

AARHUS UNIVERSITY

**GUIDE FOR THE OCCUPATIONAL HEALTH AND SAFETY  
ORGANISATION**

# **RISK ASSESSMENT**

A guide on how to predict and understand occupational health and safety risks at AU

## Introduction

This guide is a tool for the occupational health and safety organisation at AU.

Risk assessment as part of the occupational health and safety work at AU is about predicting and understanding the existing or potential risks in the workplace. Risk assessment is an important tool for the occupational health and safety organisation in order to systematically assess, prioritise and act based on the available knowledge about the potential risks employees may be exposed to at work.

The occupational health and safety organisation's primary task is to prevent that employees become exposed to risks at work which may have a negative effect on the employee's well-being and health. It is the employer's responsibility to ensure that preventive measures are taken.

## How to use the risk assessment guide

The risk assessment guide can help the occupational health and safety organisation in its efforts to launch preventive measures where necessary.

The guide is divided into two sections:

1. Information about the work environment. Where can we find information about the work environment? What can we do to ensure that the occupational health and safety organisation has the required information about the work environment in our workplace?
2. The risk assessment method. Systematic assessment of the severity of a specific risk, as well as how and when action must be taken in relation to the specific risk.
  - a. What is a risk assessment?
  - b. The specific assessment of risks at work.

## **1. Information about our work environment – in which situations is a risk assessment required?**

We must assess the risks and the things we are exposed to at work to establish whether or not they may have negative short or long term effects. The occupational health and safety organisation has a range of options for discovering and analysing the risks and exposures that exist or may arise. The list below contains a number of sources which the occupational health and safety organisation can use to find information about conditions at work:

### **Sources of information about conditions at work:**

#### Workplace assessment (WPA)

The WPA provides information about conditions at work. The risk assessment is an important assessment and prioritisation tool in connection with the WPA action plans.

#### The annual occupational health and safety review

The annual review of the occupational health and safety initiatives is an opportunity to take a closer look at procedures and scope for action. Are any changes or improvements required?

#### Health and safety walks

The occupational health and safety group collects information about conditions at work through systematic health and safety walks and by collecting specific observations concerning work environment.

The [WPA checklists](#) can be used in connection with health and safety walks.

#### Dialogues and specific input from colleagues

Input from colleagues to the occupational health and safety group. The employees must know the members of their occupational health and safety group to be able to provide input about conditions at work which need to be examined.

#### Occupational health and safety data

Information about absence due to illness, work-related injury/accidents at work, and psychological counselling from local statistics on absence due to illness and work-related injury/accidents at work.

#### Analyses of accidents, incidents and reasons for absence

The occupational health and safety groups must [analyse the root cause of accidents](#) and near-miss incidents. In connection with the WPA, it must be addressed locally whether work environment conditions exist which may affect the overall level of absence due to illness such as, for example, a poor indoor climate.

#### 'Objective' facts about the risks within a specific sector

Known and documented facts about health and safety conditions within a specific field.

[Universiteter og forskning \(Universities and research \(in Danish\)\) – Arbejdsmiljøvejviser \(Work environment guide \(in Danish\)\)](#) [BrancheArbejdsmiljøRådet \(Work environment council \(in Danish\)\)](#) [Undervisning & Forskning \(Teaching and research \(in Danish\)\)](#)

## 2. The risk assessment method

Definition and use of risk assessments:

- A risk assessment covers the likelihood of risk exposure and the severity of the consequences.
- The assessment shows which types of preventive measures that must be taken to deal with the risk.

### Assessing specific risks at work

Below, you will find examples of situations in which risk assessment is required.

#### New duties or changed job content:

“A permission has been obtained to perform a new type of experiment in a specific laboratory. As part of the new experiment, substances and materials must be used which have not been used before. In this case, the workplace must take special training and qualifications into account in order to ensure safe handling of substances and materials”.

#### Changed work processes:

“As a result of cost reductions, two employees have been dismissed, but the number of work assignments has not been reduced. The work processes change because the same number of tasks must be performed with fewer resources”.

#### New knowledge about the work and its potential effect has been obtained:

“Analyses of the cleaning staff’s working procedures and work postures show that the vacuum cleaners, which are used, are too heavy, and that it is not possible to use the appropriate lifting techniques in accordance with the instructions from the Danish Working Environment Authority. The job content and the processes are the same (vacuuming/cleaning), but the load must be reduced to prevent injuries due to heavy lifting”.

#### The occupational health and safety group becomes aware of risks at work which may have a negative effect:

“The level of absence due to illness increases over a two-year period.

A risk assessment must be carried out in order to establish how the increased level of absence due to illness affects employee well-being, and to assess how the increased level of absence due to illness affects the organisation’s overall ability to function”.

## Likelihood and consequences

The risk assessment is divided into two steps.

1. Assessing the severity of the risk (frequency and consequences)
2. Defining appropriate action and prioritising initiatives.

The severity of the risk can be defined as

$$\text{Likelihood} \times \text{Consequences} = \text{Risk}$$

Based on the available information about the work environment, you can use the risk assessment matrix below to find the risk level and initiate preventive measures.

		Consequences		
		Low 1	Medium 2	High 3
Likelihood	High 3	Moderate risk <b>3 points</b>	Serious risk <b>6 points</b>	The risk CANNOT be tolerated <b>9 points</b>
	Medium 2	The risk can be tolerated <b>2 points</b>	Moderate risk <b>4 points</b>	Serious risk <b>6 points</b>
	Low 1	Insignificant risk <b>1 point</b>	The risk can be tolerated <b>2 points</b>	Moderate risk <b>3 points</b>

## Suggestions for actions to take based on the assessment of the severity of the risk

Based on the risk score and the severity, you can find suggestions below for actions to take in order to deal with the risk.

In order to assess the information from your sources, you can ask the following: "Is there a risk, and how serious is it?"

- From a legal point of view, is there a risk? Is it a violation of the law?
- Is there a risk according to experts in the field? Is there a risk according to research and experience from, for example [The National Research Centre for the Working Environment](#)?
- Are there any conditions involved in the work which constitute a risk? For example, a highly competitive research environment – different experiences and reactions in relation to, for example, workload.
- Does the individual employee experience a risk? The employee's level of experience and knowledge of the workplace?

Risk severity	How to act
<b>9 The risk CANNOT be tolerated</b>	Risks which cannot be tolerated must be removed immediately. Alternatively, the work process must be stopped. This also applies in cases of violation of the law.
<b>6. Serious risk</b>	Serious risks must be removed immediately or minimised. Alternatively, the risk must be reduced before the work can continue.
<b>3-4 Moderate risk</b>	A moderate risk must be removed or minimised. Alternatively, the action plan must contain specific targets for how to remove the risk.
<b>2 The risk can be tolerated</b>	A risk which can be tolerated can be included when setting targets, for example, as part of an action plan. Alternatively, the risk must be monitored in connection with daily operations.
<b>1 Insignificant risk</b>	An insignificant risk does not require immediate action. It may be included when setting targets as part of an action plan.

On the following pages, you can see examples of risk assessments in relation to the physical and psychological work environment in the green, yellow and red zone.

## Physical work environment – green zone

### Example: Odour problems – toilet/sewer

#### Observation/incident:

#### Odour problems – toilet/sewer:

- In connection with heavy rain, odour problems arise in a specific cloakroom/toilet area. This is the result of an outdated sewage system.

#### Risk of:

- The odour problems may lead to discomfort and irritation among the staff.

#### **Likelihood** of negative impact:

#### Low (score 1)

The problem only occurs in connection with heavy rain.

#### **Consequences** of negative impact:

#### Medium (score 2)

Nausea, irritation and discomfort.

**Calculation of risk** Likelihood (1) x Consequences (2) = Risk (2)

#### **Low risk** (total score = 2)

*A risk which can be tolerated can be included when setting targets, for example, as part of an action plan. Alternatively, the risk must be monitored in connection with daily operations.*

#### Specific action:

- When it rains, the doors to the cloakroom/toilet area must be kept closed.
- Efficient ventilation of the toilet area.
- The sewage system will be renewed in connection with the upcoming renovation of the building.

## Psychological work environment - green zone

### Example: Noise problems from the printer room

#### Observation/incident:

Noise problems from the printer room

- The printer room is right next to an office where two employees work. Sometimes, people meet in the printer room and talk. The door is left open in order to control the indoor climate.

#### Risk of:

- The employees in the office find it difficult to concentrate and feel under pressure.

#### **Likelihood** of negative impact:

##### Low (score 1)

The noise problems only occur when the door is open.

#### **Consequences** of negative impact:

##### Medium (score 2)

Lack of concentration and the risk of falling behind/delays.

**Calculation of risk** Likelihood (1) x Consequences (2) = Risk (2)

#### **Low risk** (total score = 2)

*A risk which can be tolerated can be included when setting targets, for example, as part of an action plan. Alternatively, the risk must be monitored in connection with daily operations.*

#### Specific action:

- The door to the printer room must be kept closed.
- Employees are encouraged to talk to each other somewhere else and not in the printer room or right outside the printer room.
- The ventilation system in the printer room will be renewed in connection with the upcoming renovation of the building.

## Physical work environment – yellow zone

### Example: Slippery floors

#### Observation/incident:

Slippery floors when a machine is used to wash the floors.

- When a machine is used to wash the floors, water is often left on the floor.

#### Risk of:

- Slip and fall accidents at work.

#### **Likelihood** of negative impact:

##### Medium (score 2)

Many employees walk on the slippery floor. The risk is known and obvious to everyone, but slip and fall accidents may still occur.

#### **Consequences** of negative impact:

##### Medium (score 2)

Slipping and falling on a slippery floor may lead to sprains and broken legs/arms which may result in long-term absence due to illness.

**Calculation of risk** Likelihood (2) x Consequences (2) = Risk (4)

#### **Moderate risk** (total score = 4)

*A moderate risk must be removed or minimised. Alternatively, the action plan must contain specific targets for how to remove the risk.*

#### Specific action:

- Adjusting the machine which is used to wash the floors to ensure that it becomes dry quicker.
- Planning to ensure that the washing of floors takes place when no one else is a work.

## Psychological work environment - yellow zone

### Example: Conflicts between employees

#### Observation/incident:

Conflicts often arise between employees and professional differences of opinion occasionally lead to personal criticism.

#### Risk of:

- Low level of professional and personal well-being at work.

#### **Likelihood** of negative impact:

##### Medium (score 2)

The conflicts arise once or twice a month.

#### **Consequences** of negative impact:

##### Medium (score 2)

Professional and social isolation  
Stress  
Absence from work due to illness/sick leave

**Calculation of risk** Likelihood (2) x Consequences (2) = Risk (4)

#### **Moderate risk** (total score = 4)

*A moderate risk must be removed or minimised. Alternatively, the action plan must contain specific targets for how to remove the risk.*

#### Specific action:

The occupational health and safety group and the manager of the unit in question initiate a process with dialogues about constructive communication and professional behaviour. The unit's manager intervenes the conflicts to find the reasons for the conflicts.

## Physical work environment – red zone

### Example: Risk of fire

#### Observation/incident:

Flammable substances and materials are used in the laboratories.

- Lack of instructions on how to handle highly flammable substances and materials.
- Lack of fire fighting instructions.
- Fire fighting equipment is not available in the laboratory.

#### Risk of:

Fire in the laboratory.

#### **Likelihood** of negative impact:

##### Medium (score 2)

The lack of instructions increases the risk of mistakes when working with flammable substances and materials. As a result of the lack of fire fighting instructions, a minor incident may develop into a serious accident.

#### **Consequences** of negative impact:

##### High (score 3)

Serious personal injury/death.  
Laboratory facilities may burn down.  
Research goes to waste.  
Significant financial and research-related losses.

**Calculation of risk** Likelihood (2) x Consequences (3) = Risk (6)

#### **Serious risk** (total score = 6)

*Serious risks must be removed immediately or minimised. Alternatively, the risk must be reduced before the work can continue.*

#### Specific action:

- Making instructions mandatory.
- Implementing systematic inspection of the employees' skills with regard to handling hazardous materials.
- Making fire fighting equipment available and ensuring that is checked systematically.

## Psychological work environment – red zone

### Example: Risk of harassment and violence

#### Observation/incident:

Staff has been exposed to verbal threats and assault.

- In certain situations, some of AU's service staff are in contact with students and, to a limited extent, citizens who act in an aggressive and threatening way.
- The workplace is not designed to deal with people with this type of behaviour.
- The employees do not have the required training to deal with situations involving aggressive behaviour or threats.

#### Risk of:

Serious psychological and physical trauma among staff.

#### **Likelihood** of negative impact:

##### High (score 2)

These situations involving students or citizens do not occur very often. However, based on experience, these situations must be expected in connection with some work functions.

#### **Consequences** of negative impact:

##### High (score 3)

Serious personal injury.  
Psychological trauma as a result of threats.  
Reduced capacity for work, long-term absence due to illness and increased workload in the rest of the unit.

**Calculation of risk** Likelihood (2) x Consequences (3) = Risk (6)

#### **The risk cannot be tolerated** (total score = 6)

*Serious risks must be removed immediately or minimised.*

*Alternatively, the risk must be reduced before the work can continue.*

#### Specific action:

- Implementing [initiatives to prevent violence and threats](#).
- Creating an emergency response plan and conducting emergency response training.