

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

# OCCUPATIONAL HEALTH

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السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

# Occupation Health Program & Occupational Health Services:



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# Differences between occupational medicine and clinical medicine

Items	Occupational Medicine	Clinical Medicine
Target group	Workers at all jobs (Healthy)	Patients irrespective to their jobs
Health status	Healthy and diseased	Diseased only
Place	Plants	Hospitals and Clinics
Diagnosis	System of medical examinations	Examination and investigations
Management	Occupational health program	Medical/surgical treatment

## Occupational Health Program:

It is defined as a

- ❖ program for **promotion** and **protection** of **the health** of the working people in their **working environment**
- ❖ **and**
- ❖ **prevention** of occupational hazards in the work place.

### **Staffing of occupation health program:**

- 1- Industrial physician.
- 2- Occupation nurse.
- 3- Occupational hygienist.
- 4- Safety engineer.
- 5- Industrial safety personnel.
- 6- Toxicologist.



# Occupational Health Team:

physician

Nurse

Hygienist

Ergonomist

Safety  
engineer

Epidemiologist

# Industrial Physician:

Is the **key person** in occupational health team.

Is the the team who **designs** and **implements** the occupational **leader of** health program,

**His duties can be summarized in the following points:**

1- Perform the **pre-placement** examination.

2- Perform the **periodic examination**.

medical examination

3- Emergency treatment and/or first aid of accidents

4- Diagnosis and treatment of **occupation disease**.

5- Rehabilitation of diseased workers.

6- **Assessment** of the degree of **disabilities** following occupational diseases and injuries and calculate the **required compensation**.

7- **Referral** of chronic-non occupational diseases to a specialist.

8- Health education.

9- First aid treatment of emergent **non-occupational conditions**





## ❖ Occupational nurse:

She/he assists the physician in providing medical services, assists in supervising the work environment, educates workers, and keeps medical records.

## Objectives of Occupation Health Program:

- 1- Protection of employees against health hazard in their work place.
- 2- Facilitating the placement of workers according to their physical, mental and emotional capacities.
- 3- Assuring an adequate medical care and rehabilitation of occupationally diseased and injured workers.
- 4- Protection of the general environment of the community

# Activities of Occupation Health Program & Occupational Health Services



- 1- Maintenance of healthful work environment
- 2- **Diagnosis** and treatment of occupation diseases
- 3- **Promotion** of workers' health.
- 4- **Prevention** of occupational health hazards.
- 5- **Control** of occupational health hazards.
- 6- Rehabilitation and **compensation** of the disabled workers.
- 7- **Provide special** care for vulnerable groups of workers namely women and children.
- 8- **Keep good health** recording system (*the seeing eye of occupational health team*).

- 1- Maintenance of healthful work environment
- 2- Diagnosis and treatment of OD
- 3- Promotion of workers' health.
- 4- Prevention of occupational health hazards.
- 5- Control of occupational health hazards.
- 6- Rehabilitation and compensation.
- 7- Provide special care for vulnerable groups
- 8- Keep good health recording system

## Activities of Occupation Health Program & Occupational Health Services Cont.

### 1- Maintenance of Healthful Work Environment:

This requires personnel **skilled in industrial hygiene** to

- ✓ perform **periodic inspection** of the different departments of the factory and
- ✓ **evaluate** the work environment
- ✓ In order to **detect** and **appraise** (assess) health hazards.



Such **appraisals** together **with** knowledge of industrial **process** and materials used, **provide** the basis for

- ✓ appropriate **recommendation** to improve **the control measures**



## 2-Diagnosis and treatment of occupation diseases:

The following criteria should be fulfilled to confirm such diagnosis:

1. A detailed occupational history of **exposure to hazardous agent or process** should be taken from the workers.
2. **Symptoms and signs** of the disease **must coincide with** documented manifestations of the occupational disease.
3. **Measures and samples taken from the environment indicate** that **the causative agent is present** in a **sufficient concentration** to produce the disease.
4. The **manifestations are improved** when the worker **gets out** from the work place and are **aggravated by getting back** to the work place.
5. The same manifestations are prevailed **among other workers in the same work circumstances.**
6. The disease should be registered on the **list of occupational diseases.**



### 3. Promotion of workers' health:

- 1-Maintenance of healthful work environment
- 2-Diagnosis and treatment of OD
- 3- **Promotion of workers' health.**
- 4- Prevention of occupational health hazards.
- 5- Control of occupational health hazards.
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(A) Improvement of the health and working capacity of workers

(B) Improvement of work environment:

A. Improvement of the health and working capacity of workers through

1- Adequate nutrition (for every type of occupation) either by

\*Nutrition Education and support as well as

\*\*Prevention and control of parasitic diseases.

2- Socioeconomic development through:

- Improving **workers' income.**

- Guidance for **proper expending** of this income.

3- Social welfare through:

- Management of family problems.

- Making good social relations at work.

- Encouragement of sport activities.

4- Health education and keeping good medical records



## (B) Improvement of work environment:

This can be achieved **through good sanitation** of work place by:

- a. Good design of the machines.
- b. Suitable housekeeping.
- c. Proper lighting and ventilation.
- d. Good control for physical hazards as heat, radiation and noise.
- e. Supplying work place with **washing facilities** and suitable **transportation** means.

Promotion of workers' health:  
A.Improvement of the health and working capacity  
B.Improvement of work environment

## 4- Prevention of occupational health hazards:

Prevention of occupational **disease** or **accident** occurrence **through integrated efforts** of many disciplines **as:**

- a) Medical prevention:
- b) Engineering prevention:
- c) Hygienic prevention



Activities of Occupation Health Program  
1-Maintenance of healthful work environment  
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3- Promotion of workers' health.  
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5- Control of occupational health hazards.  
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## a) Medical prevention:

- i. Pre-employment medical examination
- ii. Pre-placement examination:
- iii. Periodic medical examination
- iv. Health education
- v. Immunization of workers and chemoprophylaxis

### i. Pre-employment medical examination

for all persons to **choose the suitable worker to the job** which suits his **physical** capacities and **mental** abilities,

### ii Pre-placement examination:

- this type of medical examination must be **done by the**
- **occupational physician** of the plant to which the worker is
- joined to put the **suitable worker in the suitable process** that **suits his health condition**.
- Each employee is subjected to a pre-placement examination **before joining a new job**



Each employee is subjected to a **pre-placement examination** before joining a new job:

- 1- personal , family and medical history .
- 2- Proper **past** and **present** occupational history.
- 3- Complete **physical examination**.
- 4- Laboratory investigation related to the nature of the work *e.g workers joining dusty work e.g cotton industry should do an X-ray chest.*

□ **Objectives of the pre-placement examination:**

- 1- Proper placement of workers according to their medical and physical abilities to perform their job without hazards.
- 2- Put a **base- line** of the health status of the workers.
- 3- Establishing records for the condition of the workers at the start of the job be used in case of **compensation**



Medical prevention:  
Pre-employment medical exam  
Pre-placement examination:  
Periodic medical examin  
Health education  
Immunization of workers  
chemoprophylaxis

### iii Periodic medical examination

❖ for **Early Detection** of any health hazards arises from **exposure** to an offending agent at workplace where intervention (**early treatment**) can slow, halt (**stop**) or reverse the progression

❖ **Done** at certain intervals

It is either **every six months** or every **two years**

These intervals vary according to:

\* **type** of the **hazards**, **duration**, **Severity** or **level** of exposure.

\* **Individual findings** in each examination .

Focusing on the **body systems** which can be affected by **exposure** in the job.

❖ **depending** on the result of periodic examination, **the workers** may be **temporally** or **permanently** removed from further exposure or may be advised to **continue work**.

**It includes**

The items of periodic medical examination (screening) include the following:



*The items of **periodic medical examination** (screening) include the following:*

1- **Survey** (*questionnaire*): inquires about **history of exposure** to any **hazardous substance** or **process** at work place as well as any **abnormal symptoms** or complains.

2- **Clinical examination.**

3- **Laboratory investigations as:** chest X-ray, pulmonary function tests, audiometric evaluation.



4- **Biologic monitoring; by examination of blood, urine and exhaled air.** for early detection of any **disturbed physiologic function** or **toxic substance level**

**C- Early treatment** of the diagnosed occupational diseases.

**D- First aid treatment** of any occupational injuries.

## Objectives of periodic examination:

1. Determine if the worker's health remains **compatible** with job.
2. **Detect early any deviation** from normal in the worker's health and thus **early detection** of occupational disease.
3. **Evaluate the control** measures in the factory

### Medical prevention:

Pre-employment medical exam

Pre-placement examination:

Periodic medical exam

### Health education

Immunization of workers

chemoprophylaxis

## iv Health education and counseling

Occupational health personnel should educate employees about **personal hygiene** and **Health maintenance.**

The industrial physician and nurse should **co-operate** with the safety engineer and industrial hygienist

to educate the employees about prevention of **accidents and OD**



## Health education of workers can be done:



- 1- During periodic examination.
- 2- On reviewing laboratory test results.
- 3- During treatment.
- 4- At a time of specific enquiry by employees.
- 5- On a request of work group.
- 6- On introduction of a new process or a new hazardous material.

about early  
S&S of OD and  
the importance of  
early management

## Successful health education

- ✓ will improve safe working habits and
- ✓ will **reduce** both
- ✓ the **lost time** rate and
- ✓ the **incidence** of minor accidents as well

### Medical prevention:

Pre-employment medical exam  
Pre-placement examination:  
Periodic medical examin  
**Health education**  
Immunization of workers  
chemoprophylaxis

## V . Immunization of workers and chemoprophylaxis

to combat any infectious disease that may be contracted during the course of their occupation

## Cont. ..Prevention of occupational health hazards

Prevention of occupational health hazards

a) Medical prevention:

b) Engineering prevention:

Hygienic prevention

**b) Engineering prevention:** through:-

1. **Mechanization** of heavy work process to lighten the physical strain.

2. **Substitution** of hazardous substance or operation by non hazardous one

3. **Enclosure:**  
machine guarding

4. **Isolation:**  
isolation of hazardous process inside the work place (*radiation*).

5. **Segregation**  
of hazardous process away from work places.

6. **Good ventilation:**

i. by fans to increase air movement or

ii. by exhaust system for suction of hazardous gases or

iii. dust to be collected in a special disposal system



**7. Good lighting** and control of other physical hazards at workplace as heat, noise and radiation.

**8. Assurance of Ergonomics** at work place:

- a. to adapt the work situation to physical capabilities of the worker
- b. to prevent **loss** of effort and time and
- c. to **prevent** development of **accidents** and
- d. to **prevent** development **musclo-skeletal disorders**

**c) Hygienic prevention: through:-**

- ❖ Providing good **sanitary facilities** as **washing, changing clothes** before and after work, **skin and mouth hygiene**.
- ❖ Supplying **protective equipment(PPE)** as respirators, protective clothes, and ear muffs or plugs.
- ❖ **Work environment monitoring** for detection and evaluation of environmental pollutants,



## Hygienic prevention Cont. ..

- ❖ Work environment monitoring for detection and evaluation of environmental pollutants, **threshold limit value (TLV) of a chemical substance**.
- ❖ Ensuring that work legislations are **applied as:**
  - work and rest hours,
  - setting rules for **employment of women** and children and
  - investigation for detection of the cause of **workers' absenteeism**.



## 5- Control of occupational health hazards:

- ❖ It includes **early detection** of OD and
- ❖ **Early treatment** through the following measures:
  - A- Pre-placement medical examination
  - B- Periodic medical examination:

- 1-Maintenance of healthful work environment
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- 5- **Control of occupational health hazards.**
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## 6- Rehabilitation and compensation of the disabled workers.

Rehabilitation of disabled workers **aims to:**

- **Minimize** or prevent the disability.
- **Retraining the disabled** worker for a new job suitable for his new physical and mental capacities.
- **Compensation** of the disabled workers **after evaluation of the disability** resulted from occupational disease or accident **and giving him some privileges.**



## Rehabilitation types include:



### A- Psychosocial services :تأهيل نفسي وإجتماعي

Family counseling.

Social, psychiatric and recreation services.

All these tasks are carried by **psychologist and psychiatrist**

### C- Vocational services: تأهيل مهني

- Vocational assessment and attitude exploration
- Vocational training.
- Placement in a suitable job.

### B- Medical services :تأهيل طبي

- Diagnosis
- Treatment
- Follow up

All these tasks are carried by  
**industrial doctor.**

THANK

YOU

### Occupational Health Services

Promotion of workers' health.

Prevention of occupational health hazards.

Control of occupational health hazards.

Rehabilitation and compensation of the disabled workers.

-Provide special care for vulnerable groups of workers  
namely women and children.

Keep good health recording system

## 7-Provide Special Care For Vulnerable Groups of Workers:

Namely women and children.

This can be achieved through the **following measures:**

- 1) Selection of **suitable jobs** that match with their capacities.
- 2) **Pre-placement in another** job when **woman get pregnant**.
- 3) **Proper M.C.H** care for pregnant females.
- 4) Make sure of the **application of certain laws** for employment of **working women and children** namely:
  - no night shift,
  - limitation of working hours,
  - paid leave for infant care and
  - **Prohibition from working in** certain hazardous jobs.



## 6- Keep Good Health Recording System:

### Medical records:

- ❖ It is very important that **good medical record system** is maintained in any occupational health program.
- ❖ Every employee should have an **accurate & complete medical report** from the time **of his first employment examination**.
- ❖ The records must **be detailed enough** to provide adequate information for **job placement health maintenance workmen's compensation and rehabilitation** .

*Health record is the seeing eye of the industrial physician and industrial health team.*



**It should include,**

**Medical records:**



- personal data,
- data of pre-employment,
- periodical examination,
- history of exposures and
- diseases (occupational and non-occupational),
- history of accidents,
- sick absenteeism, retirement, clinical exam
- any previous immunization taken

### **Value of keeping and analyzing health records:**

- Basic data for statistical analysis.
- Help to know morbidity and mortality rates.
- Help to see trends in health and disease.
- Help to identify plant areas of high accidents, sick absenteeism and occupational disease.
- Help in planning and **evaluation** of industrial health program.

THANK

YOU

# OCCUPATIONAL HAZARDS

An industrial worker may be exposed to five types of hazards, depending upon his occupation:

- (a) Physical hazards
- (b) Chemical hazards
- (c) Biological hazards
- (d) Mechanical hazards
- (e) Psychosocial hazards.

## a) Physical hazards

- (1) Heat and Cold
- (2) Light
- (3) Noise:
- (4) Vibration:
- (5) Ultraviolet Radiation :
- (6) Ionizing Radiation :

