

Ergonomics Seminar

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The muscles in the back are unlike many other muscles in your body. They are almost always in use. They hold your torso in an upright position throughout your day. They assist you every time you pick something up, whether it's a pen or a concrete block. They support posture while you sit in your chair, and they even work at night when you sleep.

Ergonomics in the Workplace

Computer Monitors:

Placement of the monitor affects both the eye and muscular system. The following suggestions can help prevent the development of eye strain, neck pain and shoulder fatigue while using your computer workstation:

- Adjust brightness and contrast to optimum comfort.
- Position the monitor directly in front of user to avoid excessive twisting of the neck.
- Position the monitor approx. 20-26 inches (arm's length) from user.
- Tilt top of the monitor back 10 to 20 degrees.
- The top of the viewing screen should be at eye level when the user is sitting in an upright position (NOTE: Bifocal wearers may need to lower monitor a couple of inches).

Chair:

Sitting for long periods of time can cause increased pressure on the intervertebral discs. Try the following suggestions:

- Adjust height of backrest to support the natural inward curvature of the lower back.
 - It may be useful to use a rolled towel or lumbar pad to support the low back.
 - The backrest angle is set so that your hip-torso angle is 90 degrees or greater.
- Adjust height of chair so feet rest flat on floor (use footrest if necessary).
 - Sit upright in the chair with the low back against the backrest and the shoulders touching the backrest.
 - Thighs should be parallel to the floor and knees at about the same level as the hips.
- Adjust height and/or width of armrests so they allow the user to rest arms at their sides and relax/drop their shoulders while keyboarding.

Desktop:

There is no specific height recommended for your desktop; however, the working height of your desk should be approximately elbow height for desk work. To allow for proper alignment of your arms your keyboard should be approximately 1 inch to 2 inches above your thighs.

If a document holder is used, it should be placed at approximately the same height as the monitor and at the same distance from the eyes to prevent frequent eye shifts between the screen and reference materials.

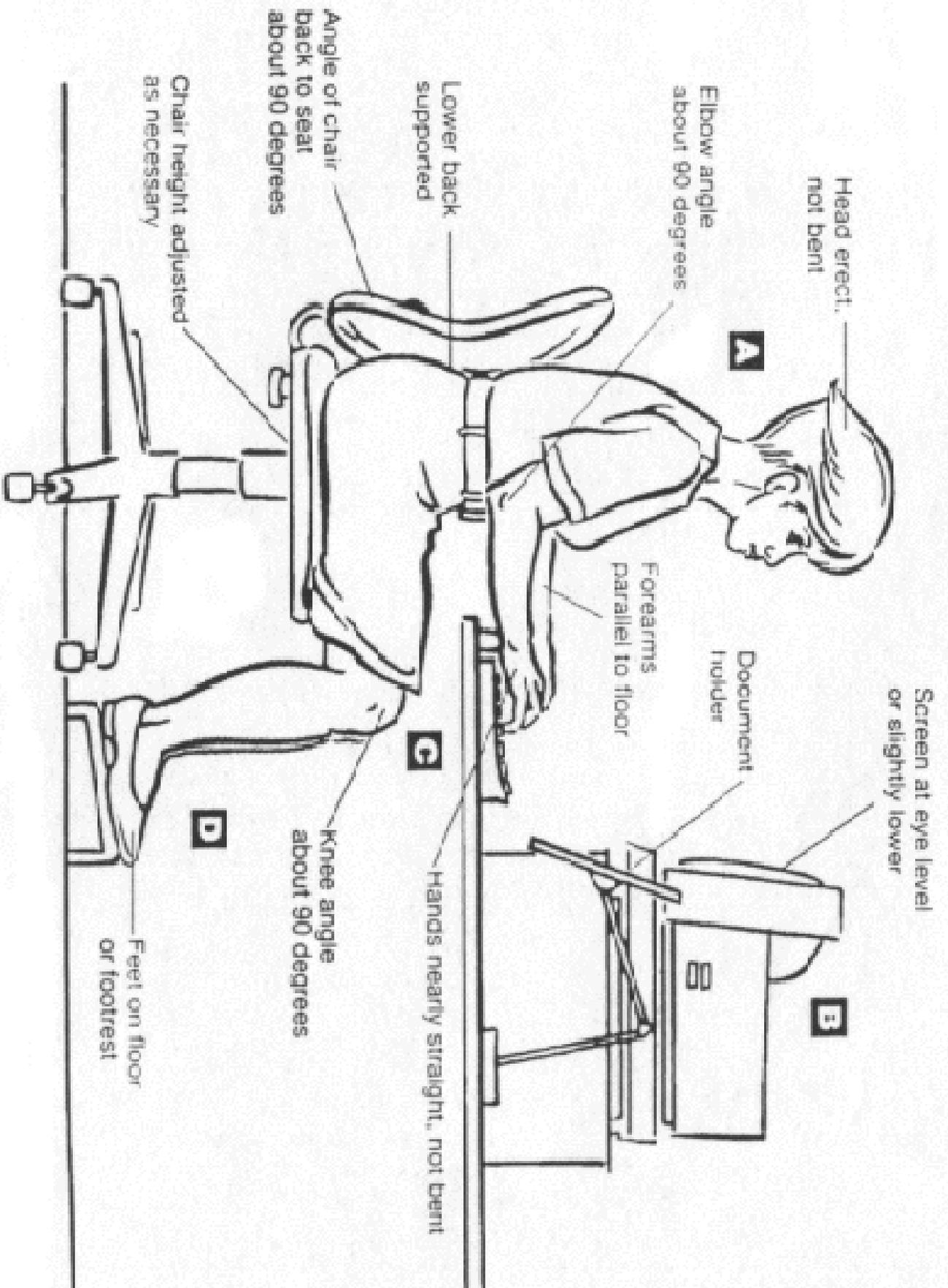
Keyboard & Mouse:

Many ergonomic problems associated with computer workstations occur in the forearm, wrist, and hand. Continuous work on the computer exposes soft tissues in these areas to repetition, awkward postures, and forceful exertions.

The following adjustments should be made to your workstation to help prevent the development of an ergonomic problem in the upper extremities:

- Adjust keyboard height so shoulders can relax and allow arms to rest at sides (an articulating keyboard tray is often necessary to accommodate proper height and distance).
- Keyboard should be close to the user to avoid excessive extended reaching.
- Forearms parallel to the floor (approximately 90 degree angle at elbow).
- Mouse should be placed adjacent to keyboard and at the same height as the keyboard (use articulating keyboard tray if necessary).
- Avoid extended and elevated reaching for keyboard and mouse. Wrist should be in neutral position (not excessively flexed or extended).

Do not rest the hand on the mouse when you are not using it. Rest hands in your lap when not entering data.



Proper Lifting Posture

Lifting from the Floor - Squat down as close to the object as possible with your back straight, making sure you're not hunched over. Stand up, using your legs to lift the load, NOT YOUR BACK. Do not twist or bend your body while lifting. If you must change angles pivot your feet. It can hurt your back to twist while lifting.

Lifting from Overhead - If a load is above your shoulders, use a step stool to elevate yourself until the load is at least chest level— preferably waist height. Pull the object close to your body and then lift. Remember to maintain your alignment — use your arms and legs to do the work.

Exercises

It doesn't take much time to improve the strength and flexibility of your back. In just 10 minutes a day, you can perform a few exercises, which can prevent a lifetime of low back pain!

Posterior Pelvic Tilt – Stand with hands on hips, feet parallel, knees slightly bent, back arched, and pelvic tilted forward (butt sticking out). Tilt the buttocks in while tightening the muscles. 15-20 reps

Torso Rotation – standing feet parallel, hands on the shoulders. Twisting through the waist to the right, back to the center and to the left. 15-20 reps

Bird Dog Pose – place hands under shoulders and knees under hips, extend one leg straight back and opposite arm straight out, balancing on opposite hand and knee. Return to all fours and complete exercise on the other side. 10-15 reps on each side

Superman – Laying on stomach with arms forward, simultaneously lift upper body and legs of the floor (Keep Legs straight) 15-20 reps

Plank – elbows under shoulders, on knees or toes, keeping the torso straight. Hold 30sec-1min.

Partial Sit-Up – laying on the back with knees bent and hands at base of head. Slowly raise your head and shoulders off the floor, hold for two seconds and return to the starting position. 15-20 reps

Bridges– lie on back with arms along your side, palms down and knees bent. Push down on your feet and lift buttocks of the floor. Hold for two seconds and lower. 10-15 reps

Stretches

Nagging back pain may be the result of ergonomic workplace inadequacies or poor habits you've developed while sitting at your computer all day. Throughout the day taking five minutes to perform stretches can improve your physical and mental health.

GET ACTIVE AT WORK



Shoulder Shrugs
 - Raise shoulders towards ears
 - Hold
 - Relax downward to a normal position



Upper Back Stretch
 - Interlace fingers behind head with elbows out
 - Pull shoulder blades together
 - Hold 5 seconds, then relax



Neck Tilts
 - Keep shoulders relaxed and arms hanging loosely
 - Tilt head sideways, first to one side, then the other
 - Hold 5 seconds on each side



Wrist/Forearm Stretch
 - Place hands palm to palm
 - Move hands downward, keeping palms together and elbows even
 - Hold 5-8 seconds



Wrist/Forearm Stretch
 - Place hands palm to palm
 - Rotate palms around until they face downward keeping elbows even
 - Hold 5-8 seconds



Hand/Finger Stretch
 - Separate and straighten fingers
 - Hold 10 Seconds
 - Bend fingers at knuckle and hold 10 seconds
 - Separate and straighten again



Back and Hip Stretch
 - Bend left leg over right leg and look over left shoulder
 - Place right hand on left thigh and apply pressure
 - Repeat for right side



Back Stretch
 - Lean forward
 - Keep head down and neck relaxed
 - Hold 10-20 seconds
 - Use hands to push yourself back up



Upper Body Stretch
 - Interlace fingers, turn palms upward and straighten arms above head
 - Elongate arms to stretch through upper sides of your rib cage
 - Hold 10-15 seconds
 - Breathe deeply



Side Stretch
 - Hold left elbow with right hand
 - Gently pull your elbow behind your head to feel stretch in shoulder or back of upper arm
 - Hold 10 seconds
 - Don't overstretch or hold breath
 - Repeat on right side



Hamstring Stretch
 - Sitting, hold onto upper left leg just above and behind the knee
 - Gently pull bent knee toward chest
 - Hold 15-20 seconds
 - Repeat on right leg



Neck Stretch
 - Sit or stand with arms hanging loosely
 - Gently tilt head forward
 - Keep shoulders relaxed and downward
 - Hold 5 seconds