



# Occupational Health

## 1. Occupational Environment

- Interaction between:
- Man & environment (physical, chemical, biological agents)
- Man & machines
- Man & other workers

## 2. Occupational Hazard

- Any source or situation with potential harm:
- Injury / disease
- Property damage
- Environmental damage

## 3. Types of Occupational Hazards

- Physical
- Chemical
- Biological
- Mechanical
- Psychosocial

## ⚠ 4. Physical Hazards

### Examples:

- Heat / Cold
- Noise
- Radiation
- Vibration
- Light
- Pressure

### Diseases:

- Heat → heat stroke, exhaustion, cramps
- Cold → frostbite
- Noise → deafness
- Radiation → cancer, leukemia
- Pressure → caisson disease



## 🔥 Heat Stroke (Important)

- Medical emergency
- Symptoms:
- Altered consciousness
- Neurological signs
- High temperature
- ± sweating

### Risk factors:

- Dehydration
- Heavy work
- Obesity
- Drugs

## 🔪 5. Chemical Hazards

### Routes:

- Inhalation (most important)
- Skin absorption
- Ingestion

### Types:

- Metals → lead, mercury
- Hydrocarbons → benzene
- Gases:
- Simple asphyxiants → CO<sub>2</sub>
- Chemical → CO
- Irritants → ammonia

## 🫁 6. Pneumoconiosis (VERY IMPORTANT)

- Lung disease from dust inhalation
- Particle size: 0.5–3 μm

### Types:

#### Inorganic Dust

- Silicosis → mining, sandblasting
- Asbestosis → insulation, construction
- Anthracosis → coal

#### Organic Dust

- **Bagassosis** → sugar cane
- **Byssinosis** → cotton
- **Farmer's lung** → moldy hay



### ☘ Silicosis (High Yield)

- Cause: silica ( $\text{SiO}_2$ )
- Symptoms:
- Cough
- Dyspnea
- Chest pain
- X-ray:
- “Snowstorm appearance”
- Eggshell calcification (classic)

#### Complications:

- ↑ TB risk
- Lung cancer
- Autoimmune diseases

### 🧱 Asbestosis

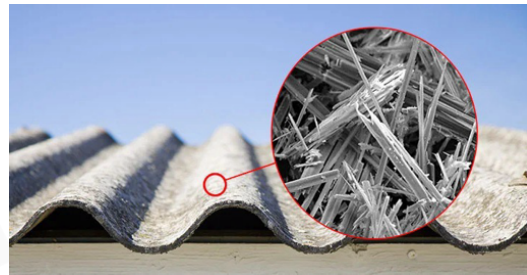
- Fibers remain in lungs permanently

#### Causes:

- Insulation, cement, roofing

#### Diseases:

- Asbestosis (fibrosis)
- Lung cancer
- Mesothelioma (hallmark)



### 🦠 7. Biological Hazards

- Bacteria → TB, tetanus
- Viruses → hepatitis, HIV
- Parasites → malaria
- Fungi → skin infections

### ⚙️ 8. Mechanical Hazards

#### Injuries:

- Falls, cuts, trauma

#### Ergonomic Disorders:

- MSDs & CTDs (very common)

#### Prevention:

- Proper lifting (“straight back rule”)
- Use machines instead of manual handling

## 9. Psychosocial Hazards

- Causes:
- Stress, job dissatisfaction

### Effects:

- Anxiety, depression
- Substance abuse
- Psychosomatic diseases:
- Hypertension
- Peptic ulcer
- Heart disease



## 10. Prevention (VERY IMPORTANT)

### 3 Main Methods:

1. Medical
  - Regular checkups
2. Engineering
  - Dust control, ventilation
3. Legislation
  - Safety laws

### Additional:

- PPE (masks, respirators)
- Substitution (safer materials)

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