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# Strengthening the Occupational Health Expertise and Scientific Performance of Public Health Institution of Turkey



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# Workplace surveillance

B 3.2 ppt



# Learning Objectives

1. have basic knowledge of the difference between hazard and risk
2. have basic knowledge of risk assessment
3. be able to describe different levels of risk assessment
4. be able to perform a participative risk detection
5. be able to perform a workplace inspection (walk through surveillance)
6. be able to design an exposure assessment strategy for your surveillance protocol

# Workplace surveillance

Surveillance of the working environment is a generic term which includes the identification and evaluation of environmental factors which may affect workers' health.

It covers assessments of sanitary and occupational hygiene conditions, factors in the organization of work which may pose risks to the health of workers, collective and personal protective equipment, exposure of workers to hazardous agents and control systems designed to eliminate and reduce them.

From the standpoint of workers' health, the surveillance of the working environment may focus on, but not be limited to, ergonomics, accident and disease prevention, occupational hygiene in the workplace, work organization, and psychosocial factors in the workplace.

# Hazard

## Hazard

A physical or psychosocial condition, object or agent that has the potential to cause harm to a worker and/or to cause damage to property or environment.

## Health

- Chemical: products, dust and fume, indoor air
- Physical: noise, vibration, climate, radiation
- Biological: bacteria, viruses, fungi, moulds, insects
- Ergonomical: physical and physiological strain
- Psychosocial

## Safety

- Accidents: mechanical, chemical, electrical, explosive, thermal,...

# Hazard

## Hazard

Hazard identification

Hazard characterisation

Dose-response assessment

Exposure limits

**Exposure:** the way the workers come into contact with the hazard

**Risk factors:** elements that are associated with the realisation of the hazard (collective and personal protective equipment, personal characteristics, behaviour)

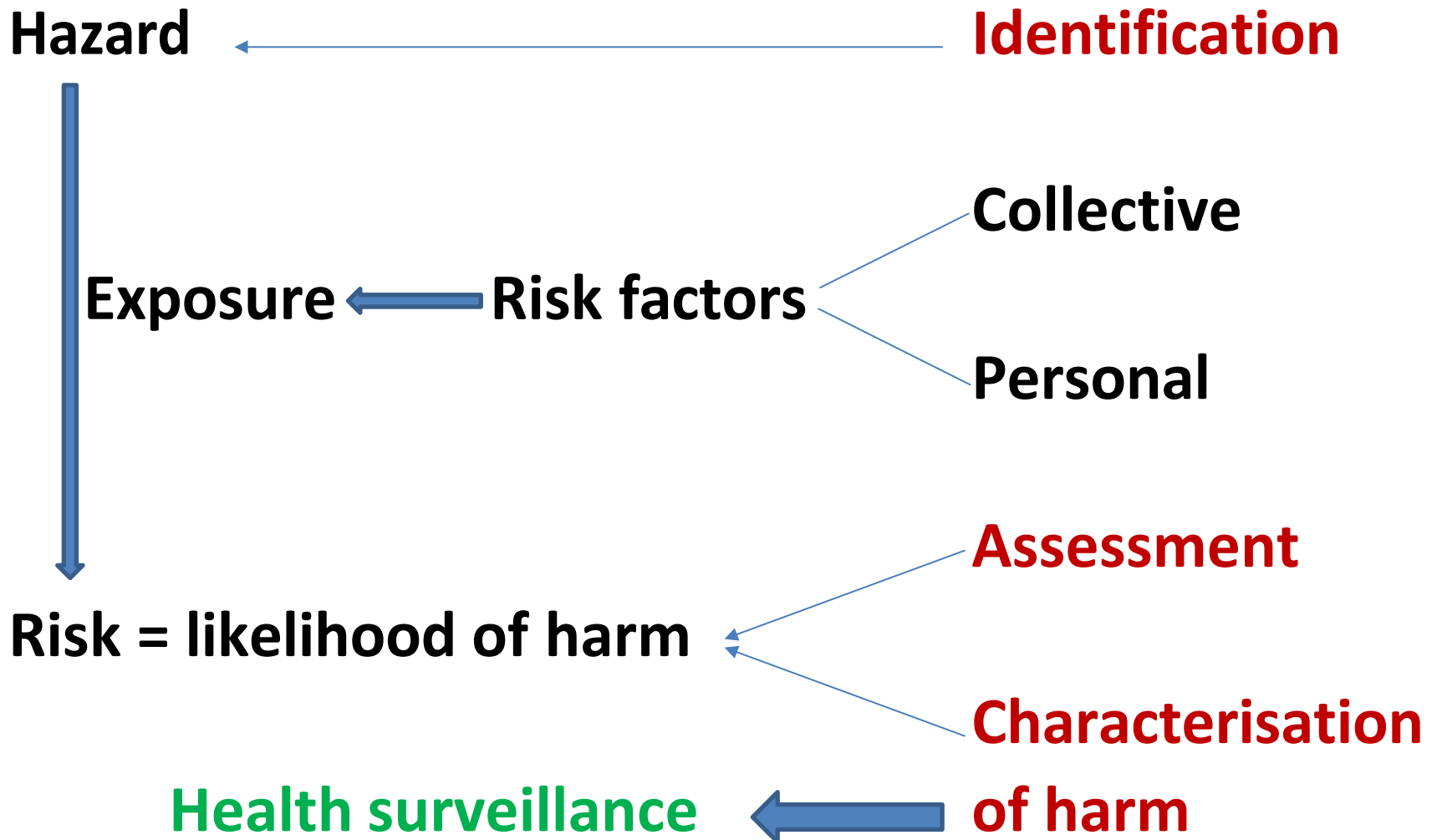
# Risk

**Risk** (related to work)

The likelihood of a harmful effect such as an accident or occupational disease occurring within a specified period or in specific circumstances such as during or after specified exposure. It may be expressed either as a frequency, such as the number of harmful effects in a certain time period, or as a probability, such as the probability of a harmful effect during or after exposure.



**Risk = hazard x exposure x personal vulnerability**



# Risk assessment

## Risk assessment (related to work)

Risk assessment is the process of quantifying the frequency or probability of a harmful effect to individuals or populations (e.g. related to exposure or activities at work) and is one of the first steps in risk management.

## Risk management (related to work)

All actions taken to achieve, maintain or improve work and working conditions so that harmful effects to individuals or populations related to exposure or activities at work will be prevented.

# Occupational Health and Safety

## Risk management



Risk management consist of different **steps**:

1. Risk identification
2. Risk inventarisation
3. Risk assessment
4. Developing, implementing and evaluating control measures.  
Hierarchy of control measures:
  1. Elimination at the source
  2. Collective protection (avoiding transmission)
  3. Personal protection
5. Information and training of the workers

# Characteristics of risk assessment

- Based on scientific, systematic and validated methods and tools
- To measure is to know
- Focused on the worker

# Levels of risk assessment

## 1. Detection or screening

Quick and dirty: a talk with the workers (20 minutes)

## 2. Observation, workplace inspection

A walk-through inspection with a checklist (generic or sector-specific)

## 3. Analysis

Environmental monitoring: measurements (sampling) and calculations

## 4. Expert assessment

Highly specialized labs (very costly)

Involvement of two parties:

- The workers (participative approach)
- The expert (expert evaluation)

# Assignment B 3.2 ass

Make a participative screening of the health risks in the working environment of this course.

- Chemical risks: indoor air quality, dust and fume, use of chemicals
- Physical risks: noise, vibration, heat, cold, draught, light, ionizing and non-ionizing radiation
- Biological risks: biological contamination of air, water, soil, waste, body fluids
- Ergonomic risks: sitting, standing, walking, lifting, pulling and pushing, repetitive tasks, inactivity
- Psychosocial risks: stressors, workload, time pressure, organization, relationships, emotional strain

1 group = 1 coordinator and 6 workers

Decide (if possible in agreement) on the 3 main health risks encountered.

# Workplace inspection

Observation of

- how the worker is working
- his work environment

can give us extra information on the health risks of the worker  
by means of

- looking, hearing, smelling, feeling
- talking to the workers
- simple measurements.

Tools for workplace inspection and risk assessment.

Generic and specific checklists can help us not to miss information.

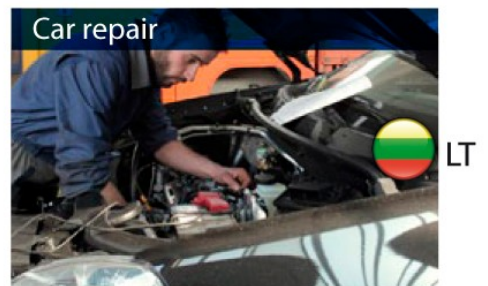


# Online interactive Risk Assessment





# OiRA tools published



# OiRA tools under development



# OiRA tools

There is a more and more common perception that such tools

- need to be developed by governments/ministries/public institutions
- offered for free
- facilitate the risk assessment process among micro and small enterprises
- are good for building bridges, strengthening collaboration, setting up new ways of exchanging/sharing information

# Assignment B 3.3 ass

A workplace inspection using an OiRA checklist.

The 3 workplaces are:

- 1.The cleaning department of the hotel (cleaning tool)
- 2.The kitchen of the hotel (generic tool)
- 3.The maintenance department of the hotel (generic tool)

2 groups of 3 persons for each workplace.

# Measurements and calculations

- Chemicals, dust, fibers, fume
- Noise, vibration, radiation, light, temperature, humidity, air velocity
- Microbiological sampling
- Ergonomic measurements
- Psychosocial strain (questionnaires)





# Examples of tools

## ILO Ergonomic Checkpoints

[http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_120133.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_120133.pdf)

## Stoffenmanager

<https://stoffenmanager.nl/>

## ISPESL

<http://www.portaleagentifisici.it/index.php?lg=EN>

# Assignment B 3.4 ass

Design an exposure assessment strategy for your surveillance protocol

Part 5.4 of the protocol.

What to measure

Why. The goal, purpose of the measurements

Which tools or instruments will be used.

Validity, accuracy of the used method

When, where, whom, how long, how often, how many

Who will do it (name of person or institution or lab)

Estimated costs

Data-analysis and interpretation of the results: who, how

Search for information using all possible sources.