ERGONOMIC EVALUTION CHECKLIST

WORK STATION AREA

Are the following adequate?

- Space for phone, equipment (VDU, keyboard, printer, etc)., work hands and wrist during keyboard use, and document holder?

- Distance behind screen to enable proper positioning of VDU so operator can achieve comfortable posture (screen tilts from 5° forward to 15° backward)?

- Space for feet and legs under work desk (do wires, equipment stored material prevent effective use of space under work table) (recommended - 27 inch deep by 27 inch wide open space)?

Is VDU positioned so that glare, distractions, and screen viewing angle are acceptable?

Is the workstation height adjustable so that arms, wrists, legs, etc. are comfortable and at an acceptable angle?

VDU EQUIPMENT

Is VDU screen adjustable vertically and horizontally?

Has user put objects under VDU to raise it or adjust angle?

Is there adequate viewing distance between user and screen (adjustable between 15 and 32 inches)?

Is keyboard height acceptable (29-31")?

Does keyboard have non-skid base?

User Questions:

- Do you find your chair supportive (i.e., lower back)? ❾ Yes ❾ No
  - Is it fully adjustable? ❾ Yes ❾ No
  - Do you know how to adjust it? ❾ Yes ❾ No

ILLUMINATION / GLARE

Is background (general) illumination adequate?
(i.e., about 40-70 foot-candles)? ❾ Yes ❾ No ❾ N/A

Are there glare sources (unshaded windows, bright floor / desk/ keyboard / screen surfaces, etc.) in field of view. ❾ Yes ❾ No ❾ N/A

Are window shades effectively used? ❾ Yes ❾ No ❾ N/A

Is "parabolic" lighting provided? ❾ Yes ❾ No ❾ N/A

User Questions:

- Do you find the room too bright to easily see the PC screen? ❾ Yes ❾ No ❾ N/A
- Do you find the room to dark to read paperwork? ❾ Yes ❾ No ❾ N/A
- Is there annoying glare/reflection on the PC screen? ❾ Yes ❾ No ❾ N/A

ELEMENTS FOR GOOD POSTURE

Is item listed available and used effectively?

- Ergonomically Designed Chair (height adjustable over 15-20 inches above floor and at least 16 inches wide) ❾ Yes ❾ No ❾ N/A
- Desk Height Adjustment ❾ Yes ❾ No ❾ N/A
- Detachable Keyboard ❾ Yes ❾ No ❾ N/A

Is the posture of the operator good (sits up straight, feel under table, arms at right angle at elbow, hands/wrists supported, head not bent up or down to see screen, etc.)? ❾ Yes ❾ No ❾ N/A

User Questions:

- Do you have enough knee room? ❾ Yes ❾ No ❾ N/A
- Anything seem "awkward" when seated at your PC? ❾ Yes ❾ No ❾ N/A
  - Reaching for things? ❾ Yes ❾ No ❾ N/A
  - Twisting or bending to get in the right position? ❾ Yes ❾ No ❾ N/A
- Is there adequate space for papers, desk objects? ❾ Yes ❾ No ❾ N/A
- Does the presence of the PC seem to interfere with your non-PC work? ❾ Yes ❾ No ❾ N/A

Evaluation Guidelines

COMFORTABLE COMPUTING

Workstations with Video Display Terminals (VDTs) should be as flexible as possible to allow for difference in operator height and personal preference. Individual operator control of keyboard height, screen height screen brightness and contrast, leg room, viewing distance, workstation illumination level, seat adjustment, choice of armrests or no armrests, and foot support should be important considerations if comfort and productivity are to be maximized.

A. Posture

1. Back - Straight or slight rear tilt (90-105 degrees) and supported.

2. Wrists and hands - Should be in the neutral position and a wrist rest is preferred.

3. Head - Slight downward tilt.

4. Feet - Should be flat on the floor or a footrest.

B. Adjusting the Workstation

1. Chair - Should be adjusted so that keyboarding can be done with wrists, hands and back in the appropriate position(see figure 1).

2. Keyboard - Should be adjusted so that wrists are relatively straight and supported.

3. Screen - The top should be at the worker's eye level.

4. Work Surface - Should provide adequate space to prevent extended reaching, and minimal clutter and disorder.

5. Provide a minimum clear space of 27 inches under the workstation.

CHAIRS

1. Adjust chair height so the worker's thighs and lower legs form an angle or about 90-135 degrees.

2. Backrest should be adjusted to offer good support to the lower back. Avoid sitting in middle of seat pan.

3. Adjust chair height so that the worker can keyboard with relatively straight and

level wrists and hands. Elbows about level with work surface.

4. Foot rests should be provided so that thighs don't support all of leg weight, and front of seat pan does not come into contact (pinch) with thigh and lower leg.

KEYBOARD

A. Keyboard should be so that arms are at 90 degrees at the elbow and wrists/hands are relatively level and straight. Wrist support should be used.

B. Avoid resting wrists against sharp edge or work surface.

SCREEN

A. Adjust screen height so that the top of the screen is at about eye level.

B. Adjust the viewing angle back 5-15 degrees.

C. Adjust the viewing distance to about 20 inches (18-22 inches); minimum 12 inches; maximum 28 inches.

D. Adjust brightness and contrast controls to adjust for changing daylight.

E. Tilt screen to minimize reflected glare.

WORK SURFACE

A. Adjust copy holder/stand to the same height as the screen.

B. Minimize head movement from copy to screen. Use eye movement; head relaxed.

EMPLOYEE CONTROL FACTORS

A. Work Breaks

Any employee whose job tasks requires concentration, but offers little mobility, needs periodic breaks and/or changes in their work pattern. In addition, it is the recovery value of a break that is important and not the duration.

1. Normal lunch and coffee breaks should be scheduled so that there is a break after approximately two hours of work.

2. Associates should be encouraged to leave the workstation and move around during such breaks.

3. When alternate duties are part of the job function, they should be scheduled in such a way that they break up the time spent at the keyboard.

B. Increasing Comfort

Regardless of how or when the employees adjust their posture or work areas, there may be times when their level of concentration is such that discomfort or a sense of fatigue sets in. Below are some suggestions to help prevent this from happening.

1. Periodically, stretch arms and legs while sitting or standing.

2. Rotate head slowly from one side to the other to relax the neck muscles.

3. Roll should forward several times, then backwards several times.

4. Stand up with arms down at sides and breathe in slowly through the nose. Fill the lungs and exhale slowly through the mouth.

5. Make a tight first with hands and hold for a second; then spread fingers apart as far as possible.

6. Close eyes, cup hands and place over eyes. After holding this position for one minute, open eyes with hands still covering them, slowly spread finger to let eyes adjust gradually to the light, and take hands away.

7. Look at an object at least 20 feet away and focus on it for five to ten seconds.

8. Blink eyes slowly several times while taking deep breaths.

More exercise are given in Appendix F, and in the Stretch and Flex video.

LIGHTING AND GLARE

A. Don't face into a window. Place desk, when possible, to be parallel to any line of windows.

B. Place VDT so that ceiling lights are beside the VDT workstation, not directly in front of it.

C. Rows of VDT stations should be oriented at right angles to the overhead light fixtures, or in other words, fixtures parallel to the line of vision.

D. Illumination levels should be uniform throughout the work area, and about 50-70 candles (500-700 Lux) at the task level.

E. The ambient sound level should be minimized to eliminate distractions that can reduce operator efficiency.

F. Task lighting may help to reduce shadows on work surface.

G. Cover lighting fixtures with baffles, differs or parabolic reflectors.

H. Use matte surface colors to minimize reflected glare.

I. Avoid strong color contrasts and brightness levels between screen, surface and surround.

OFFICE ERGONOMICS
SELF_HELP IN IMPROVING WORKING COMFORT

SYMPTOM	WHAT TO CHECK
Backache	• Chair height, design - foot support, back rest • Workplace height - keying/screen • Location of VDT and source documents • Contrast of VDT screen • Bifocals/trifocals worn • Time on task
Neck and Shoulder Discomfort	• Seat height, chair design • Work material management • VDT screen contrast • Environmental stressors • Glasses worn
Arm, Hand, Wrist Discomfort	• Armrest adjustment • Work material arrangement • Height adjustment - poor wrist postures • Highly repetitive keying - time on task
Leg Discomfort	• Seat height • Foot Support • Leg clearance • Time on task
Blurred Vision	• VDT screen contrast • Glare/reflections on screen • Office lighting level
Screen Blurry Distance or Near Objects Blurring	• Viewing distance • Time on task • Eyeglasses prescription • Viewing distance
Double Vision	• Viewing distance • Arrangement of work - VDT screen & source doc. • Time on task • Eyeglasses prescription
Color Vision	• Green Phosphor on VDT screen • Color blindness • VDT contrast
Burning Eyes Eye Strain - Squinting	• Time on task • VDT screen contrast - glare, reflections • Viewing distance
Headaches	• Environmental stressors • Time on the task