

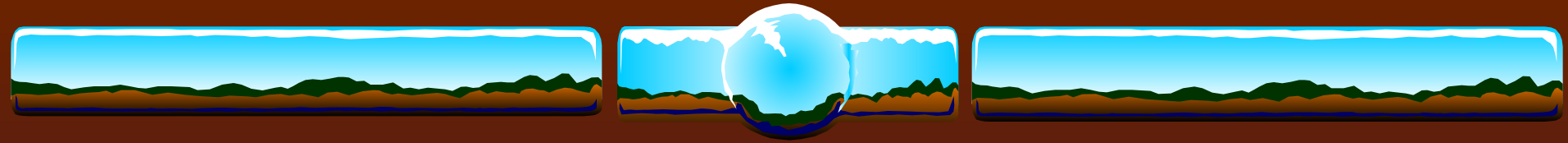


WORKPLACE HEALTH HAZARDS OR OCCUPATIONAL HEALTH HAZARDS



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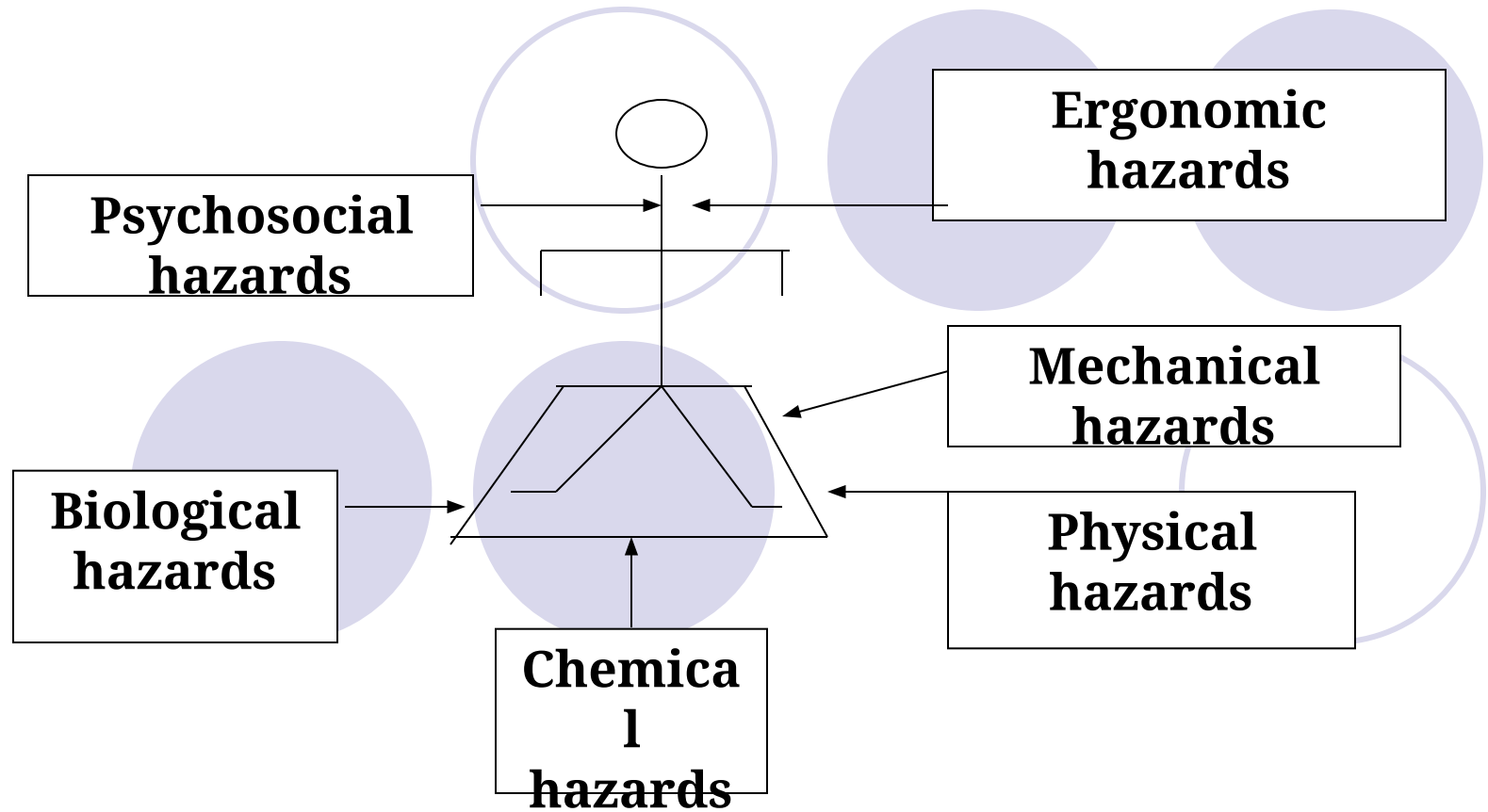
Definition

An occupational hazard is a situation that is likely to cause, an accident, body injury, acute and chronic health effects to the worker or death to the work or a non worker.

Thus the effects of the hazards result into:

- ❖ Occupational accidents
- ❖ Occupational diseases and ill health
- ❖ Death and
- ❖ Damage to property

Figure 1 demonstrates the six common types of hazards inherent at work places



A decorative header at the top of the slide. It features a central globe with a blue and white color scheme, flanked by two rectangular panels. Each panel shows a stylized landscape with green hills and a blue sky. The entire header is set against a dark blue background.

Recognition of Hazards

Hazards may be recognized through any of the following senses:

- ❖ Smell
- ❖ Hearing
- ❖ Feeling
- ❖ Seeing
- ❖ Testing



Physical Hazards

- ❖ Excessive noise
- ❖ Extreme temp.
- ❖ Excessive light
- ❖ Pressure e.g. gases under pressure
- ❖ Radiation (ionizing & non-ionizing)
- ❖ Electrical hazards





Electrical hazards

- ❖ Burns
- ❖ Shocks
- ❖ Fires
- ❖ Arc flash



Noise



Excessive noise can cause (hearing impairment/induces deafness, ulcers, etc).
The effects takes long time to develop and it is gradual.

The accepted limit for noise is 90 dB (A) for 8 hour- shift.



Heat

Excess heat can give rise to a condition known as Heat Stress on the body and this can result to:

- Heat cramps, heat stroke and heat exhaustion..



Light

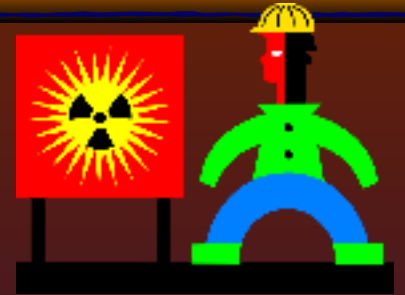


Poor lighting can cause eye strain or damage the eye. Excessive light can damage eye due to ultra-violet rays, e.g, from welding works . Such an exposure cause “arc eye” a painful condition of eye.





Radiation



A common example is X-rays in health facilities and industries

X-rays and other ionizing radiation can cause skin burns or cancer



Mechanical hazards

Mechanical hazards may originate from the following systems and processes:

- ❖ Boilers
- ❖ Air receivers
- ❖ Lifts and Lifting equipments
- ❖ Pressurized vessels (gases under pressure)
- ❖ Machines in motion etc

All these may cause temporary, permanent body injury or death.

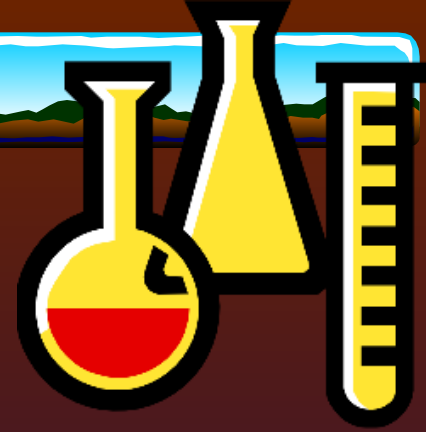


Pressure

Certain type of occupations such as diving and salvaging work under the sea, building tunnels under rivers and other underwater works can cause some type of disease known as “decompression sickness” or compressed air sickness.



Chemical Hazards



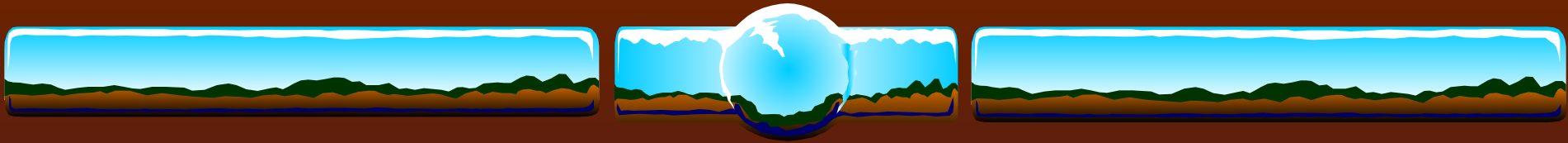
Chemicals in work place have potential to cause both acute and chronic health effects.

They are mainly categorized as organic and inorganic chemicals.

Examples are heavy metals, agro-chemicals, solvents, mineral dusts

The effects of such chemicals may be :-

- Acute - (sudden). Results from high dose exposure
- Chronic – (gradual) Results from low dose



Exposure to chemical liquids or gases e.g. ammonia, chlorine, etc, can cause immediate effects such as coughing or chemical burns



Photo SMIDO

Emmanuel Dartey, Ghana
Sture Bye, Norway



- ❖ Other chemical effects are slow and take long time to develop.
- ❖ Some solvent vapours causes damage to the liver and nerves system over a period of time, e.g. formaldehyde.
- ❖ Some solvents, e.g. benzene cause lung cancer.



Biological Hazards

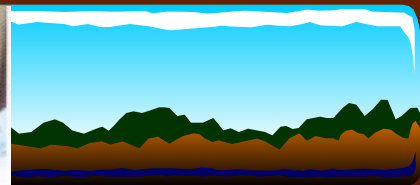
These are hazards due to microorganisms such as germs, bacteria, fungus, pollen grains, anthrax, tetanus, insects, animals, etc. They are also known bio-hazards. A classical examples are the so called blood borne pathogens. These include:

- ❖ Ebola
- ❖ Marburg
- ❖ Rift Valley Fever
- ❖ Hepatitis B
- ❖ HIV/AIDS





Photo ©International Labour Organization/P. Deloche





Cont. of Biological Hazards

- ❖ Airborne pathogens (air droplets), e.g. TB, Influenza, Swine flu, etc.
- ❖ Body fluid pathogens, e.g. Hepatitis A, all types of bacteria including anthrax, etc

Psychosocial Hazards

These hazards may affect health - both physical and mental. Examples of Psychosocial Hazards

- ❖ Various systems or arrangement of work, i. e. shift work, night work, automated work, interpersonal relationships, job demands, verbal abuse/humiliation including sexual harassment at workplace.

These hazards may affect the mental morale or physical health of workers





- ❖ Psychosocial hazards such as sexual harassment and depression,- common at workplaces. WHO statistics indicate that 8% of depression is attributable to the environmental factors and occupational stress (Prüss-Ustü and Corvalan 2006).



Ergonomic hazards

- ❖ Is a physical factor within the environment that harms musculoskeletal system. Ergonomic hazards include uncomfortable workstations, height, poor body positioning, lifting etc.



Hazards Identification Methods

- ❖ Workplace inspection
- ❖ Use of material safety data sheets
- ❖ Complaints and investigation
- ❖ Accidents at workplace
- ❖ Hygiene survey
- ❖ Medical examination



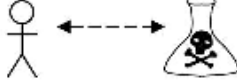





Risks & Health Outcomes

Types of Hazards	Routes of Exposure	Health Outcome	Ultimate Adverse Effects
<p>Physical hazards</p> <ul style="list-style-type: none"> Gases under pressure Radiation (ionizing non ionizing) Excessive noise Extreme temperature Electricity (dynamic-static) Lighting 	<ul style="list-style-type: none"> Environment Contact with body Air Physical contact 	<ul style="list-style-type: none"> Accidents Acute diseases Absenteeism Pain, distress, depression Death Acute health effects/diseases Short-term exposure (High dose short-term exposure) 	<ul style="list-style-type: none"> Loss of GNP or Decreased GNP loss production or decreased production Loss of family Income Loss due to closure of business
<p>Biological hazards</p> <ul style="list-style-type: none"> Blood borne pathogens Other body fluid pathogens Airborne pathogens (droplets) 	<ul style="list-style-type: none"> Contact with skin e.g. needle stick Inhalation 		
<p>Chemical (organic & inorganic) hazards</p> <ul style="list-style-type: none"> Mineral dust Agrochemicals Fumes from engines Heavy metals Solvents 	<ul style="list-style-type: none"> Inhalation e.g. airborne lead Eye contact Contact with skin (skin absorption) Ingestion 	<ul style="list-style-type: none"> Asbestosis 	

Risks & Health Outcomes Contd.

<p>Psychosocial hazards</p> <ul style="list-style-type: none"> Humiliation Verbal abuse Sexual harassment/abuse Job demands Fatigue Long working hours Unstable shifts Irregular work shifts 	<p>Interactive</p>	<p>Long term exposure (low dose/Long term exposure)</p> <p>Chronic health effects/ Diseases such as Hearing impairment Psychosocial health conditions Musculoskeletal disorders syndrome</p>	<p>Loss of life due to death Cost incurred by Individual family or nation due to health care cost Loss of companies' /resources due compensation WIBA (Work Injury Benefits Act NO. 13, 2007)</p>
<p>Ergonomic hazards</p> <ul style="list-style-type: none"> Lifting, carrying or moving heavy objects Repetitive motions (movements) Awkward postures especially over long periods Poorly designed tools which require poor posture/effort 	<p>Interactive/ physical contacts</p>		
<p>Mechanical hazards</p> <ul style="list-style-type: none"> Pressure released (explosion) accidentally from a vessel Impact on body by flying objects 	<p>Interactive/ physical contacts</p>		

Categories of controls for changing unsafe work environments or exposures

Elimination		Hazard gone, no problem.
Substitution		Hazardous chemical gone. Problem resolved.
Isolation		Hazard away from people. Problem reduced.
Containment		Hazard separated from worker. Problem contained.
Engineering Controls		Hazard still present. Problem managed automatically.
Administrative Controls		Hazard still there. Problem watched and managed by people.
Behavioral Controls		Hazard still there. Problem avoided by behavior and training.
Personal Protective Equipment		Hazard still there. Problem managed by workers wearing protection.