

# Occupational Health at EPFL

- ❖ Who are we?
- ❖ Where are we?
- ❖ Objectives
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- ❖ Expertise available to the EPFL community
- ❖ Expertise available to EPFL individuals
- ❖ Medical forms
- ❖ Community health
- ❖ COSEC: interactions with the service PS-Santé

## Who are we?

- Occupational physicians and medical assistants
- Occupational hygienists
- Nurses from the Point Santé



# Where are we?

## Occupational Hygiene

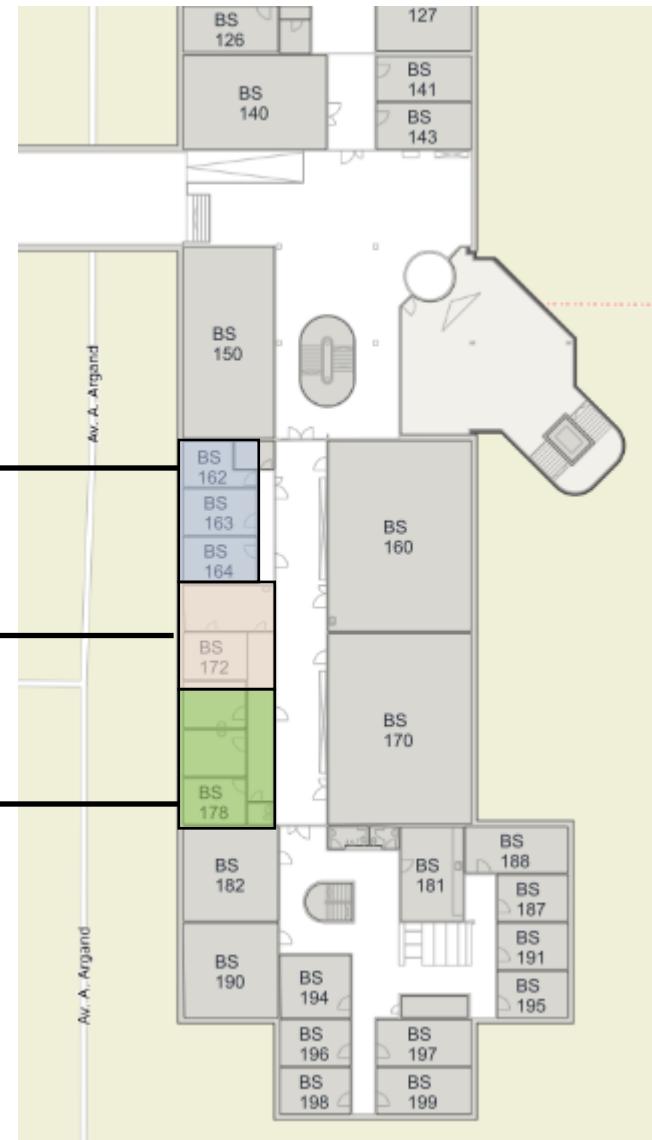
Appointment  
[hygienetravail@epfl.ch](mailto:hygienetravail@epfl.ch)

## Occupational Health

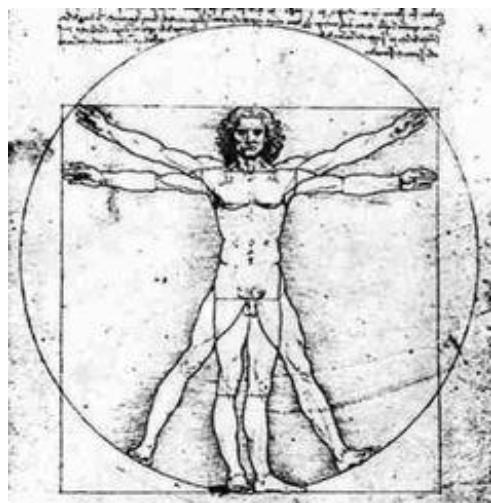
Appointment  
[sante@epfl.ch](mailto:sante@epfl.ch)  
Call 3 2007

## Point Santé

Opening Hours  
8.30 - 11.30 and 12.30- 17.00



# Objectives



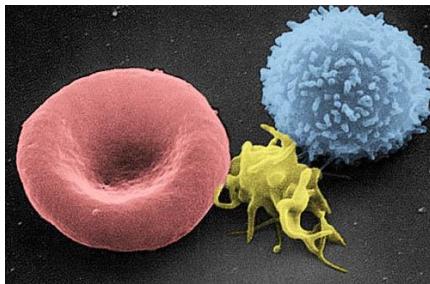
- ❖ Ensure an optimal physical, mental and social **well-being at work**
- ❖ Protect **children** from indirect harmful effects
- ❖ Ensure **retirement** without any handicap due to the professional activity

OLT 3 (Art. 2): The health protection measures that the authorities require from the employer need to be commensurate with the implications in building design and business organization.

## OCCUPATIONAL MEDICINE EFFECTS



Jmarchn\*



NCI-Frederick†

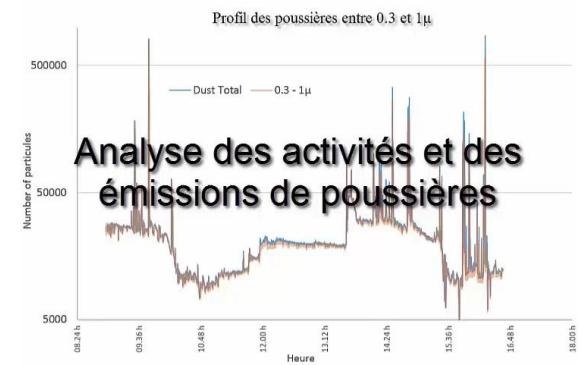
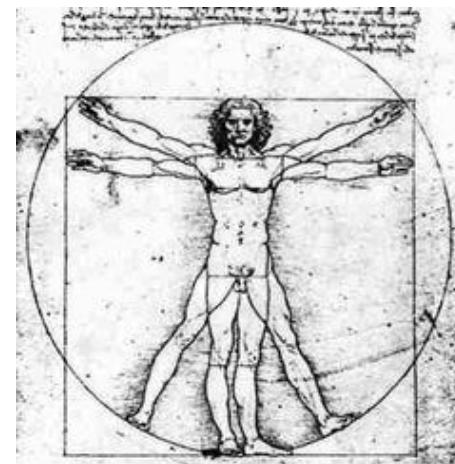
- **Investigation of individual situations (anamnesis)**
- **Preventive medical exams and monitoring:**  
biological (TB), chemical (Pb, As, Hg, nano-particles),  
physical agents (noise, radiation)

## DSE OHS

Security, Safety and  
Facilities Operations

## Skills

are these symptoms possibly  
due to a professional  
exposure?



\*Par Jmarchn — Travail personnel, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=26590234>

† Par Electron Microscopy Facility at The National Cancer Institute at Frederick (NCI-Frederick) — [1], Domaine public, <https://commons.wikimedia.org/w/index.php?curid=407197>

# Expertise available to the EPFL community

## EXPOSURE ASSESSMENT AND PROTECTION MEASURES



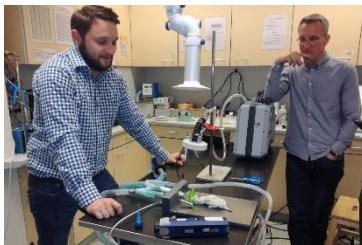
*Emergency response group*

Is there contamination after a particular **incident**?



*Safety Engineers*

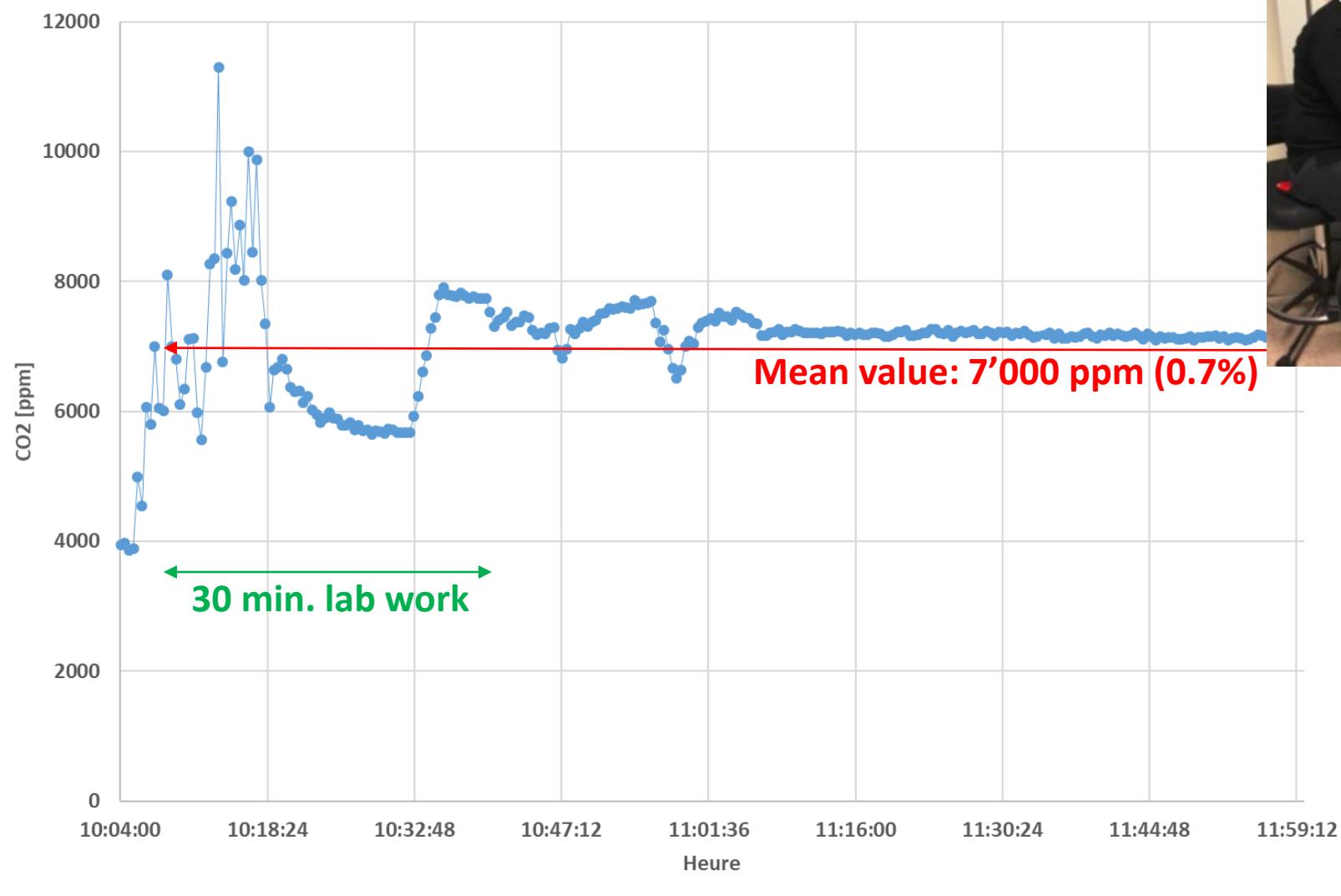
Are **technical measures** in place appropriate?

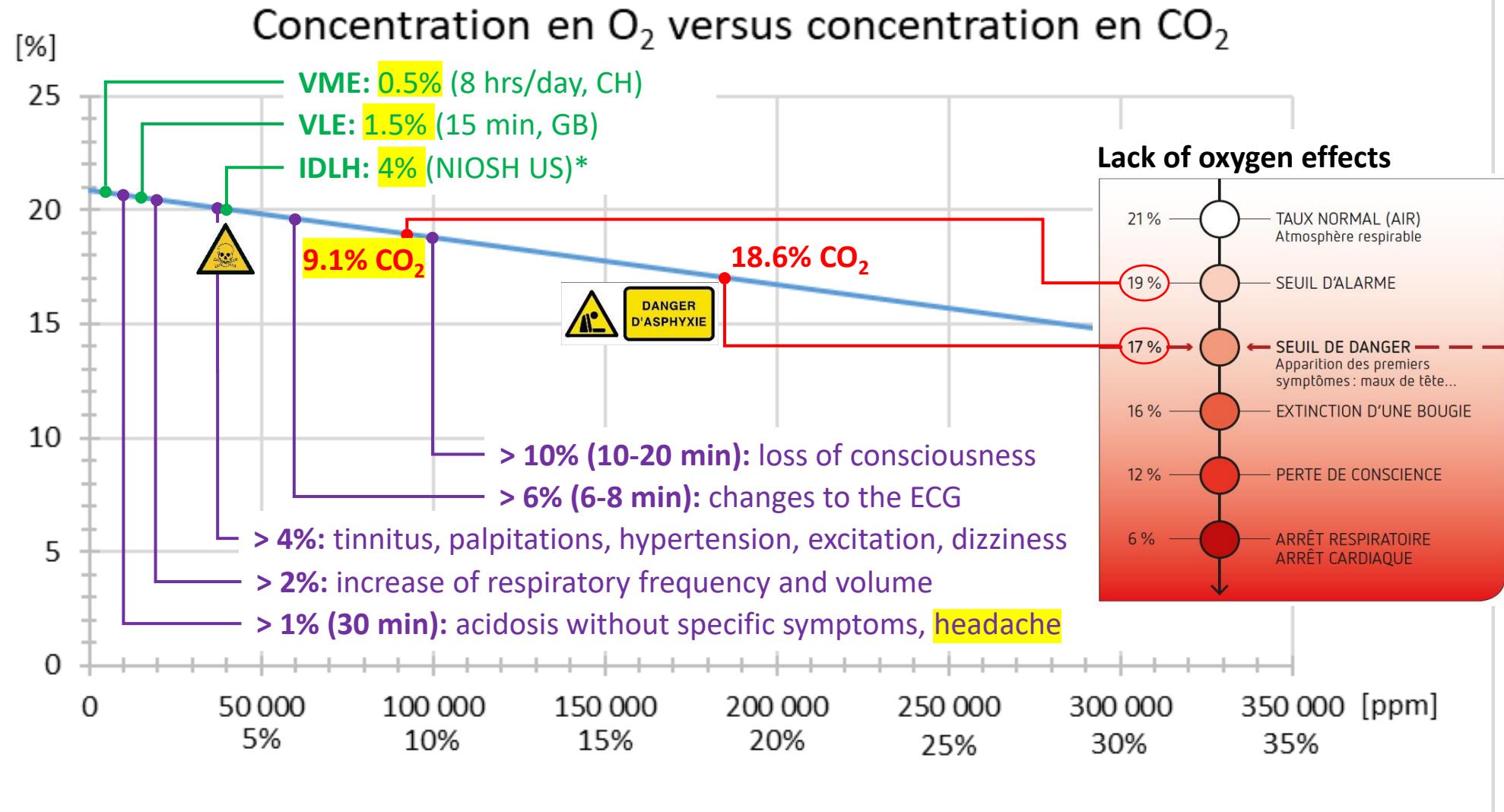


*Research groups*

How can we improve the **operating procedures**?

## Use of CO<sub>2</sub> as anesthetic gas





# Use of CO<sub>2</sub> as anesthetic gas

Model 5 (2 points of extraction: microscope + floor, 75 + 25 m<sup>3</sup>/h)

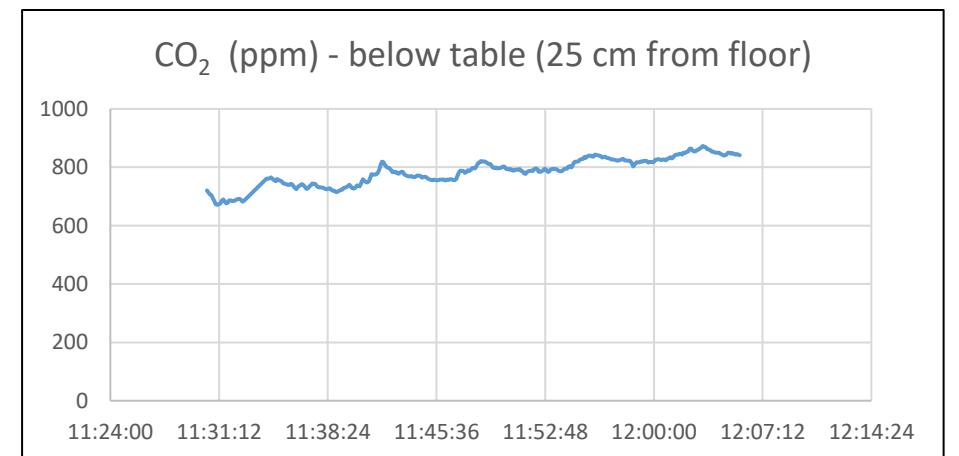


**Good hygiene (easy cleaning)**

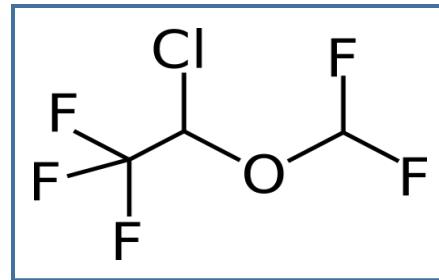
**Good efficacy – CO<sub>2</sub>**

- Nose: < 900 ppm
- Table (sides of microscope): < 800 ppm
- Ground: < 900 ppm

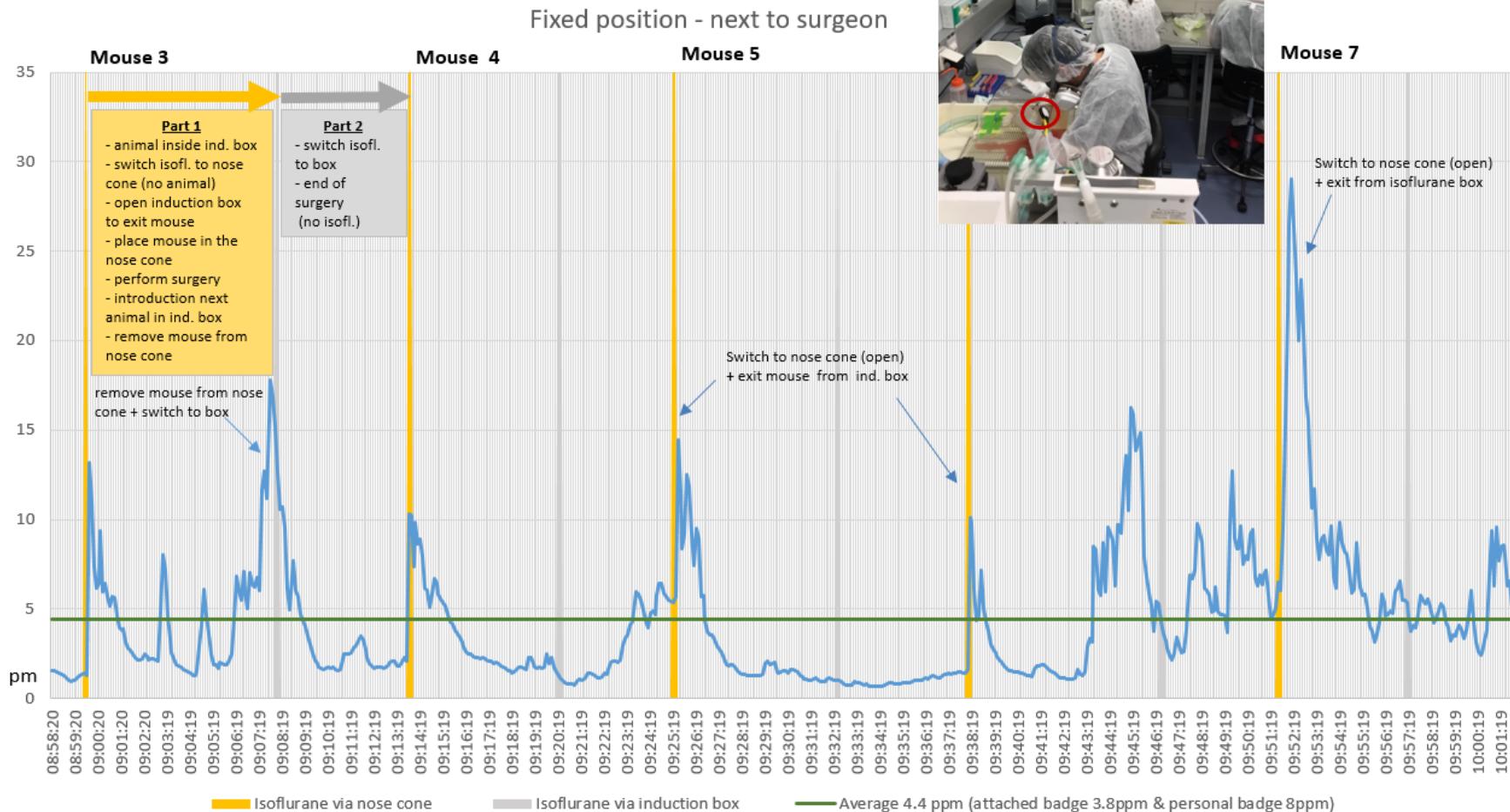
**Satisfied users**



## Use of isoflurane as anesthetic gas



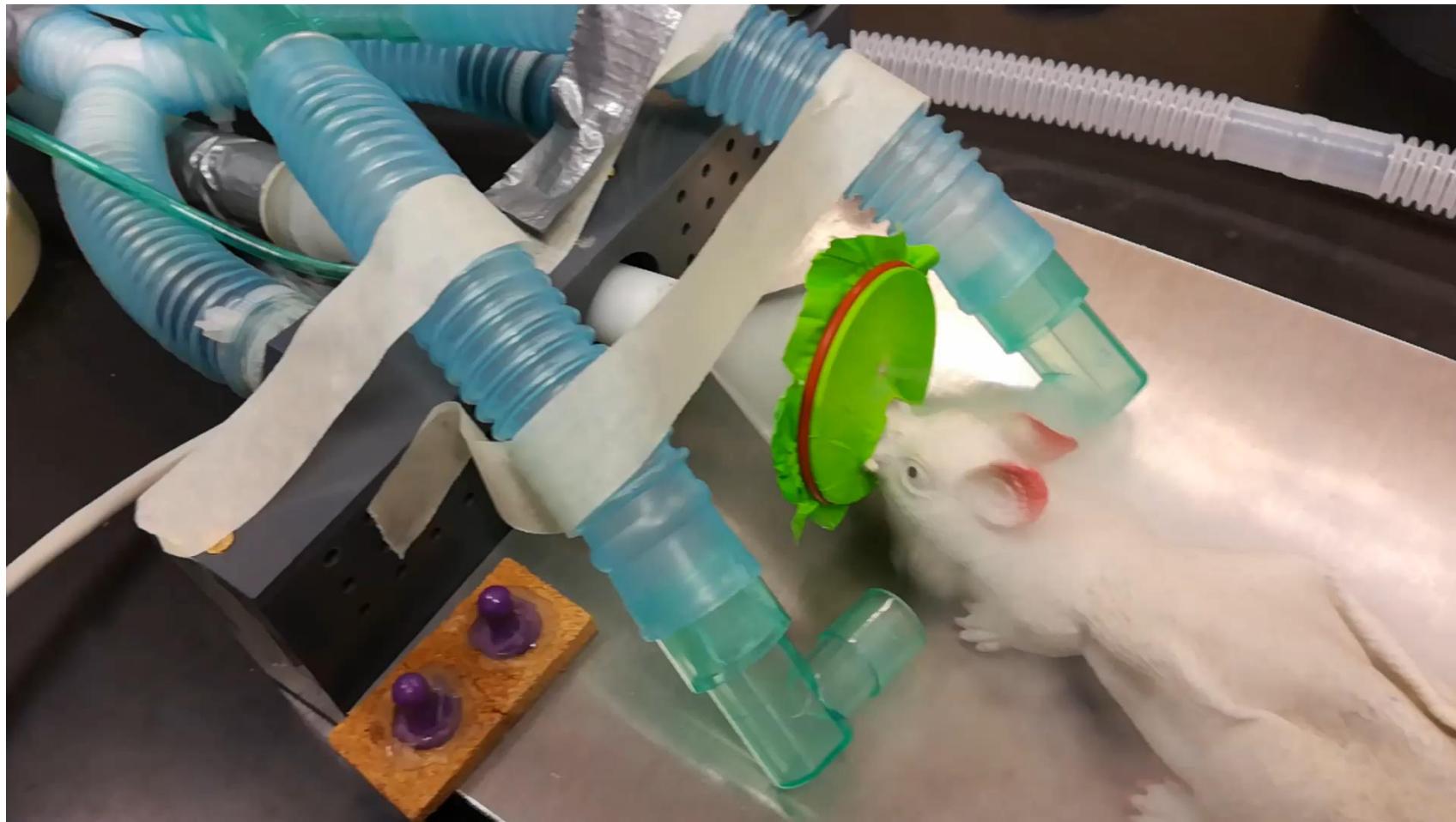
# Use of isoflurane as anesthetic gas



**Mouse 7**

Switch to nose cone (open) + exit from isoflurane box

## Use of isoflurane as anesthetic gas

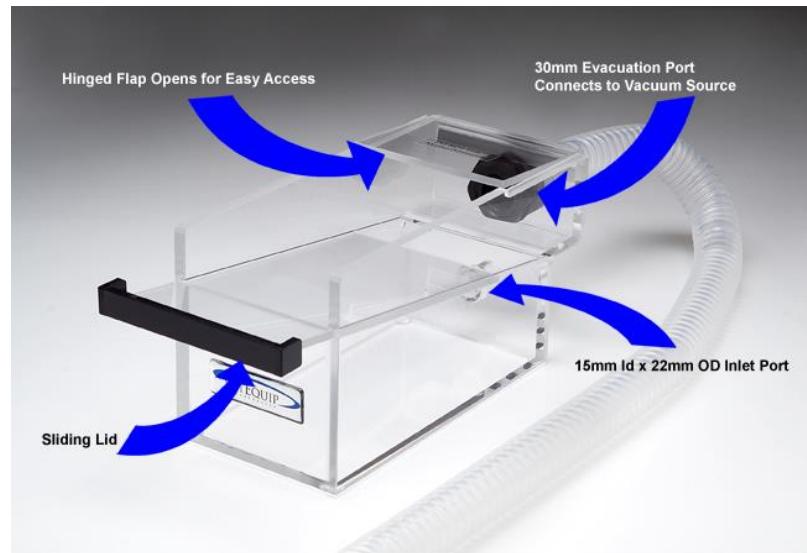


## Use of isoflurane as anesthetic gas

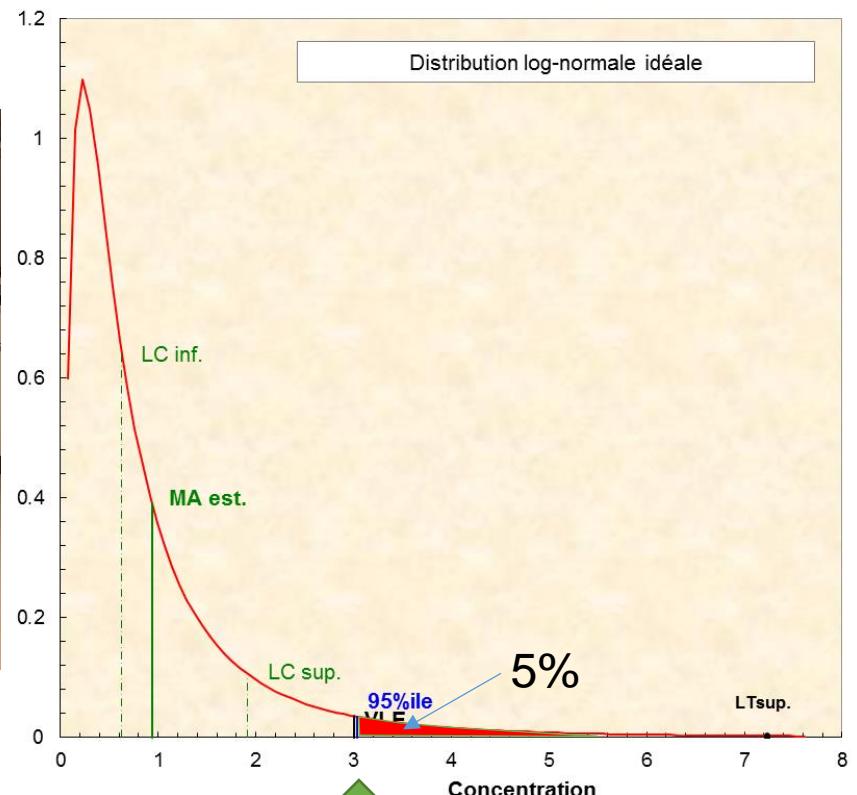
Standard induction boxes



Improved induction boxes



## Evaluation of laboratory fume hoods



**Safety level (95%ile) = 3 ppm**

## Evaluation of laboratory fume hoods

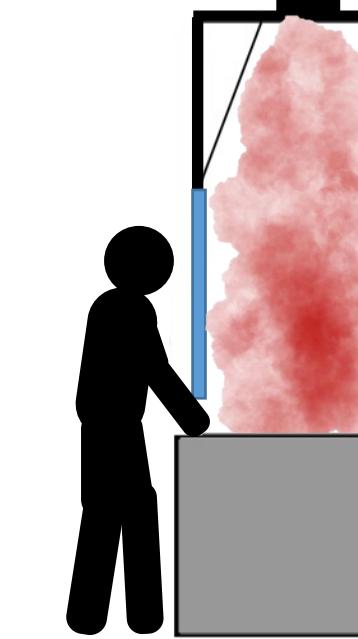
Sash opening = standard (50 cm)



Sash opening < 40 cm



Sash opening << 40 cm  
+ Technical measures



Butanone (MEK) : VLE : 200 ppm  
Isopropanol : VLE : 400 ppm



Chloroform : VLE : 1 ppm  
Formaldehyde : VLE : 0.6 ppm



Cyanogen chloride: No VLE !  
Ozone : VLE : 0.1 ppm

**Valeur Limite d'Exposition (VLE) = Short-Term Exposure Limit (STEL):** acceptable average exposure over a short period of time (15 minutes), as long as the 8hr-time weighted average (VME) is respected

## 2. I check my fume hood is working prior to using it

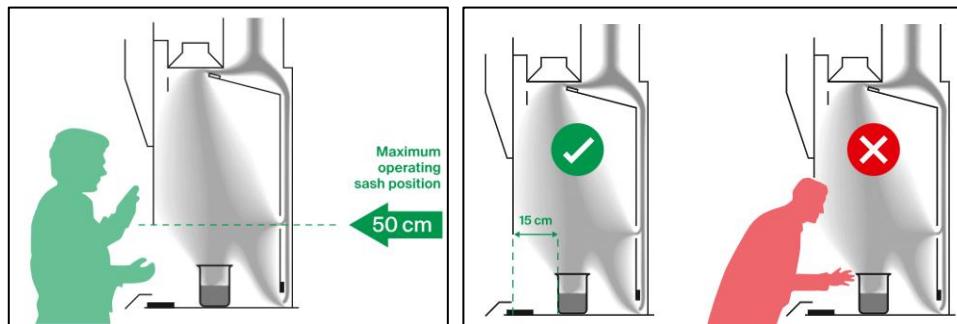
Prior to using a chemical fume hood, always check that it is drawing air

The check is carried out by means of a [pressure indicator](#) ([pressostat](#)) or by a [light indicator](#)

Discontinue work and close all containers with hazardous chemicals if the alarm sounds. If possible, mute the alarm and put an out-of-order sign on the hood.

If the alarm remains, contact maintenance so that they fix it:

- Lausanne, Sion, Neuchâtel:  
[021 693 4000](#) ou [34000](#) (from a landline)  
[Alarm and Engagement center](#)
- Geneva: [facility@fcbg.ch](mailto:facility@fcbg.ch)



Link: [Laboratory fume hoods – Safety, Prevention and Health - EPFL](#)

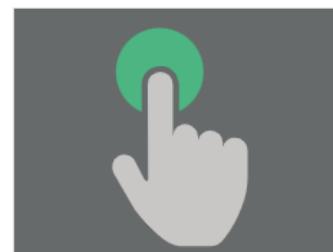
## Laboratory fume hoods

Fume hoods provide protection from vapours, splashes, and impacts caused by chemicals and their reactions. At EPFL, we control [the level of protection of the fume hoods](#).

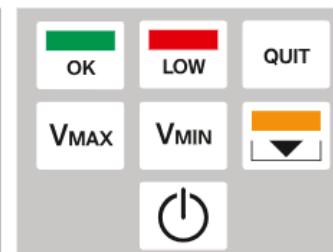
The [linked video](#) illustrates how improperly operated or set-up fume hoods present an additional hazard by creating a false sense of protection. Understanding how they work, and adhering to best practices, is essential to ensuring genuine safety when handling chemicals.

### Guidelines and safe work practices

1. What kind of fume hood do I have?
2. I check my fume hood is working prior to using it
3. I close the sash to the maximum possible whenever I work with it
4. I keep a safe distance between myself, the hood, and the setup within the fume hood
5. I keep the fume hood tidy
6. I close the fume hood when I am not using it



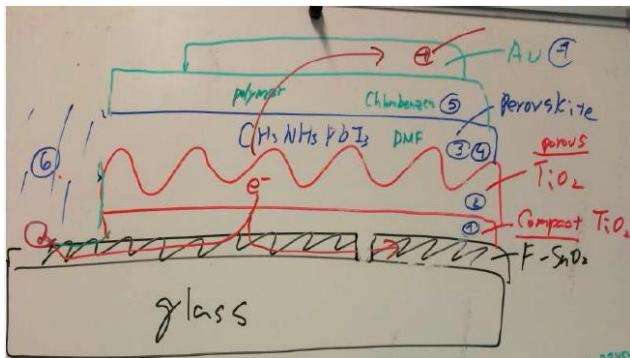
[Manual fume hood with timer](#)



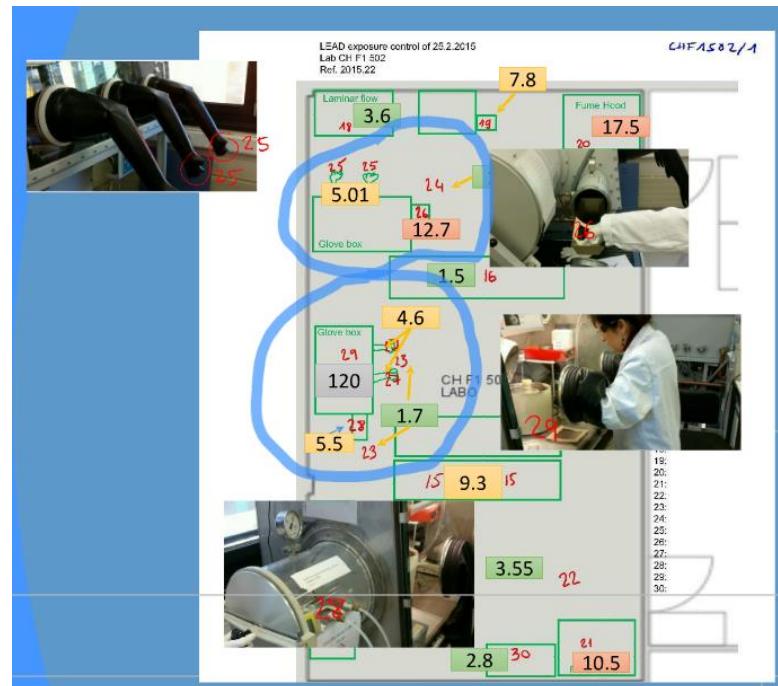
[Variable air volume fume hoods](#)

# Lead exposure risk assessment

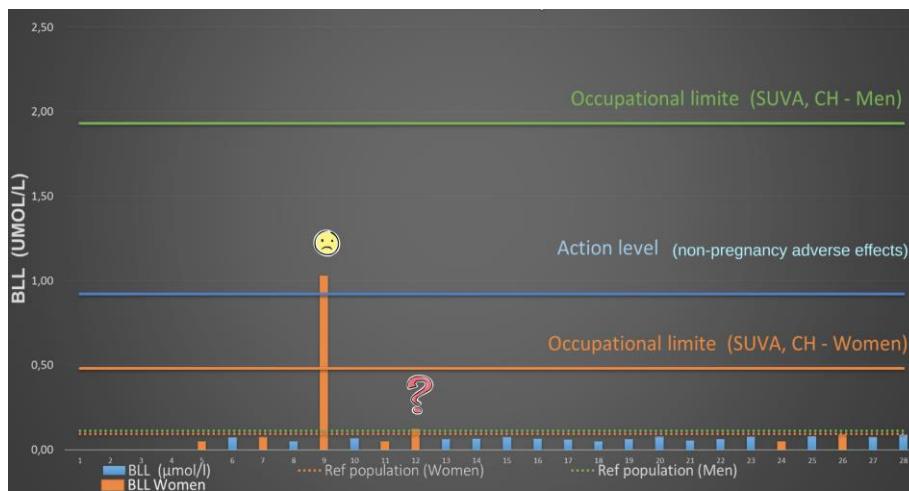
## 1. Observation of process



## 2. Occ. Hygiene: analysis of surface contamination



## 3. Occ. Medicine: biomonitoring – blood lead levels



## 4. Determine risk level and preventive measures needed

# Expertise available to EPFL individuals

## Maternity/lactation risk assessments

### Maternity protection



In your workplace, you may be exposed to numerous risks (for instance chemical substances, noise, micro-organisms) that may be harmful to your health or that of your future child. In Switzerland, every employer must comply with a specific legal framework.

To announce your pregnancy or your desire for pregnancy, please fill in the [maternity announcement form](#) and send it to occupational medicine as soon as possible. These formalities are strictly confidential. The earlier the announcement, the better the protection.

**DOMAINE SECURITE, PREVENTION ET SANTE (DSPS)**

EPFL RHD DSPS - PS  
Médecine du travail  
BS 172  
Station 4  
CH 1015 Lausanne

EPFL

**Confidential - Maternity - Employee protection**

**General information**

Name & first name: \_\_\_\_\_  
Birth date: \_\_\_\_\_

Unit EPFL: \_\_\_\_\_ Supervisor: \_\_\_\_\_  
COSEC: \_\_\_\_\_

**Is your supervisor informed of your pregnancy ?**  Yes  No

**Gynecologist:** \_\_\_\_\_

**Request**

Pregnancy announcement Due date: \_\_\_\_\_  
 Request a risk assessment for a project of pregnancy

**Is this your first pregnancy ?**

Yes  No Date of the previous pregnancy(ies): \_\_\_\_\_

**Description of your activities (workplace)**

**Brief assessment**

Office work only  
If not, identify (check), the elements with which you are in contact (in this case the workplace should be evaluated by the Occupational Health).

Hazardous chemical  
 Microorganism or biological fluids  
 Ionizing radiations  
 Moving heavy loads  
 Cold and heat  
 Movements and postures causing early fatigue  
 Noise  
 Night work

**List of products (chemicals) used in the workplace**

**Do you need access to a mother's rest/breastfeeding room ?**

Yes  No

Date and signature: \_\_\_\_\_

Please send this form to: Occupational Health, BS 172, station 4 or [sante@epfl.ch](mailto:sante@epfl.ch)

Mod. à jour le 26.03.2019



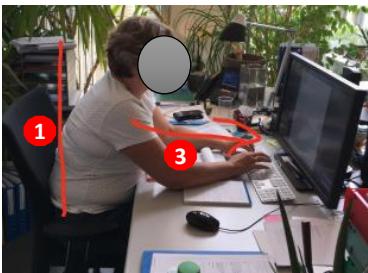
## Maternity/lactation risk assessments



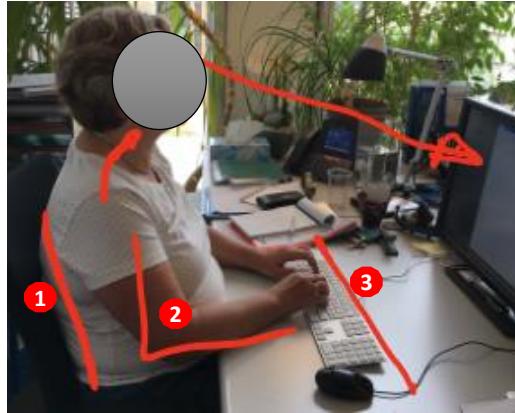
## Office ergonomic assessments



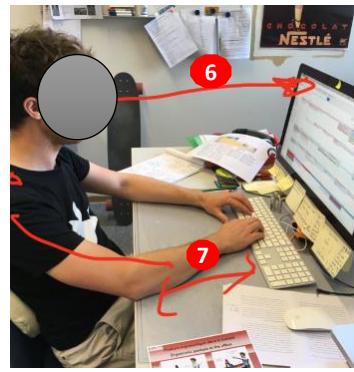
- Adjusted chair settings and lowered its height
- Keyboard closer to body + centered
- Mouse closer to body



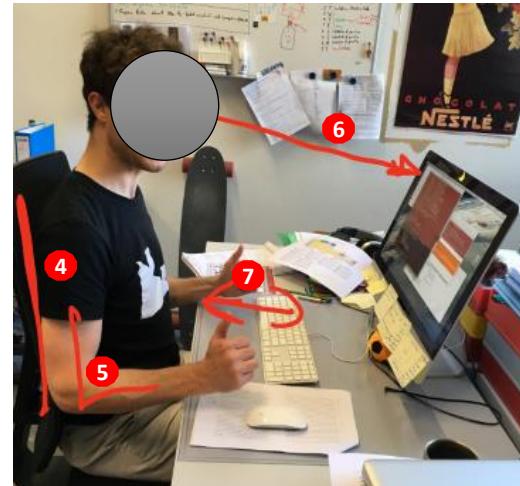
## Before



## After



- Adjusted chair settings and increased its height
- Removed IPad
- Keyboard closer



# Ergonomic assessments of the workplace... and telework

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Occupational exposure risks

Technical protection equipment

**Ergonomics**

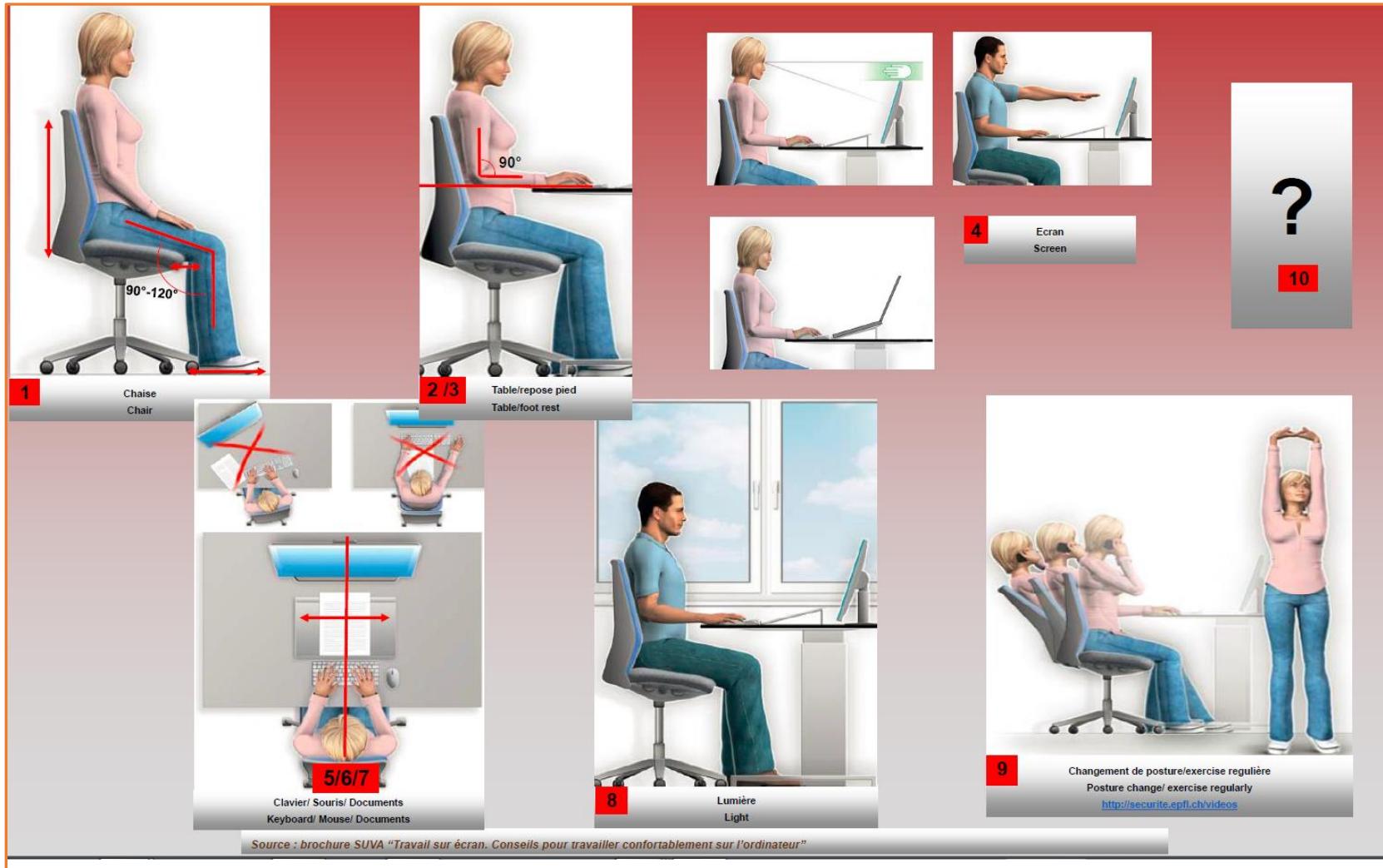
Maternity protection

Workplace adaptations

## Ergonomics



## Office ergonomic assessments



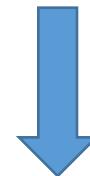
## Validation of “Specific” PPE and guidance



Question or purchase for an “**specific**” article via Catalyse from the catalogue  
**“Articles de Sécurité de l’EPFL”**  
(respiratory and hearing protection)



**Risk assessment** by occupational hygienists



**Validation** of purchase or recommendation of an **alternative** solution

# Quantitative Fit-Test



Respiratory protection FFP3  
APF = 20; FF Pass level = 200



3M 9332+



3M 8835+

Employees	Overall fit-test value	
Employee 1	145	1535
Employee 2	133	882
Employee 3	368	835
Employee 4	216	1220
Employee 5	45	1131
Employee 6	293	1411
Employee 7	179	1335
Employee 8	70	2019

# Medical questionnaires/forms

Depending on the profile of potential exposures, researchers may need to fill out a **questionnaire**:

<https://www.epfl.ch/campus/security-safety/en/health/health-at-work/>

EPFL

About Education Research Innovation Schools Campus Contact

☰ Browse 🔍 Campus > Health, safety and prevention > Health > Health at work

Coronavirus (COVID-19)

Health at work

Occupational exposure risks

Technical protection equipment

Ergonomics

Maternity protection

Workplace adaptations

Nurse consultations

Health promotion and prevention

## Health at w



### Contact

Contact and office hours of occupational medicine:

Monday, Tuesday, Thursday and Friday from 8.30 am to 4 pm

[sante@epfl.ch](mailto:sante@epfl.ch)

Phone: 3 20 07

Contact of occupational hygienists:

[hygienetravail@epfl.ch](mailto:hygienetravail@epfl.ch)

Formulaires:

[Medical questionnaire and risks of occupational exposure](#)

[Maternity announcement form](#)

[Radiation protection form](#)

- chemical
- biological
- noise, etc.

# Community health at EPFL

- Health checkups
- Consultations with nurses and health care
- Orientation within the health care network
- Basic vaccinations
- Emergency contraception



Opening Hours M-F:  
8.30-11.30  
12.30-17.00

Possibility to fix an appointment online:

<https://www.epfl.ch/campus/security-safety/en/health/nurses-consultations/>



# Interaction with our Services

## The COSEC:

- ❖ Informs women regarding the risks associated with **pregnancy**
- ❖ Orients questions **regarding ergonomics**
- ❖ Orients cases re: **health issues** in relation to work activities
- ❖ Purchases **specific PPE** via the online store within **Catalyse**
- ❖ Requests assistance from occupational hygienists for questions in relation with the control of **professional exposure**

**Thank you for your attention and  
for being a COSEC!**

I will be glad to answer any questions

