

# **Occupational Safety and Health**

## **Part 1**



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**Course name: Community Health Nursing**

**Faculty of Nursing Code: NURS 401**

**Fall Semester**

**Week No. 5**

# Objectives

Upon completion of this lecture, the student will be able to do the following:

- Discuss the major dimensions of a Occupational safety and Health.
- Discuss the Major roles of community health nurse.
- Identify the types of health hazards .
- Describe the process of conducting a personal protective equipment.

# WORK SAFETY



## **Occupational health and safety :**

**Occupational health and safety (OHS) is a practice that deals with the safety, health, welfare and wellbeing of people when they are at work.**

## **WHO defined Occupational Health as;**

‘the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations’

**Occupational Health Nurse:** Diagnoses and treats health issues for a group or organization; may specialize in the unique hazards of a particular industry; implements programs to improve employee health and safety

# Aim of the roles of Occupation and Health Nurse

- To promote health at work
- To protect the health of the worker
- Care for work-related injuries and illness
- Committed to client's wellness which involves - health promotion  
- disease and injury prevention - health education - care and  
safety management

# Factors determining OHSN's scope of practice

1. The no. of workforce
2. Types of products and processes
3. Chemicals used
4. Machinery used
5. Management philosophy



# Major Roles of the Occupational Safety and Health

## Nurse OSHN :

1. Clinician/Practitioner
2. Administrator
3. Educator
4. Researcher
5. Consultant

# Major Roles of the OSHN

## 1. Clinician/Practitioner

- Assess work environment
- Assess workers health status
- Perform health surveillance
- Provide direct nursing care
- Conduct health education and counselling
- Collaborate, communicate and consult with Occ. Safety & Health (OSH) team
- Maintain accurate, concise and complete records

# Major Roles of the OSHN

## 2. Administrator

- Maintain awareness of technology, legal & professional changes associated with OH and Safety
- Coordinates in professional growth & education opportunities for staff
- Formulates policies for OH and Safety
- Develops, implements and evaluates OH service

# Major Roles of the OSHN

## 3. Educator

- Provide education programs to employers & employees
- Promotes integration of OHN practice into nursing education
- Utilise experts in OHS in planning & coordinating relevant education programs
- Collaborates with other OHN regarding practice issues & students practical sites
- Serves as a role model and preceptor for the students

# Major Roles of the OSHN

## 4. Researcher

- Participates in the development & implementation of research
- Disseminates research findings to others through presentation, publication & practice
- Incorporates research results into own practice Collaborates with other members of OH team in developing & conducting research

# Major Roles of the OSHN

## 5. Consultant

- Offer advise to the patient regarding the future treatment, or preventative measures to be taken at work when it is appropriate.
- Offer advice to management regarding the health of the worker as it may be affected by the processes or the substances used in them, where she/he considers such advice to be necessary

# Types of Occupational Health Hazards

**1. Physical Hazards**

**2. Biological Hazards**

**3. Chemical Hazards**

**4. Ergonomic Hazards**



# Types of Occupational Health Issues

## 1. Physical Hazards

Employers are legally obligated under law to ensure that work environments are free from physical hazards, or conditions that can cause physical harm to a person without any type of contact.





# Types of Occupational Health Issues

## 1. Physical Hazards

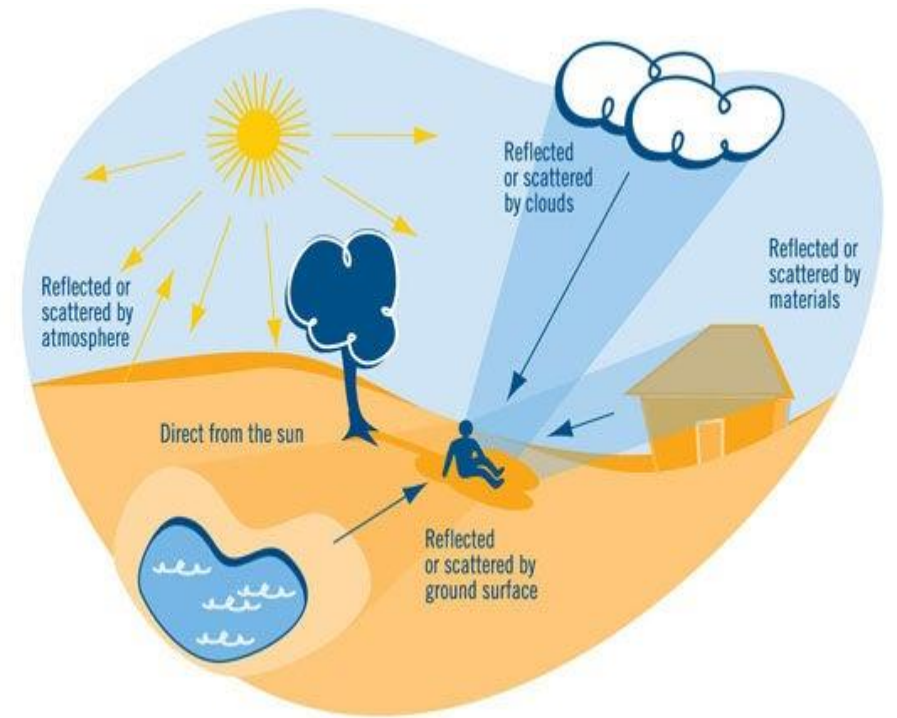
**A. Heat illness:** According to OSHA, dozens of workers die every year from working in extreme heat or humid conditions, and thousands more become ill

# 1. Physical Hazards

**B. Radiation:** Employers are obligated to protect employees from both ionizing and non-ionizing radiation. Some examples of non-ionizing radiation include microwaves and radiowaves. Examples of ionizing radiation include X-ray machines and computed tomography (CT) equipment.

# 1. Physical Hazards

**C. Sunlight/UV exposure:** Workers who spend a lot of time in the sun should be equipped with eyewear and sunscreen to protect them from exposure to harmful ultraviolet rays.



## 2. Biological Hazards

Biological hazards are **organic substances that present a threat to the health of people and other living organisms.**



## 2. Biological Hazards

Biological hazards include things like:

1. **Bodily fluids:** This includes blood, vomit, and diarrhea.
2. **Pathogens:** This includes microorganisms such as bacteria, viruses, and fungi.
3. **Mold:** Mold can cause respiratory problems, especially in sensitive individuals.

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## 2. Biological Hazards

**Biological hazards include things like:**

**4.Plants:** Certain kinds of outdoor work may expose workers to hazardous plants such as poison ivy, poison oak, devil's club, and stinging nettle.

**5. Biting insects:** Biting insects include mosquitoes, venomous spiders, and ticks. Ticks and mosquitoes can spread chronic diseases such as Lyme disease and zika virus.

## 2. Biological Hazards

Biological hazards include things like:

**6. Animals:** Certain workers may also be exposed to venomous snakes such as rattlesnakes or disease-carrying animals such as rodents and bats.

**7. Animal feces:** Animal feces can spread viruses, bacteria, and parasites.

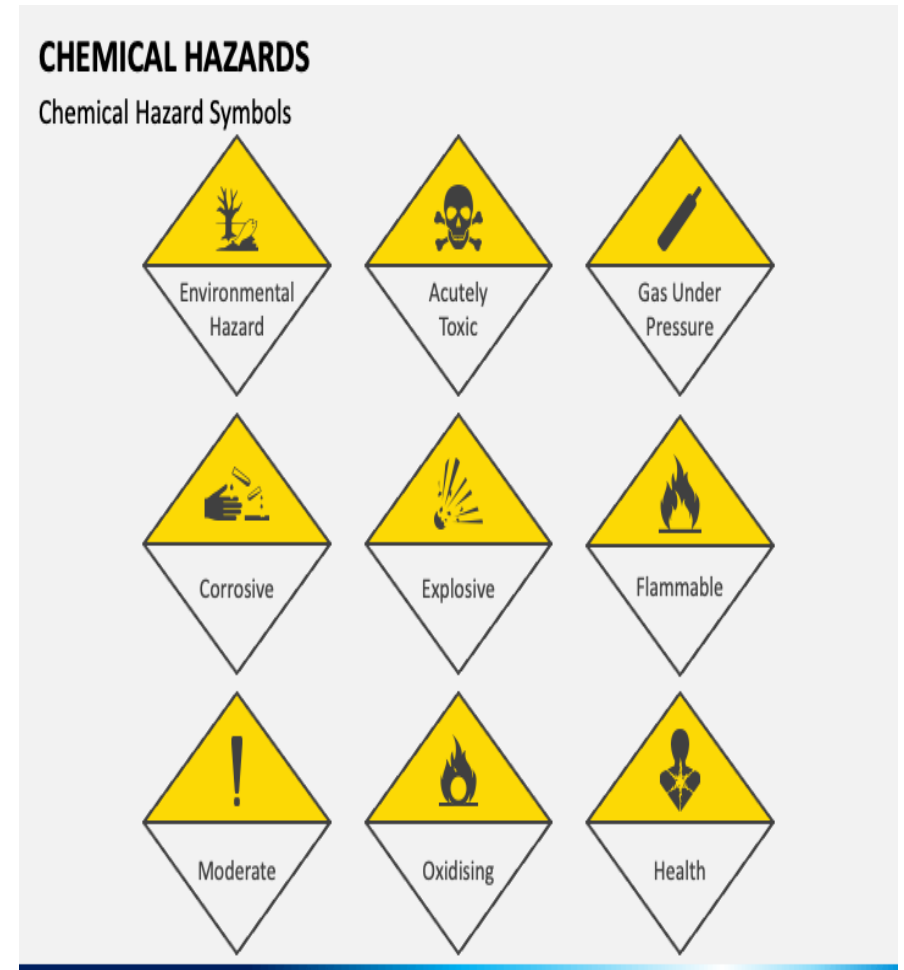


# 3. Chemical Hazards

Chemical hazards are typical of hazardous chemicals and hazardous materials in general.

Exposure to certain chemicals can cause acute or long-term adverse health effects.

Chemical hazards are usually classified separately from biological hazards.



### 3. Chemical Hazards

Examples of chemical hazards include:

- 1. Liquids:** Paints and solvents, cleaning products, and pesticides can cause contact injury. Long-term exposure to certain chemicals can cause chronic illnesses such as cancer.
- 2. Gases and fumes:** This includes gases such as carbon dioxide and carbon monoxide and vapors/fumes that are produced during activities like welding or using paints and solvents.

## 3. Chemical Hazards

Examples of chemical hazards include:

**3. Flammable substances:** Substances like gasoline, liquefied petroleum gas, and paints and lacquers may catch fire or cause explosions.

**4. Dust hazards:** Sawing and sanding can expose workers to dust, which can irritate the lungs and cause breathing problems. Some types of dust like silica and asbestos can be extremely hazardous and can cause long-term health problems.

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## 4. Ergonomic Hazards

- **Poor posture**
- **Repetitive stress**
- **Weather-related**
- **Visibility**

# Personal Protective Equipment PPE

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# Personal Protective Equipment

**Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses.**

# Hazard Assessment

## The employer must:

1. Evaluate every job function
2. Determine if hazards are present
3. Check for hazards to all parts of the body
4. Determine appropriate PPE

Common hazards include chemical exposures, falling or dropping objects, particulates, temperature extremes, light radiation, moving equipment and parts, sharp objects, etc.





# Training Requirements

**Employer must train employees in the following areas before issuing them a PPE:**

- When PPE is necessary
- What PPE is necessary
- How to properly don, doff, adjust, and wear PPE
- Limitations of the PPE
- Proper care, maintenance, and disposal of the PPE

# Training Requirements

Employees must demonstrate an understanding of the training and the ability to use PPE properly before being allowed to perform work requiring the use of PPE

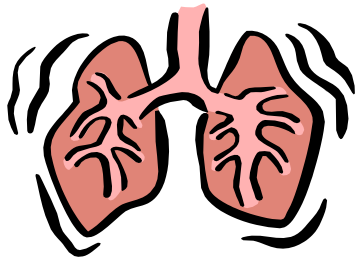
Training should be documented through a written certification to verify that each employee has received and understood the training requirements

# Retraining Requirements

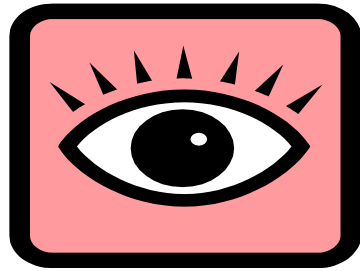
## **Employees shall be retrained due to:**

1. Changes in the workplace
2. Changes in types of PPE used
3. Inadequacies in an affected employee's knowledge
4. Assessment that the use of assigned PPE indicate that the employee has not retained training
5. Or as determined by results of accident investigation

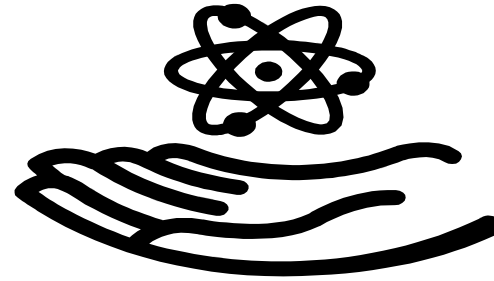
# Routes of entry (or routes of exposure)



**inhalation**



**Eye splash**



**skin**



**ingestion**

**Knowing the hazards and how to protect yourself is the key to your safety!**

# Types of PPE

1. Eye & Face Protection
2. Respiratory Protection
3. Head Protection
4. Foot Protection
5. Hand Protection
6. Hearing Protection
7. Body Protection
8. Fall Protection



# Types of PPE

## 1. Eye and Face Protection

There are four primary types of eye protection

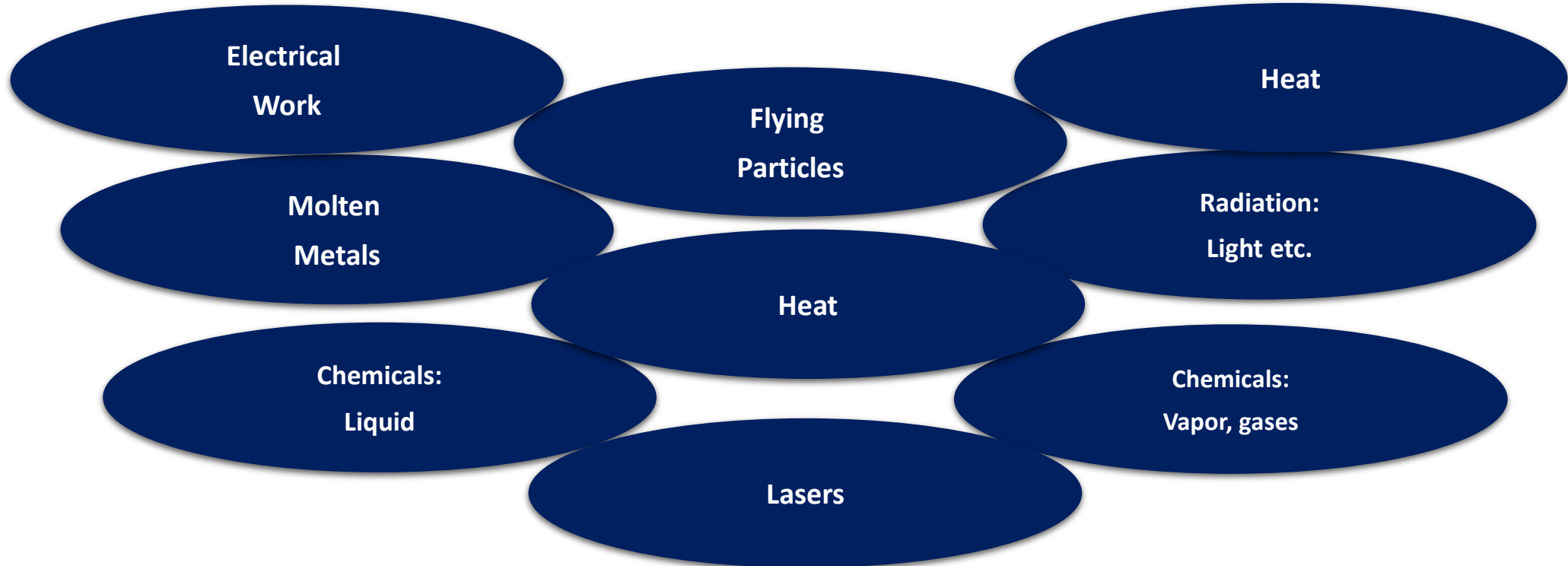
1. **general safety glasses**
2. **laser safety glasses**
3. **chemical splash goggles**
4. **impact goggles.**

**Full face protection is achieved by wearing face shields.**

# Types of PPE

## 1. Eye and Face Protection

Required for exposure to eye and face hazards such as:



# Types of PPE

## 2. Respiratory Protection

Respiratory Protective Equipment (RPE) is a particular type of Personal Protective Equipment (PPE), used to protect the individual wearer against the inhalation of hazardous substances in the workplace air.





# Types of PPE

**When the use of respirators are required, the following elements shall apply:**

- Training
- Fit testing
- Medical evaluations
- Care and maintenance
- Procedures for respirator selection
- Procedures for routine & emergency use

# Types of PPE

## Protection

**Required when employees are in areas where there is a potential for injury to the head from:**

- Falling objects
- Flying objects
- Fixed object
- Protruding material
- High voltage equipment and work involving



# Types of PPE

## 4. Foot Protection

Required when employees are in areas where there is danger of foot injury due to

- falling and rolling objects
- slip hazards or objects piercing the sole, and
- where employees are exposed to electrical hazards



**Must comply with ASTM F2413  
– 05**

# Types of PPE

## 4. Foot Protection

### Potential Hazards



Impact Injuries



Spills & Splashes



Compression Injuries



Electrical Shocks



Slipping



Heat/Cold

# Types of PPE

## 5. Hand Protection

**Required when employees' hands are exposed to hazards such as**

- Skin absorption of harmful substances
- Severe cuts or lacerations
- Punctures
- Chemical burns
- Thermal burns
- Harmful temperature extremes

***Protection must be compatible with hazard!***

# Common Types of Gloves



# Types of PPE

## 6. Hearing Protection

Hearing protectors are required to prevent noise induced hearing loss. Hearing protection devices reduce the noise energy reaching and causing damage to the inner ear. Ear muffs and earplugs are the most common types of PPE.



# Types of Hearing Protection

There are three types of hearing protection:



**1. Earmuffs**



**2. Earplugs**



**3. Ear caps or bands**



# Types of PPE

## 7. Body Protection

**The skin (covering the body) is the largest organ of the body, which also exposes it easily to occupational hazards. Body parts such as chest, torso, back, arm, legs must be protected from hazards such as:**

- Intense heat
- Cuts
- Hazardous chemicals
- Splashes from hot metals and other liquids
- Contact with potentially infectious materials, like blood
- Radiation

# Types of Body Protection

**There are different types of body protective clothing which includes:**

1. Coveralls
2. Full body suits
3. Sleeves
4. Apron



Coats including – including lab coats, insulated coats and other design

# Care of PPE

- ✓ Always check PPE for damage before and after use
- ✓ Clean PPE before storing
- ✓ Dispose of and replace damaged PPE
- ✓ Properly store PPE and avoid conditions that could damage them, such as heat, light, moisture, etc.
- ✓ Do not fix or repair a damaged PPE



# References

- Harris N, Grootjans J. The application of ecological thinking to better. 2012 - Park's text book of preventive and social medicine. –
- Stanhope, & Lancaster, 2021. Foundations for population - Community Health Nursing in Canada - The future of nursing.

