Pregnancy and breastfeeding are biological states that require special protection.

During the entire process of gestation and breastfeeding, physiological, metabolic and psychological changes take place in the woman’s body. As a result, work conditions that were considered normal and hazard-free may no longer be defined as such, because they could affect the health of the mother or that of the fetus.

To recognise a situation of pregnancy or breastfeeding and request the adoption of appropriate measures, the organisation needs to be informed of the worker’s state.

Why inform the organisation:

To implement the Procedure to protect women who are pregnant or breastfeeding against occupational hazards:

- Receive information about occupational hazards that could affect pregnancy, breastfeeding or the fetus.
- Receive an assessment of your work conditions in relation to pregnancy or breastfeeding.
- Adapt or implement any required preventative measures.

How to communicate a pregnancy:

1. Request a doctor’s appointment using the tool for requesting healthcare on the prevention website:

2. Fill in the Notification of pregnancy / Notification of breastfeeding document, which is available at the above links, and submit it to the Health Monitoring and Promotion Centre at the time of the appointment.
Main occupational hazards that could affect the health of pregnant / breastfeeding workers or the fetus

A non-exhaustive list of agents to which pregnant or breastfeeding (*) workers must not be exposed:

- Reprotoxic chemical agents
- Certain biological agents from Group 2 (Toxoplasma, Rubella Virus, etc.)
- Work in high-pressure atmospheres
- Ionising radiation (X-rays, alpha, beta and gamma isotopes)

A non-exhaustive list of agents and work conditions that could have a negative impact on the health of pregnant or breastfeeding workers and/or on the fetus (*):

- Chemical agents (mutagens, carcinogens and reprotoxic substances)
- Biological agents in groups 2, 3 and 4
- Physical agents:
  - Extreme cold or heat
  - Knocks or strong vibrations
  - Excessive noise (above 80 dBA)
  - Non-ionising radiation
  - Manual handling of heavy loads that represent risks, particular back injury
  - Awkward movements and postures

(*) Royal Decree 298/2009, of 6 March, on the application of measures to promote better health and safety at work for pregnant, postpartum or breastfeeding women.
Before you handle any chemical agent, you must identify the R- or H-phrases assigned on its label and check whether these could have a negative effect on the health of a pregnant worker, embryo, fetus or breast-fed infant:

<table>
<thead>
<tr>
<th>R-phrases</th>
<th>H*-phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>R40 Limited evidence of a carcinogenic effect</td>
<td>H351 Suspected of causing cancer</td>
</tr>
<tr>
<td>R45 May cause cancer</td>
<td>H350 May cause cancer</td>
</tr>
<tr>
<td>R46 May cause inheritable genetic damage</td>
<td>H340 May cause genetic defects</td>
</tr>
<tr>
<td>R49 May cause cancer by inhalation</td>
<td>H350i May cause cancer by inhalation</td>
</tr>
<tr>
<td>R60 May impair fertility</td>
<td>H360F May impair fertility</td>
</tr>
<tr>
<td>R61 May cause harm to the unborn child</td>
<td>H360D Suspected of causing harm to the unborn child</td>
</tr>
<tr>
<td>R62 Possible risk of impaired fertility</td>
<td>H361f Suspected of impairing fertility</td>
</tr>
<tr>
<td>R63 Possible risk of harm to the unborn child</td>
<td>H361d Suspected of damaging the unborn child</td>
</tr>
<tr>
<td>R64 May cause harm to breast-fed babies</td>
<td>H362 May cause harm to breast-fed children</td>
</tr>
<tr>
<td>R68 Possible risk of irreversible effects</td>
<td>H341 Suspected of causing genetic defects</td>
</tr>
</tbody>
</table>

Other chemical agents with negative effects:

- **Endocrine disrupters**: substances and preparations that could disrupt the function of the male or female endocrine system: e.g. styrene.
- **Neurotoxins**: substances and preparations that could affect the nervous system, for example: *polychlorinated biphenyl (PCB)* and *toluene*.
- **Agents with the phrase R33 or H373**: danger of cumulative effects.
- **Agents that, due to liposolubility, pH or molecular weight**, may be excreted in breast milk: e.g. lead and its derivatives (lead sulphate, etc.).

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1 Some H phrases are combinations, such as: H360Fd “May impair fertility, etc.” Further information on the prevention website: [http://www.upc.edu/prevencio/ca/seguretat-higiene/productes-quimics/etiqueta-de-productes-quimics/frases-h](http://www.upc.edu/prevencio/ca/seguretat-higiene/productes-quimics/etiqueta-de-productes-quimics/frases-h)
Pregnancy and breastfeeding

Preventative measures should be adopted to eliminate or reduce exposure to a chemical agent

Preventative measures

- **Do not work with chemical products** labelled with the phrases H360F (R60), H360D (R61), H361d (R63), H360FD, H360Fd, H360Df if you are pregnant and H362 (R64) if you are breastfeeding.
- **Adapt the workplace**, eliminate processes in which there are chemical agents that may be harmful to the pregnant worker, the embryo, fetus or breast-fed infant.
- **Use chemical products** that do not have negative effects on the health of the pregnant worker, embryo, fetus or breast-fed infant.
- **Handle** all hazardous chemical products **within a fume cupboard**.
- **Use suitable personal protection equipment**, including at least safety goggles and protective gloves.
- **Use a lab coat**.

Store dangerous chemical products suitably
in safety cabinets, etc.
Identify and classify biologically agents before handling them

**Biological agents**

**Group 2:** can cause disease in humans or animals, but is unlikely to spread to the community. Prophylaxis is effective.  
(For example: *E. coli*, *Candida albicans* and *Toxoplasma gondii*)

**Group 3:** can cause severe disease in humans and/or animals with a risk of spreading to the community. Prophylaxis is effective.  
(For example: *Brucella abortus* and *human immunodeficiency virus* [HIV])

**Group 4:** can cause very severe disease in humans and/or animals with high likelihood of spreading to the community. No effective prophylaxis. (For example: *Ebola virus*)

**Containment level** means **level of biological safety**. The term containment is used to describe safe working methods. The aim of containment is to reduce or eliminate the exposure of workers, other people and the external environment to potentially hazardous agents.

If you handle biological agents in group 3 or 4, notify the SPRL  
servi.prevencio@upc.edu
Safety measures for CONTAINMENT LEVEL 2

Do not work with the following biological agents from Group 2:

- *Toxoplasma gondii*
- *Campylobacter fetus*
- *Cytomegalovirus*
- *Coccidioides immitis*
- *Rubella virus*
- *Treponema pallidum*
- *Herpes simplex virus*

- Restrict access to authorised staff.
- Ensure that test or work bench surfaces are impermeable to water, easy to clean and resistant to acids, alkalis, solvents and disinfectants.
- Use a biological safety cabinet.
- Use personal protection equipment, including at least safety goggles and protective gloves.
- Use a lab coat.
- Use incinerators to destroy dead animals, etc.
- Control disease vectors, such as rodents and insects.
- Ideally, equip containment level 2 areas with an observation window or an alternative device so that the occupants can be seen.
**Pregnancy and breastfeeding**

1. **Introduction**
2. **Health risks**
3. **Chemical agents**
4. **Biological agents**
5. **Physical agents (1/3)**

### Physical agents that could have a negative impact on a pregnant worker and/or the fetus and during breastfeeding

- **Extreme temperatures:** avoid exposure to $T > 36^\circ C$ or $T < 0^\circ C$

  ![Temperature Gauge]

- **Vibrations:** do not carry out any work that exposes you to vibrations of the entire body and/or vibrations through the hands and arms.

### Preventative measures:

- **Extreme temperatures:**
  - Limit the time you remain in areas at these temperatures, reduce it to zero.
  - If you are occasionally exposed to extreme temperatures ($28-36^\circ C$ or $0-10^\circ C$), depending on the situation, you should:
    - Drink water, cut down on food or drink warm liquids
    - Use suitable work clothing

- **Vibrations:**
  - Do not drive transport vehicles, tractors or other motor-driven machinery, such as a fork-lift truck.
  - Do not use compacting machines, due to the vibrations, or large portable tools (drills, pneumatic hammers, etc.).

- **Knocks:** try to avoid knocks, particularly to the abdomen.
Introduction

Health risks

Chemical agents

Biological agents

Physical agents (2/3)

Use of ear protectors does not protect the fetus

Work should not be carried out when the sound pressure level is above 80 dB(A), particularly after weeks 20-22 of pregnancy.

<table>
<thead>
<tr>
<th>Sound pressure level dB(A)</th>
<th>Situations</th>
<th>Sensation</th>
<th>Preventative measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Siren of an ocean liner</td>
<td>Produces a sensation of pain</td>
<td><img src="image.png" alt="Ear protectors icon" /> Avoid exposure of pregnant workers by organising tasks, etc.</td>
</tr>
<tr>
<td>110</td>
<td>Fireworks</td>
<td>Unbearable sensation and need to leave the environment</td>
<td><img src="image.png" alt="Ear protectors icon" /> Indicate work areas where the sound pressure level is above 80 dB(A) and restrict access to pregnant workers.</td>
</tr>
<tr>
<td>100</td>
<td>Motorbike with no muffler</td>
<td>Annoying sensation</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Discotheque</td>
<td>Uncomfortable background noise for conversation</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Car horn (at 10 m)</td>
<td>Agreeable background noise for social life</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Noisy street</td>
<td>Background level required to rest</td>
<td><img src="image.png" alt="Ear protectors icon" /> During pregnancy, workers should not carry out tasks in high-pressure atmospheres.</td>
</tr>
<tr>
<td>60</td>
<td>Assembly line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Conversational speech</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Restaurant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Interior of a car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Office (background noise)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Bedroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fridge (at 1 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Broadcasting studio</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound of a mosquito (at 2 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acoustic laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound of breathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threshold of human hearing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preventative measures:

- Avoid exposure of pregnant workers by organising tasks, etc.
- Indicate work areas where the sound pressure level is above 80 dB(A) and restrict access to pregnant workers.

Other physical agents: work in high-pressure atmospheres

- Preventative measures:
  - During pregnancy, workers should not carry out tasks in high-pressure atmospheres.
Non-ionising radiation may have a negative impact on a pregnant worker and/or the fetus. Pregnant women must not be exposed to ionising radiation.

**Non-ionising radiation:** If you work in places where there is a considerable amount of equipment such as server racks, electrical cables for the building, etc.

### Types of non-ionising radiation

- **Static electromagnetic fields (static EMF)**
- **Extremely low frequency (ELF)** (frequency of 0 to 30 KHz)
- **Radiofrequency (RF)** (frequency of 30 KHz to 300 MHz)
- **Microwaves (MW)** (frequency of 300 MHz to 300 GHz)
- **Optical radiation. Infrared (IR)** (frequency of 300 GHz to 385 THz)
- **Optical radiation. Visible (Vis)** (frequency of 385 THz to 750 THz)
- **Optical radiation. Ultraviolet (UV)** (frequency of 750 THz to 30 PHz)
- **Lasers (a concentrated, directed form of radiation, normally of IR, Vis or UV radiation)**

**Communicate your situation** by making a doctor’s appointment and filling in the pregnancy notification form or the breastfeeding notification form.

### Preventative measures

- **Avoid exposure**, change the process, vary tasks, etc.
- **Keep as far as possible** from the source of emission.
- **Reduce exposure time.**

**Ionising radiation:** if you work in workplaces that are exposed.

**Communicate your situation** by making a doctor’s appointment and filling in the pregnancy notification form or the breastfeeding notification form.