

PERSONAL HYGIENE/chapter 1

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1. Definition of personal hygiene
2. Goal of personal hygiene
3. EU regulations relevant to personal hygiene

The trainee/student will:

- learn to define personal hygiene in terms of food safety
- be able to present the basic principles of personal hygiene
- be able to set the main goals of personal hygiene
- learn current EU Regulations relevant to personal hygiene

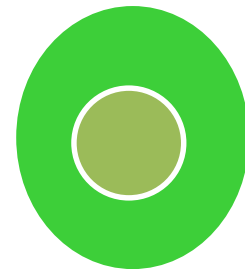
Food workers responsibility

Food workers have a moral and legal responsibility to ensure that they do not contaminate food. One of the characteristics of a good food worker is a positive attitude towards hygiene and a willingness to help maintain a high standard at the workplace.

Definition of personal hygiene

- Keeping clean and tidy when working with food, including the hair and especially the hands
- Avoiding unhygienic habits
- Wearing clean protective outer clothing and keeping hair covered
- Washing your hands regularly throughout the work period. Always wash your hands when they are likely to be contaminated, for instance after going to the toilet or after handling raw meat or poultry
- Reporting symptoms of food borne illnesses or any illnesses with similar symptoms to your employer

Goal of personal hygiene



- To prevent food poisoning / food contamination
- To comply with the law
- Appearance
- Staff morale

It is off-putting for customers, if those handling or serving food show little or no regard for their own personal hygiene standards. On the other hand, a clean appearance creates a good impression and is good for business.

EU Regulations relevant to personal hygiene



EU Regulations relevant to personal hygiene

General Food Law Regulation 178/2002

- **Key obligations of FBO's**

Safety

- FBO's shall not place on the market unsafe food

Prevention

- FBO's shall identify and regularly review the critical points in their processes and ensure that controls are applied at these points

EU Regulations relevant to personal hygiene

The Hygiene Pack

- The current regime of hygiene rules is often referred as ***'The hygiene package'***

It aims to introduce consistency and clarity throughout the food production chain from 'farm to fork'.

EU Regulations relevant to personal hygiene

Regulation 852/2004 Hygiene of foodstuffs

- Basic obligation
 - FBO's to ensure that all stages of production, processing and distribution of food under their control comply with the relevant **hygiene requirements** laid down in Regulation 852/2004
 - Chapter VIII: Personal Hygiene

EU Regulations relevant to personal hygiene

The Hygiene Pack Regulations

Regulation 852/2004

- Hygiene of foodstuffs

Regulation 853/2004

- Specific Hygiene Rules for Food of Animal Origin

Regulation 2073/2005

- Microbiological criteria for foodstuffs

Regulation 2074/2005

- Implementing measures

National rules

- For the implementation of regulations 852/2004, 853/2004 and for official control

EU Regulations relevant to personal hygiene

Regulation 852/2004 CHAPTER VIII PERSONAL HYGIENE

- Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.
- No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination.
- Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator.

- Regulation (EC)178/02 laying down the general principles and requirements of food law
- Regulation (EC) No. 852/2004 on the hygiene of foodstuffs
- Regulation (EC) No. 853/2004 laying down specific hygiene rules for food of animal origin in order to guarantee a high level of food safety and public health
- Regulation (EC) No. 854/2004 putting in place a Community framework of official controls on products of animal origin intended for human consumption
- <https://www.cdc.gov/handwashing/when-how-handwashing.html>

1. It is important to practice good hygiene because?

Bad hygiene practices can contaminate food products and cause sickness to personnel .

2. Food workers have a moral and legal responsibility to ensure that they do not contaminate food.

- a) **True**
- b) **False**

3. Cross-contamination may occur when

- a) Bacteria is spread from meat to raw foods.
- b) Bacteria is spread from ill workers or to raw foods.
- c) Bacteria is spread from raw foods to cooked foods.
- d) All of the above.**

4. Pick the example below which outlines the use of poor personal hygiene

a) Taking off jewellery before washing hands and leaving jewellery off

b) Washing hands before entering the facility

c) leaving long hair out

d) Shower daily and wear clean clothing

5. Which is the EU Regulation that sets specific requirements for Personnel Hygiene?

- a) Regulation (EC)178/02
- b) Regulation (EC) No. 852/2004**
- c) Regulation (EC) No. 853/2004
- d) Regulation (EC) No. 854/2004

Good Hygiene Practices/chapter 2



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1. HAND WASHING
2. CLOTHING AND CLEANLINESS OF CLOTHING
3. PROHIBITED CLOTHING/MATERIAL
4. PERSONNEL BEHAVIOR-SHORT DESCRIPTION OF GOOD AND BAD EMPLOYEE THAT HANDLES FOOD (IN TERMS OF FOOD SAFETY)
5. HANDLING OF FOOD PRODUCTS
6. INSTRUCTIONS FOR VISITORS

The trainee/student will:

- learn to present Good Hygiene Practices in terms of food safety
- be able to set the basic rules for a food handler in food industry in order to achieve high level of personal hygiene
- be able to describe the importance of the role of every food handler in terms of food safety
- learn easy rules and procedures that a food handler should follow in a food industry

- **Wash hands regularly**

Food workers are legally obliged to wash their hands after visiting the toilet. Toilet paper is porous and can cause the contamination of hands with dangerous bacteria even when soiling on hands is not visible. Forearms must also be washed regularly if they are uncovered at work.





- **It is also necessary to wash hands before**
 1. Starting work
 2. Handling food, especially if cooked or ready-to-eat
 3. Changing from one job to another



- **It is also necessary to wash hands after**
 1. Handling raw meat and vegetables
 2. Sneezing, coughing, blowing nose
 3. Touching eyes, nose, face, hair, mouth, cuts
 4. Smoking, coffee/lunch breaks
 5. Cleaning duties, handling money, waste



Hand washing

Wash hands properly

- Hands must be washed at a wash hand basin supplied with running hot and cold water. Liquid anti-bacterial soap and an approved means of hand drying should be used. The hands, front and back and the gap between the thumb and forefinger must be washed using a rubbing action. It is not satisfactory to run fingers under the tap and then to dry hands on uniforms. Hands should be thoroughly dried.



- **See poster: Hand washing**
- <http://foodqa.just.edu.jo/Pages/Courses.aspx>
- **Handwashing procedure:** page: 12-14:
- <http://foodqa.just.edu.jo/Pages/Training.aspx>
- **Handwashing video:**
- <http://foodqa.just.edu.jo/Pages/>
- **See e-books: Personnel Hygiene:**
<http://foodqa.just.edu.jo/Pages/Training.aspx>

- Characteristics for suitable clothing for a food worker
 - It must include suitable hat/cap and/or hairnet protecting all hair
 - It must be pale in colour so that any dirt is clearly visible
 - It must be washable
 - It must have no external pockets

Uniforms should be fastened by means of studs, or zips (to avoid the risk of buttons coming loose and causing physical contamination of food)

Where possible use disposable gloves, tongs, scoops or any other utensil which reduces direct contact with food.



Wear clean outer clothing

- Personal clothing can be easily soiled and can carry harmful bacteria. Clean protective clothing must be worn by food workers to protect the food from contamination by bacteria, dust, fibres and hair. It also offers personal protection from burns and other injuries. Protective clothing must not be worn outside the work-place. It must be put on in the staff cloakroom before work commences.

Long hair must be enclosed in a hair net. All food handlers must wear a hat or cap which completely covers the hair. Beards must be kept trimmed or covered.

Unnecessary handling of food

- There may be times when direct contact with the hands cannot be avoided.

Where suitable:

- a) Disposable gloves may be used
- b) Tongs, scoops and other utensils may be used
- Tongs are particularly useful in service areas when handling high-risk foods. Ice scoops should be provided with a suitable clean storage container so that the handle does not contaminate the ice.

- **Glass and hard plastic**
- **Long nails** (they are hard to keep clean and break easily)
- **Nail varnish** (hides dirt and chips off)
- **Watches and jewelry** (hold dirt, harbour bacteria and stones etc., may fall off)
- **Perfume/aftershave** (it may taint food)
- It is important to remember that food workers may also be prosecuted for breaches according to the food hygiene legislation which may result in having a criminal record. Food workers may also be fined for each offence and/or serve time in prison.

- **Unhygienic practices** include:
 1. Smoking as
 - a) it causes contamination of the fingers by hand-to-mouth contact
 - b) ash and butts may fall into food
 - c) it is illegal
 2. Coughing or sneezing over food
 3. Nail biting (may fall into food; contamination of the fingers by hand-to-mouth contact)
 4. Nose picking
 5. Finger tasting/wetting fingers to open bags etc.

(Staphylococcus aureus)-

Handling of food products



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 - 60°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 like pies very well in order to avoid cross contamination between ingredients.
- Handle directly food as less as possible.

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.

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.

Description of good and bad employee that handles food (in terms of food safety)

**Sources of
food poisoning
bacteria**



Instructions for visitors

- Visitors and non-food workers in the food premises must also comply with food hygiene legislation.
- This includes maintenance personnel, electricians, children, sales representatives, other staff members, etc.
- Access to the food preparation and storage areas should be restricted as much as possible and notices to that effect posted on entrance doors.
- Anyone entering a food area by necessity must also wear protective outer clothing and headgear.

- Antunović B., Mancuso A., Capak K., Poljak V., Florijančić T. (2008): Background to the preparation of the Croatian Food Safety Strategy Food Control. 19, 11; 1017-1022.
- <http://www.health.gov.au/internet/publications/publishing.nsf/Content/ohp-enhealth-manual-atsi-cnt-l~ohp-enhealth-manual-atsi-cnt-l-ch3~ohp-enhealth-manual-atsi-cnt-l-ch3.7>
- <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/personal-hygiene>
- <https://www.foodsafety.gov/keep/index.html>
- <http://foodqa.just.edu.jo/Pages/>

1. What are the basic steps for washing hands?
 - a. Wash thoroughly with water and dry.
 - b. **Apply soap, wash thoroughly, rinse and use paper towels.**
 - c. Apply soap, wash thoroughly.

2. What temperature range is considered the danger zone?

a) 14°C - 60°C .

b) 5°C - 60°C.

c) 5°C - 40°C

d) 4°C - 16°C

3. In a place of work, the best way to dry your hands after washing them is to;

- a. Use a cotton towel.
- b. Just shake excess water away.
- c. Use a air dryer.
- d. Use a once-use paper towel.**

4. Which one of the following jewellery is acceptable for a food handler to wear?

- a. No jewellery is allowed.**
- b. Wedding ring.
- c. Bracelet .
- d. A ring that is a symbol of religious faith.

5. What is the first thing you do when you enter food handling facilities?

a. Comb Your Hair

b. Go To The Toilet Before Starting Work

c. Wash Your Hands

d. Go To The Office And See What You Are Doing That Day

e. All Of The Above

HEALTH AND MEDICAL SCREENING/chapter 3

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1 Health Certificate-medical examination of personnel

1.1 Introduction

1.2 Definition

1.3 Certified food handler

1.4 Medical Examination

1.5 Issuing of Health certificate

2 Foodborne illnesses

2.1 Definition and nature

2.2 Economic impact of foodborne illness

2.3 Health consequences of foodborne illness

2.4 Infectious dose

2.5 Infection

2.6 Intoxication

3 Occupational Health and Safety in food companies

3.1 Implementing safety training for new employees

3.2 Training on personnel hygiene

3.3 Guardrails and Floors

3.4 Ventilation and lightening

3.5 Equipment, machine guarding and maintenance

3.6 Personal Protective Equipment

3.7 Safe and hygienic Practices

3.8 Working in confined space

The trainee/student will:

- learn the basic medical examination required for a food handler in Jordan
- be able to describe the procedure of issuing a Health Certificate in Jordan
- get to know the most important foodborne illnesses and their consequences
- learn to set the basic rules/instructions for safety of the workers in food industries

Health Certificate-medical examination of personnel

“People known, or suspected, to be suffering from, or to be a carrier of a disease or illness likely to be transmitted through food, should not be allowed to enter any food handling area if there is a likelihood of their contaminating food. Any person so affected should immediately report illness or symptoms of illness to the management. Medical examination of a food handler should be carried out if clinically or epidemiologically indicated.” (Codex Alimentarius, 2003)

DEFINITIONS

Food handler: Any person dealing directly or indirectly with packaged and unpacked foods or with equipment or Food products or food contact surfaces, thus requiring compliance with the application of food safety requirements

Food handling includes: Food receipt, food storage, food processing, food cooking and catering, food service and food transportation

Health certificate: A certificate attesting a person's good health and free from communicable and infectious diseases.

CERTIFIED FOOD HANDLER

- All food handlers and workers that contact food directly or indirectly in an establishment should have a valid Health certificate according to the established instructions.
- Medical examination for food handlers should be conducted every six months according to **article 14 paragraph 1 from the Law of crafts and industries no 16 year 1953.**

CERTIFIED FOOD HANDLER

- Food handlers or workers that are suspected to be suffering from infectious illnesses should be reported and excluded from food handling.
- Examples of most common infectious illnesses:
 1. Jaundice
 2. Diarrhea
 3. Vomiting
 4. Fever
 5. Sore throat with fever
 6. Visibly infected skin lesions (boils, cuts, etc.)
 7. Secretion from ears, eyes or nose.

MEDICAL EXAMINATION

The main objectives of medical examination among food handlers are:

- To ensure that all food handlers are not carriers of any pathogens related to foodborne diseases
- To ensure that those who come directly or indirectly in contact with food are not likely to contaminate the food
- To ensure that food products in Jordan are safe and do not pose any risk of foodborne diseases to the consumers.

MEDICAL EXAMINATION

Food handlers working in any food producing or food processing or food selling establishments are obliged to issue a health certificate.

MEDICAL EXAMINATION

Medical screening should include the following types of examinations:

- 1. Physical examination**(e.g Fever, Jaundice, Skin infection, etc.)
- 2. Lab examination**
 - ✓ **Blood test**(e.g Typhoid, Hepatitis A, Tuberculosis, etc.)
 - ✓ **Feces test**(e.g Eggs of worms and parasites, Harmful intestinal bacteria, etc.)
- 3. X-ray for chest**(Tuberculin test for pulmonary tuberculosis)

MEDICAL EXAMINATION

4. **Smear pharynx test**(e.g *Staphylococcus*, Diphtheria)
5. **Other tests**(*Any additional tests which the doctor deems necessary in order to proceed to the issue of the health certificate*)

ISSUING OF HEALTH CERTIFICATE

According to Law of crafts and Industries No. 16 of 1953

Article 14, the worker is not allowed to handle food directly or indirectly , unless he/ she is medically examined and has obtained a certified health certificate, which proves that he/she is free from communicable and infectious diseases.

ISSUING OF HEALTH CERTIFICATE

- **Health departments of Ministry of health** are responsible for the medical examination and issuing of health certificates.
- **Health and Occupational Control Departments of the Greater Amman Municipality** are responsible for lab examination and issuing of health certificates **in the governorate of capital (Amman) of Jordan.**

ISSUING OF HEALTH CERTIFICATE

- Health certificate format should be according to the format determined by the Ministry of health.
- **Jordan Food and Drug Administration(JFDA)** cooperatives along with **Amman Municipality and Ministry of health** are responsible for inspection and controlling of the validity of health certificates of food handlers and workers.

- Foodborne diseases, especially those caused by pathogenic organisms, remain a serious problem in most countries. Diarrhea is the basic feature of most of these diseases and a large percentage of diarrhea episodes may result from the consumption of contaminated food and water.
- Most foodborne illnesses could be prevented. This fact means that hospitalizations and deaths related to foodborne illnesses are preventable as well.

DEFINITIONS

Foodborne disease can be defined as: “any disease of an infectious or toxic nature caused by or thought to be caused by the consumption of food or water” (WHO, Basic Food Safety for Health Workers, 1999)

TABLE 1: CAUSES OF FOODBORNE ILLNESSES

INTRINSIC HAZARDS	Examples
Natural toxins or anti-nutritional factors	oxalic acid (rhubarb, spinach)
	Alkaloids
	solanine (potatoes)
	dioscorine (yams)
	cyanide (cassava, lima beans)
	haemagglutinin (red kidney beans)
	protease inhibitors (legumes)
	phytic acid (bran)
	amatoxin, psilocybin and others(toxic Mushroom)
EXTRINSIC HAZARDS	Examples
Chemical Contamination	dioxins, PCBs
	heavy metals (Cd, Hg, Pb, ...)
	pesticides residues, hormone residues
Biological Contamination	Bacteria
	causing infection e.g. Salmonella
	causing intoxication e.g. C. botulinum
	Parasites
	helminths e.g. roundworms
	protozoa e.g. Giardia lamblia
	Viruses e.g. Hepatitis A
	Viruses (SRSVs)
	Fungi/mycotoxins e.g. aflatoxin
	Algae (e.g.dinoflagellates leading to paralytic shellfish poisoning

"Adapted from (M Adams; Y. Motarjemi, 1999)"

ECONOMIC IMPACT

Foodborne illnesses have major economic impacts on any country's economy. These costs include the following cases:

1. Loss of income by the affected person
2. Cost of health care
3. Loss of productivity due to absenteeism
4. Costs of investigation of a food poisoning outbreak
5. Loss of income due to closure of businesses
6. Loss of sales when consumers avoid certain food products

HEALTH CONSEQUENCES

In developed countries, incidents of foodborne illness are normally mild and not usually life threatening.

Exceptions occur usually with specific groups of people (e.g very old people, babies or young children, pregnant women sick or weak people, etc.). A diarrheal disease could be fatal for these population groups.

INFECTIOUS DOSE

Infectious dose is the amount of pathogen (measured in number of microorganisms) required to cause an infection in the host. Usually the infectious dose varies according to the pathogenic agent and the consumer's age and overall health.

INFECTION

- Infection is the invasion of an organism's body tissues by disease-causing agents, their multiplication, and the reaction of host tissues to the infectious agents and the toxins they produce.
- The time needed between food consumption and the first symptoms can range from several hours to one week. The most common symptoms are diarrhea and/or vomiting and typically last from 1 until 7 days.

INFECTION

Foodborne infections can be caused by the following agents (most common examples):

- **Bacteria:** Salmonella spp., Listeria monocytogenes, Campylobacter jejuni, Vibrio parahaemolyticus, Vibrio vulnificus, Yersinia enterocolitica
- **Viruses:** Hepatitis A, Rotavirus, Norovirus
- **Parasites:** Trichinella spiralis, Anisakis simplex, Toxoplasma gondii, Giardia duodenalis

INTOXICATION

- In foodborne intoxications, the microorganisms which already exist in food produce toxins. It is the toxins, rather than the microorganisms, that cause illness.
- The time needed between food consumption and the first symptoms is usually quite short (1-2 hours and in some cases even shorter). The symptoms vary between nausea, diarrhea and vomiting and are usually quite intense.

INTOXICATION

- The most common foodborne bacteria which may cause intoxication are: *Clostridium botulinum*, *Staphylococcus aureus*, *Clostridium perfringens* and *Bacillus cereus*.
- Seafood toxins and plants or mushrooms could cause an intoxication.
- Viruses and parasites are **not** able to cause intoxications.

- Workers in food processing plants are exposed to many potential risks and dangers due to improper training or misunderstanding or less knowledge about safety regulations.
- Assessment of risks and their management is an important issue that must be considered in each food processing plant. This assessment is going to create a healthy workplace that enhances worker performance and promotes human health.
- Improvement of occupational safety and health is achieved through focusing on equipment and best work practices.

The most common risks are listed in the following categories:

- ✓ **Knife cuts and amputations**
- ✓ **Falls**
- ✓ **Burns and scalds**
- ✓ **Electrical shocks**
- ✓ **Back pains**
- ✓ **Redness and swelling and itching of skin**
- ✓ **Respiratory problems**

IMPLEMENTING SAFETY TRAINING FOR NEW EMPLOYEES

Health and safety training for new employees should include the following information:

- potential hazard of the job
- training responsibility
- reporting of hazards
- emergency guide
- safety and protective clothing and equipment
- first aid kits and emergency room
- cleaning, maintenance and company safety measures

IMPLEMENTING SAFETY TRAINING FOR NEW EMPLOYEES

Implementing a safety training program helps to succeed the following objectives:

- Increase safe and reduce dangerous behaviors
- Detect potential hazards and eliminate them before injuries occur
- Reduce absenteeism
- Increase employees' awareness level
- Improve relations between employees and management
- Reduce injuries on the job

TRAINING ON PERSONNEL HYGIENE

Personnel hygiene training should include:

- ✓ Hand washing good practices
- ✓ Daily shower, good dental hygiene, short clean nails etc.
- ✓ Clean clothing
- ✓ Protective clothing, for example gloves, hair caps, etc.
- ✓ Prohibited clothing, for example rings, watches, jewelers, etc.
- ✓ Immediate reporting for any sudden cut or illness

GUARDRAILS AND FLOORS

Slips and falls are one of the greatest risks for workers in food processing plants. There are three important ways to prevent these types of incidents:

1. Keep walking surfaces free of slippery materials (water, grease, etc.).
2. Check that walking surfaces provide enough friction
3. Provide workers with slip-resistant shoes or boots.

VENTILATION AND LIGHTENING

- Food industries should have both localized and general ventilation systems to protect workers from air contaminants. The local ventilation should remove exhaust from equipment and other contamination from the air. These systems must be located around the source of air contamination. General ventilation, including windows, fans and roof ventilators, for the building is also required in order to maintain low levels of air contaminants.
- Lights, either natural or artificial or both, and emergency lights should be adequate in order to ensure workers safety.

PERSONAL PROTECTIVE EQUIPMENT

- Workers should wear non-slip, closed shoes while performing their duties in order to prevent slips and falls.
- **Additional personal protective equipment varies depending on the worker's role in the facility.** For example, workers who are exposed to hazardous chemicals must be provided with gloves, goggles and a respirator.

SAFE AND HYGIENIC PRACTICES

- Workers must follow strict regulations in order to maintain a safe environment. This includes:
 1. Inspection of the equipment
 2. Availability of hand-washing facilities
 3. Safety training provided by the employers , so that workers are aware of potential dangers and how to prevent injury and illnesses.
 4. Knowledge of basic hygienic practices and efficient use of sanitizers in order to avoid contamination of food.

WORKING IN CONFINED SPACE

Typical examples of confined spaces in food industry are:

- Silos
- Tanks
- Mixing vats
- Storage bins

WORKING IN CONFINED SPACE

Potential hazards in such places should be identified and managed. Some examples of these hazards are:

- ✓ Hazardous atmosphere condition (lack of oxygen, air contaminants, etc.)
- ✓ Physical obstacles or limitations to movement (including exit and entry)
- ✓ Instability of stored products
- ✓ Other mechanical or electrical hazards.

WORKING IN CONFINED SPACE

Each type of confined space has different safety and regulatory requirements. However, some tips to prevent confined space problems are:

1. Evaluate the workplace - determine if there are confined spaces.
2. Inform workers not to enter confined spaces unless they have permission.
3. Put signs in all confined spaces.
4. Write and distribute a detailed process for employees who are permitted to enter a confined space.

WORKING IN CONFINED SPACE

5. Evaluate confined spaces for the following:
 - ✓ Oxygen level, flammability and toxic substances (already known or possibly present).
 - ✓ Methods for isolating the space - either by mechanical or electrical means
 - ✓ Adequate ventilation of the space.
 - ✓ Work procedures for the persons working in the confined space.
 - ✓ Personal protective equipment (clothing, footwear, respirator, boots, etc.).

WORKING IN CONFINED SPACE

6. Train workers to recognize the hazards of working in a confined space
7. Assign a person to remain outside of the confined space.
8. Define rescue procedures in case of an emergency.
9. Have a monitoring system in place in order to continuously monitor the conditions of the confined space.

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1. A food handler who suffers from diarrhea should:
 - a) Wear protective gloves during food handling
 - b) Wash his/her hand every 15 minutes during food handling
 - c) **Report to his/her supervisor and take a leave from work for as long as the symptoms exist**

2. Medical screening of food handlers includes:
- a) Physical examination
 - b) Blood test
 - c) Feces test
 - d) X-rays for chest
 - e) Smear pharynx test
 - f) All of the above**

3. Which of the agents below can cause foodborne intoxications (more than 1 correct answers):
- a) *Clostridium botulinum***
 - b) *Staphylococcus aureus***
 - c) Seafood toxins**
 - d) Viruses
 - e) Parasites
 - f) Mushrooms**

4. What is the exact meaning of infectious dose?

Infectious dose is the amount of pathogen (measured in number of microorganisms) required to cause an infection in the host.

5. What is the frequency of medical examination for a Jordanian food handler:
- a) *Every month*
 - b) *Every 3 months*
 - c) **Every 6 months**
 - d) Once per year
 - e) Once per 3 years
 - f) Once per 5 years

EMPLOYEE TRAINING/chapter 4

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1 Content of training material

2 Goals of training

The trainee/student will:

- learn the parts of basic training material on personnel hygiene
- be able to describe employer and employee responsibilities regarding training
- learn examples of training formats and training programs established by employers
- get to know the role of training in order to achieve a high level of personal hygiene

1. Healthy personnel in terms of food safety
2. Signs and symptoms of infectious diseases
3. Ways of contaminating food by personnel
4. Personal hygiene – Good hygiene practices
5. Hand washing
6. Protective clothing
7. Protective Equipment
8. Instructions for visitors

All employees should receive training when required and especially:

- ✓ when they are first hired
- ✓ before beginning in a new work place
- ✓ when company's policies or procedures are revised or need to be reinforced

- Training should be performed at least once a year for all personnel that handle food. The annual training program should include the following information:
 1. Training Year
 2. A list of employees and their job description
 3. The training objective (e.g Personnel Hygiene, etc.)
 4. The exact date and training duration
 5. Trainer's name
- The language of training courses should be understandable for every employee – images and photos could be really useful in the training procedure.

The company should keep records of each employee's training history which should include:

1. the employee's name
2. employee's job description
3. the hiring date
4. the training date
5. duration of training
6. training objective
7. the name of the trainer or training provider
8. evaluation of the training – trainee

A variety of training modules could be selected, including:

- ✓ One-on-one or group training
 - ✓ Coaching or mentoring based on each job description
 - ✓ On-line courses
 - ✓ Review of company's policies and procedures(SOP's and SSOP's)
-
- Trainers could choose between different training formats including videos, presentations, company's written working instructions or manuals, etc.

A trainee after receiving training should be able:

- *To identify typical signs and symptoms of infectious diseases*
- *To be able to provide protection from a lesion*
- *To understand the conditions of contaminating food and vice versa*
- *To understand the importance of good hygiene*
- *To understand the importance of hand washing and proper hand washing techniques*
- *To train personnel how to use protective clothing, footwear and equipment depending on each job description*
- *To ensure that good hygienic practices are followed by visitors*

- Hellenic Food Authority, *Basic Education Manual in Health and Food Safety*, 2004.
- Royal Environmental Health Institute of Scotland, *The Food Hygiene Handbook for Scotland, 17th Edition*, pp 33-38, 2016.

1. What is the proposed minimum frequency for personnel training ?
 - a) Every month
 - b) Once per year**
 - c) There is no rule-it depends on the employer

2. Training could be performed through:
- a) One-on-one or group training
 - b) Coaching or mentoring based on each job description
 - c) On-line courses
 - d) All of the above**

3. Please state at least 3 basic contents that Personnel Hygiene Training should include:

- a)
- b)
- c)

- a) Healthy personnel in terms of food safety**
- b) Signs and symptoms of infectious diseases**
- c) Ways of contaminating food by personnel**
- d) Personal hygiene – Good hygiene practices**
- e) Hand washing**
- f) Protective clothing**
- g) Protective Equipment**
- h) Instructions for visitors**

4. Please choose the training formats that could be used:
- a) Videos
 - b) Presentations
 - c) Manuals
 - d) Work instructions
 - e) **All of the above**

5. Evaluation of the training is not obligatory
- a) True
 - b) False**



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