

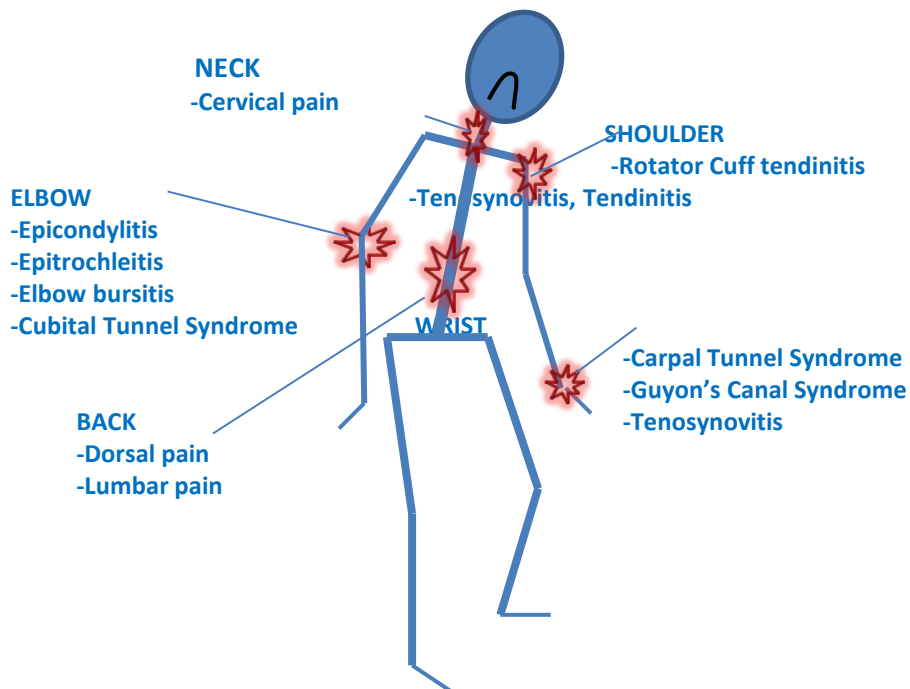


## The computer workstation and you

-  I work two or more continuous hours on my computer every day, what impact can this have on my health?
-  How do I organise or improve my workstation in order to avoid possible problems?

## Working intensively on a computer can lead to health problems:



### ▪ Musculoskeletal problems:

- Commonly known as Repetitive Strain Injuries (**RSI**), which affect the soft tissues around the joints.
- Can be linked to bad posture, gripping the mouse, non ergonomic workplace design, work rhythm, stress....
- RSI is a leading cause of professional illness in Europe.

### ▪ Tiredness :

- **General tiredness**, sometimes secondary to RSI.
- **Visual fatigue**, with possible dry eyes and discomfort.

### ▪ Stress :

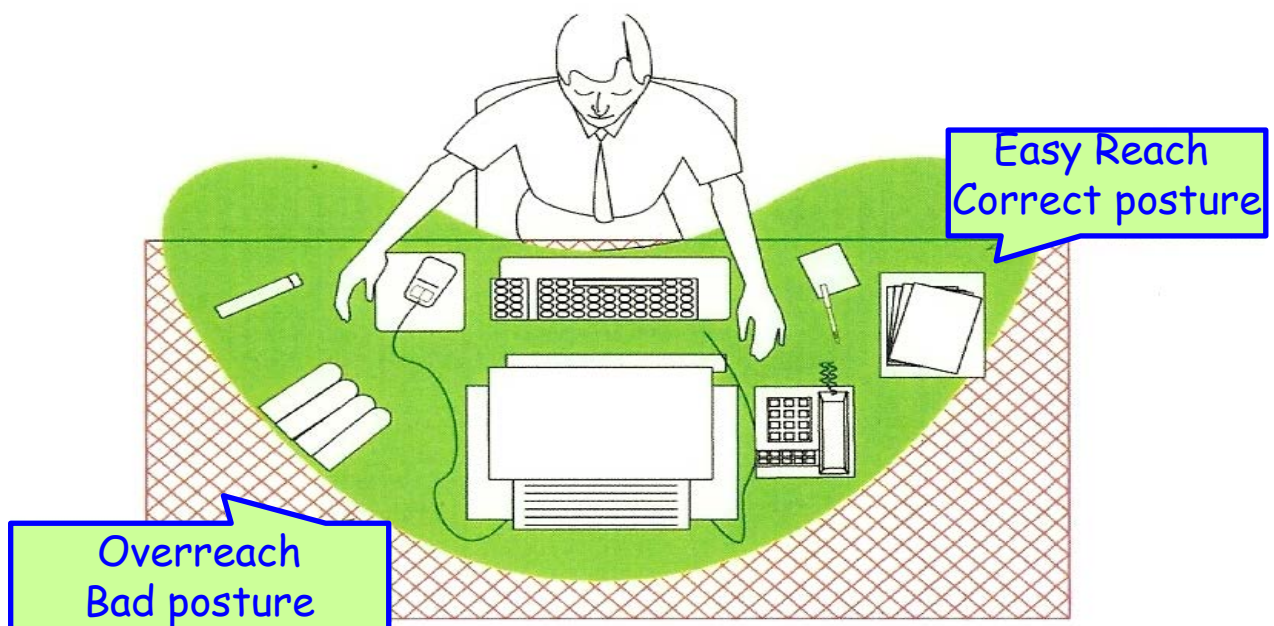
Often linked to workload or pressure

ALL 3 PROBLEMS CAN BE INTERRELATED

## 1. Your workspace: should be adapted to the tasks carried out.

- **Minimal depth of a desk:**
  - For a flat screen (15" to 21") → **depth of 80 cm**
  - For a laptop with a stand & keyboard → depth of 70 cm
- **Minimal desk width:** dependent on the work being carried out.  
**A width of 120 cm is sufficient if a flat screen is being used.**
- **Desk height:** ideally adjustable, allowing you to move freely and enabling you to stretch and vary your posture.

## Work Surfaces



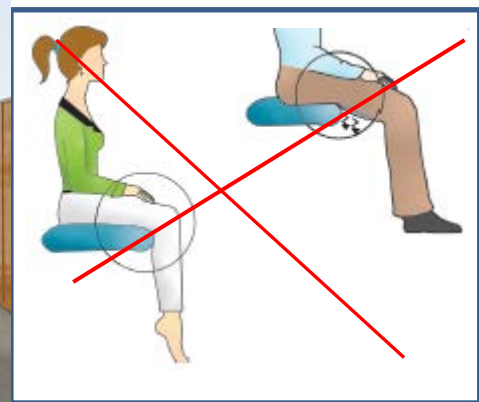
There should be enough room under the desk to allow freedom of movement for the legs, knees and feet. This space should not be restricted by your computer's system unit, or by any other equipment or clutter.

## 2. Lighting: no reflection or glare



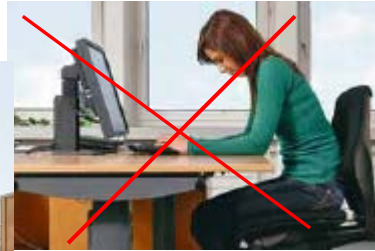
- The direction of your gaze should be **parallel to the window** (ideal distance: 1.5m away)
- The colours of the walls, furniture, surfaces should ideally be light and matt.
- Desk lamps are not recommended, rather make the most of natural light or use ceiling lighting.
- If necessary, use blinds or a sun screen to avoid glare or reflection.

## 3. Your seat: adapt according to your height

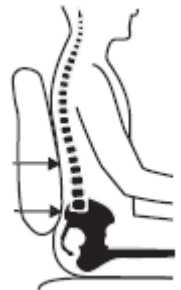


- The height and depth of the seat should ideally be adjustable:
  - **Angle  $\geq 90^\circ$  between thighs & legs.**
  - **The feet should rest flat on the floor, use a foot rest if necessary.**
- Leave sufficient space (about the width of two fingers) between the edge of the seat and the back of your knees.

## 4. Your back: straight and pressed firmly against the backrest



The Backrest should support the natural curve of the spine



- **Backrest adjustable in height and angle**, with lumbar support.
- **Dynamic** backrest, able to adjust to the movements of the operator.
- Sit as close to the desk as possible, directly **in line** with the keyboard and screen.



## 5. Your armrests:

- Armrests reduce loads on the neck, shoulders and arms
- Help you to change your position
- Provide leverage to help you stand up.
- **Can be useless if not adjustable in height.**

Height adjustable armrests



## 6. Your arms: Your forearms horizontal and resting on the desk

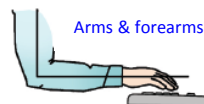


- Adjust the height of the table in order for **your elbows to be at a  $\geq 90^\circ$  angle**.
- The keyboard should be around 20cm away from the edge of the desk and parallel to it.

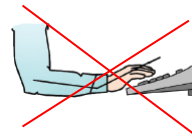


- In order to maintain your wrists in a neutral position, avoid raising the back of the keyboard.

Recommended position



To be avoided



- Place the **mouse with wire** (light) to the right or left of the keyboard in order not to overreach.

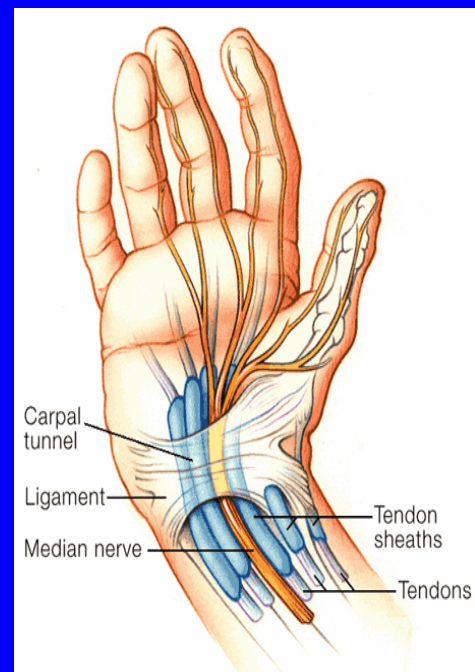
### One of the most frequent RSI's: Carpal Tunnel Syndrome.

The carpal tunnel is a C shaped, narrow passage in the wrist, made up of small bones and ligaments.

Some of the tendons and nerves which control the fingers' movement pass through the carpal tunnel to reach the hand. These tendons are covered by fluid filled sheaths which allow them to slide smoothly when moving. Repetitive hand movements such as those involved in computer use, can cause irritation of the tendons, leading to an inflammation inside the sheath.

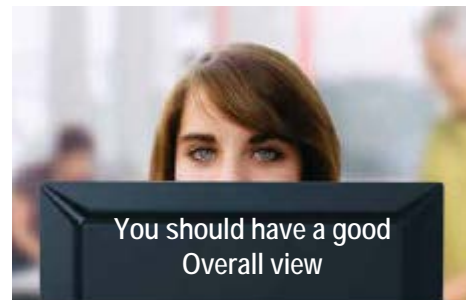
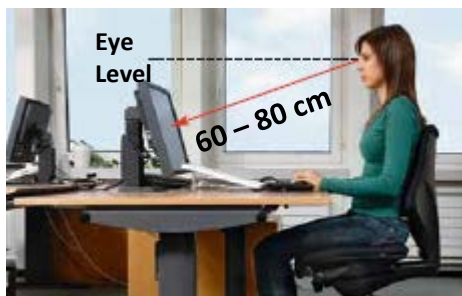
As the carpal tunnel is made up of bones and ligaments, it cannot expand; the nerve can become compressed producing numbness, tingling and pain in the thumb and first 3 fingers of the hand.

Cf : <http://www.santepublique.fr/syndrome-canal-carpien.php>



## 7. Your screen: favour anti-glare screens. Adjustable in height and angle, placed directly in front of you, parallel to the edge of the desk

- **Luminosity, contrast and screen resolution** must be correctly adjusted. Think of adjusting the size of the script to suit your eyesight.
- The height of your screen should be **5 to 10cm lower than your eye level**.
- With current screens, leave a distance of **60 to 80 cm** between your eyes and the screen.



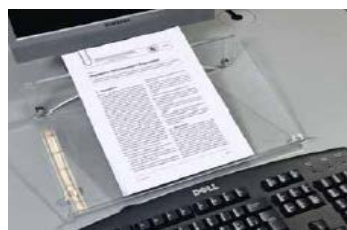
- If you work with a **laptop for more than one hour a day**, use a separate keyboard and mouse and elevate your laptop.



- If you work with a **laptop for more than two hours a day**, use a separate screen.

## 8. Possible accessories:

- **Footrest** : Generally, no footrests are needed when desks can be lowered to 65cm. For non adjustable desks, a shorter person may need to use a footrest.
- **Document holder** : Helps you to sit comfortably and to maintain a good posture when transcribing data from printed material. It should be placed between the keyboard and the screen.



## 9. Further advice:

✓ **Keep moving:** Use every opportunity to get up and move, this will benefit your health in the long-term!

Consciously make an effort to move as often as possible (take the stairs instead of the lift, fetch a document from the printer, find a book...).

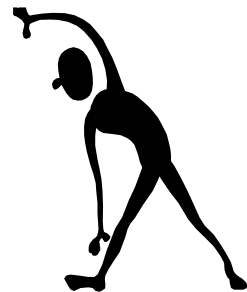


✓ **Take regular breaks:** Get some fresh air and keep yourself hydrated, your eyes and body will feel the benefit and you will be more alert and responsive!

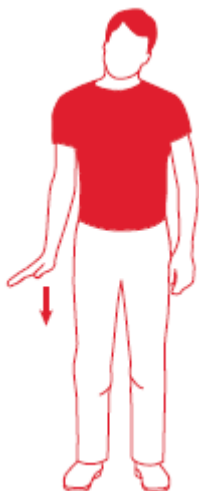


✓ **Carry out frequent, gentle stretching and relaxation exercises** throughout the day (see below).

✓ **Try to be physically active during your free time, find a sport that you enjoy** (Ex : walking, swimming).



Stretch your neck muscles



Tilt your head to one side and reach down towards the floor with your opposite arm, keeping your hand horizontal.

Stretch by reaching out with your arms....



- towards the screen with your chin to your chest.  
- Towards the ceiling, breathing deeply..



## ✓ Drink at least 1.5L of water a day

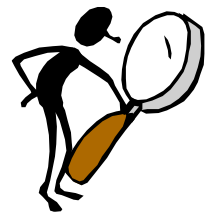


### Preventing or improving RSI's through proper hydration:

If you suffer from muscular/tendon problems such as frequent cramps, stiffness or tendinitis, it is necessary to increase your daily fluid intake. Vital organs, such as the heart and lungs are the first to benefit from hydration and only then the muscles and tendons.

## ✓ Look after your sight

- Rest periods for your eyes are important.  
It is generally recommended to take a 10min break every hour during which you should actively change your focus from nearby to distant objects.



- If your eyes feel tired, rub the palms of your hands together and place them against your closed eyes.



- If your eyes feel dry, blink rapidly 10 times at regular intervals, or use artificial tear drops.
- If you have difficulty reading your computer screen, an eye test is recommended.

**These recommendations also apply  
to your workstation at home.**



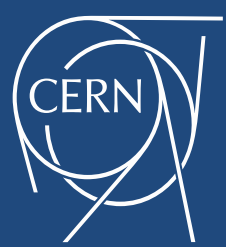
If, despite following these workplace recommendations, **your situation has not improved** (back, neck pain, eye-strain, stress, etc...), **contact CERN's Medical Service or the HSE unit in order to organise:**

- **An individualised workplace visit** by a member of the [Medical.Service@cern.ch](mailto:Medical.Service@cern.ch) team
- **An eye test at the infirmary**
- **A consultation with CERN's medical service or with your own general practitioner**

**DO NOT WAIT FOR THE SITUATION TO WORSTEN. ACT BEFORE THE PAIN BECOMES CHRONIC AND CONTACT A PROFESSIONAL.**



Upon request, the Medical Service can organise a group ergonomics session (1 ½ hrs) at your workplace.



Notes:

A large, empty rectangular box with a blue border, intended for taking notes.

For further information :  
<http://www.suva.ch/fr/startseite-suva/service-suva/lernprogramme-suva/ergonomie-am-bildschirmarbeitsplatz-suva.htm>

