

Guide to Office Ergonomics

Musculoskeletal Injury Prevention

S•T•A•B•L•E stands for:

- S** **MAINTAIN THE NATURAL CURVES OF YOUR SPINE.**
Butt out, chest out, eyes forward! Put the soft tissues of your back in the most efficient position possible before you start. Keep your lower stomach muscles tight.

- T** **AVOID TRUNK TWISTING.**
Point your feet in the direction your arms are reaching! Shoulders and hips stay in the same plane (move as a unit).

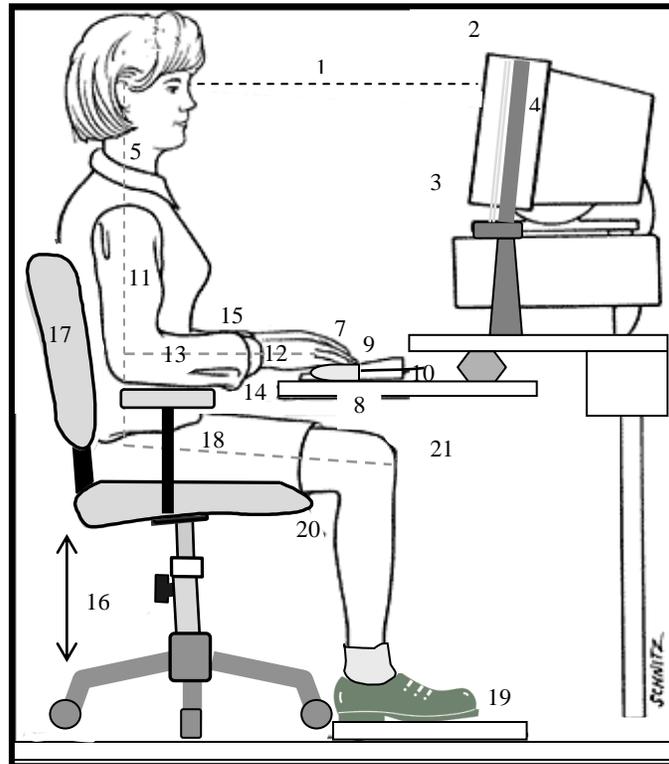
- A** **KEEP YOUR ARMS CLOSE TO YOUR BODY.**
Keep your elbows in and down! Keeping your arms close to your body gives you better leverage and better control over your load.

- B** **MAINTAIN A WIDE BASE OF SUPPORT.**
Use a staggered stance; feet shoulder width and half a step forward! Keep a slight bend in your knees. You will be better able to deal with forces that Challenge your balance.

- L** **USE YOUR LEGS.**
Your knees and hips should be moving, NOT your spine! The leg muscles Are designed for power and endurance.

- E** **EVALUATE THE LOAD, ENVIRONMENT, ABILITIES AND LIMITATIONS.**
Evaluate the load, size shape, ability, hazards, stability, etc. as well as weight. Evaluate your environment. From where are you coming? Where are you going? What is your route? Evaluate your own abilities and limitations. Recognize these may change from year to year, week to week, hour to hour, task to task. Many factors may influence your abilities at any given time.

COMPUTER WORKSTATION - ERGONOMIC "QUICK - LIST"



✓ CHECK YOUR COMPUTER WORKSTATION

- 1. The monitor should place the top line of text level with your eyes. Staff that wear bifocals may need a lower screen.
- 2. The monitor should be 33-70 cm (13-28 inches) from your eyes or approximately arm's length away.
- 3. To reduce eyestrain, adjust the monitor contrast and brightness to comfortable levels.
- 4. Any document holder should be the same height and viewing distance as the monitor.
- 5. When working, your head should remain upright, with your ears directly over your shoulders.
- 6. The monitor should be placed in line with the keyboard to reduce awkward neck posture.
- 7. The mouse and keyboard should be the same height. Any keyboard tray should be large enough to also fit the mouse.
- 8. A mouse pad should be used to allow the mouse to move properly.
- 9. The mouse and keyboard should be as close to each other as possible.
- 10. The keyboard should be flat with the rear legs folded in - to promote a neutral or straight wrist posture.
- 11. The shoulders should be relaxed with your elbows close at your sides.
- 12. Use the entire arm when moving the mouse and keep the wrist straight.
- 13. The elbows should be bent at 90 degrees with the forearm horizontal when using the keyboard or mouse.
- 14. To create a straighter wrist posture, the palms should not be resting on any surface when typing.
- 15. For frequent keyboard and mouse use, the height of your chair should allow your wrists to be straight.
- 16. The chair must be height adjustable.
- 17. Sit with your back against the backrest to support the lower and middle back.
- 18. The thighs should be resting horizontally with a 90-110 degree angle at the hips.
- 19. Your feet should rest flat on the floor or, if required, use a footrest.
- 20. There should be clearance between the seat and the back of the thighs or knees.
- 21. There should be enough space beneath the work surface to move your legs freely without contact from the desk or keyboard tray.
- 22. If your workstation is shared, take the time to adjust it to fit you before you start work each day.
- 23. Take regular breaks away from the computer to stand, stretch and walk around.
- 24. Practice the 20-20-20 rule. After 20 minutes of computer work, look 20 feet away for 20 seconds.
- 25. Adjust your posture and vary you work activities throughout the day to use other muscles.

Office Chair

- The standard office chair should offer proper support and should be adjusted to fit you.
- If you already have a proper chair at your workstation, it may need adjusting to fit you.

1/ Adjusting your seat height



- Stand in front of your chair and adjust the height so the front edge of your chair touches the bottom of your kneecap.

2/ Adjust your backrest



- Run your hand down the backrest, find the bulge, and place a piece of tape over this spot. Place your hand over the curve of your lower back and sit back in your chair. Adjust the height of the backrest so that the tape (lumbar curve of the chair) rests level with your hand.

3/ Adjust your backrest angle



- Try adjusting the angle of the backrest to an upright posture. Your spine should be placed in an erect position (with your shoulders directly over your hips) or slightly reclined.

4/ Adjust your seatpan



- Adjust the seat pan depth so that when you sit with your back supported by the chair, you have two to three fingers' width between the front edge of chair and the back of your knee

5/ Adjust arm height



- Adjust the armrest height, positioning the armrests at the same height as your elbow when your arms are by your side and your shoulders relaxed.
- Adjust the width between the armrests. Positioning the armrest as close to the side of the seat pan as possible is typically the most comfortable.

Talking on the Telephone



Incorrect Position



Correct Position

http://www.osha.gov/SLTC/etools/computerworkstations/components_desk.html

- Consider using your non-dominant hand or use the speaker phone option. Never cradle the telephone handset between your shoulder and ear.
- If you use the telephone for more than one hour per day and need to use your hands at the same time, use a headset to reduce awkward neck postures.

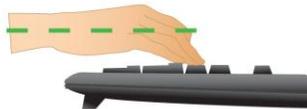
Data entry and Hand Placement

Don't bend your wrists up or down (shown) while keyboarding. Keep your wrist straight during mouse and keyboard work. The keyword is "hover" while typing. Do not bend your wrists from side to side and when mousing, try to move your whole arm instead.

RIGHT!



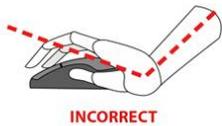
RIGHT!



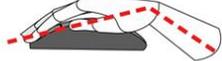
WRONG!



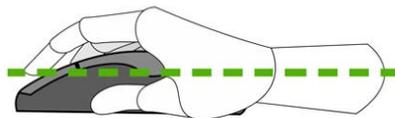
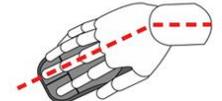
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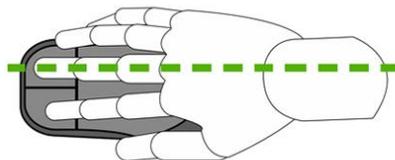
INCORRECT



INCORRECT



CORRECT



Keep your shoulders, arms, wrists, and hands relaxed and comfortable as you work...

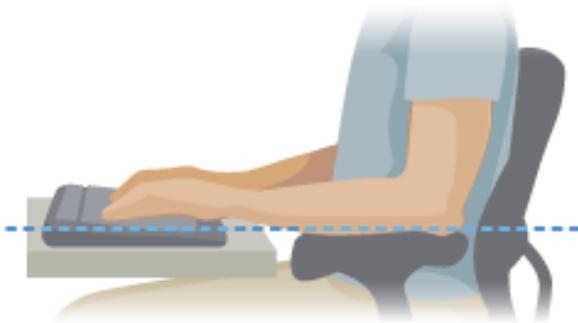
To keep your shoulders, arms, wrists, and hands relaxed as you work, let them hang loosely at your sides for a moment, allowing them to dangle toward the floor and to become relaxed. Try to maintain this relaxed feeling while you work.

- Position the mouse at the same height and directly beside the keyboard and keep your elbows close to your sides to minimize reaching.
- Try using your left hand to mouse. It takes a bit of practice (maybe a week or two!) and helps to reduce reaching for the mouse. Switch mouse functions by going to Start (bottom left corner of your screen)/settings/control panel/mouse/buttons/button configuration.
- If you are short of room and do not use your number pad, try a mouse bridge.



Keyboard Tray Placement

6/ Adjust keyboard height



- Adjust the height of the keyboard tray to position your keyboard at elbow height, when your wrists are neutral and your fingers are on the middle row of keys.
- You may choose to place your keyboard on the desktop and/or have to raise your chair height to accomplish this. If so, then use a footrest to raise your feet a similar amount.

7 Adjust your keyboard tray angle



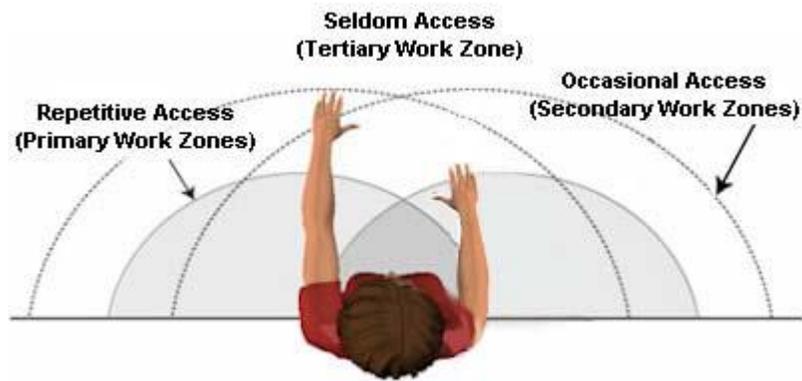
- Adjust the angle of the keyboard tray so that your wrists are neutral, not bent up or down. (picture of neutral wrist posture)
- Try folding away the keyboard feet (tabs on the underside of the keyboard) so that the keyboard lies flat.

9/ Align your keyboard and monitor



- Line up the F5 key (on most conventional keyboards) with both the manufacturer's (HP) symbol on the monitor and with your bellybutton by (trying all of the following):
 - Moving the location of your keyboard,
 - Adjusting the position of your keyboard tray (if you have one),
 - Moving the location of your monitor,
 - Moving yourself,
 - Reconfiguring your desk

Organizing Your Workspace



http://www.osha.gov/SLTC/etools/computerworkstations/components_desk.html

Primary and secondary work Zones. Place items that you use frequently in the primary zone and items that you use occasionally, or for short periods of time, in the secondary work zone.

Document Placement



1. Screen and document holder are close together and same distance from eye



2. In line document holder

Potential Hazards –

- Documents positioned too far from the monitor may require awkward head postures or frequent movements of the head and neck to look from the monitor to a document. Those awkward postures can lead to muscle fatigue and discomfort of the head, neck, and shoulders.

Possible Solutions –

- Document holders should
 - Allow you to place documents at or about the same height and distance as the monitor screen (Figure 1), and
 - Be stable when loaded with heavier documents such as a textbook (Figure 2).
- A document holder can be positioned directly beneath the monitor (Figure 2). This provides a sturdy writing surface, if written entries are necessary, and reduces frequent movement of the head, neck, or back.
- Task lighting on the document should not cause glare on the monitor.

Glare Control in the Office



Here are some tips to decrease glare in your office:

- Use diffusers on overhead lighting
- Attach an “anti-glare” screen to the computer monitor
- Use vertical blinds to block out blinding sun rays
- Have matte finish on walls and floors
- Do not use too much white paper on the work surface
- Use task lighting over writing area and document
- Monitor glare control:
 - ✓ Brightness and contrast adjusted
 - ✓ Light-coloured background on colour monitor
 - ✓ Monitor parallel with overhead lights and perpendicular to window
 - ✓ Monitor at right angle with work surface

Monitor Placement



Incorrect Set Up

Typical workstation set up: keyboard, document and monitor are not aligned, which causes repetitive, one directional twisting of the neck, shoulders and back – a long term health danger.



Correct Set Up

Ergonomic workstation set up: alignment of keyboard, document and monitor precludes dangerous twisting and minimizes the risk of associated injuries.

Monitor Height



- Adjust the monitor height up or down so that the top line of computer text is slightly below or at your eye level when looking straight ahead.
- Depending on your height, consider placing the monitor directly on the desktop or on the CPU/hard drive
- **Exception:** If you wear bifocals, trifocals or progressive lenses you may need to position the monitor lower than recommended. Adjust the monitor height so that you can clearly see all areas of the screen by moving your eyes only, while your head and neck remains in a neutral position (your neck is not bent back or down). If this proves difficult, you may wish to discuss single lens, computer-dedicated glasses with your optometrist.
- For many people this quick check can help - hold out your arm your monitor should be at or just beyond your finger tips.
- Push the monitor back or bring it toward you until you can easily and comfortably view the screen with your head in a neutral position (not bent up or down) while sitting with your back against the backrest of your chair and your ears over your shoulders and hips

Dual Monitors



- If you refer to one monitor more often, move that monitor directly in front of you. If you refer to both monitors equally, move the monitors as close together as possible and align the middle of the keyboard to where the monitors meet.