ICT AND HEALTH PROBLEMS

Lesson 8

What is ergonomics in computer meaning?

- **Ergonomics** is a field of study that attempts *to reduce strain, fatigue, and injuries by improving product design and workspace arrangement*.

- Even though using a computer is not a physically taxing job, there are some health problems that can arise if we are not careful.
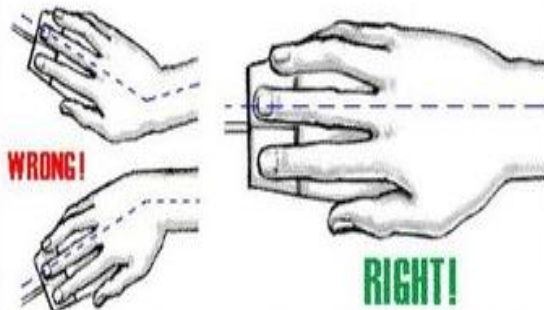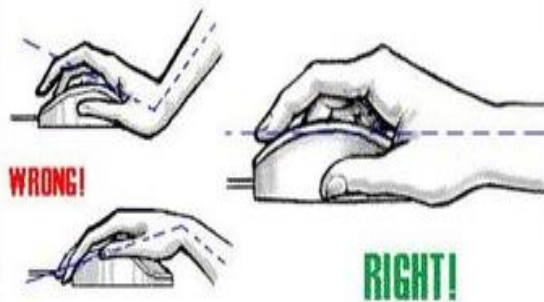
The goal is to have a comfortable, relaxed posture. When using computers.
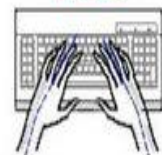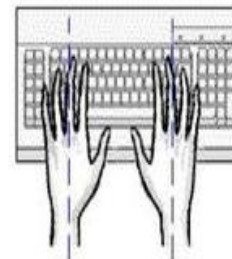
Health problems

There are a number of health problems that you can suffer if you use **ICT devices incorrectly** or for **too long**. The main ones are:

- **Repetitive Strain Injury (RSI)**
- **Back and Neck Strain**
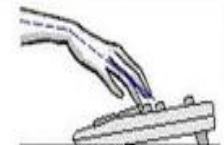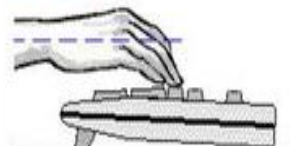- **Eye Strain and Headaches**
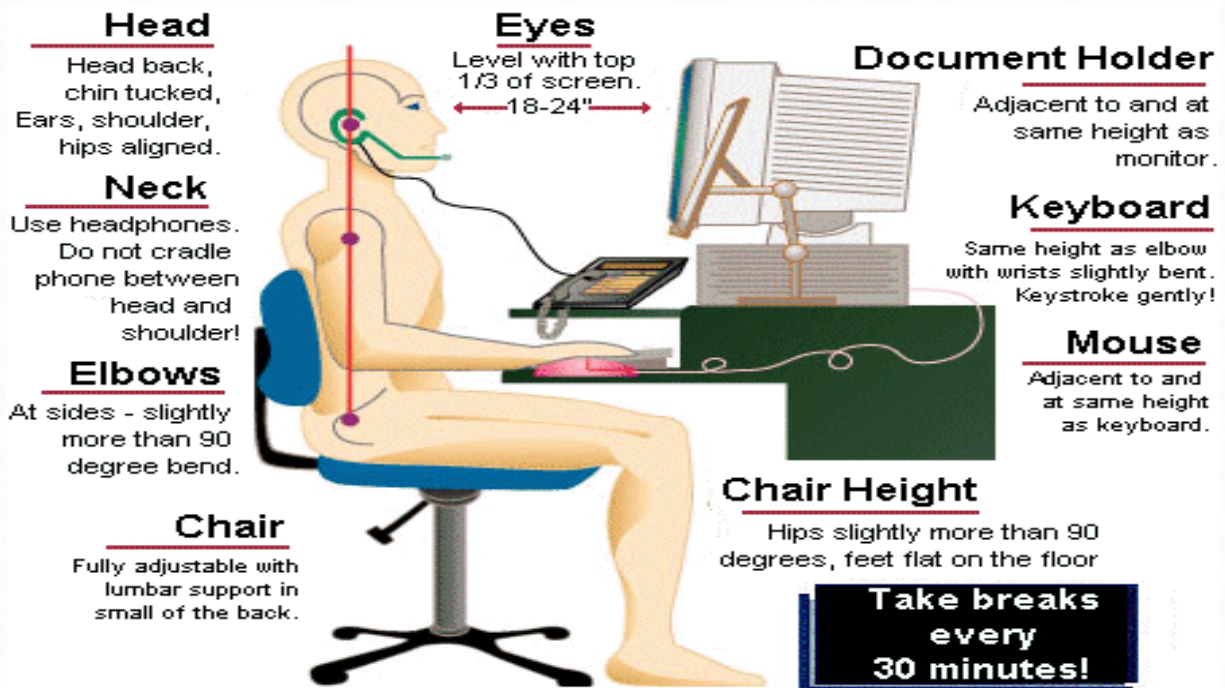
What are some of the issues entailed in ergonomics?

Head
Head back, chin tucked, Ears, shoulder, hips aligned.

Neck
Use headphones. Do not cradle phone between head and shoulder!

Elbows
At sides - slightly more than 90 degree bend.

Chair
Fully adjustable with lumbar support in small of the back.

Eyes
Level with top 1/3 of screen. ←—18-24"—→

Document Holder
Adjacent to and at same height as monitor.

Keyboard
Same height as elbow with wrists slightly bent. Keystroke gently!

Mouse
Adjacent to and at same height as keyboard.

Chair Height
Hips slightly more than 90 degrees, feet flat on the floor

Take breaks every 30 minutes!

1 Repetitive Strain Injury(RSI)

Examples:

\# RSI causes **painful swelling** of **joints** such as the **shoulder, wrist and fingers**. Sufferers with really bad RSI are unable to use their hands at all.

The **symptoms** are **similar to arthritis** with sufferers experiencing pain and swelling. Extreme cases can cause people to be unable to perform simple functions like typing.

\# RSI is caused by **doing the same small movements over and over again** across a long period of time.

For Example: Repeatedly **clicking a mouse button** or moving fingers across a **keyboard whilst typing**.

\# Computer users who **type** and **use a mouse all day long** are commonly affected.

Causes of RSI and how to prevent it:

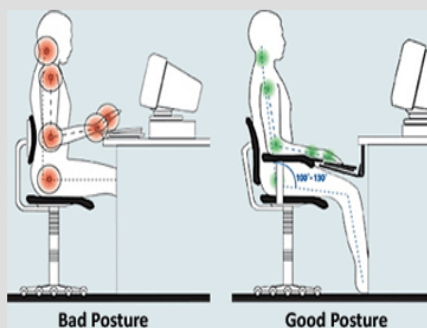| Causes of RSI:	How to prevent RSI:
Typing on a computer for too long.	Take breaks to **rest your hands**.
Using a mouse for long periods.	Use an **ergonomic keyboard**.
Holding a mouse **incorrectly**.	Use an **ergonomic mouse** or a **rollerball**.
Typing on a keyboard with **incorrect posture**.	Use a **wrist rest**.
Working in a **cramped** workspace.	Arrange your workspace so that there is **enough space** to work comfortably.

2 Back and Neck problems

\# Back ache and neck ache can cause **great pain** and really affect the quality of your life.

\# Both back and neck ache can be caused by **sitting incorrectly** and using **poor quality chairs without back rests**.
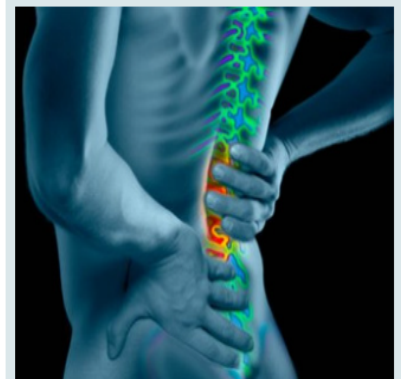
This is called **poor posture**.

Examples:

Sitting incorrectly in front of a computer can cause painful conditions like backache.

Seating Posture:

The images to the right show you both the incorrect and correct ways to sit at a computer.

(Click the image to see a larger version with more information)

Bad Posture   Good Posture

Causes of Backache / Neckache and how to prevent them:

Causes of back and neckache:	How to prevent back and neckache:
Working in a **cramped** work space.	Take **regular breaks** to stretch your body.
Not sitting upright in your chair.	Use **adjustable chairs** so you can sit in a position suitable for your height.
Sitting with **poor posture**.	**Sit upright** against the back rest.
Incorrect positioning of the computer screen.	Tilt the computer screen so it is set **just below your eye level**.
	Keep your feet **flat on the floor** (or use a footrest)
	Keep your work space **tidy**.

3 Eye Strain and Headaches

\# Staring at a computer screen for too long can **strain your eyes and cause headaches**.

\# Eye strain can cause your **vision to blur**.

\# Common causes of eye strain are **screen flicker** and having **direct light** causing **screen glare** (see video examples below).

Causes of Eye Strain and how to prevent it:

Causes of eye strain:	How to prevent eye strain:
Staring at a computer screen for a long time.	Take **regular breaks** (every hour or so) to rest your eyes.
Working in a room with **bad lighting**.	Use **TFT screens** rather than CRT as they have **less flicker** and **glare** .
Glare or **flicker** an the computer screen.	Use an **anti-glare screen** to help reduce screen glare.
Dirt on the screen can cause you to **strain** to see the **images or characters** on the screen.	Ensure that room lighting is good with **no direct light** causing glare on the screen.
	Keep the screen **clean of dirt** so that you don't have to strain to see characters/images on the screen.
	Have **eyes tested** regularly.

What are some solutions to these problems?

For User:

* Practice good ergonomics
* Proper usage of desk, keyboard, and other devices
* Rest and perform stretching exercises (also helps back and neck and eye strain)

By companies, including ICT companies:

* Good software and workstation design
* Cost of proper software design and workstations can quickly be recouped