

Appendix – Assessment criteria

The following list describes the “ideal” office ergonomics conditions. During an assessment, we review all of these criteria, make changes where we can, and summarise recommendations in a report. Ergonomics guidelines used to assess the workstation: CSA Z412-24 Group Office ergonomics – An application standard for workplace ergonomics, 2017; ANSI/HFES 100-2007, Human Factors Engineering of Computer Workstations, 2007; BIFMA G1-2002, and Ergonomics guideline for VDT furniture used in office workspaces, 2002).

Seat pan height The seat pan height should allow the thighs to be fully supported, with the hips and knees at approximately 90-degree angles. If the seat pan is raised to allow an employee to work at a desk or keyboard that will not adjust low enough, a footrest is required.

Lumbar support The seat back should provide a pronounced lumbar (low back) support which can be adjusted to fit into the lumbar curve of the employee's back. The backrest should contact the employee's back from side-to-side, and vertically from the shoulder blades to the low back area.

Seat back angle The seat back should be upright or slightly reclined, providing comfortable back support while working at the desk and computer.

Backrest height The backrest should support the back from the lumbar curve to just below the shoulders. Backrest support at the level of the neck and head is unnecessary for most employees.

Armrest height Armrests are rarely “required”, from an ergonomist's perspective. If present, they should adjust to a comfortable height, just below elbow height. Armrests should not be used while typing, and they should never prevent the employee from sitting close to the keyboard or desk.

Seat pan depth A gap of 2-3 fingers' width, between the back of the calf and the front edge of the chair should allow the employee to sit comfortably with the hips and knees at 90-degree angles. The employee should sit all the way back in the chair.

Footrest A footrest is not required if the employee can sit comfortably at the workstation in a relaxed posture with the feet resting comfortably on the floor. If a footrest is required, usually to accommodate a non-adjustable desk or keyboard, then it should be appropriate for the employee's height, and should allow him/her to sit with the hips, knees, and ankles at 90-degree angles.

Viewing distance and readability Viewing distance to the screen and font size are appropriate if the employee does not lean forward or backward, or squint, to view the screen, allowing a neutral and relaxed sitting posture.

Screen height The screen height should allow the employee to view text on the screen with a neutral, relaxed neck posture. For a standard 17" screen, the top of the screen should be positioned at eye level. For a large screen, the top of the screen should be positioned approximately 2 inches above eye level. Bifocal wearers may require a lower screen position to ensure neutral neck postures.

Screen position The monitor should usually be positioned in-line with the keyboard, allowing the employee to view the screen without twisting her/his neck. With dual screens, the most-often-used screen should be in-line with the keyboard, and the less-used screen to either side.

Glare Indirect glare, from lights or windows, should not reflect onto the screen. If lights or windows create glare, the screen angle, workstation orientation, window coverings, or overhead lighting should be adjusted to prevent discomfort.

Keyboard and mouse height The keyboard should be positioned so that the keyboard surface is at seated elbow height. This height allows the employee to type with the shoulders relaxed, with the wrists in a straight and relaxed posture. Ideally, the mouse should sit on the same surface as the keyboard, so that the mousing posture should also be relaxed and neutral.

Reach to keyboard and mouse The employee should be able to type and mouse with shoulders relaxed and elbows at 90-degree angles. The elbows should be tucked against the seams of the shirt.

Keyboard angle Keyboards typically should be adjusted to a flat orientation (i.e. function keys at the same height as the space bar). This position allows most people to type with straight wrists.

Keyboard design The keyboard size should be appropriate for the employee's build. Petite employees may need narrower keyboards (i.e. without a number pad) while employees with broader shoulders may need a wider, or “split” keyboard. External keyboards should be provided to employees who are working on laptops.

Wrist rests A wrist rest is not required at the keyboard if the employee types with wrists straight and does not rest the wrists against the edge of the desk. Wrist rests should only be used while reading the screen, and not while typing. Wrist rests should not be used at the mouse, as they tend to cause the user to fix the wrist in one position, and operate the wrist using a “windshield-wiper” motion, rather than moving the mouse with a combination of hand, wrist, and arm movement.

Mouse design The size and shape of the mouse should be appropriate for the size of the employee's hand. Employees with large hands may benefit from a larger mouse. An external mouse should be provided to employees who are working on a laptop.

Touch typist Employees who type without looking at the keyboard minimize neck bending, and awkward hand and finger postures. Non-touch typists may benefit from typing tutor software and may need short-term accommodation to optimise the line of sight to the keyboard.

Desk (writing) height Ideally, the employee should be able to sit comfortably at the desk, and the desk height should be 5-7 cm above elbow height, to allow support for the forearms while writing.

Functional layout The writing surface ideally should be on the hand-dominant side of the computer, allowing the employee to take notes without twisting across the body. The workstation should also be organised so that the most frequently used items are close, and less frequently used items are further away.

Sufficient leg clearance Enough clearance should be available under the workstation to stretch out the legs and to sit in comfortably.

Task lighting If overhead lighting does not provide sufficient illumination, additional task lighting should be provided. Task lighting should be adjusted below eye level, to prevent direct glare, and directed toward documents rather than the screen.

Shelf height Shelf heights should allow employees to reach items easily, and should not obstruct the workstation by being located too low.

Telephone headset Employees who are seldom required to talk on the telephone rarely need a headset. If employees use the phone for prolonged periods of time, or if they use the phone while accessing information on a computer, a telephone headset should be used.

Document holder Employees who are required to transcribe information from paper copy into the computer should use a document holder to angle documents toward the eyes, so that neck demands are minimised.

Good work habits and pacing Employees should be encouraged to leave the workstation for breaks and lunch. Tasks that do *not* involve computer work (faxing, filing, copying, telephone use while standing) should typically be interspersed throughout the day to provide “micro-breaks” from seated work.