

Ergonomics Best Practices

ERGONOMICS:

Ergonomics is the study of the interaction between people and the objects they use and the environments they function in. If equipment, workstations and work methods are designed to suit employees' capabilities and limitations, health, safety and performance is maximized. Ergonomics is fitting the task to the person. Ergonomics improves health and safety, reduces costs from absences and reduced productivity, and ensures that social and legal obligations of employers to their employees are being met.

Ergonomics is the science of designing work processes and equipment for employees and should be considered when there are injuries, complaints, staff turnover or absenteeism from work. One method of solving an ergonomic problem or complaint is to adjust the employee's workstation.

Ergonomics requires the following steps:

- recognizing the complaint/problem and documenting the job tasks
- evaluating the existing situation
- consulting resources/experts on best practices
- identifying mismatches between the existing situation and human capabilities
- identifying potential solutions
- providing recommendations and implementing the recommendations
- evaluating the success of the recommendations

General Guidelines-Best Practices:

The following guidelines are applicable for office workers who sit at a desk and/or work on computers. These guidelines pertain to chairs, computer workstations, telephone/desk areas and best postures for working at these stations.

Ergonomic Chair:

- In general, one should be able to sit in the chair with feet flat on the floor, knees and hips at about 90 degrees.
- The seat depth should allow approximately two fingers of space between knees and end of seat.
- The low back should be supported by the back of the chair. The curve in the back should match the curve in the chair.
- Some employees prefer additional support to the upper back area (high back).
- Arms rests, if available, should allow for arms/elbows to rest comfortably, also at 90 degrees. It is important that arms and shoulders are resting comfortably while typing. Arm rests should be adjustable to prevent interference with the keyboard tray and to other tasks.
- Chairs should be adjustable to allow for tilting between 95 and 110 degrees. This allows one to push back and alternate positioning as needed for comfort.

Computer Workstation:

- Computer monitors should be placed directly in front of the employee, approximately 18-24 inches from the body.
- Top of monitor should be at about eye level, or slightly lower to avoid neck extension. Optimal viewing angle is 15-30 degrees below horizontal to avoid neck, shoulder and eye fatigue.
- The monitor may need to be lowered slightly below eye level height for bifocal wearers.
- Keyboard tray and keyboard should also be directly in front of the employee.
- While resting on home row, fingers, hands, wrists should be in a neutral position
- Shoulders should be at rest, not hunched upwards as hunching upwards will place additional stress and fatigue on shoulders, neck and upper back areas.
- Computer mouse should be at same level as keyboard and close enough to prevent over extended reaches.
- Employees may wish to consider alternating the computer mouse to the left and right side in order to alleviate excessive or constant use of one hand to perform computer mouse work.
- Foot rests should be provided for seated work to provide a firm support for the feet if the feet don't touch the floor.
- Document holders, placed on either side of the computer monitor will reduce forward flexion of the neck or other awkward neck posturing. Document holders should be considered for those who frequently type on to the computer from hand written documents

Body Postures:

Shoulders, arms and wrists should be in relaxed positions. While seated, arms should be at about 90 degrees to the body, with shoulders relaxed and wrists in a neutral position. Holding tensed muscles in a fixed or awkward position for long periods of time is called static work. Static work results in a burning sensation discomfort and fatigue because there is decreased blood flow to the tensed muscles. Fatigue leads to a buildup of waste materials at a muscle level, known as lactic acid. When fatigued the load is transferred to the tendons and ligaments. With time, this can lead to cumulative injuries (i.e. repetitive strain).

Work heights have a major impact on job performance and musculoskeletal injuries. Working too high, with arms held away from the body (abduction), and shoulders lifted, contributes to static loading. Working too low results in employees bending forward which can lead to neck and back pain.

For work at elbow level (i.e. desk and computer work stations) reaching should be within 25 cm (10 inches) for frequently used items such as answering the telephone. For occasionally reached for items, say once every two minutes, reaching distance can be slightly longer at 50 cm or 20 inches from the body.

Desk/Telephone Area:

- Regularly used items (telephone, binders, reference material, etc) should be placed within 10 inches (25 cm) in front of the employee.

- Items occasionally reached for can be within 20 inches (50 cm) in front of employee. Infrequent reaches should be kept within 29.5 inches (75 cm) in front of the employee.
- Employees who make frequent phone calls should consider using a head set. This will prevent cradling of the telephone between ear and shoulder while trying to take notes, or retrieving other information.
- Employees may need to adjust chair (move higher) when relocating from computer work station to desk area as generally desks are positioned higher than are keyboard areas. While working at a desk, arms should continue to remain at a comfortable, neutral position so that arms are at about 90 degrees at the desk, and shoulders are not hunched upwards.

Other Considerations:

Employees should be encouraged to be aware of body posture, need for hydration, importance of stretches and need for posture changes throughout the work day.

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