

UNIT 10

HAZARDS IN THE WORKPLACE

1

PREVENTATIVE AND PROTECTIVE ACTIONS

The aim of risks prevention in business is to avoid and reduce risks at work and also improve work conditions; therefore prevention and protection actions at work are necessary.

- **Preventative actions** try to avoid and minimise risks at work and their consequences (harms). For example: to use a low-level noise machine to avoid hearing damage.
- **Protective actions** are used in case preventative actions are insufficient to avoid hazards at work.

There are two types of **protective actions** at work:

(adequate ventilation and heating, protection nets, safety railings...)



COLLECTIVE
PROTECTIVE
ACTIONS

(rubber gloves, safety glasses, safety harness, protective helmet or hard hat...)



PERSONAL
PROTECTIVE
ACTIONS

The safety and health of employees must first be safeguarded by actions to eliminate workplace risks at the source, through technical or organisational means (e.g. by substituting hazardous chemical) or by providing protection on a collective basis (e.g. providing scaffolding instead of harnesses).

Collective protective actions covering a number of employees in a workplace must have priority over protective actions applying to individual employees.

If these actions are not sufficient, only then should PPE be used to protect against the hazards that are unavoidable.

PREVENTATIVE ACTIONS

TRY TO AVOID AND REDUCE RISKS

PROTECTIVE MEASURES

TRY TO AVOID AND REDUCE HARMS

2

HAZARDS IN THE WORKPLACE RELATED TO PHYSICAL CONDITIONS

2.1 SAFETY HAZARDS IN THE WORKPLACE

Work areas include employee lounges, dining room and restrooms. These areas must be designed according to the use it is going to have trying to avoid hazards.



Slips, trips, falls (on the same or to a different level), and hits and cuts, are the most common accidents in the workplace. These can be caused by falling objects or collapses due to poor construction of the building, poor signage or lack of order and cleanliness.



PREVENTATIVE ACTIONS: good structure of the building, good installations, safety and health signs, high level of order and cleaning.

2.2 SAFETY HAZARDS ASSOCIATED WITH THE USE OF MACHINERY AND HARDWARE

A machine is an apparatus consisting of interrelated parts with separate functions, used in the performance of some kind of work.

Hardware is the mechanical equipment necessary for conducting an activity, for instance, metal ware, tools, locks, hinges and cutlery.



Crushing, ejection of fragments and liquids, entrapments, electrical contacts, fire and explosions are the largest cause of accidents. These accidents can cause hits, cuts, sprains, overstrains, burns, hearing impairments, deafness, serious eye injuries, etc.



PREVENTATIVE ACTIONS: workers' training to properly use of machinery and hardware, suitable design of the machinery and hardware, approved machinery and hardware as well as adequate storage and maintenance and the correct use of the machinery and hardware according to the instructions found in the owner's manual.

2.3 ELECTRICAL HAZARDS

These are electrical contacts whenever human body and electricity get in contact (direct: with a stripped wire or indirect contact: with the exterior housing of a machine connected to the power grid).

The severity of an electric shock depends on the resistance of the body, the current flow path and the intensity of the current.



Fires and explosions and electrical contacts are the most common cause of accidents. These accidents can cause death from cardiac arrest or suffocation, muscle rigidity, burns and falls.



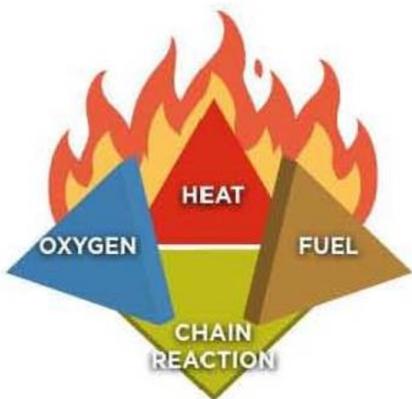
PREVENTATIVE ACTIONS: maintaining distance from active parts of installations and equipment, grounding of exposed conductive parts, installing automatic circuit breakers, insulating of equipment and machines, workers' training to properly use of all the machinery and hardware, adequate safety signage and regular inspection of installations.

WHAT TO DO IN CASE OF ELECTRIC SHOCK



- a. If the victim seems held by the current or is still in contact with it
 - 1° Don't touch the victim. You might get a shock, too!
 - 2° Disengage the victim from the electric current by
 - cutting the power at the source or
 - using a nonconductive object to free the victim from the energy source without touching him or her directly.
 - 3° Call an ambulance
 - 4° A witness to the accident should always accompany the victim to emergency.
- b. If the victim is unconscious, has stopped breathing or has no detectable pulse after being released from the current
 - 1° Call for help and dial 112.
 - 2° Perform cardiopulmonary resuscitation (CPR) until the ambulance arrives. A severe electric shock may cause cardiac arrest. But if the heart is uninjured, CPR can be extremely effective.

2.4 FIRE HAZARDS



Fires start when a **flammable and/or a combustible material**, in combination with a sufficient quantity of an **oxidizer** such as oxygen, gas, or another oxygen-rich compound (though non-oxygen oxidizers exist that can replace oxygen), is exposed to a **source of heat or ambient temperature** above the flash point for the fuel/oxidizer mix, and is able to sustain a rate of rapid oxidation that produces a **chain reaction**.

This is commonly called the **fire tetrahedron**. Fire cannot exist without all of these elements in place and in the right proportions. For example, a flammable liquid will start burning only if the fuel and oxygen are in the right proportions.

Fire can be extinguished by removing any one of the elements of the fire tetrahedron.

The fire can be extinguished by any of the following:

- Turning off the gas supply, which removes the fuel source.
- Covering the flame completely, which smothers the flame as the combustion uses both the available oxidizer (the oxygen in the air) and displaces it from the area around the flame with CO₂.
- Application of water, which removes heat from the fire faster than the fire can produce it (similarly, blowing hard on a flame will displace the heat of the burning gas from its fuel source).
- Application of a retardant chemical such as halon to the flame, which retards the chemical reaction itself until the rate of combustion is too slow to maintain the chain reaction.

OPERATING YOUR EXTINGUISHER



PULL THE PIN



AIM AT THE BASE OF THE FIRE



SQUEEZE THE LEVER



SWEEP FROM SIDE TO SIDE

IN ADDITION

- TEST EXTINGUISHER PRIOR TO APPROACHING FIRE
- KEEP LOW & APPROACH WITH WIND AT YOUR BACK
- BACK AWAY, WATCHING FOR REKINDLE

There are six types of fire:

- A As a rule, **class A** fires are the fires of solid materials of organic nature (such as cloth, wood, paper, cardboard, furniture ...), rubber and various plastics.
- B The **class B** fires are, as a rule, fires of the flammable or combustible liquids, such as petrol, oil, paint, kerosene and grease.
- C The **class C** fires are the fires of the inflammable gases, like propane, butane, acetylene and so on.
- E The **class D** fires are fires of burning metals like aluminium, magnesium, titanium, potassium or sodium.
- D **Class E** fires include the combustion of electrical equipment, such as appliances, wiring, circuit breakers and outlets. This is no longer used on the basis that, when the power supply is turned off, an electrical fire can fall into any of the remaining five categories.
- F **Class F** fires involve cooking fat and oil.

A **fire extinguisher** is a portable container usually filled with special chemicals for putting out a fire.

According to the standard BS EN 3, fire extinguishers in Europe are red RAL 3000, and a band or circle of a second colour covering between 5-10% of the surface area of the extinguisher indicates the contents.

LOCATIONS FOR FIRE EXTINGUERS:

- Near an exit
- Visible location
- High on a wall
- Out of children's reach
- Away from heat sources
- No more than 23 m away from a Class A (a ordinary combustibles) hazard
- No more than 15 m away from a Class B (flammable liquids) hazard
- Kitchen
- Laundry room
- Workshop
- Garage
- Top basement stairwell

Water / Water + additive	●					
AFF Foam	●	●				
Carbon Dioxide		●		●		
ABC Powder	●	●	●	●		
Specialist Powder					●	
Wet Chemical	●					●



PREVENTATIVE ACTIONS: keeping the workplace in order and maintaining cleanliness; managing disposal of waste; installing fire detection systems; and implementing emergency and evacuation plans.

[www.hydroquebec.com/security/que faire choc](http://www.hydroquebec.com/security/que_faire_choc)

3

ENVIRONMENTAL HEALTH HAZARDS

3.1 PHYSICAL HAZARDS: NOISE, VIBRATIONS, LIGHTING, TEMPERATURE, RADIATIONS

PHYSICAL HAZARDS

NOISE

VIBRATIONS

LIGHTING

TEMPERATURE

RADIATIONS

NOISE

Hearing is a series of events in which sound waves in the air produce electrical signals and cause nerve impulses to be sent to the brain where they are interpreted as sound.

Sound is what we hear. Noise is unwanted sound. The difference between sound and noise depends upon the listener and the circumstances. Rock music can be a pleasurable sound to one person and an annoying noise to another. In either case, it can be hazardous to a person's hearing if the sound is loud and if one is exposed long and often enough.

Noise is one of the most common occupational health hazards. In heavy industrial and manufacturing environments, as well as in farms and cafeterias, permanent hearing loss is the main health concern. Annoyance, stress and interference with speech communication are the main concern in noisy offices, schools and computer rooms.

HOW CAN I TELL IF MY WORKPLACE IS TOO LOUD?

If you answer yes to any of the following questions, the workplace may have a noise problem.

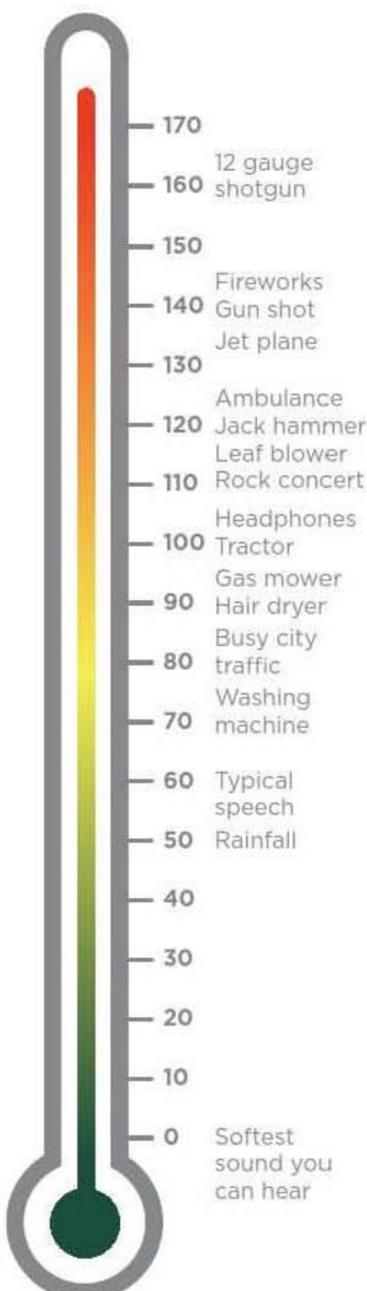
- Do people have to raise their voices?
- Do people who work in noisy environments have ringing in their ears at the end of a shift?
- Do they find when they return home from work that they have to increase the volume on their car radio higher than they did when they went to work?
- Does a person who has worked in a noisy workplace for years have problems understanding conversations at parties or restaurants or in crowds where there are many voices and "competing" noises?

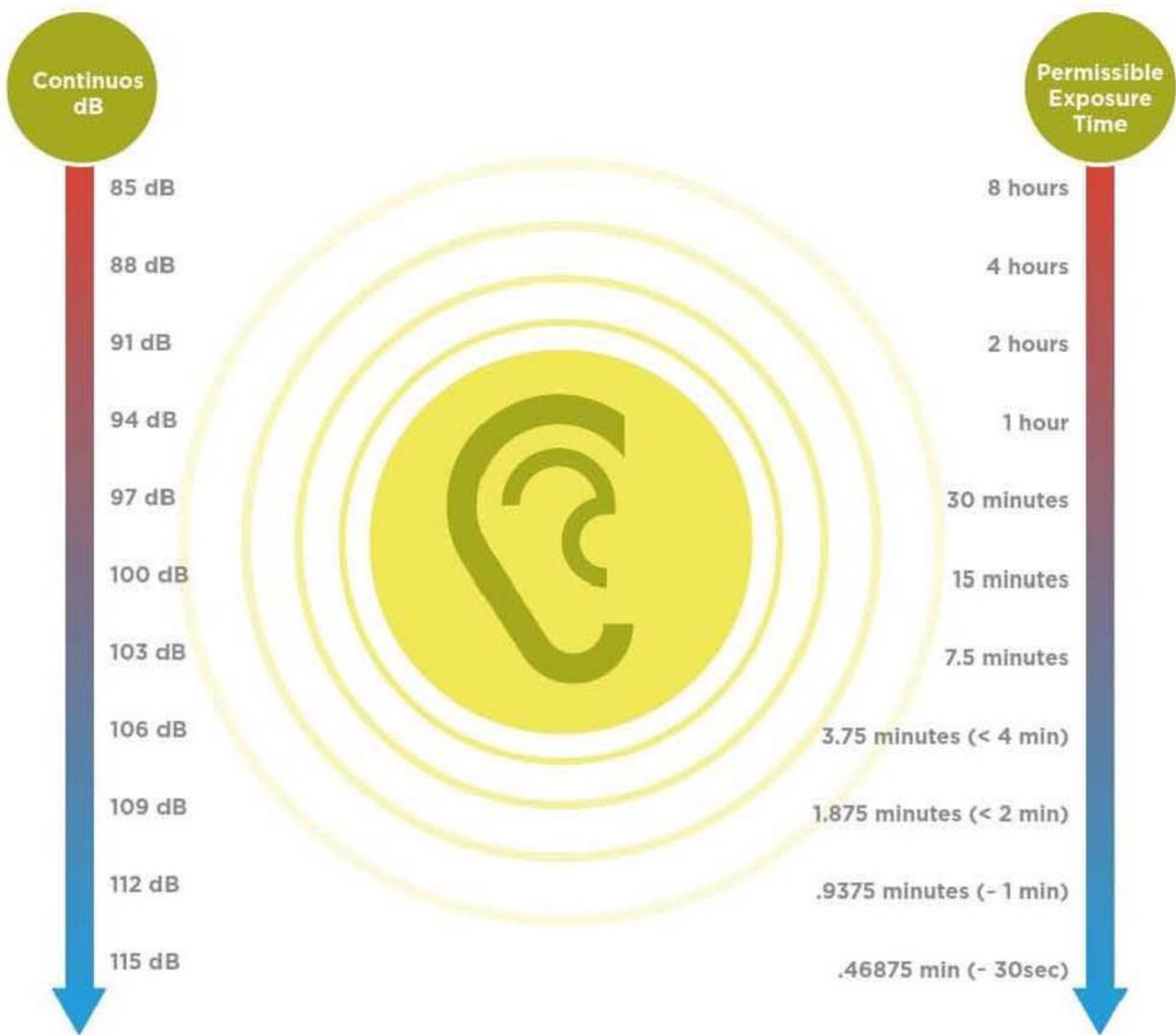
If there is a noise problem in a workplace (RD 286/2006), then a noise assessment or survey should be undertaken to determine the sources of noise, the amount of noise, who is exposed and for how long.

Sound pressure is the amount of air pressure fluctuation a noise source creates. We "hear" or perceive sound pressure as **loudness**. We use decibel (dB, or tenth (deci) of a Bel or dB scale).

Exposure Time Guidelines

The following chart sets out the accepted standards for recommended permissible exposure time to continuous noise, according to NIOSH and CDC, 2002. For every 3 dB over 85dBA, the permissible exposure time before possible damage can occur is cut by half.





A person with hearing loss may perceive normal or typical speech as a whisper. Everything shifts up.



Noise exposure can have two kinds of effects on health, namely non-auditory effects and auditory effects.

- ⓘ Non-auditory effects include stress, related physiological effects (nervousness, aggressiveness), behavioural effects, sleep disorders, digestive problems, disorders in the respiratory and cardiovascular systems and safety concerns.
- ⓘ Auditory effects include hearing impairment resulting from excessive noise exposure (acoustic trauma, tinnitus (the ringing in your ears), temporary hearing loss, permanent hearing loss).

Noise-induced permanent hearing loss is the main concern related to occupational noise exposure.



The Spanish Royal Decree 286/2006 regulates the occupational exposure noise limits and the preventative actions that must be taken:

NOISE LEVELS	PREVENTATIVE ACTIONS
Fewer than 80 dB with the highest reaching 135 dB at one given time	No actions are needed
Fewer than 85 dB with the highest reaching 137 dB at one given time	Give information and training to workers Noise assessment every 3 years Workers' health survey every 5 years Provide PPE hearing protective devices to the workers
Fewer than 87 dB with the highest reaching 140 dB at one given time	Give information and training to workers Noise assessment every year Workers' health survey every 3 years PPE, hearing protective devices, must be worn Compulsory safety signs Adopt technical measures to reduce the noise

VIBRATIONS

An object vibrates when it moves back and forth, up and down, or side to side, usually very rapidly.

Vibration describes the physical energy from a vibrating object, and also what we feel when that energy is transmitted to us.

There are two types of vibration that employees are exposed to in the workplace. Both have potential to cause injury. The two different types are:

1 Hand-arm Vibration

This is vibration that is transferred to the body through hand tools, or hand/arm contact with anything that is vibrating.

The recommended 8 Hour Average is <2.5 m/s²

2 Whole Body Vibration

This is vibration that is transferred to the body by standing or sitting on a vibrating surface.

The recommended 8 Hour Average is <0.5 m/s²

Table of exposure limits:

	DAILY EXPOSURE MEASURE VALUE	DAILY EXPOSURE LIMIT VALUE
Hand-arm Vibration	2.5 m/s ² A(8)	5 m/s ² A(8)
Whole Body Vibration	0.5 m/s ² A(8)	1.15 m/s ² A(8)

The values are measured using a formula which works out the average (A) exposure over an 8 hour day: A(8)

CLASSIFICATION OF VIBRATIONS ACCORDING TO FREQUENCY		
FREQUENCY	MACHINE/TOOL	HARMS
Very low frequency 1 Hz	Passenger transportation: car rolling, ship, plane, train...	Dizziness and vomiting. Nervous system disorders.
Low frequency 1-20 Hz	Urban passenger transport vehicles, commercial vehicles, tractors and agricultural machinery, wheelbarrows, public works machinery	Back problems, lumbar pains and slipped discs, impingements
High frequency 20-1000 Hz	Air-powered machines, hand rotary tooling (polishers, chainsaws, pneumatic jack-hammer, etc.)	Arthritis, wrist injuries



Hand-Arm vibration can cause a variety of symptoms which can include: tingling/numbness in the fingers; white fingers; decreased sense of touch; pain and cold sensations in the hands; and loss of grip strength.

Exposure to whole body vibration can contribute to the development of chronic back pain. Being exposed to elevated levels of whole body vibration can also cause a variety of other symptoms, including: abdominal pain, discomfort, chest pain, nausea, loss of balance, disc displacement and disc degeneration.



PEREVENTATIVE ACTIONs: training and information regarding the appropriate precautions and on the personal and collective protection measures that are to be taken, limiting the duration of exposure, insulating machines, developing maintenance programmes for equipment and systems and undertaking workers' health surveillance.

LIGHTING

The lighting in your workplace should enable employees to comfortably see what they need to do their tasks.

Proper workplace lighting is essential to any good business:

- ✓ it allows employees to comfortably see what they're doing, without straining their eyes or their bodies
- ✓ it makes work easier and more productive
- ✓ it draws attention to hazardous operations and equipment
- ✓ it helps prevent costly errors and accidents

Proper lighting, on the other hand, creates a pleasant atmosphere and gives workers a sense of well-being. This improves their productivity and efficiency.

Proper lighting is also required under RD 486/1997.

To assess whether lighting is sufficient in your workplace, consider these factors:

- human factors
- area to be lit
- tasks to be done
- equipment and furniture used in tasks

There must be sufficient light in the workplace to ensure the safety of every worker. And, there must be adequate back up lighting in an emergency or power failure.

To realize the benefits of proper lighting, it is important to maintain your lighting systems and train your workers in how to use them.

Table 1 shows examples of recommended lighting levels by areas and tasks. Lux is the unit of measurement for luminance. Luminance is the amount of light that falls on a surface.

TABLE 1. Recommended lighting levels depending on the task and the area

TASK/AREA	RECOMMENDED RANGE OF LUMINANCE (LUX)
Simple visual tasks: Lobby area, washrooms, loading onto trucks	30-100
Medium visual tasks: Bookkeeping, filing, receiving and packing	300-1,000
More visually demanding tasks: Colour inspection, proofreading, fine bench or machine work, sewing, watch and jewellery making	3,000-10,000



Poor lighting makes it hard for employees to see and can lead to visual fatigue and discomfort. It can also lead to neck and back pain, if the worker adopts poor posture (for example, if he or she constantly leans forward to see the work). Insufficient lighting also creates a dreary environment.



PREVENTATIVE ACTIONS: maintaining lighting systems and training workers in how to use them, using preferably natural light, using task lighting if necessary, avoiding contrast, maintaining the adequate amount of light, however, should not be excessively brighter than the general level of brightness to avoid causing glare for the worker and others working nearby, controlling glare.

Automatic emergency lighting, powered by an independent source (generator), should be provided where sudden loss of light would create a risk. Exit lights, for example, must always be lit when the building is occupied. And, emergency lighting must provide at least 10 lux, on average, at floor or tread levels in exits, exit routes, stairs, and underground walkways.

TEMPERATURE

Temperatures in the workplace are covered by the RD 486/1997, which place a legal obligation on employers to provide a "reasonable" temperature in the workplace:



For sedentary jobs between
17 - 27 °C



For physical jobs between
14 - 25 °C

But there is more to it than just room temperature.

Thermal comfort is defined as: *'That condition of mind which expresses satisfaction with the thermal environment.'*

So the term 'thermal comfort' describes a person's psychological state of mind and is usually referred to in terms of whether someone is feeling too hot or too cold.

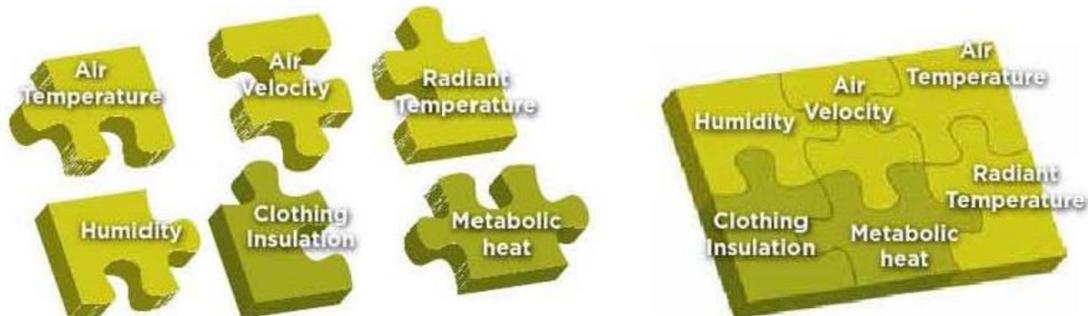
The six factors affecting thermal comfort are both environmental and personal. These factors may be independent of each other, but together contribute to a worker's thermal comfort.

Environmental factors

- **Air temperature:** this is the temperature of the air surrounding the body. It is usually given in degrees Celsius (°C).
- **Radiant temperature:** is the heat that radiates from a warm object (the sun; fire; electric fires; furnaces; steam rollers; ovens; walls in kilns; cookers; dryers; hot surfaces and machinery, molten metals etc.)
- **Air velocity:** this describes the speed of air moving across the worker and may help cool the worker if it is cooler than the environment.
- **Humidity:** if water is heated and it evaporates to the surrounding environment, the resulting amount of water in the air will provide humidity.

Personal factors

- **Clothing Insulation:** Thermal comfort is very much dependent on the insulating effect of clothing on the wearer.
- **Metabolic heat:** It describes the heat that we produce inside our bodies as we carry out physical activity.



HEAT STRESS

Can affect individuals in different ways, and some people are more susceptible to it than others.

Typical symptoms are: inability to concentrate, muscle cramps, heat rash, severe thirst - a late symptom of heat stress, fainting; heat exhaustion (fatigue, giddiness, nausea, headache, moist skin), heat stroke (hot dry skin, confusion, convulsions and eventual loss of consciousness); this is the most severe disorder and can result in death if not detected at an early stage.



COLD STRESS

Hypothermia is a type of cold stress. Symptoms of hypothermia can vary depending on how long you have been exposed to the cold temperatures.

Early Symptoms are: shivering, fatigue, loss of coordination, confusion and disorientation.

Late Symptoms are: no shivering, blue skin, dilated pupils, slowed pulse and breathing, loss of consciousness.death if not detected at an early stage.



PREVENTATIVE ACTIONS: firstly acting on the source (heat or cold), secondly on the thermal environment, and finally using personal protective equipment.

Drinking water frequently and adjusting the work schedule to help cope better with extreme temperature.

RADIATION

Radiation is the complete process in which energy is emitted by one body, transmitted through an intervening medium or space, and absorbed by another body (RD 783/2001). Radiation can be classified as either ionising or non-ionising according to whether or not it can cause ordinary chemical matter.

The main difference between **ionising** and **non-ionising** radiation is in the amount of energy the radiation carries. Ionising radiation carries more energy than non-ionising radiation and causes damage to cells and tissues (changes the composition or structure of cells).

Radiation poisoning has a negative impact on the body. Radiation is known to damage and kill nerve cells and blood vessels.

IONISING RADIATIONS

These include X-rays, gamma rays and particulate radiation (alpha, beta and neutron radiation) produced from X-ray sets or radioactive substances.



These are more harmful for the body but, on the other hand, they have their benefits to the human body (cancer treatment, medical tests...).

NON-IONISING RADIATION (NIR)

It is the term used to describe the part of the electromagnetic spectrum covering two main regions, namely optical radiation (ultraviolet (UV), visible and infra-red) and electromagnetic fields (EMFs) (power frequencies, microwaves and radio frequencies).



Symptoms include diarrhoea, vomiting, bleeding, burns, eye injuries, cancer and even death.



PREVENTATIVE ACTIONS: implementing safety regulations for working with radiation, or proximal to radiation sources, including exposure limits, safety signs, personal monitoring equipment, and the proper restricting of contaminated work sites. Personal monitoring equipment must be supplied by employers.

3.2 CHEMICAL HAZARDS

Chemicals are part of modern life, and we are likely to encounter them every day.

Chemicals are used in many places and in many different ways, including in factories, shops, laboratories, offices, farms and in the home and garden. The chemicals you use at work may include products you buy to use in your core business, or in maintaining your equipment, or in general cleaning.

Toxicity is the degree to which a substance can damage an organism.

Toxicity of a substance can be affected by many different factors

- The pathway of administration (whether the toxin is applied to the skin, ingested, inhaled, injected, absorbs parenterally, via eye mucous)
- The time of exposure (a brief encounter or long term)
- The number of exposures (a single dose or multiple doses over time)
- The physical form of the toxin (solid, liquid, gas)
- The genetic makeup of an individual
- An individual's overall health
- And many others

Important factors relating to chemicals

- **Occupational exposure limit value (OELV):** this is a concentration of a chemical in workplace air to which most people can be exposed without experiencing harmful effects, according the National Institute for Health and Safety in the Workplace (INSHT).
- **Chemical inventory:** this is a list of all the chemicals you have in your workplace.
- **Label:** all chemicals should be supplied with a label on the container which clearly identifies the chemical and its hazards.
- **Chemical Abstracts Service (CAS) number**
This is a unique identifying number which is assigned to each chemical. Where you encounter more than one chemical or trade name for the same chemical, you can use this number to definitively identify the chemical.
- **Safety data sheet (SDS)**
This is a document that must be provided to you with all hazardous chemicals. It provides useful information on the chemical hazards, advice on safe handling, use and storage, and the emergency measures to be followed in case of an accident.



Chemical agents can cause:

- **Physical hazards:** oxidising, explosive, flammable, highly flammable, or extremely flammable, corrosive chemicals and pressure vessel cylinders, liquids or gases.
- **Environmental hazards**
- **Health problems:** acute toxicity, serious eye injury, eye irritation, skin irritation, skin rashes, skin sensitisation and respiratory sensitisation, carcinogenic, germ cell mutagenic, toxic to reproduction, negative effect on breast feeding....



PREVENTATIVE ACTIONS:

- Determine which hazardous substances are present in the workplace.
- Prevent or control exposure to the hazardous substances to as low a level as is reasonably practical.
- Adopt appropriate hygiene measures.
- Provide information, training and consultation to employees.
- Apply collective protection measures at the source of the risk, such as ventilation and appropriate organisational measures.
- Apply individual protective measures
- Arranging and cleaning the working place.
- Make health surveillance available to employees such as correct storage, handling, use and disposal procedures.

Introduction to GHS - Pictograms



3.3 BIOLOGICAL HAZARDS

Infections at work are those created by exposure to harmful micro-organisms such as bacteria, fungi, viruses, internal parasites, and other infectious proteins known as prions (prions are responsible for the transmissible spongiform encephalopathies in a variety of mammals). These are called 'biological agents' in health and safety legislation.



You may be harmed by micro-organisms:

- by **being infected** with the micro-organism (salmonella-salmonellosis, virus of influenza...)
- by **being exposed** to toxins produced by the micro-organism (the staphylococcus aureus produces a toxin that causes vomiting and digestive disorders)
- by **having an allergic reaction** to the micro-organism or substances it produces (anisakis: it's a parasite in the fish that causes allergy and digestive disorders)

They have the ability to adversely affect human health in a variety of ways, ranging from relatively mild, allergic reactions to serious medical conditions, even death.

MICRO-ORGANISMS	DEFINITION	ILLNESSES
Virus (biological structure)	An ultramicroscopic (20 to 300 nm -nanometers- in diameter), metabolically inert, infectious agent that replicates only within the cells of living hosts, mainly bacteria, plants, and animals.	<ul style="list-style-type: none"> • AIDS • Rabies • Hepatitis B • Typhus • Influenza
Bacteria (living being organism)	Ubiquitous one-celled organisms, spherical, spiral, or rod-shaped and appearing singularly or in chains.	<ul style="list-style-type: none"> • Tuberculosis (TB) • Dysentery, • Tetanus • Malta fever

MICRO-ORGANISMS	DEFINITION	ILLNESSES
Protozoa	<p>Any of a large group of single-celled, usually microscopic, eukaryotic organisms, many of which are mobile.</p> <p>Some protozoa are human parasites, causing diseases.</p>	<ul style="list-style-type: none"> Malaria Amoebiasis Giardiasis Toxoplasmosis
Fungi	<p>Large group of eukaryotic organisms that includes microorganisms such as yeasts and moulds, as well as the more familiar mushrooms.</p>	<ul style="list-style-type: none"> Mycosis fungoides Tinea (infections of the skin or nails caused by fungi and appearing as itching circular patches) Athlete's foot
Worms	<p>Any of various invertebrates, having a long, flexible, rounded or flattened body, often without obvious appendages.</p>	<ul style="list-style-type: none"> Hookworm infection

Activities that may involve exposure to biological agents include, but are not limited to:

- Work in food production plants
- Work in agriculture
- Work in health care, including isolation and post mortem units
- Work in clinical, veterinary and diagnostic laboratories
- Work in refuse disposal plants
- Work in sewage purification installations
- Work activities where there is contact with animals or products of animal origin (or both)



Where it is not technically possible to prevent exposure to biological agents, actions to be taken so as to reduce the risk of exposure and to ensure the control of any remaining risk so as to protect the worker should include:

PREVENTATIVE ACTIONS:

- Provide training and information on the appropriate precautions and on the personal and collective protection measures that are to be taken.
- Keep the number of employees exposed or likely to be exposed to a biological agent as low as possible.
- Use both collective protection measures and individual protection measures where exposure cannot be avoided by other means.
- Use hygiene measures compatible

with the aim of preventing or reducing the accidental transfer or release of a biological agent from the workplace.

- Use the bio-hazard sign and other relevant warning signs.
- Use means for safe collection, storage and disposal of waste by employees, including the use of secure and identifiable containers, after suitable treatment where appropriate.
- Make arrangements for the safe handling and transport of a biological agent within the workplace.

4

PSYCHOSOCIAL HAZARDS

MOST COMMON HAZARDS

A

Due to work overload:

- Fatigue
- Premature ageing

B

Due to work organisation:

- Stress
- Mobbing
- Burnout
- "Bore out"

A

WORK OVERLOAD

There are two types of work overload: being asked to do too much work and being asked to do work that is too difficult.

Work overload is a stressor frequently noted by people across countries and occupations. It has been linked to a variety of behavioural, physical, and psychological strains.



Overload produces **fatigue** that in the long run can have **detrimental effects on health and well-being**.



PREVENTATIVE ACTIONS: on the organisation's side, reduction of overload might require redesign of the job, reduction of constraints, hiring of more employees, or reducing the amount of work to be done; or training employees to increase their efficiency and skill/s.

B

WORK ORGANISATION

Basically, an organisation in its simplest form is a person or group of people intentionally organized to accomplish an overall, common goal or set of goals.

In a business it is how the work is carried out including how to do the tasks and human relationships.

The consequences of a bad work organisation are:

STRESS

Job stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury.



THE SYMPTOMS OF STRESS ARE: stress-related disorders encompass a broad array of conditions, including psychological disorders (depression, anxiety, post-traumatic stress disorder) and other emotional disturbances (dissatisfaction, fatigue, tension, etc.), maladaptive behaviours (aggression, substance abuse), and cognitive impairment.

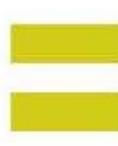
Stress is also associated with physical symptoms including increased heartbeat, swiftness of breath, dry mouth, and sweaty palms and over the longer term, digestive upset and cramp.



Organizational change



Stress management



A healthy workplace

Reduced stress disorders
Satisfied and productive workers
Profitable and competitive organizations

Stress is the second most reported work-related health problem, affecting 22% of workers from EU 27 (in 2005).



PREVENTATIVE ACTIONS (How to change the organisation to prevent job stress):

- Ensure that the workload is in line with workers' capabilities and resources.
- Design jobs to provide meaning, stimulation, and opportunities for workers to use their skills.
- Clearly define workers' roles and responsibilities.
- Provide opportunities for social interaction among workers.
- Improve communications - reduce uncertainty about career development and future employment prospects.
- Establish work schedules that are compatible with demands and responsibilities outside the job.
- Give workers opportunities to participate in decisions and actions affecting their jobs.

MOBBING

Bullying in the workplace is a repeated inappropriate behaviour, direct or indirect, whether verbal, physical or otherwise, conducted by one or more persons against another or others, at the place of work and/or in the course of employment, which could reasonably be regarded as undermining the individual's right to dignity at work.

Mobbing, as described by Herr Zucker, shows itself in three ways, (1) by employees against a colleague, (2) by employees against a subordinate and (3) by employees against a superior.



THE SYMPTOMS OF MOBBING ARE: victims of workplace mobbing frequently suffer from: adjustment disorders, somatic symptoms (e.g., headaches or irritable bowel syndrome), psychological trauma, post-traumatic stress disorder and major depression.



PREVENTATIVE ACTIONS: promoting a pleasant working environment in an adequate business culture.

First the employer should be aware of the nature of mobbing and its effect on employees at all levels. He must have good systems for monitoring and investigating the conduct of employees at all levels and for timely consultation and action without the need to wait for employees to complain.

Timing is crucial, because the nature of the conduct is such that, if action is delayed, relations between employees and the harm to the victim are likely to become beyond repair.

BURNOUT

Burnout is a psychological term that refers to long-term exhaustion and diminished interest in work.

Burnout is a state of emotional, mental, and physical exhaustion caused by excessive and prolonged stress. It occurs when you feel overwhelmed and unable to meet constant demands. As the stress continues, you begin to lose the interest or motivation that led you to take on that certain role in the first place.



THE SYMPTOMS OF BURNOUT ARE: sense of failure and self-doubt, feeling helpless, trapped, and defeated, detachment, feeling alone in the world, loss of motivation, increasingly cynical and negative outlook and decreased satisfaction and sense of accomplishment.



PREVENTATIVE ACTIONS: while individuals can cope with the symptoms of burnout, the only way to truly prevent burnout is through a combination of organisational change and education for the individual. Organisations address these issues through their own management development, but often they engage external consultants to assist them in establishing new policies and practices supporting a healthier work life.

A better connection on workload means assuring adequate resources to meet demands as well as work/life balances that encourage employees to revitalize their energy.

A better connection on values means clear organisational values to which employees can feel committed.

A better connection on community means supportive leadership and relationships with colleagues rather than discord.

"BORE OUT"

"Bore out" is a management theory (2007) that posits that lack of work, boredom, and consequent lack of satisfaction are a common malaise affecting individuals working in modern organisations, especially in office-based white collar jobs.

"Bore out" consists of three elements: boredom, lack of challenge, and lack of interest. The authors disagree with the common perceptions that a demotivated employee is lazy; instead, they claim that the employee has lost interest in work tasks.

This theory implies the employee is dissatisfied and demotivated in the workplace. Employees who suffered from this disease are under challenged, uninterested, and spend hours each day simulating work. These employees have given up and become resigned to their situation, suffering what is effectively the opposite of office burnout.

"Bore out" lowers morale, productivity, and profits.



THE SYMPTOMS OF "BORE OUT" ARE: consequences of chronic boredom for employees include dissatisfaction, fatigue as well as ennui and low self-esteem, while for the business itself there are the problems of an unnecessary financial burden, high levels of sick leave and low company loyalty.

The paradox of boreout is that despite hating the situation, employees feel unable to ask for more challenging tasks, to raise the situation with superiors or even look for a new job.



PREVENTATIVE ACTIONS (**The authors of this theory do however propose a solution**): first, one must analyse one's personal job situation, then look for a solution within the company and finally if that does not help, look for a new job.