



OFFICE ERGONOMICS

By Amer Bin Ziyad

Environment, Health & Safety Dept.,

Introduction

In modern office work, the job can affect your body in damaging ways just as many physically demanding tasks does. It is important to realize that the average office worker spends more than 50 percent of their time at work in a sedentary seated position. It is known fact that prolonged sitting can lead to cardiovascular problems, increases in musculoskeletal discomfort, and decreases in productivity.

What is Ergonomics?

Ergonomics or sometimes called “Human Factors” aim to learn about human abilities and limitations, and then apply this learning to improve employee’s workplace interactions.

The goal of office ergonomics is to design your office work station so that it fits you and allows for a comfortable working environment for maximum productivity and efficiency. The design includes office products such as desks, chairs, keyboards, computer monitors, and everything else in between.

Ergonomics Risk Factors

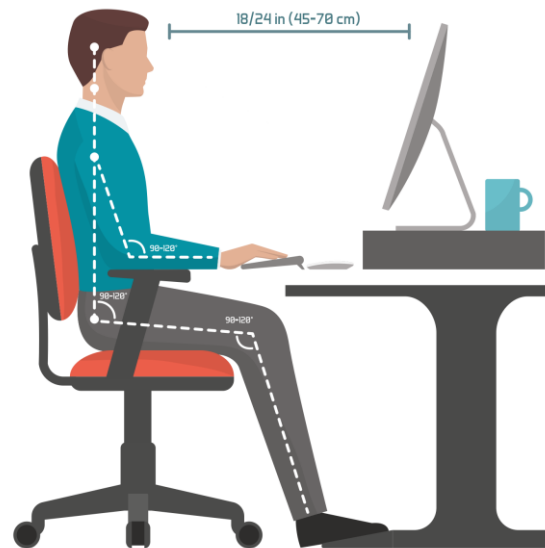
The three (3) main risk factors for ergonomics analysis are task repetition, forceful exertions and awkward postures. Each of these factors alone poses a risk of injury. However, combination of all poses a greater risk of injury. Minimizing forces, controlling the frequency (repetition) rate, with proper working posture can minimize the risk of injury.

Common Injuries due to Poor Ergonomics

Ergonomic injuries are those injuries caused by the presence of ergonomic risk factors. Some of the injuries due to poor ergonomics are:

- Musculoskeletal disorder (MSD): It involve muscles, tendons and ligaments. An example of MSD is carpal tunnel syndrome which is type of wrist injury.
- Back injuries

- Stiff neck
- Headache & migraines.
- Trigger finger: The inflammation of tendons located in finger.
- Ganglion cysts: A larger sized lumps which develop on joints of wrist and fingers.



Picture 1: Correct Sitting Posture

Ergonomics in Office

Key areas to look at while setting up your ergonomic friendly office station are: chair, monitor, keyboard & mouse, and workspace.

The ideal setup for office workstation is shown in **Picture 1**.

Chair:

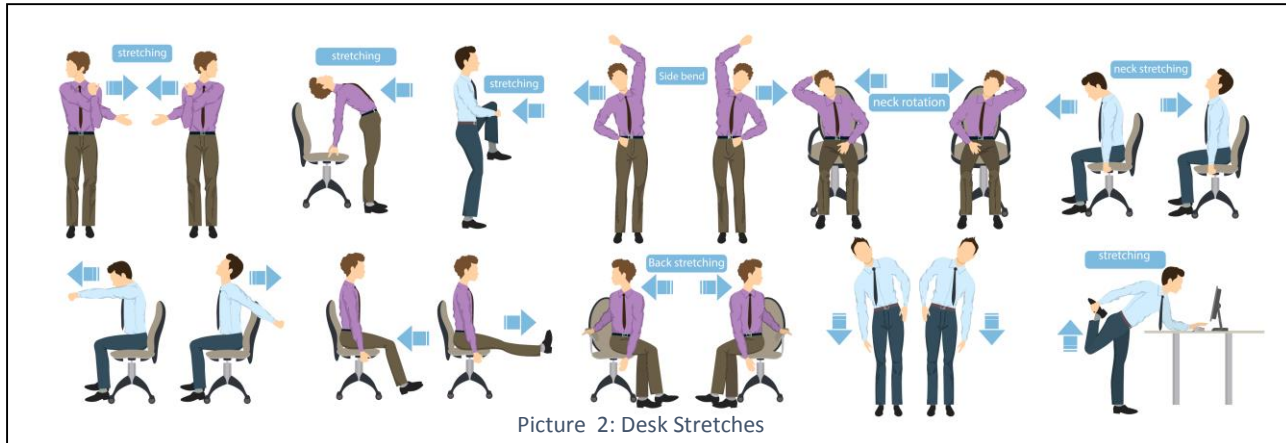
- Height of the chair should be adjustable so that knees are within 90-110 deg angle.
- Adjust height of backrest to support back and place it at an angle 0-10 deg recline.
- It should have good lumbar support as well.
- Adjust seat pan to ensure that chair doesn't contact with back of your knees.
- It should have armrests to support your forearms while sitting.

Keyboard & mouse:

- Your arms and wrist should rest on desk surface while using keyboard/mouse.
- Design and angle of keyboard/mouse should allow for a neutral posture, so hands are in straight line with forearms.
- Raise the chair height so that elbows are at approximately 90 deg when using keyboard.

bones and joints and allows for maximum control.

- Workstation setup: Use posture-friendly desk items like ergonomic chair, keyboard, mouse and monitor, and arranging workspace in different zone based on their frequency of use.
- Reduce excessive force: It will reduce worker fatigue and the risk of developing MSD in body.
- Reduce excessive motion: Tasks with repetitive



Monitor:

- Screen should be placed in front of you so that there is no twisting of neck.
- Height of the screen such that the top line of text is in line with your eyes.
- It should be at location that eliminates glare on screen.
- It should be placed at distance so that it is within the reach of your hands while sitting.

motions with awkward postures must be minimized.

- Allow for movement & stretching: It reduces fatigue, improves muscular balance and posture. Stretching arms, sides, shoulders, neck, wrists, waist and lower back in stretch breaks, see **Picture 2**.
- Adequate lighting: Avoid dimly lit work areas as it can cause eye fatigue and headaches and can put workers at greater risk for all types of injuries.

Workspace:

- Arrange the workspace such that you access the frequently used items easily.
- Place the items in workspace reach zones depending on their frequency of use:
 - ✓ Zone A for regularly used items;
 - ✓ Zone B for less frequently; &
 - ✓ Zone C for rarely used items.

Conclusion

Ergonomics doesn't have to be as difficult or complicated as brain surgery. The ergonomic principles included in this article is the practical approach to prevent various ergonomic injuries. By day-to-day implementation of these tips, you will be able to create a safer and healthier work environment. It may seem simple but will make a world of difference to your comfort in the office.

Tips to Avoid Ergonomic Injuries

The following are the fundamental ergonomic principles to identify in order to avoid ergonomic injuries:

- Maintain neutral posture: Neutral postures are when the body is aligned and balanced, placing minimal stress on muscles, tendons, nerves,