traditional production methods, it promotes sustainability and conserves biodiversity. It also reduces food miles and promotes local businesses and rural communities.