

MODULE - 7

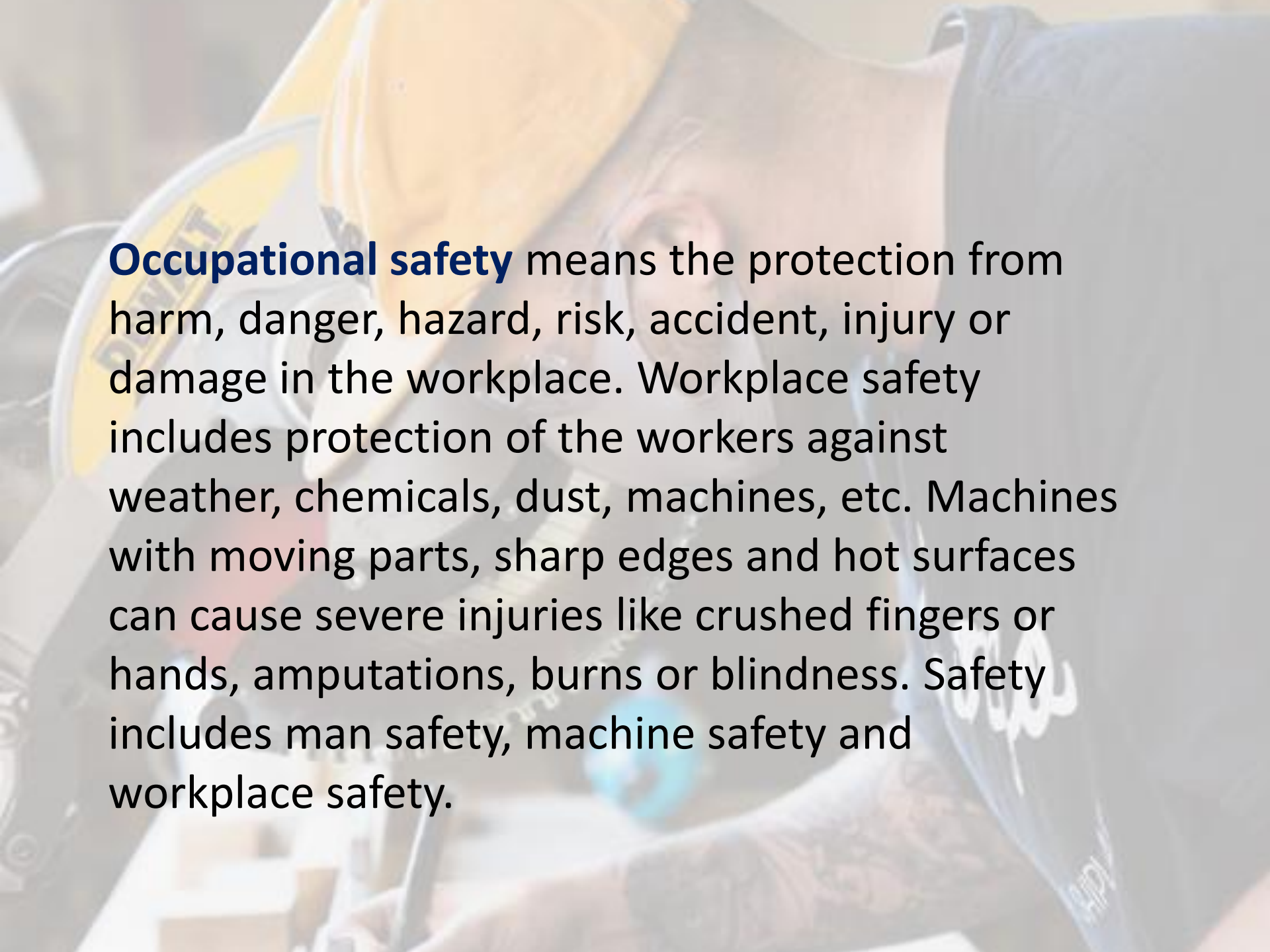
OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT EDUCATION

EDUCATION

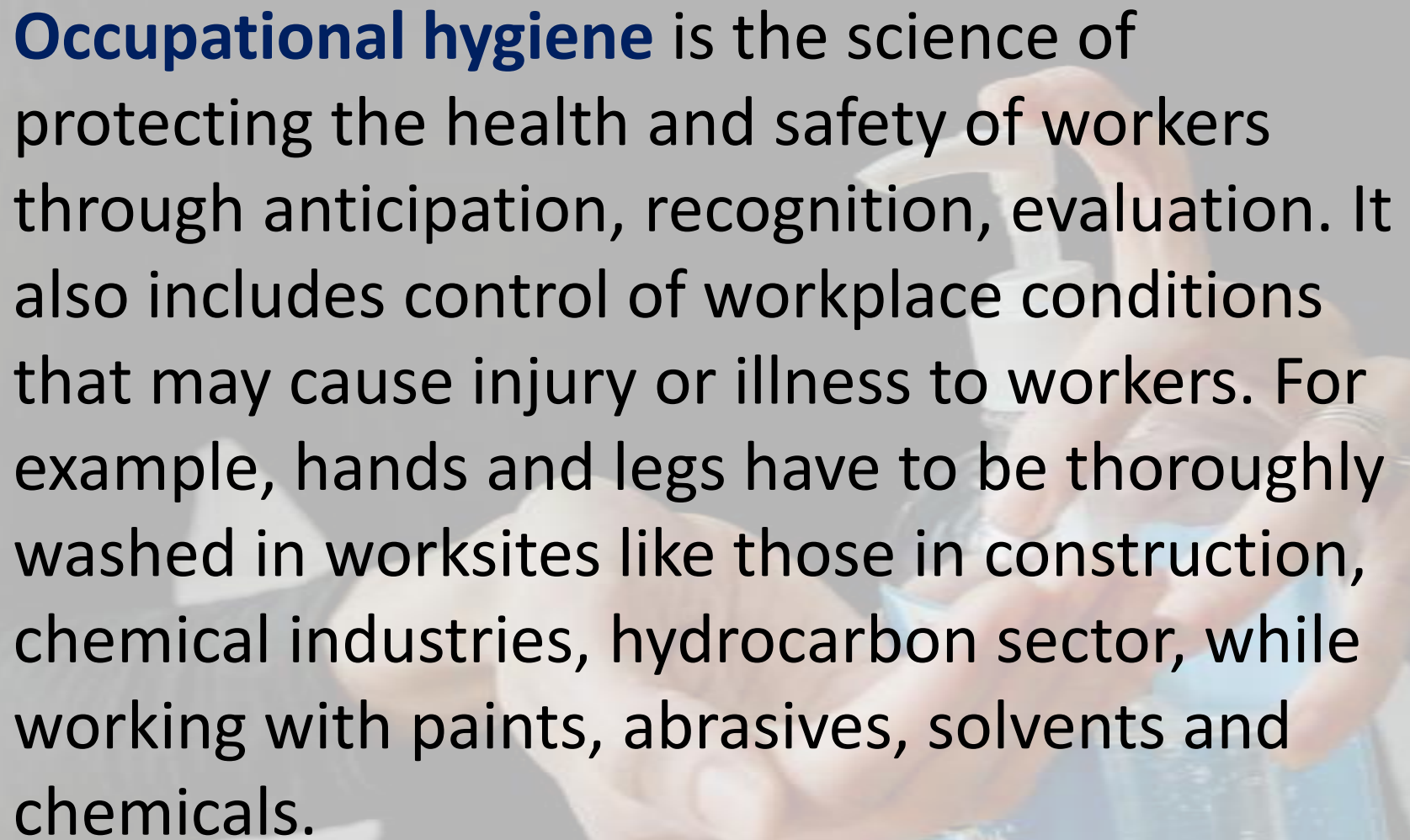
ENVIRONMENT

What do you mean by
Occupational
Safety & Hygiene
??



A worker wearing a yellow hard hat and a safety vest is operating a machine. The worker is looking towards the camera. The machine has a yellow and black color scheme with the word "POWER" visible on a part of it. The background is slightly blurred, showing an industrial setting.

Occupational safety means the protection from harm, danger, hazard, risk, accident, injury or damage in the workplace. Workplace safety includes protection of the workers against weather, chemicals, dust, machines, etc. Machines with moving parts, sharp edges and hot surfaces can cause severe injuries like crushed fingers or hands, amputations, burns or blindness. Safety includes man safety, machine safety and workplace safety.

A person wearing a dark-colored t-shirt is shown from the chest down, holding a blue hand sanitizer bottle with a white pump dispenser. The person's hands are positioned to use the sanitizer. The background is a plain, light-colored surface.

Occupational hygiene is the science of protecting the health and safety of workers through anticipation, recognition, evaluation. It also includes control of workplace conditions that may cause injury or illness to workers. For example, hands and legs have to be thoroughly washed in worksites like those in construction, chemical industries, hydrocarbon sector, while working with paints, abrasives, solvents and chemicals.

Occupational health :

As define by the World Health Organization (WHO)
“Occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of Hazards.”

Health has been define as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

WORKPLACE HAZARD



A hazard is any source of potential damage, harm or adverse health effects on something or someone.”.

TYPES OF HAZARDS

1) Safety hazards

Safety hazards can affect any employee, but these are more likely to affect those who work with machinery or on a construction site. Safety hazards include slips, trips and falls, operating dangerous machinery and electrical hazards.

safety hazards



slips, trips, and falls



machinery



electrocution

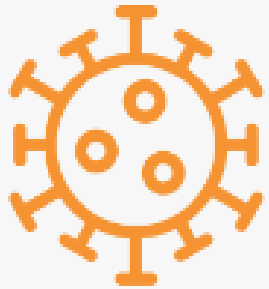
2) Physical hazards

Physical hazards can affect those who work in extreme weather conditions or in harmful environments. Workers that are exposed to continuous loud noise, radiation, sun rays and ultraviolet rays could be at risk.

3) Biological hazards

Biological hazards are extremely dangerous. These include exposure to dangerous substances and diseases associated with working amongst animals, people, or infectious plant materials. Employees who work in hospitals, laboratories or various other outdoor occupations are at risk from biological hazards.

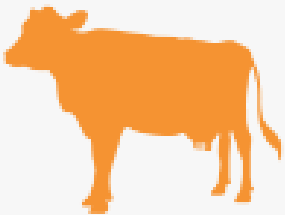
biological hazards



bacteria
and viruses



contaminated
waste



animal
droppings

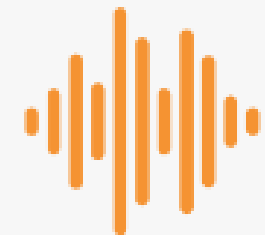
physical hazards



radiation



extreme
weather

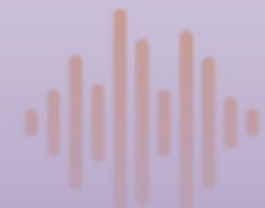


extreme
noise



droppings
animal

noise
extreme



4) Ergonomic hazards

Ergonomic hazards affect individuals whose work puts a strain on their body. Manual roles that require lifting or sitting for long periods can cause damage over time. These hazards may not be noticeable at first which makes them much harder to identify. If your staff use improperly adjusted workstations or have poor posture when performing manual roles and heavy lifting, they may be at risk of injury.

ergonomic hazards



poor posture



heavy lifting

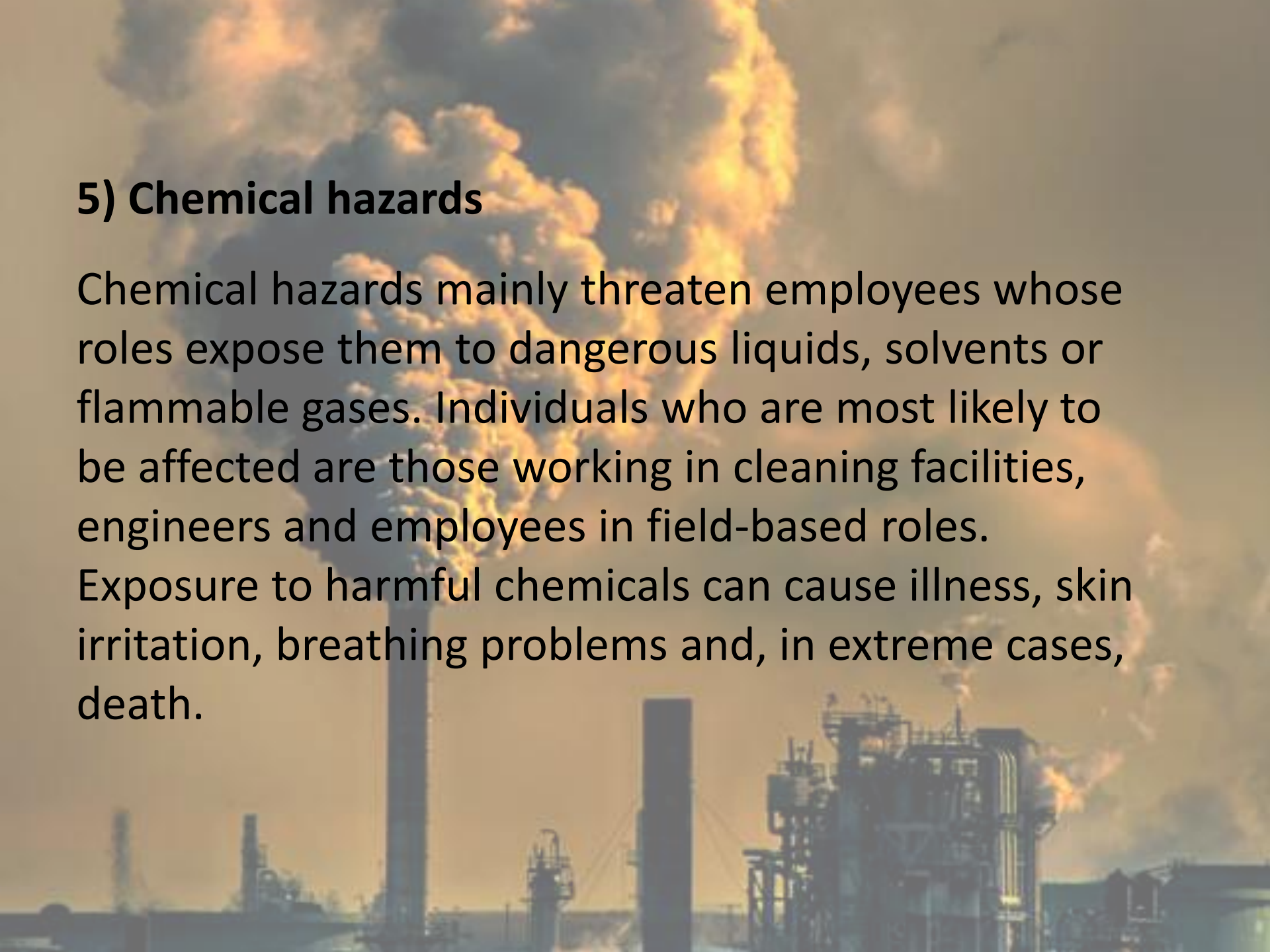


improper work station

5) Chemical hazards

Chemical hazards mainly threaten employees whose roles expose them to dangerous liquids, solvents or flammable gases. Individuals who are most likely to be affected are those working in cleaning facilities, engineers and employees in field-based roles.

Exposure to harmful chemicals can cause illness, skin irritation, breathing problems and, in extreme cases, death.



6) Workload hazards

Workload hazards include issues that could cause stress or strain, such as workload, violence or aggression. These hazards can be experienced in any job role. However, lone workers may struggle to voice concerns due to their isolated work environment or find themselves a target for anti-social behaviour.

chemical hazards



unlabelled
liquids



flammable
substances



harmful
gases

work load hazards

workplace
violence



confrontation



flexibility



SAFETY FROM WORKPLACE HAZARD

A person wearing a full-body protective suit, including a hood and gloves, stands in a laboratory or industrial setting. The background shows a tiled wall, a sink, and various equipment.

✓ Safety of the employees is important as it:

- i. Ensures company's smooth and successful functioning
- ii. Improves employee morale
- iii. Reduces absenteeism
- iv. Enhances productivity
- v. Minimizes potential of work-related injuries and illnesses
- vi. Increases the quality of manufactured products and/or rendered services.

➤ Fire Safety

When a fire emergency occurs, and people have to be evacuated from the workplace. There must be more than one escape route available. The escape route must be clearly marked with appropriate visible signs. Emergency lighting should be provided as appropriate. Fire drills must be conducted during induction training for newer employees and others in the organization. This will help them identify assembly points located at a safe distance from the building in case of an emergency. In order to prevent fire, ensure to keep the three elements part – oxygen, fuel and heat.

➤ The following steps need to be followed in case a fire breaks out:

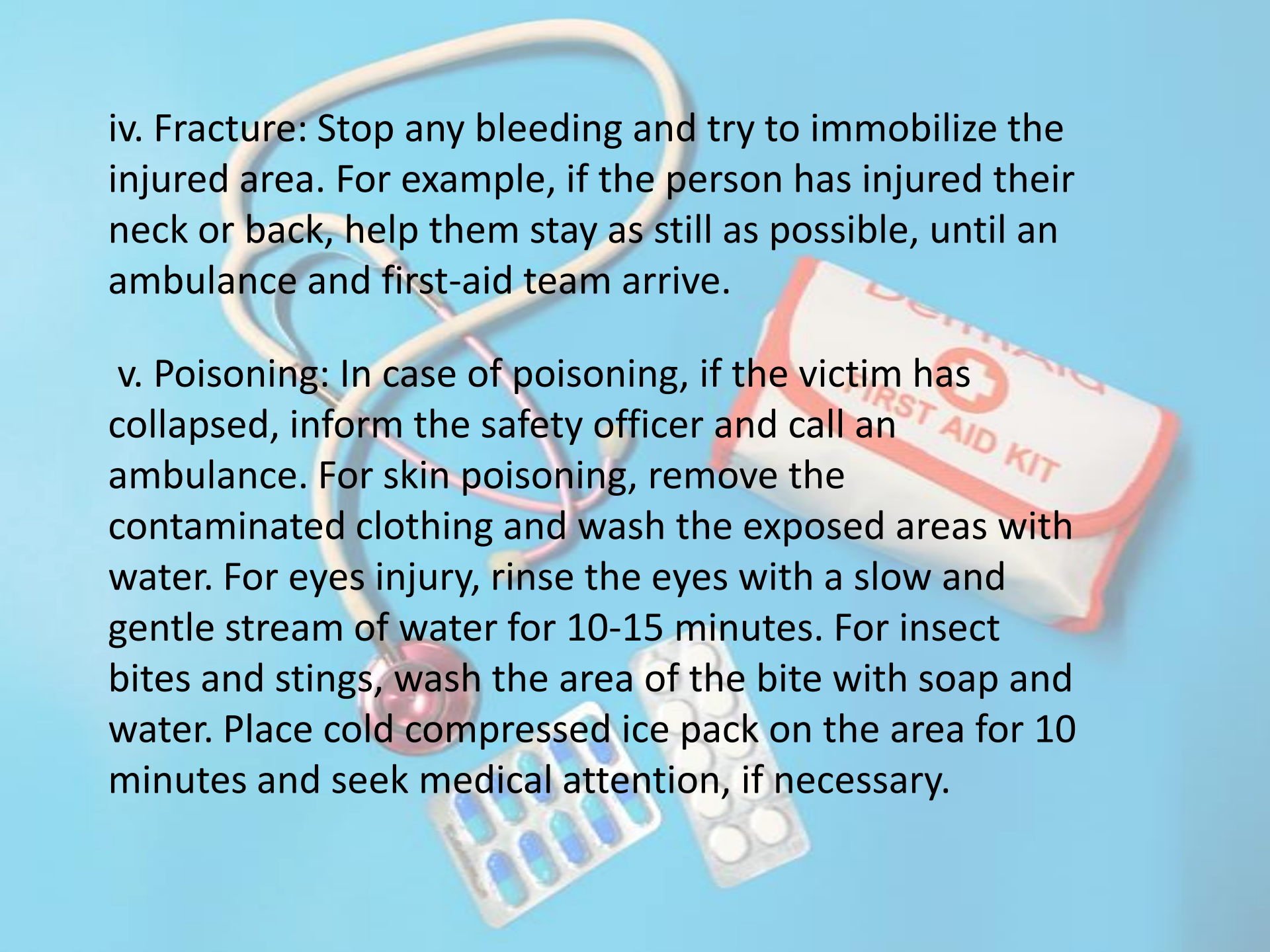
- i. Activate the nearest fire alarm and call for emergency assistance.
- li. Inform the fire department.
- lii. Escape from the place where fire has burst out to a safer place (assembly point).
- lv. Ensure that all employees are in the assembly point.

b. Extinguish the fire. Isolating or removing any of the three elements which cause fire, will extinguish it. The following three basic ways will help to achieve this:

- i. removing the fuel from the place of fire
- ii. cooling by using water to lower the temperature
- iii. blanketing the fire with foam or sand.

First-aid Common accidents and emergencies in the workplace include bleeding, burns, choking, electric shock, fracture from falls, poisoning, etc. First-aid is the help given to a sick or injured person until medical help is available.

- i. Bleeding: It may be superficial abrasion or wounds or severe bleeding due to injured veins or arteries. Firstaid for bleeding is to prevent further blood loss and minimise the effect of shock.
- ii. Burns: It is important to get the person away from the source of heat, cool the burns with cool or lukewarm running water for 10-15 minutes, remove any clothing or jewellery near the burnt area of the skin. Use of ice, iced water, ointment and cream is to be avoided.
- iii. Choking: When the choking is mild, the person may be asked to cough to clear the blockage to spit the object out. Avoid putting fingers in the person's mouth.

A collection of medical supplies is arranged on a light blue background. A stethoscope with a pink chest piece and white tubing is positioned diagonally across the upper left. To its right is a white first aid kit with red borders and a red cross symbol, with the words 'FIRST AID KIT' printed in red. Below the stethoscope are two blister packs of pills: one containing blue and white capsules, and another containing white round tablets.

iv. Fracture: Stop any bleeding and try to immobilize the injured area. For example, if the person has injured their neck or back, help them stay as still as possible, until an ambulance and first-aid team arrive.

v. Poisoning: In case of poisoning, if the victim has collapsed, inform the safety officer and call an ambulance. For skin poisoning, remove the contaminated clothing and wash the exposed areas with water. For eyes injury, rinse the eyes with a slow and gentle stream of water for 10-15 minutes. For insect bites and stings, wash the area of the bite with soap and water. Place cold compressed ice pack on the area for 10 minutes and seek medical attention, if necessary.

vi. Cardiac arrest: In cases where the heart has stopped beating, act immediately. Check if the carotid pulse on the neck can be felt. Lay the victim on their back on a firm surface. Kneel alongside, facing the chest and locate the lower part of the breast-bone. Place the palm of one hand on the centre of the lower part of the breast-bone, keeping your fingers off the ribs. Cover the palm with your other hand and lock your fingers together. Keeping your arms straight, press sharply down on the lower part of the breast-bone. Then release the pressure. Repeat this 15 times at a rate of at least once per second. Move back to the victim's mouth to give two breaths (mouth to mouth breathing). Check the pulse at frequent intervals repeating the procedure for another 15 compressions.



PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal Protective Equipment (PPE) is the equipment that is used by the workers to protect themselves from possible injury or infection in the workplace. PPE includes safety helmets, gloves, safety glasses, ear plugs, high-visibility clothing, nose protection, safety footwear, vests, overalls, safety harnesses, etc. It is worn for occupational safety and health purposes. The type of PPE to be worn depends on the occupation of the worker. For example, construction workers like fabricators and masons need to wear safety harnesses while working at heights

SAFETY GOGGLES

Protects the eye and surrounding area from water, chemicals or particles

EAR MUFFS

Noise absorbing pads that protect the ears from excessive noise and foreign objects

LONG SLEEVED SHIRT & PANTS

Acts as protection for the skin from pests, pesticides and injuries



SAFETY HELMET

Prevents from head injuries due to falling objects and falls

RESPIRATORY MASK

Filters out unwanted particles and limits absorption of pesticide vapours

SAFETY GLOVES

Protects the hands against pesticide contact and injuries

SAFETY BOOTS

Protects the feet from pesticide spills, falling objects and punctures from below



TYPES OF PPE

- i. Eye and Face Protectors: Safety glasses and masks protect the eyes and the face from exposure to chemicals, radiation or debris.
- ii. Ear Protectors: Ear plugs protect ears from high decibel sounds or exposure to noise.
- iii. Hand Protectors: Gloves protect hands from cuts, burns or harmful liquids.
- iv. Foot Protectors: Safety shoes protect feet from hot and cold environments, chemicals, heavy objects, rough surfaces or debris.
- v. Body Protectors: Vests, jackets, overalls and harnesses protect body from chemical, biological, physical hazards and falls from heights.
- vi. Respiratory Protectors: Nose guards protect from dusty environments, chemical vapours or transmissible diseases.

THANK

YOU