

Occupational Health

Dr. Farhan Hassan

Pneumoconiosis

Are the group of fibrotic lung diseases which result from inhalation of **dust**.

- Chemical composition (Organic / Inorganic)
- Fineness or Size
- Concentration in air
- Period of exposure
- Health status of the person exposed

Pneumoconiosis

1. Silicosis
2. Anthracosis
3. Asbestosis
4. Byssinosis
5. Bagassosis
6. Farmer's lung

Silicosis

Most abundant compound on earth crust, found in crystalline form known as quartz.

(Sand, Agate, Onyx, Amethyst)

- Stone crushing & Mining (coal, mica, gold & lead)
 - Masonry, Quarrying & Tunneling
 - Fettling, Foundry, Ceramic, pottery & Brick making
 - Sand blasting for metal polishing and grinding.
- Acute Silicosis (IP month to 6 years)
 - Accelerated Silicosis (**snow storm appearance**)
 - Silico-tuberculosis

Prevention:

- a. Dust control, Substitution, enclosure, Isolation, Hydro blasting
- b. Regular physical examination

2/25/2019

Anthracosis

(Coal worker's pneumoconiosis CWP)

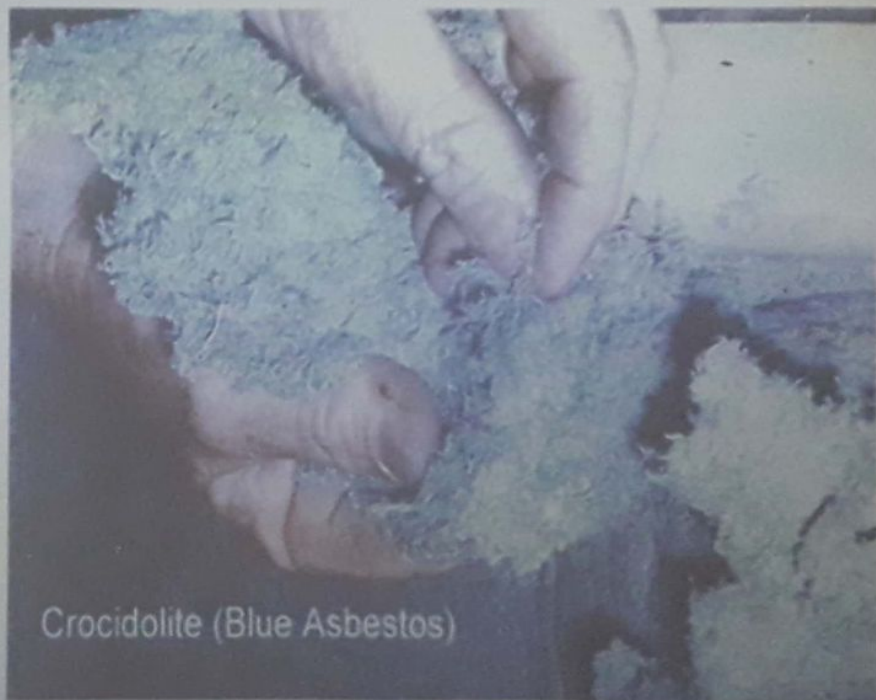
- Occupations:
 - Underground miners and coal sorters
 - Coal trimmers, Loading coal in ship holds and trains
- Simple Anthracosis
 - progressive
 - massive fibrosis
- PMF

2/25/2019

Asbestosis

Silicates of varying compositions (Silica + Magnesium, iron, calcium, sodium or aluminum)

Naturally occurring fibrous mineral have common property of resistance to destruction by chemical or physical means



Crocidolite (Blue Asbestos)

2/25/2019

Asbestosis

Types:

- Serpentine or chrysolite
- Amphibole
 - Crocidolite (blue) Most dangerous
 - Amosite (brown)
 - Anthophyllite (White)

Occupations:

Asbestos Mines & mills, Thermal insulations, building & demolition, Electric repair work, Railways eng., Gaskets manufacturer, Cement & friction product

Asbestosis

Clinical Features

Dyspnea, Cough, Sputum, clubbing
(Ground-glass appearance)

Mesothelioma

pleura or peritoneum

Prevention

Use safer type, Substitution, Dust control, Periodic examination etc



Byssinosis

(Associated with cotton dust exposure)

Textile industry

Chronic cough

Progressive dyspnoea

Chronic bronchitis

Emphysema

Bagassosis

(Inhalation of sugarcane dust)

Occupation

- Paper industry
- Card board
- Chip board
- Hard board

Thermophilic Actinomycete

(*Thermoactinomyces sacchari*)

Preventive Measures

Farmer's Lung

- Mouldy Hay
- Grain Dust
- Thermophilic Actinomycete
(*Micropolyspora faeni*)

Lead Poisoning

(Plumbism)

2/28/2019

Lead Poisoning

(Plumbism)

- Properties

- Low Boiling Point & Easily oxidized
- Mixes easily with metals to form ALLOYS
- Anti-corrosive

- Common industries

- Glass, Batteries, Ship, Pottery, Printing, Gasoline

- Body storage

- Total body storage 150-400 mg
- Average blood level 25 $\mu\text{g}/100\text{ml}$
- Clinical symptoms appear 70 $\mu\text{g}/100\text{ml}$
- Normal daily ingestion 0.2-0.3 mg/day

2/19/2019

24

Lead Poisoning

(Plumbism)

- Diagnosis
 - History of lead poisoning
 - Clinical picture
 - Lab Investigations
 - CPU (Coproporphyrin in urine) 150 μ g/L (Normal)
 - ALAU (Aminolavulinic acid in urine) >5mg/L (Significant)
 - Urine lead level 0.2-0.8 mg/L
 - Blood lead level >70 μ g/100ml
 - Basophilic Stippling of RBC
- Prevention
- Management: Saline Purge, d-penicillamine (Chelating agent)

Lead Poisoning (Plumbism)



- Basophilic Stippling of RBCs

2/25/2019

Occupational cancer

- Around 350 chemical have been identified as occupational carcinogens.
- Examples: benzene, hexavalent chromium, nitrosamines, asbestos.
- Common Cancers: Lung, Bladder, Skin, Bone, Leukemia, Sarcoma.

Causes of Occupational Cancers

Apart from mesothelioma, there are a number of types of cancer that have a well-established occupational origin: for example angiosarcoma of the liver from exposure to vinyl chloride monomer, bladder cancer from exposure to beta-naphthylamine, nasal carcinoma from exposure to hard wood dust, and lung and skin cancers due to a variety of industrial agents and processes. Most of these cancers qualify for payment.

Sickness Absenteeism

Causes:

1. Economic
2. Social
3. Medical
4. Non-occupational

Prevention:

For max utilization of resources and max production

1. Good factory management
2. Adequate pre-placement medical examination
3. Good human relation-ship
4. Application of ergonomics

Health problems due to Industrialization

Community Health problem

1. Environmental sanitation problem
 1. Housing
 2. Water pollution
 3. Air pollution
 4. Sewage disposal
2. Communicable diseases
3. Food sanitation
4. Mental health
5. Accidents
6. Social problems
7. Morbidity and Mortality