

## **Background Information**

Musculoskeletal disorders, such as carpal tunnel syndrome and back injuries, are the leading cause of lost work time and workers' compensation awards. Musculoskeletal disorders are preventable through proper workplace design and appropriate work procedures. A number of risk factors cause musculoskeletal disorders. Eliminating those risk factors will significantly reduce the chance of an injury.

## **Musculoskeletal Disorders: Risk Factors**

Musculoskeletal disorders also referred to as Cumulative Trauma Disorders (CTDs) or Repetitive Strain Injuries (RSIs) are a family of muscle, tendon, and nerve disorders caused by one or more of the following RISK FACTORS:

**Repetition:** Keyboarding, thumbing through files, sorting mail.

**Awkward and Static Postures:** Keyboarding in a twisted position; holding the phone with your head and neck; typing with wrists bent.

**Contact Stress:** Resting wrists / forearms on sharp edges while keying; stapling using the underside of hand.

**Force:** Hole punching or stapling large stacks of paper; typing; pushing or pulling mail carts.

**Heavy Lifting:** Carrying or lifting boxes full of supplies or mail.

**Fatigue:** Insufficient or Infrequent rest breaks; any exertion done without adequate rest breaks between tasks.

**Work Stress:** Job satisfaction; lack of control over work organization; rapport with supervisors and co-workers.

**Extreme Temperatures:** Temperatures that are too hot or cold.

**Vibration:** Mailroom equipment or print shop equipment.

## **Recommended Workstation Set-up**

To understand the best way to set up a computer workstation, it is helpful to understand the concept of neutral body positioning. This is a comfortable working posture in which your joints are naturally aligned. Working with the body in a neutral position reduces stress and strain on the muscles, tendons, and skeletal system and reduces your risk of developing a musculoskeletal disorder (MSD).

Recommended Body Postures:

**Hands, wrists, and forearms:**

-Straight, in-line and roughly parallel to the floor.

**Head:**

-Level, or bent slightly forward, forward facing, and balanced.

**Shoulders:**

-Relaxed with **upper arms** hang normally at the side of the body.

**Elbows:**

-Close to the body and are bent between 90 and 120 degrees.

**Feet:**

-Fully supported by floor or footrest.

**Back:**

-Fully supported with appropriate lumbar support when sitting vertical or leaning back slightly.

**Thighs and hips:**

-Supported by a well-padded seat and generally parallel to the floor.

**Knees:**

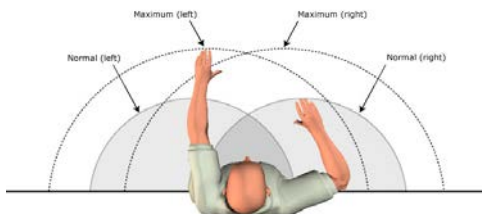
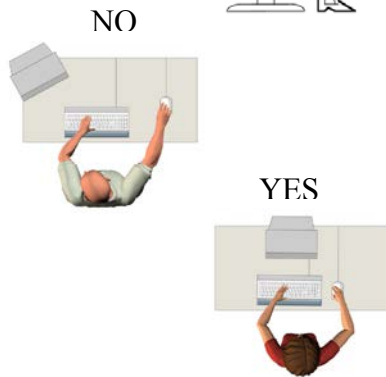
-Approximately the same height as the hips with the **feet** slightly forward.



Regardless of how good your working posture is, working in the same posture or sitting still for prolonged periods is not healthy. You should change your working position frequently throughout the day in the following ways:

Take micro-breaks by stretching your hands, fingers, arms and torso. Stand up and walk around for a few minutes periodically (this can be done while filing, faxing, obtaining needed supplies, and by making small adjustments to your chair or backrest).

## **Basic Components of the Computer Workstation**



### **Chair**

- Must be adjustable so workers can maintain recommended postures and must have adequate lumbar support.
- The seat pan should be adjusted with the thighs parallel to the ground.
- Feet must be firmly on the ground or on a footrest.

### **Keyboard / Mouse**

- The *keyboard* should be adjusted keeping the forearms parallel to the ground and the wrists straight.
- The *mouse* should be placed near the user so there is no need to reach, should be at the same level as the keyboard.

### **Monitor**

- Must be directly in front of the user with the top of the monitor at or just below eye level.

### **Work Area**

- The work area or desk should be adjustable, the area should be free of clutter with equipment that is frequently used positioned close to the user.

### **Work Environment**

- Workstations should be set up to minimize glare, monitors should be perpendicular to windows and overhead lighting should be limited.

## **Warning Signs and Symptoms**

There are number of various musculoskeletal disorders as a result of computer use. Many symptoms are similar but affect different body parts. Typical signs and symptoms of musculoskeletal disorders:

- |             |                                |           |          |
|-------------|--------------------------------|-----------|----------|
| -Numbness   | -Decreased Joint Motion        | -Swelling | -Burning |
| -Sharp Pain | -Cracking or Popping of Joints | -Aching   | -Redness |
| -Weakness   | -Tingling                      |           |          |