

ERGONOMICS

for school Secretaries



United Federation of Teachers

A Union of Professionals

Safety and Health Department

* By the end of the class you will be familiar with the following objectives

Objectives

- Reference
- What is Ergonomics?
- UFT Ergonomic Program goals
- Occupational Risk Factors
- How to sit properly
- Setting up the workstation
- Arranging the work space
- Ergonomic chairs
- Pictures of common problems
- How Ergonomics can help
- Injured – what to do



It's probably time to see the dr.!

Ergonomic Rule

- Although the Occupational Health and Safety Administration (OSHA) final rule on Ergonomics was repealed by President Bush, the Department of Education (NYCDOE) may still be responsible for injuries sustained due to Ergonomics under 29 CFR 1910, General Duty clause.
- Reference on next slide.....

Reference

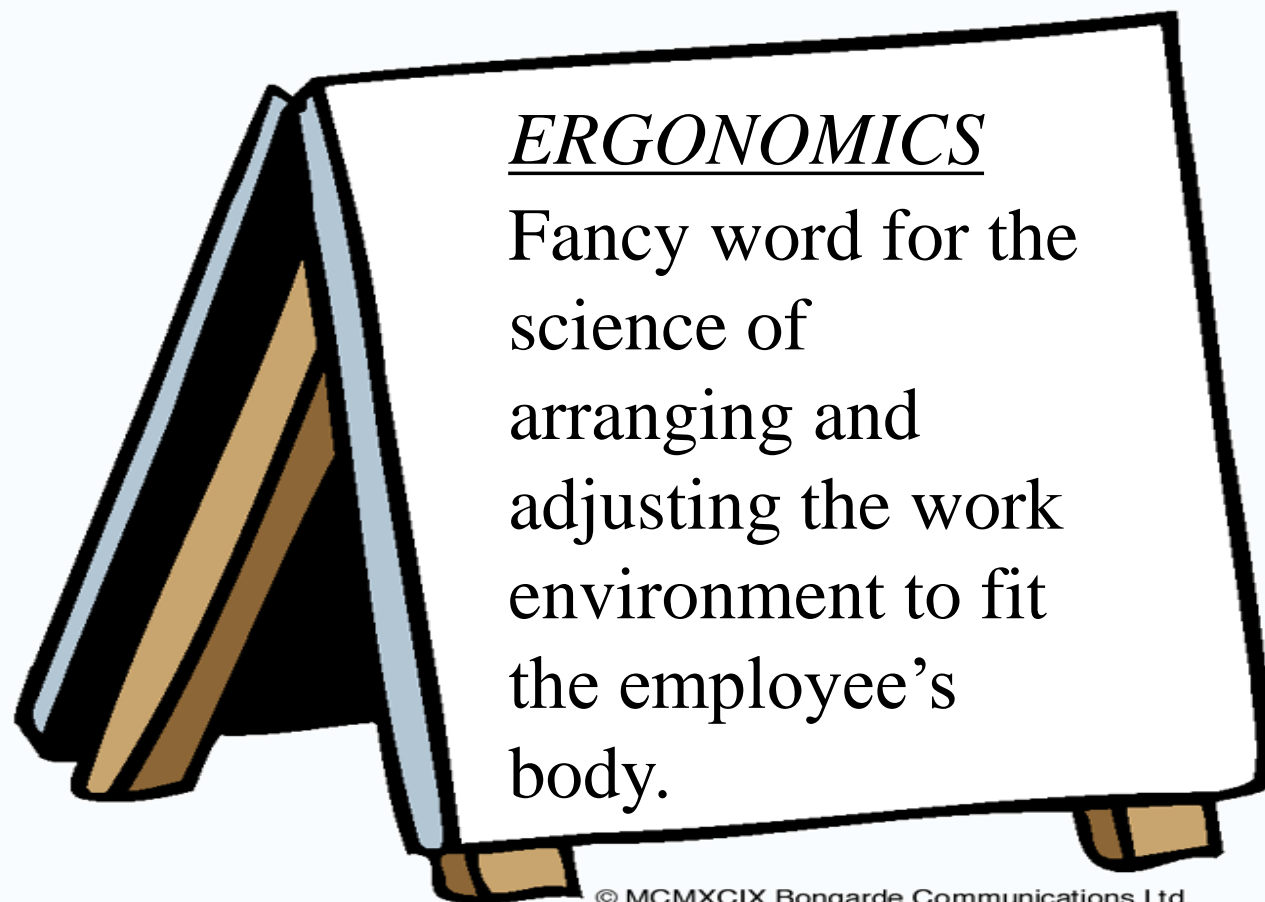
OSHA Standards for General Industry

29 CFR 1910 Section 5 – General Duty Clause

Section 5 (a) Each Employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.
- (2) shall comply with occupational safety and health standards promulgated under this Act.

What is Ergonomics?



FACTS

- The average person working at a keyboard can perform 50,000 to 200,000 keystrokes a day
- Overexertion, falls & RMI are the most common cause of workplace injury
- An average of 125,000 back injuries due to improper lifting each year.
- Muscles overuse results in tiny tears in the muscles and scarring; these contribute to inflammation and muscle stiffness



Goal of Ergonomics

Close harmony between equipment and people



Ergonomics Program

1. Training
2. Workstation Evaluations
3. Corrective Actions

An Ergonomic Program

- Training – It is important to train people regarding good ergonomic practices. This class is designed to help you better understand ergonomics and how you can help improve your ergonomic setting.
- Purchasing equipment (chairs, keyboard trays, etc.) without ergonomic education won't work. It is important to know and understand the risk factors. Understanding the risks can help you to diminish the risks.

Workstation Evaluations

- **Once you are familiarized with the principles in this PowerPoint presentation, please evaluate and make the appropriate changes to your workstation.**

Corrective Action

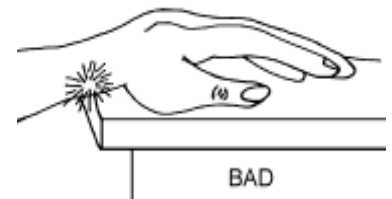
- You may complete corrective actions yourself when you:
 - Move your monitor in line with the keyboard
 - Rise or lower your chair
- However, there may be corrective actions that will require a purchase:
 - Chair
 - Keyboard pullout tray
 - Etc.

Occupational Risk Factors

- There are four main risk factors people may experience when dealing with computer work.
- Even though risk factors may be present, this does not mean you are destined to suffer an injury.
- You will benefit from being aware of the risk factors and how to minimize the risk as much as possible.

Occupational Risk Factors...

- **Repetition** – task or series of motions performed over & over.
- **Forceful Exertions** - amount of physical effort required to complete task.
- **Awkward Postures** - reaching, twisting, bending, holding fixed positions.
- **Contact Stress** – localized pressure exerted against the skin by external force.



SRSI: Warning Signs and Symptoms

☐ Hands That Fall Asleep Frequently

☐ Chronic Lower Back Pain

☐ Self-Massaging Neck, Hands, & Forearms to relieve pain

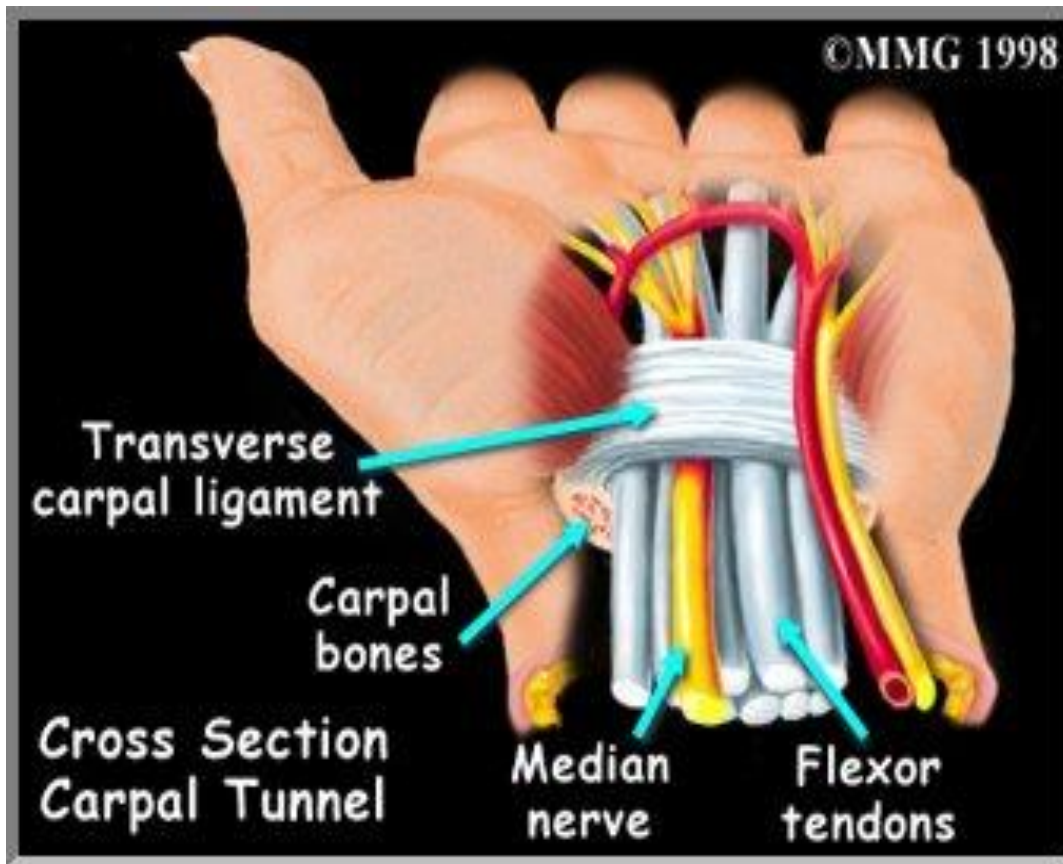


☐ Fear of Dropping Pots, Bottles & Even Babies

☐ Difficulty Opening Jars or Pouring from Gallon Containers

☐ Shooting Pain Down Arm That Wakes You at Night

Carpal Tunnel Syndrome



- Numbness & tingling in your thumb, fingers and hands
- Pain in your wrists
- Pain that wakes you from your sleep

What Can I Do if I Have Some Symptoms of RSI?

- Keep a log of symptoms and their frequency
- See an occupational doctor, physiatrist (rehabilitation specialist), orthopedist or neurologist.
- Report it to the school

Note: RSIs are often misdiagnosed as arthritis.

Repetition

- If you find yourself doing a job task over and over, you should take adequate breaks from the repetitive motion. This means:
 - Get up and move around (move your printer to a location where you have to get up.)
 - During a break - roll your wrist and hands, this will help if you've been typing for a long time.
 - Try to vary your tasks as much as possible so you aren't in a position where you have to keep doing repetitive motions.

Forceful Exertion

- To minimize forceful exertion - do not type with much force, use as light a touch as possible.
- With everything we pick up, or push against, we should try and do it with as little force as possible.
 - This means no pounding the keyboard!

Awkward Posture

- The location of the telephone may cause you to have an awkward posture that you may not be aware of...
 - Make sure your telephone is within easy reach.
 - Make sure you do not have to twist (awkward posture) at the waist to reach the phone.

Contact Stress

- There are a couple of places you may feel contact stress:
 - If you are resting your wrist on a sharp edge you are creating a contact stress.
 - To fix - do not rest your wrists on anything that will leave an indent mark on your skin.
 - If the chair you are sitting in has a seat pan that pushes against the back of your knees you are experiencing a contact stress.
 - You may need to get a chair with a sliding seat pan to give you enough room between the edge of the seat and the back of your knees.

How to Sit Properly

Neutral Position

- Sit straight with back against the chair back.
- Lower lumbar support in the right spot.
- Feet flat on the floor.
- 90+ degree angles.
- Arms parallel to the ground.
- Elbows and wrists at same level.

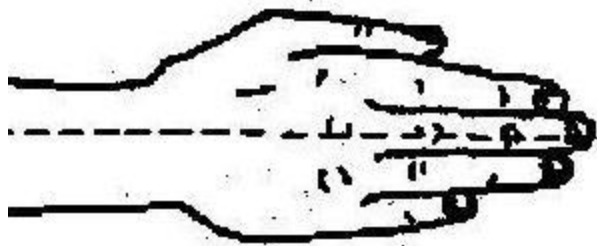


Sitting like this is known as sitting in a “neutral position.” This position reduces the amount of stress on muscles.

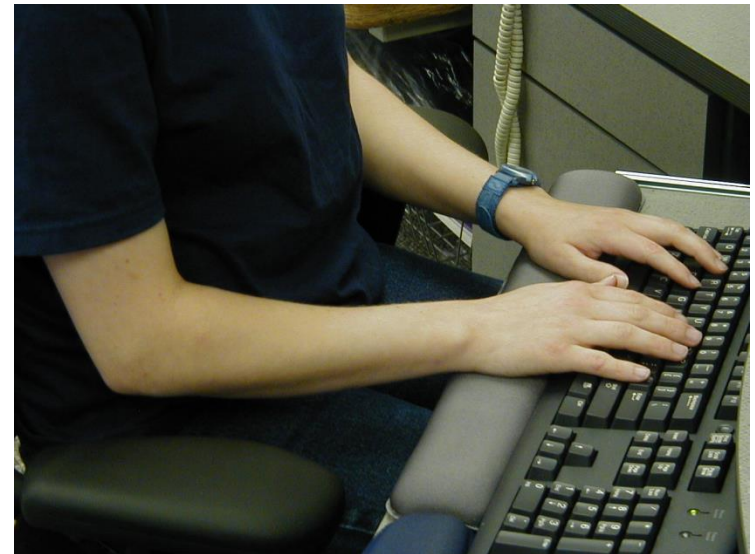
Neutral vs. Non-Neutral Hand Positions

Neutral Wrist Position

- Wrists and elbows are at the same height, parallel to the ground.
- No awkward postures.
- Everything within easy reach.



Neutral



Safe Computing

Monitor -

18-24 inches from your face.
Eye level, or slightly below.
Sit directly in front of monitor.

Keyboard -

Directly in front of monitor.
Padded wrist rest.
On sliding tray, if unable to sit in neutral.

Mouse -

Same level as keyboard.
Placement so you're not reaching.
Padded wrist rest.

Chair -

Directly in front of keyboard, and inline with monitor.

Body Posture -

Neutral positions, be cautious of awkward postures.

Accessories -

Computer and telephone? **NO!**
Document holder – a good idea
Clutter under desk – have free and easy access to sit.



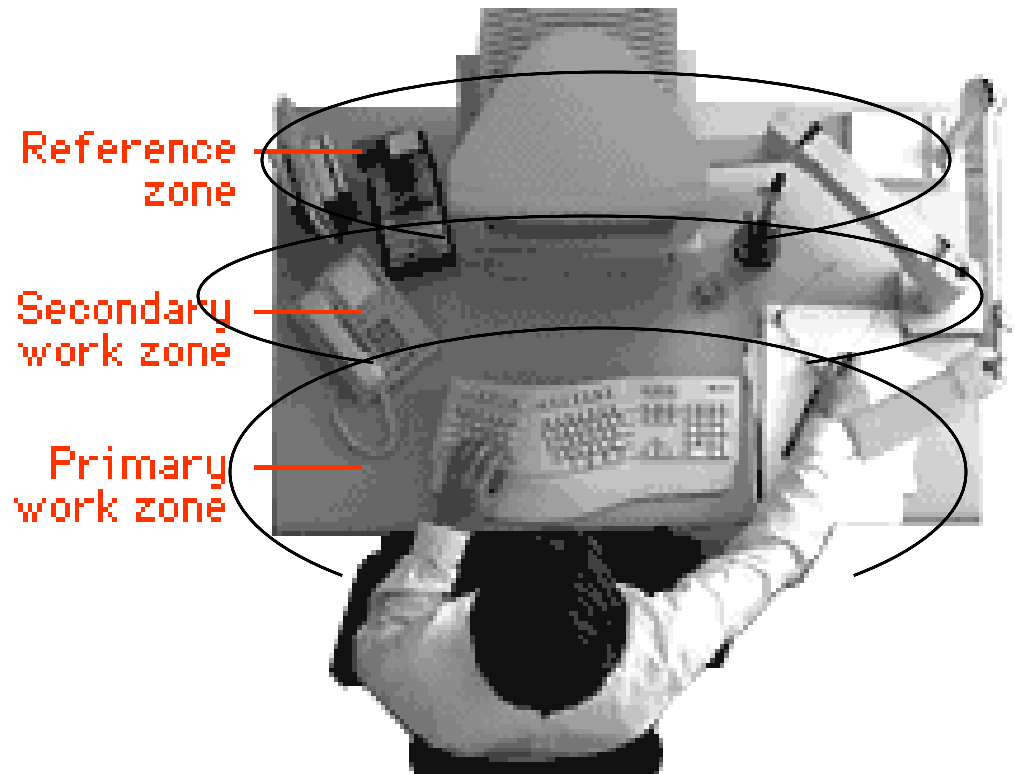
Arranging Your Workspace

Arrange tools around your desk so you minimize the distance you have to reach for them. Divide your work space into *three zones*:

Primary work zone - the distance from elbow to hand. Things you touch on a daily basis.

Secondary work zone - within arm's reach. Use this zone to position those items that you use frequently, but don't need all the time.

Reference zone - outside arm's reach. Use this zone for your least-often used items.



Ergonomic Chairs



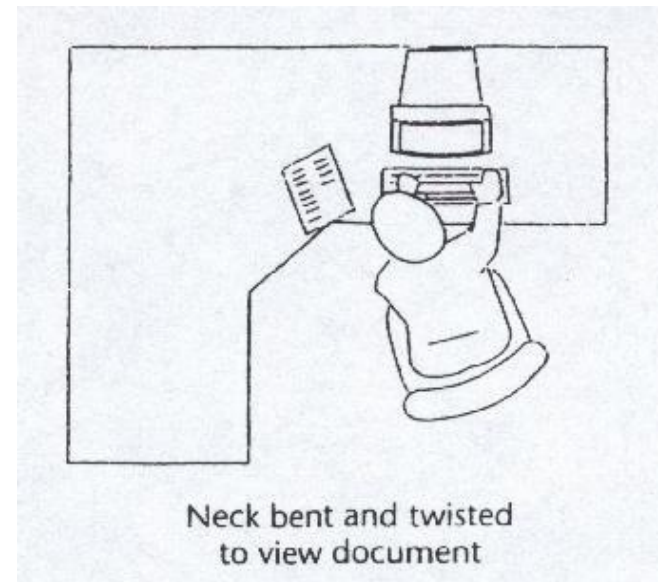
- Seat height adjustable.
- Back adjustable up and down.
- Back tilt forward and back.
- Seat pan adjustable in and out.
- Arms adjustable up and down (arms optional).
- Proper fit for individual.
- 5 casters for stability.

Twisting at the Waist and Neck



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- Can cause neck and shoulder strain.
- Unable to sit back in chair, no back support.

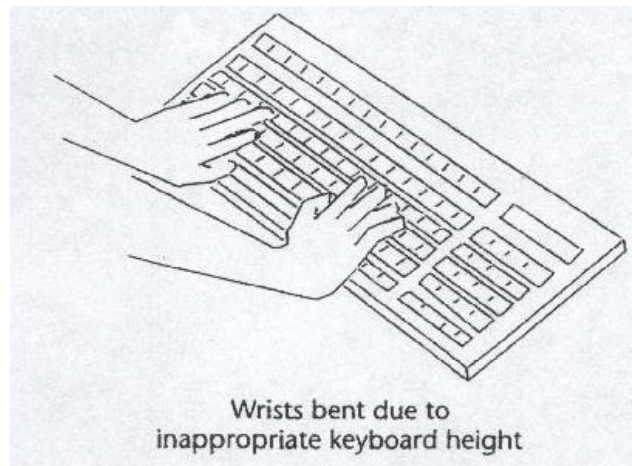


Neck bent and twisted
to view document

Too Low - Too High

Too Low

- Contact stress on wrist.
- Potential wrist and upper arm discomfort.

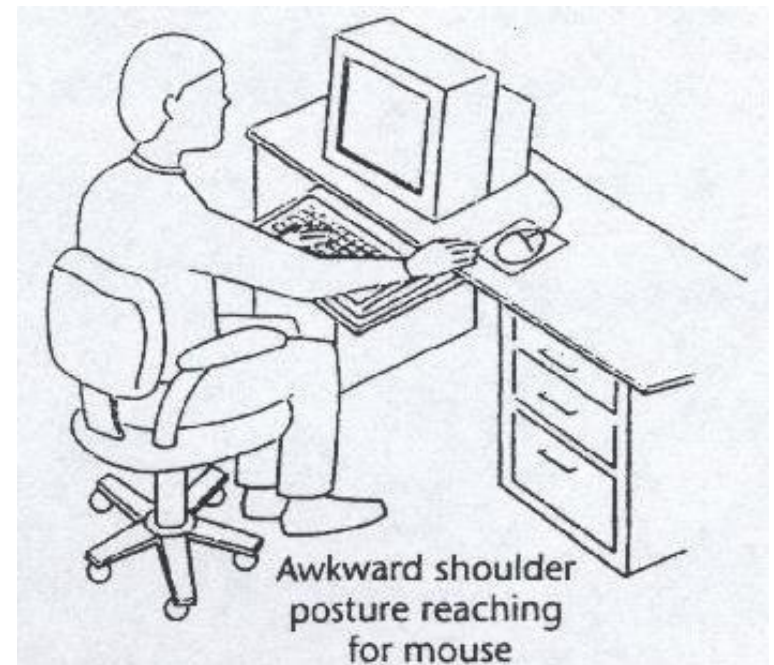


Too High

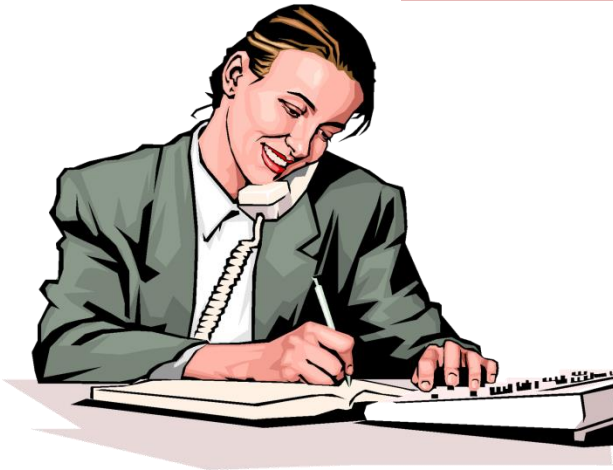
- Hunched over to see monitor.
- Potential wrist & upper arm discomfort.

Keyboard and Mouse

- Upper arm and shoulder discomfort.
- Potential for extended reaching for long periods of time.



Awkward Postures Typical of Office Work

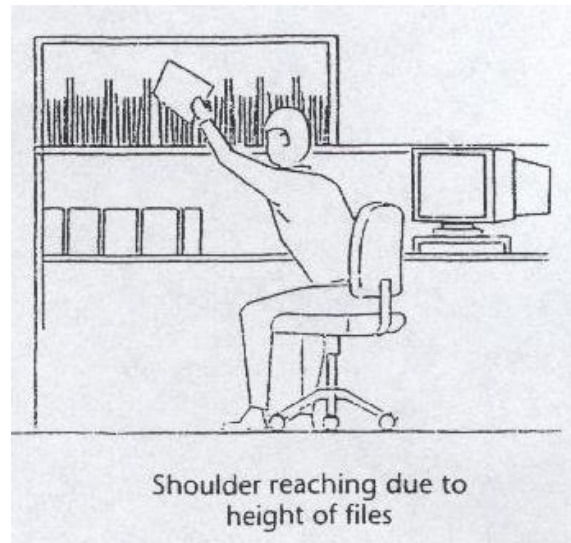


↓
Can cause neck pain and shoulder pain, both sides.



Twisting and bending of the trunk to reach files

Be cautious of twisting and bending, stand up and use good body mechanics. ↗

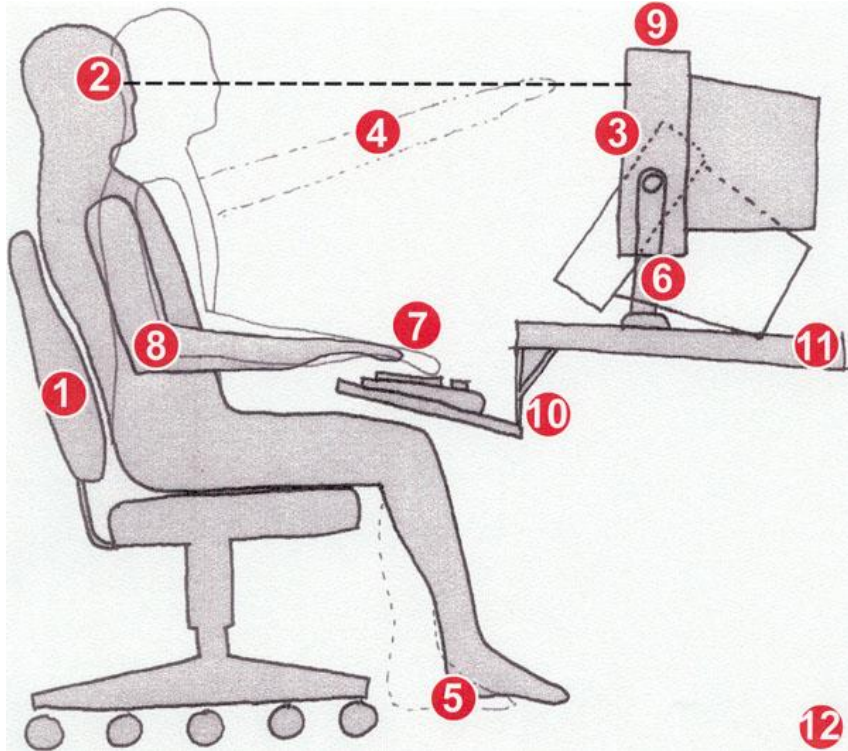


Shoulder reaching due to height of files

↖ Stand up, don't reach for items.

12 tips for an Ergonomic Computer Workstation

(Cornell University)



1. Use a good chair with a dynamic chair back and sit back in this
2. Top of monitor casing 2-3" (5-8 cm) above eye level
3. No glare on screen, use an optical glass anti-glare filter where needed
4. Sit at arms length from monitor
5. Feet on floor or stable footrest
6. Use a document holder, preferably in-line with the computer screen
7. Wrists flat and straight in relation to forearms to use keyboard/mouse/input device
8. Arms and elbows relaxed close to body
9. Center monitor and keyboard in front of you
10. Use a negative tilt keyboard tray with an upper mouse platform or downward tilt able platform adjacent to keyboard
11. Use a stable work surface and stable (no bounce) keyboard tray
12. Take frequent short breaks (microbreaks)

Benefits of Ergonomics

WIN! – WIN!

- Decreased injury risk
- Increased productivity
- Decreased mistakes/rework
- Increased efficiency
- Decreased lost work days
- Decreased turnover
- Improved morale



Injured – What to do

- If you are in pain seek medical attention - the quicker you do, the better the chances are of fixing the problems.
- Fill out an Comprehensive Accident Report.
- Once dr. establishes injury/pain, etc., is work related - fill out all necessary ILOD paperwork.
- Be sure to communicate with your supervisor that you are having problems at your workstation.

Help Yourself

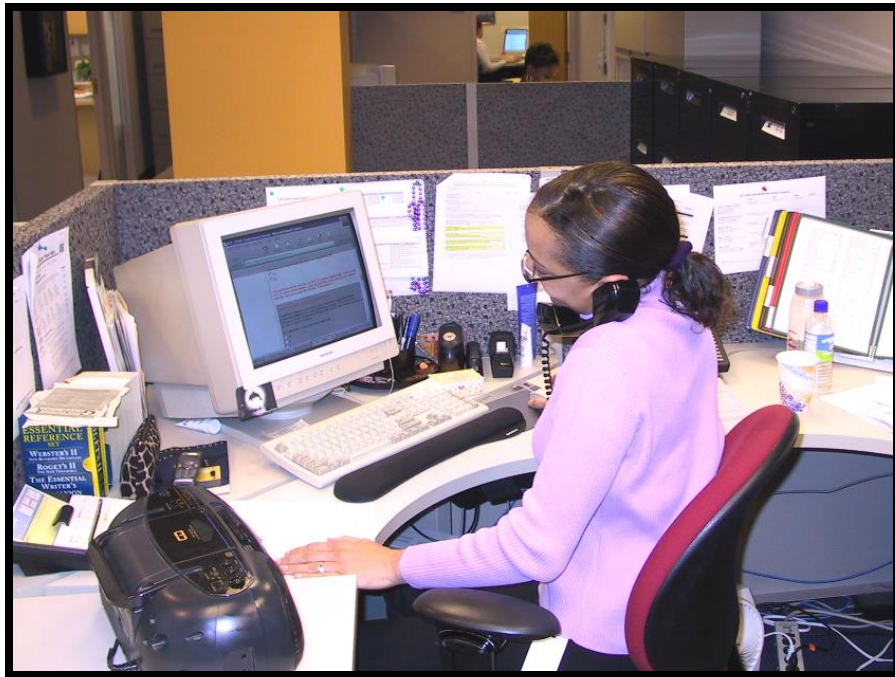
- Micro-Breaks
 - Every 20-40 minutes
- Exercises
 - Body stretch
 - Raise forearms
 - Shoulder blade squeeze/shrugs
 - Eye palming
 - Arm and shoulder shake
 - Arm extensions
 - Side bends



A blue starburst shape with a black outline, centered on a white background. The text "Before & After Pictures" is written in a black serif font inside the starburst.

Before & After
Pictures

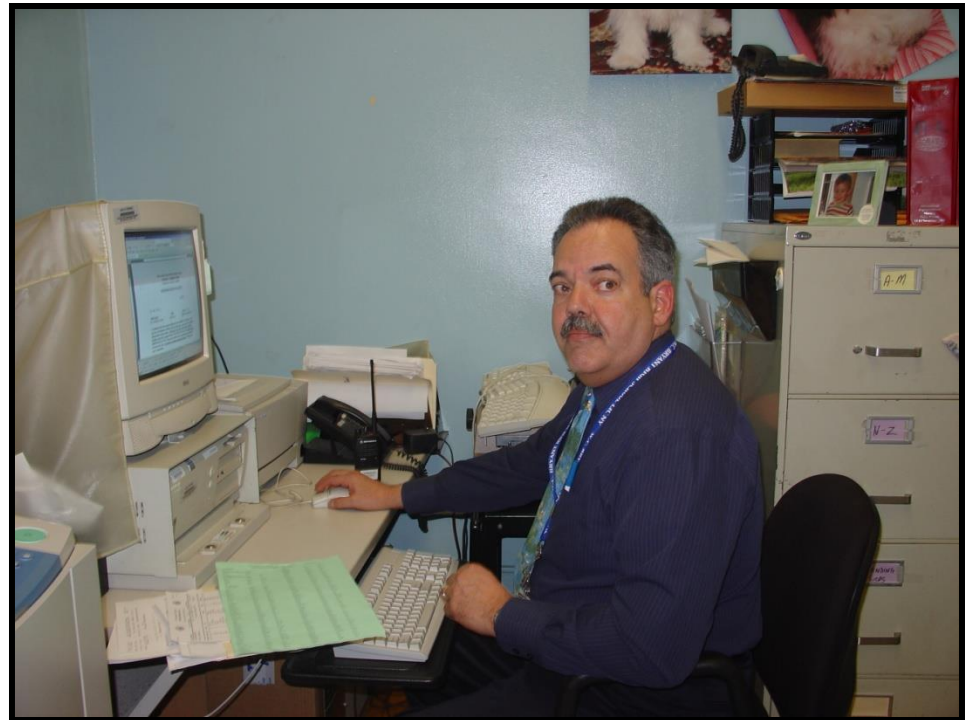
What is wrong with this picture?



What is wrong with this picture?



What is wrong with this picture?



Summary

- Avoid postures where you have to maintain non-neutral positions.
- Avoid extreme positions of body parts/joints.
- If it doesn't feel right, it's probably not right.
- Maintain proper sitting postures.
- Keep an open mind!



Acknowledgements

**Environmental Health, Safety, and Risk
Management**

Carol Shafford

Ergonomic Program Director



The End
Any Questions?