



ERGONOMICS

Presented by: Marvin Bunting, MPH, CIH

Ergonomics

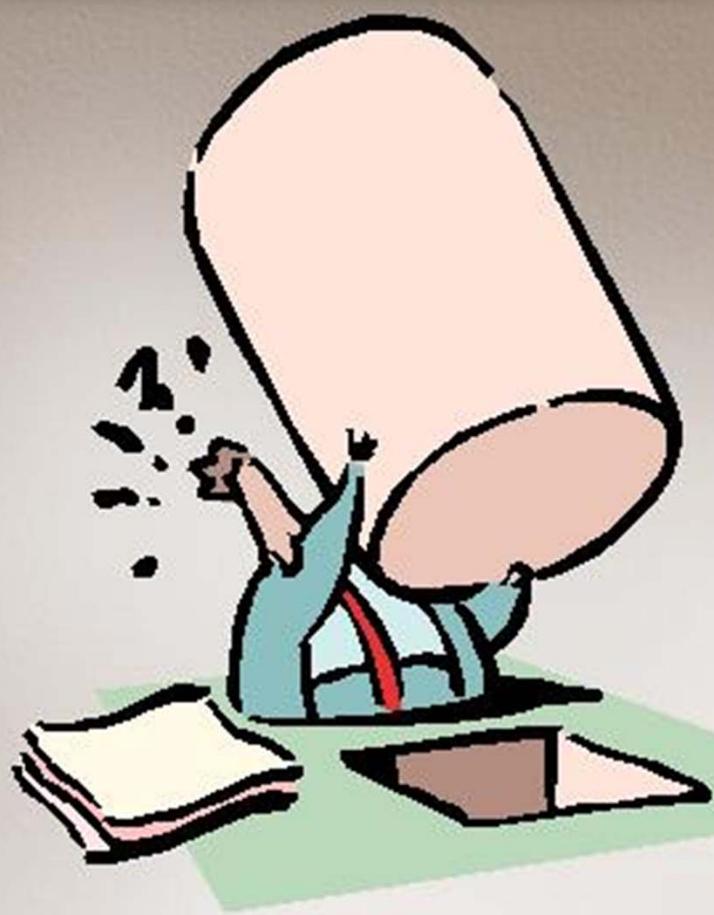
Ergo – “Work”

Nomos – “Law”

“The Law of Work”

The science of designing the job and the workplace to reduce stress on the worker and improve efficiency of work.





**Ergonomics –
Making the work fit the worker**

OSHA's Definition of MSDs

A disorder of the muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels, or spinal discs.

Why is OSHA Concerned with Ergonomics?

- OSHA considers MSDs to be epidemic in the workforce today.**
- MSDs comprise 1/3 of occupational injuries and illnesses reported to BLS**
- MSDs constitute the largest job-related injury and illness problem in the U.S.**

Types of MSDs

- **Muscle strains and tears**
- **Ligament & joint sprains**
- **Joint & tendon inflammation**
- **Pinched nerves (nerve compression)**
- **Spinal disc degeneration**

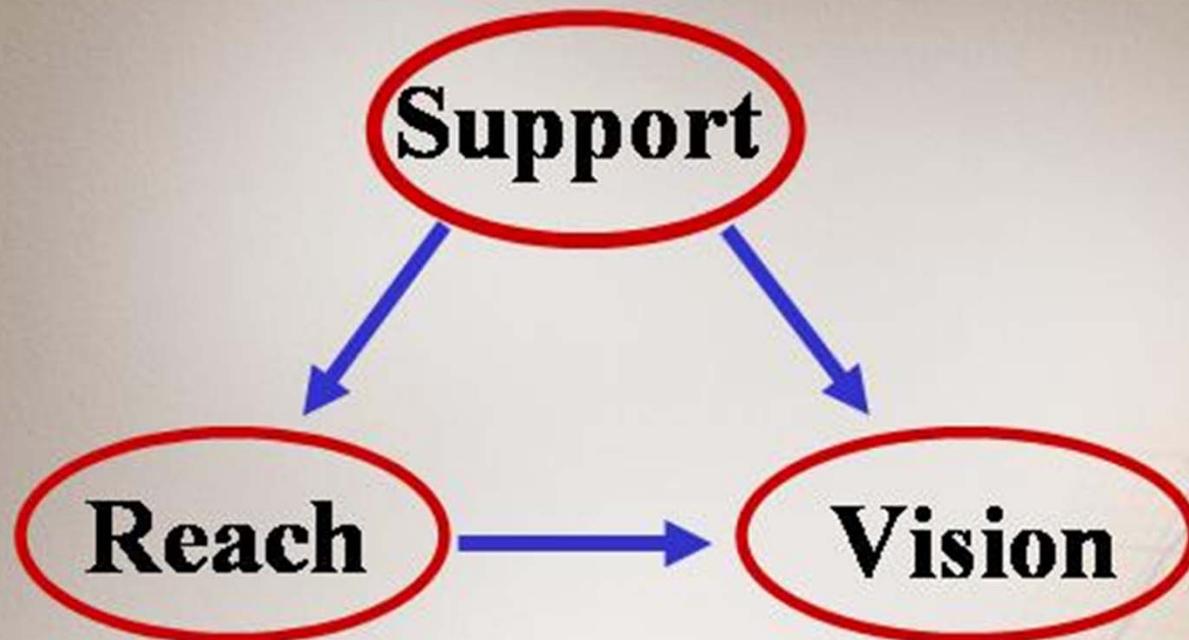
Signs and Symptoms of Injury

- **Fatigue**
- **Discomfort/Pain**
- **Swelling**
- **Loss of motion**
- **Loss of strength**
- **Numbness and Tingling**

Office Ergonomics



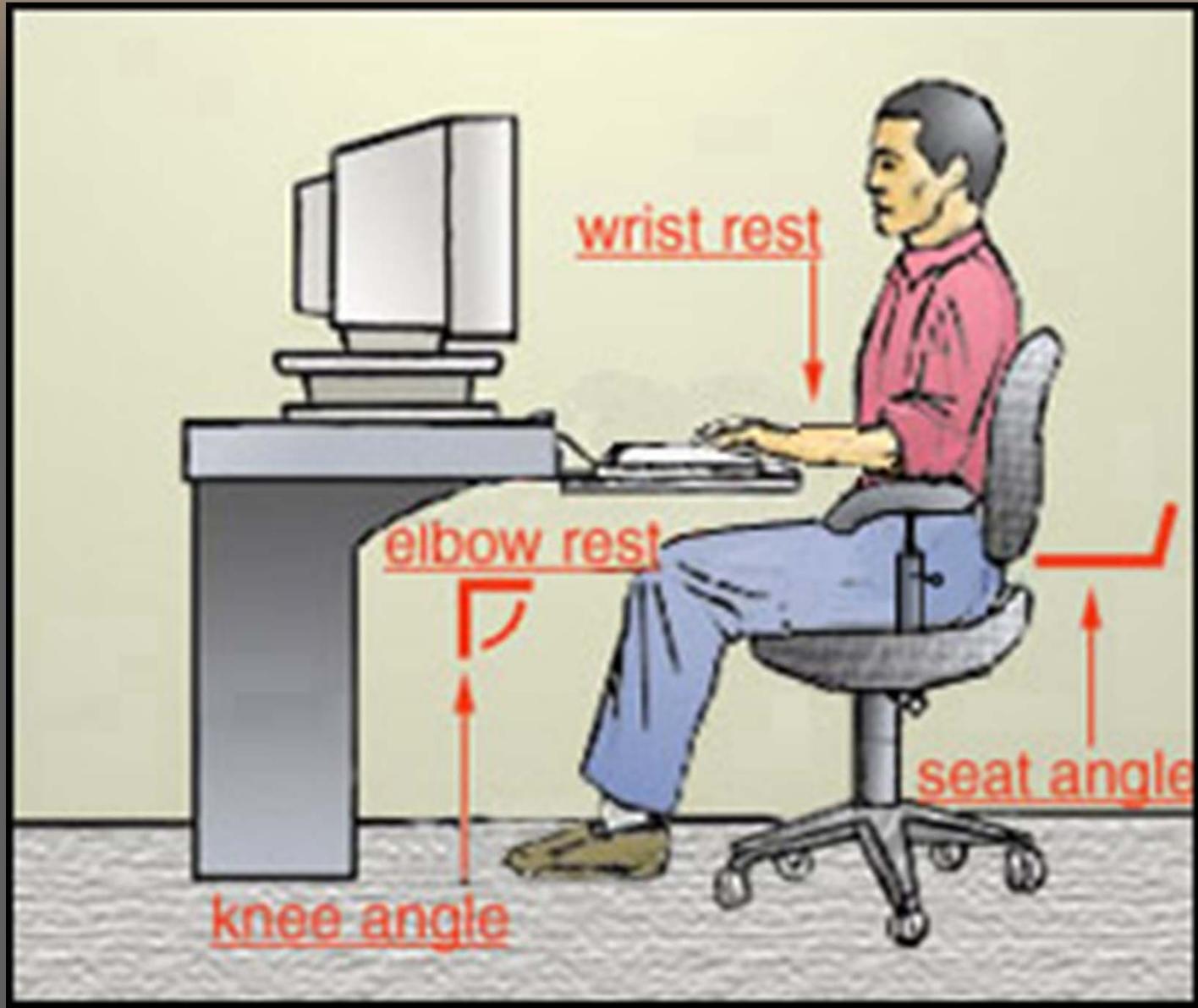
What Influences Posture?



Supported Sitting

- Feet flat on the floor
- Hips slightly higher than knees
- Backrest supports low back
- Armrests *just below* elbow height
 - Easy reach to the keyboard and mouse

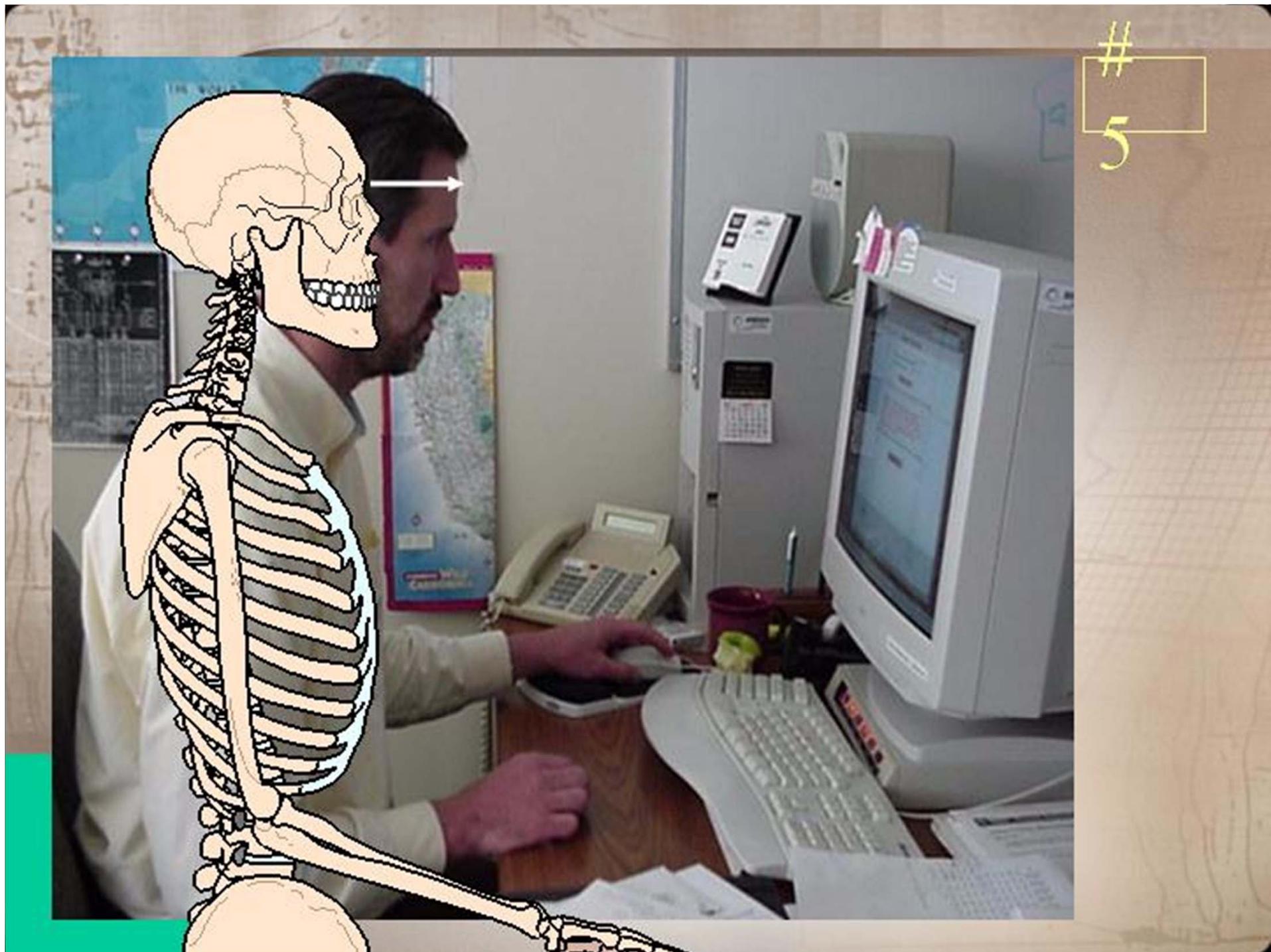




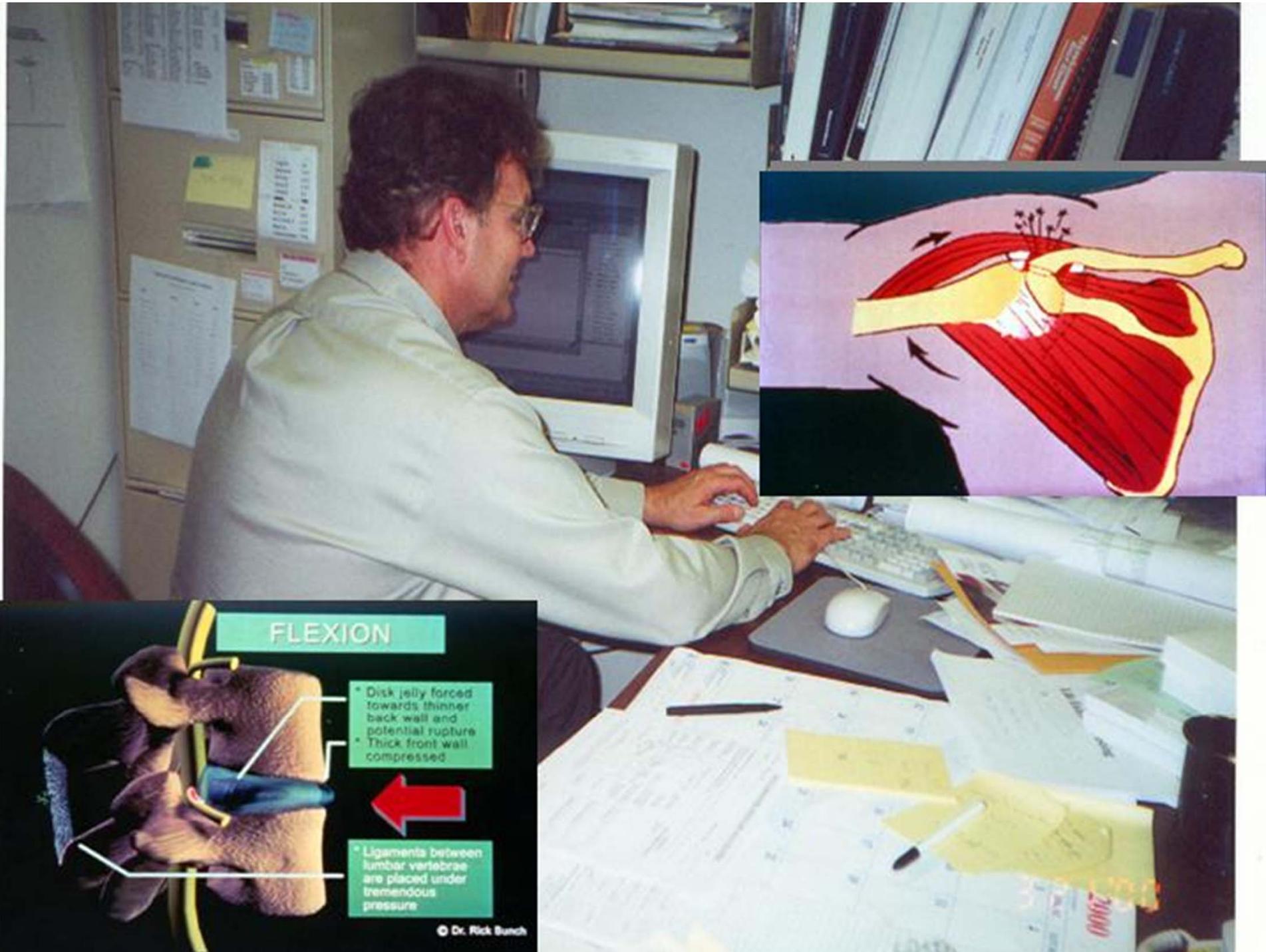
Ergonomic Influences on Back Posture

Support

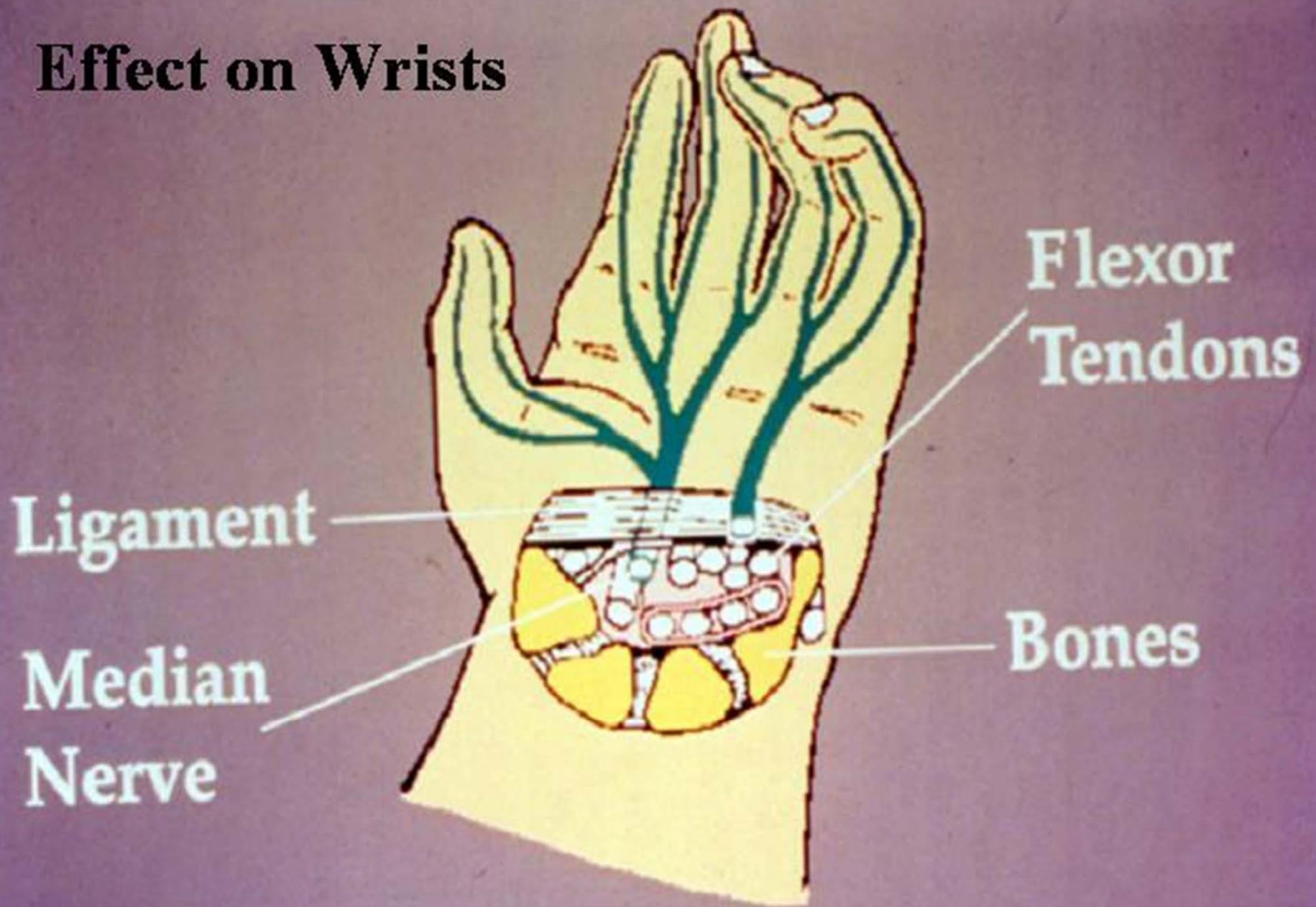
- **Seat pan**
- **Seat back angle**
- **Lumbar support**
 - **Sitting on edge of chair**
 - **Rear end migration (REM)**



5



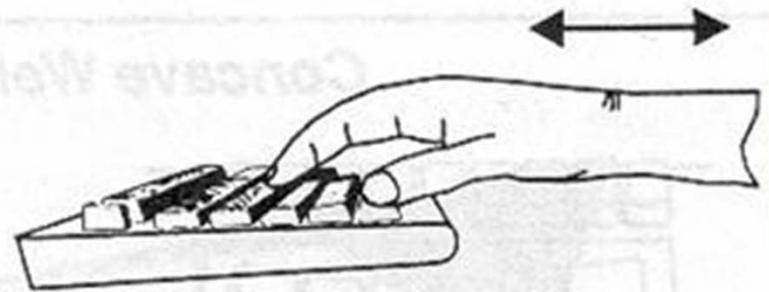
Effect on Wrists



Slope of Keyboard



**Conventional
Keyboard**



**Keyboard with
Negative Slope**

Monitor Height



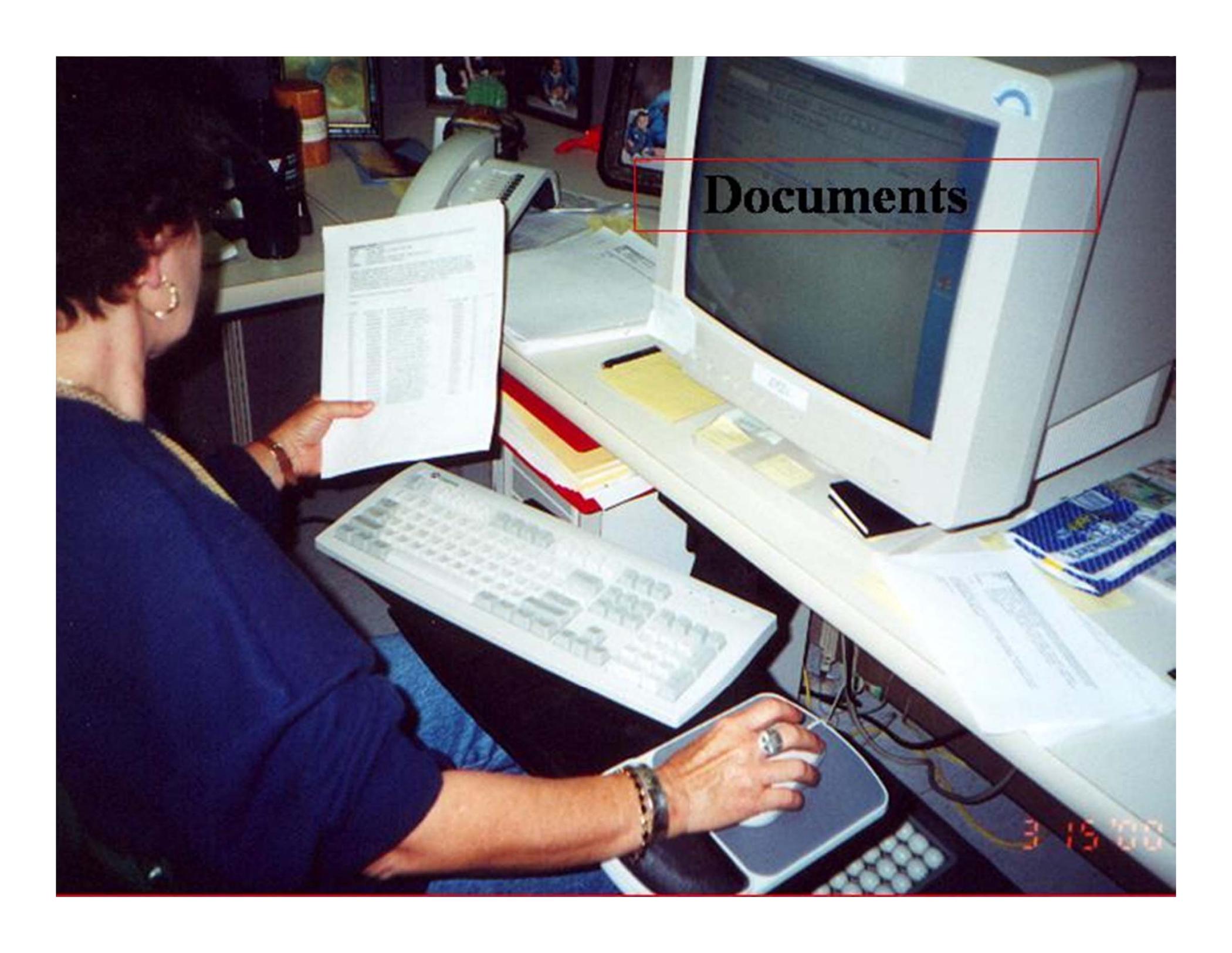
Vision → Eyes lead the body



Forward Head Posture





A photograph of a woman with short dark hair and large hoop earrings, wearing a dark blue long-sleeved shirt. She is seated at a desk, looking at a white document she is holding in her left hand. Her right hand is on a computer mouse. In front of her is a white CRT computer monitor displaying a document, a white keyboard, and a mouse. The desk is cluttered with various items, including a printer, a stack of papers, and a blue folder. A red rectangular box is overlaid on the image, containing the word "Documents" in a black serif font. In the bottom right corner of the image, there is a red digital timestamp that reads "3 15 '00".

Documents

3 15 '00

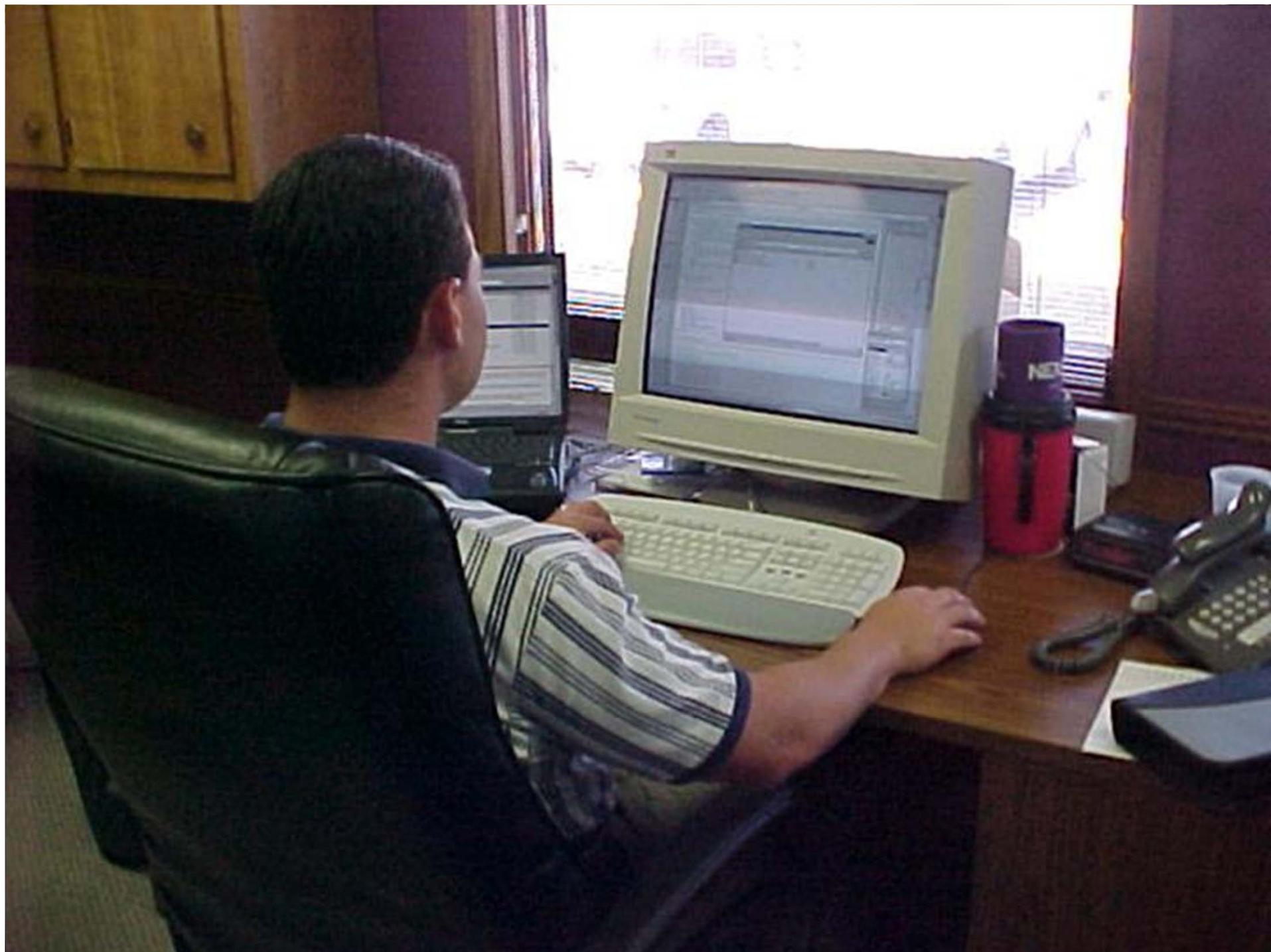


Light (Glare)



Glare





Laptops





Telephone Use



Working Long Hours

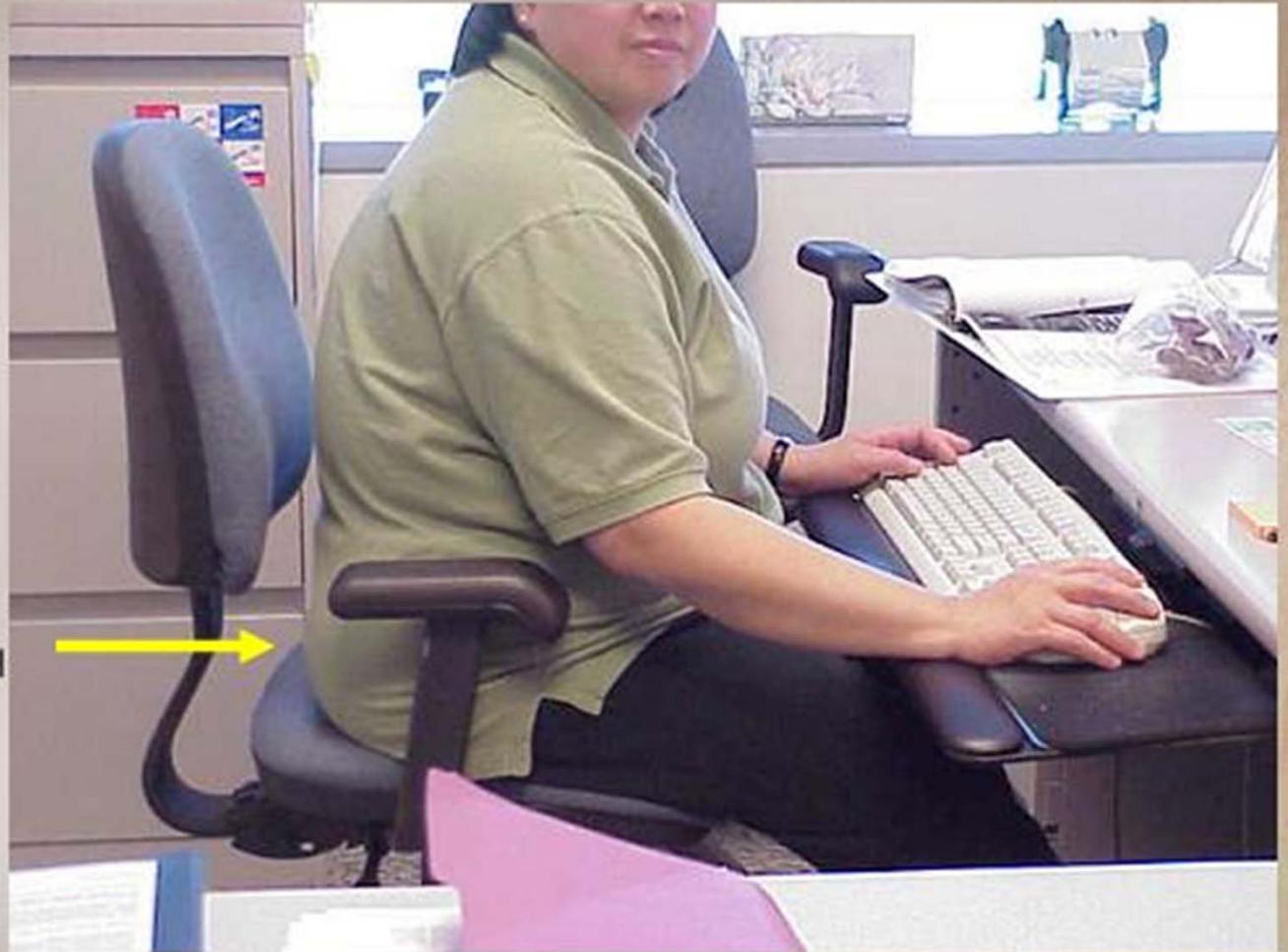






**What's Wrong
With This
Picture?**

Common Ergonomic Problems



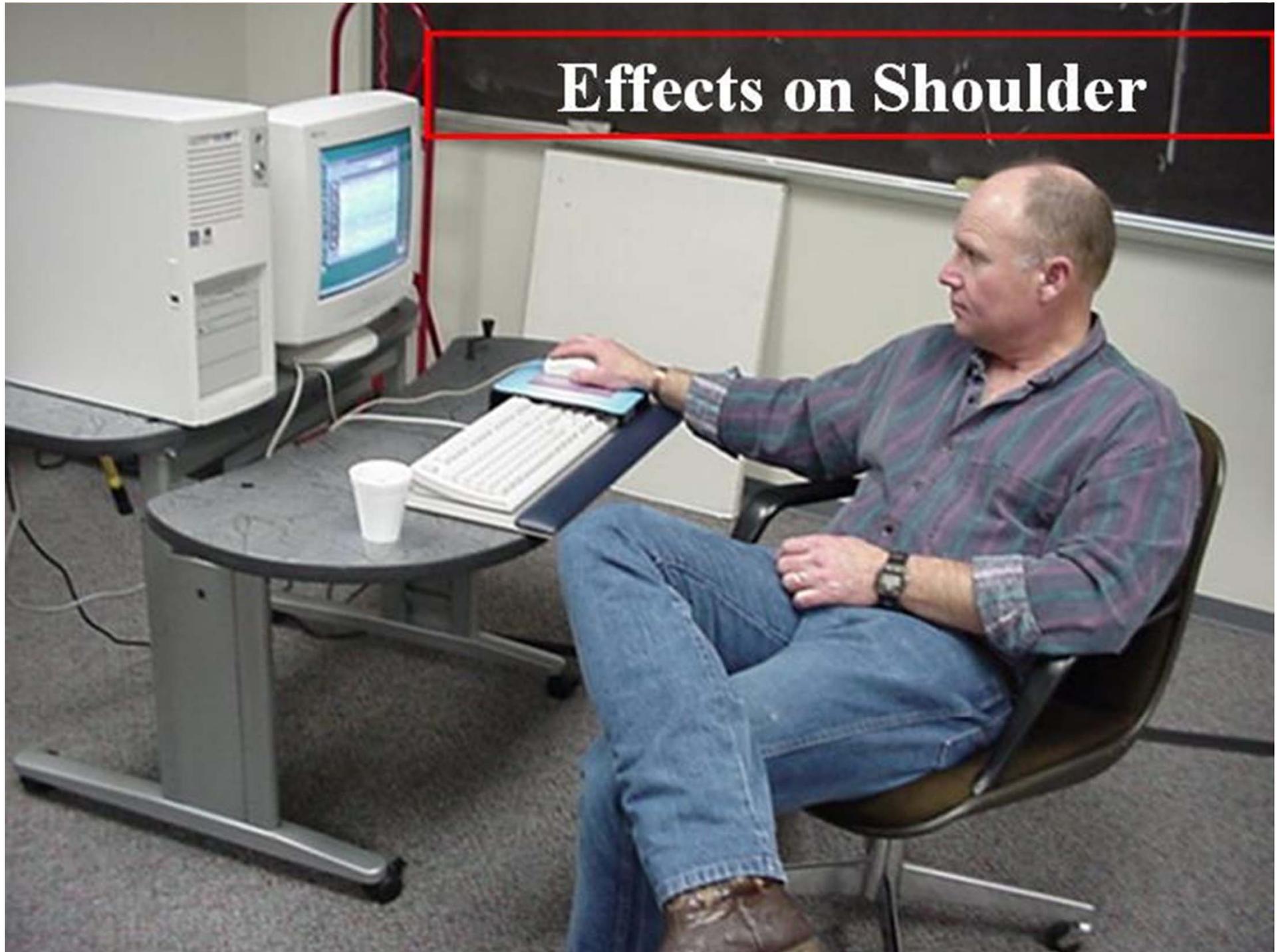
R.E.M.







Effects on Shoulder



Questions???

