CHAPTER VI

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During this study few area were identified where there is scope for improvement in office ergonomics, by which employees can get more comfortable environment. Management of companies and banks can implement this suggestion and can do the needful for better, safe and comfort environment in their organization. Following are the suggestions

6.1 SUGGESTIONS ABOUT CHAIR

Chair is the single most important component of a healthy working environment. In fact, it is what most people should adjust first before modifying their keyboard or monitor position. If you do not have an adjustable chair, you may need to think creatively to obtain an ideal sitting posture. Lumbar support cushions and footrests are ideal solutions.

The mechanisms for adjusting the chair should be easy to locate and adjust with one hand while seated. One should understand the functions of the mechanisms, and know how to operate them.

6.1.1 SUGGESTIONS ABOUT SEATING ARRANGEMENTS

- First adjust the chair height for the user and then adjust the work surface to accommodate the chair.
- When working at the keyboard, adjust the seat pan height so that your elbows are the same height as the home row of the
keyboard and so the wrists are neutral while typing.

- Adjust the altitude of the seat pan so that the highest point of the seat is just under the kneecap.
- For adequate thigh carry, adjust the depth of the seat by moving the backrest onward and backward so that the clearance between the front frame of the seat and the lower part of the legs fits comfortably.
- Adjust the armrest height so that your elbows rest unconscientiously on the armrests with your upper arms straight up and down and your forearms straight or slightly downward.
- Adjust the height of the backrest so that it supports the little of the lower back. Note: back of chair should not "give" when the user leans backside in the chair.
- Foot should rest flat on the floor. If your feet do not rest plane on the floor after properly adjusting your chair, a footrest must be used.

6.1.2 SUGGESTIONS ABOUT POSTURE

- Ensure that your chair and workstation are adjusted correctly. Place frequently used items within an easy arm's arrive at and items that are used less often additional away.
- Avoid long periods of working in one location and repeating the same motions. Vary tasks to change body location.
- Eliminate monitor glare by properly position your desk and adjusting your illumination for specific tasks.
6.2 SUGGESTIONS ABOUT WORKSTATION

- The work surface should be installed/adjusted to be just about 25" - 34" high for seated work and to fit a range of operator sizes (ensure that adjustment can be made easily).
- The space beneath the work facade should have sufficient room above your legs to allow for ranges of body postures. The knee well should be 30" by 19" in depth.
- The work surface should have sufficient space for equipment (monitor, telephone, and stapler, tape dispenser) to be situated close to the user to minimize bending, flexing, or slanting of arms, wrists, or hands.
- A matte close on the work surface is ideal to reduce light reflection.
- The keyboard and mouse should be placed jointly on a platform that is at least 28" wide, openly in front of you and directly beneath the monitor.
- The keyboard and mouse platform should be easily move side to side, up and down, in and out, and lock firmly in place.
- The height of the keyboard/mouse platform should allow your hands to rest evenly on keyboard or mouse with your forearms using the chair armrests for support.

6.3 SUGGESTIONS ABOUT KEYBOARD AND MOUSE

- The keyboard height should allow straight wrists and a 90-degree angle among the upper arm and the forearm (angle should adjust by 20-degrees up -down for individual preference and episodic adjustment).
• The keyboard height and angle must be adjustable.
• The keyboard and mouse should have a wrist rest and or mouse rest available for hold when taking mini-breaks.
• The standard keyboard must be replaced with an alternative keyboard and alternative mouse if a musculoskeletal disorder develops.
• The keyboard must be able to support “short-cut software”

6.4 SUGGESTIONS ABOUT PERIPHERAL ITEMS

• Ensure peripheral items that are used frequently by employees are placed closest to the user so that they can be conveniently and at ease reached.
• Use an in-line document holder that sits between the keyboard-keyboard tray and screen and is aligned with body midline so that all you have to do is look down to see the documents and raise your eyes towards the screen.
• Use a screen-mounted document container and position this to the equal side of your screen as your dominant eye.
• Use a freestanding document container and position this next to the side of the display and slightly angle it so that it follows a curve from the surface of the screen.
• To reduce the stress in your neck, a receiver may be beneficial to reduce stretching and improperly holding that phone.

6.5 SUGGESTIONS ABOUT STORAGE LOCATION

• Materials should stored in an accessible area (between 15" - 48” above floor).
• Storage area should allow 30" x 48" clear maneuvering space along with accommodate right or left-hand access.
• Deep storage should have “lazy susan” carousels, pull-out shelves or drawers with full-extension ball bearing slide
• Stored materials should have labels facing out with information symbols, or color-coding.

6.6 SUGGESTIONS ABOUT LIGHTING

• Be aware of florescent light as well as window lighting. Use glare screen to reduce glare on the monitor screen. You can use task lighting.
• Overhead light can cause glare and can be reduced by use of a panel diffuser (diffuser should direct the light straight downward rather than out across the room).
• Lighting with dimmer control should be used with supplemental task lighting.
• Task lighting is designed to boost lighting levels in a high localized area, so that overall lighting can be reduced to cut glare
• Reduce direct sunlight by placing blind or curtains on all the windows.
• Cover polished work surfaces with pads or blotters to reduce glare.
• Reposition the angles and/or slope of the computer screen to reduce glare.
• A non-glare screen overlay should consider reducing unwanted glare.
6.7 SUGGESTIONS ABOUT PROPER MONITOR PLACEMENT

- The monitor should be placed perpendicular to windows or in such a location that the windows are not directly in front of or behind the monitor.
- The monitor should be placed on a solid, stable surface directly in front of your chair and directly over the center of the workstation.
- The monitor's contrast and brightness controls should adjust to improve the screen image.
- The display monitor should be placed so that your eyes are at least an arm's length from the screen (approx. 18” – 28” away from eyes).
- The monitor should be supported so that top edge of the screen is at your eye level (lower if you wear bifocals).
- To reduce stress to your eye muscle, occasionally look away from your monitor (look out a window) and refocus your eyes on an object at least 30 feet away.
- To keep your eyes well lubricated, you should blink often.
- For ultimate clarity, a monitor with at least 1024 x 768 resolution and dot pitch of .28 or less should be used.
- For better visual clarity, your monitor screen should be cleaned at least twice a week.

6.8 SUGGESTIONS ABOUT HEALTHY WORK PRACTICES

- Adjust your chair, work surface, keyboard platform and keyboard and mouse to maintain a neutral position.
• Sit in a comfortable upright position with your foot flat on the floor (or on a footrest), thighs fully support by the chair seat, with no force on back of the knees.

• Alternate tasks all through the work shift (stop using keyboard, lean back and proofread your work, retrieve work from printer, files documents, make phone calls).

• Wherever possible, distribute and alternate tasks among right and left hands and alternate between use of keyboard and mouse (use keystroke equivalents to mouse).

• Change your posture frequently throughout the whole day.

• Use minimal power when typing on your keyboard.

• Place a document holder subsequently to your computer screen at approximately the same angle and height of the display screen.

• Work to minimize vibration from keyboard and other office equipment.

• Monitor sound level to ensure that communication can crop up without a great deal of interfering from external noise.

6.9 SUGGESTIONS ABOUT HEALTH FACTORS

• Keep up a comfortable temperature, good air quality as well as adequate circulation in your workstation at all times.

• Move frequently throughout the day to help circulation.

• You should have usual general medical and eye examinations as suggested by a physician.

• Get adequate rest, usual exercise and maintain a healthy diet.
6.10 SUGGESTIONS ABOUT WORKPLACE EXERCISES

- Take regular breaks for simple, brief exercise (shoulder shrugs, neck rolls, ankle rotations, leg extension overhead stretches, hand shakes, finger spreads).
- Stand up every 45 minute to give your muscles a good stretch.
- Every 20 minutes, relocate your eyes away from the computer screen to an outside window or other article at least 25 feet away.
- First adjust the chair height for the user and then adjust the work surface to accommodate the chair.
- When working at the keyboard, adjust the seat pan height so that your elbows are the same height as the home row of the keyboard and so the wrists are neutral while typing.
- Adjust the altitude of the seat pan so that the highest point of the seat is just under the kneecap.
- For adequate thigh carry, adjust the depth of the seat by moving the backrest onward and backward so that the clearance between the front frame of the seat and the lower part of the legs fits comfortably.

- Adjust the armrest height so that your elbows rest unconscionably on the armrests with your upper arms straight up and down and your forearms straight or slightly downward.

- Adjust the height of the backrest so that it supports the little of the lower back. Note: back of chair should not “give” when the user leans backside in the chair.
• Foot should rest flat on the floor. If your feet do not rest plane on the floor after properly adjusting your chair, a footrest must be used.

6.11 FUTURE SCOPE OF THE STUDY

Ergonomics is developing in many areas. But still there is lots of scope to implement ergonomically techniques for betterment and to make work more comfortable and easier for the human being. For the future study this major area can be included. Research can be done in the following areas.

I In Man-Machine System

A man-machine system is a system where one or more workmen/human beings work in relation with one or more machines, devices or equipment. Thus it research can be carried out in following sectors.

• Manufacturing Industry
• Automobile Industry
• Hospitals
• Construction

II Consumer Goods and Services

Ergonomics is appropriate in the design of consumer goods starting from design of tooth brush and other substance such as dinning set; sofa set; kitchen ware, house hold fittings table and shoes etc. Similarly protective apparatus such as safety goggles, adverse weather and space clothing, gloves, crash helmets. So in this field research can be carried out in future.

III Study can be done on school and colleges ergonomics status.

IV There is lot of scope for this study outside Pune city.

V Comparative study can be carried out with different sectors.