

سَلَامٌ عَلَى الرَّحْمَنِ الرَّحِيمِ

# OCCUPATIONAL HEALTH



السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

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

❖ His duties can be summarized in the following points:

- 1- Perform the **pre-placement** examination.
- 2- Perform the **periodic 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 OD and injuries and **calculate** the **required compensation**.
- 7- Referral of chronic-non ODs to a specialist.
- 8- **Health education**.
- 9- First aid treatment of emergent non ODs conditions

medical  
examination



## ❑ Occupational nurse:

1. She/he **assists** the physician in **providing** medical services
2. **assists** in **supervising** the work environment, **educates** workers, and
3. **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 &**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:

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 ODs.



### **3. Promotion of workers' health:**

**A. Improvement of the health & working capacity of workers**

**B. Improvement of the work environment:**

**A. Improvement health & working capacity of workers by;**

**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

**-5- keeping good medical records**



## (B) Improvement of work environment:

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

- 1) Good design of the machines.
- 2) Suitable housekeeping.
- 3) Proper lighting and ventilation.
- 4) Good control for physical hazards as heat, radiation & noise
- 5) Supplying work place with washing facilities and suitable transportation means.



## 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
- 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



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



## Pre-placement examination Cont. ..

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



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**

### 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**.



*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 factor

### 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.**

Prevention of occupational health hazards

a) **Medical prevention:**

b) **Engineering prevention:**

Hygienic prevention

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



## 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

## V. Immunization of workers and chemoprophylaxis

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

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

## 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



## Engineering prevention Cont. ..

Prevention of occupational health hazards  
a) Medical prevention:  
b) Engineering prevention:  
Hygienic prevention

**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 **musculo-skeletal disorders**

**Hygienic prevention:**



### 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, 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



- 1-Maintenance of healthful work environment
- 2- Early detection 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

## 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:

## 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.**

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

Namely women and children. This can be achieved through the **following measures:**

### 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

- 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,**

**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 :

