

SAFE WORK PRACTICE – ERGONOMICS

PURPOSE

To provide a sense of the risks associated with such factors as awkward or continuous postures, repetitive motions and forceful exertions in the workplace and to facilitate working in a manner that minimizes risk of worker injury or damage to equipment and the environment.

PREREQUISITES:

- Familiarize yourself with your workspace and workflow before beginning any task.
- Complete a Site-Specific Risk Assessment (2C SSRA).

| ACTIVITY | POTENTIAL HAZARD | PRECAUTION |
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| Standing | <ul style="list-style-type: none"> • Keeping the body in an upright position requires considerable muscular effort. Standing effectively reduces the blood supply to the loaded muscles. Insufficient blood flow accelerates the onset of fatigue and causes pain in the muscles of the legs, back and neck (these are the muscles used to maintain an upright position). • Prolonged and frequent standing, without some relief by walking, causes blood to pool in the legs and feet. When standing occurs continually over prolonged periods, it can result in inflammation of the veins. This inflammation may progress over time to chronic and painful varicose veins. • Excessive standing also causes the joints in the spine, hips, knees and feet to become temporarily immobilized or locked. This immobility can later lead to rheumatic diseases due to degenerative damage to the tendons and ligaments (the structures that bind muscles to bones). | <ul style="list-style-type: none"> • Adjust the workplace to get enough space to change working position frequently so that working in one position is of a reasonably short duration. • Avoid extreme bending, stretching and twisting. Organize your work so that the usual operations are done within easy reach. Avoid reaching behind or above the shoulder line. Shifting feet to face the object is recommended. • Avoid overreaching beyond the point of comfort. • Pace work appropriately. • Take suitable rest periods to relax; exercises may also help. Rest periods should be used to relax when muscles are tired, to move around when muscles are stiff, to walk when work restricts the worker's ability to change postures or positions, and so on. • Use a foot rail or portable footrest to shift body weight from both to one or the other leg. • Choose safety footwear with sufficient arch support, a shock-absorbing insole and room for toe movement. A slight heel (up to 1 inch) will decrease strain on the Achilles tendon. |
| Sitting | <ul style="list-style-type: none"> • Back pain, muscle tenderness, and aches. In fact, reports of varicose veins, stiff necks, and numbness in the legs are more common among seated employees than among those doing heavier tasks. | <ul style="list-style-type: none"> • For light manipulating tasks, wrist and arm support may help. • For heavier tasks, arrange the work surface below elbow height. |

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| | <ul style="list-style-type: none"> • Prolonged sitting: <ul style="list-style-type: none"> ○ reduces body movement making muscles more likely to pull, cramp or strain when stretched suddenly, ○ causes fatigue in the back and neck muscles by slowing the blood supply and puts high tension on the spine, especially in the low back or neck, and ○ causes a steady compression on the spinal discs that hinders their nutrition and can contribute to their premature degeneration. | <ul style="list-style-type: none"> • Arrangement of the workstation should allow the spine to be vertically aligned while exerting force. • Do not lift and transfer loads horizontally. • If doing foot tasks, pedals should be located directly in front of you to prevent the hips from twisting. • All workstation components, such as the chair, desk and computer, workbench or panel in a control room all affect body position. Ensure the workstation allows for frequent changes between a variety of body positions. • Five minutes of a moderate to vigorous activity, such as walking for every 40 to 50 minutes of sitting, can help you. These breaks are also beneficial because they give the heart, lungs and muscles some exercise. Where practical, incorporate an "activity breaks" such as work-related tasks away from the desk or simple exercises to carry out on the worksite. |
| <p>Manual Lifting</p> | <ul style="list-style-type: none"> • A common cause of occupational fatigue and low back pain, manual material handling accounts for about one third of all lost work due to back injury. The most common causes are strains and cramps in the back muscles. Back pain can also result from tears in the tendons connecting the back muscles to the spine, or from sprains and tears in the ligaments interconnecting the vertebrae (bones of the spine). Less frequently, it arises from direct damage to the vertebrae or the discs that separate them. • Over a prolonged time without breaks, a workers' lifting ability rapidly decreases by speeding up their fatigue. Fatigue not only causes instant and obvious discomfort, but its effects add up over time. For that reason, fatigue can also contribute to serious injuries to the musculoskeletal system. Fatigue also decreases a workers' alertness, | <p>Before Lifting:</p> <ul style="list-style-type: none"> • Always check before lifting to see if mechanical aids such as hoists, lift trucks dollies or wheelbarrows are available. • Get help with heavy or awkward loads. • Assess the weight of the load. • Identify the weight of the load. • Be sure that you can lift the load without over-exertion. • Be sure that the load is "free" to move. • Check that the planned location of the load is free of obstacles and debris. • Be sure that the path to the planned location of the load is clear. Grease, oil, water, litter and debris can cause slips and falls. • Never lift if you are not sure you can handle the load safely. • Wear lightweight, flexible, tear and puncture-resistant clothing, safety boots with toe caps and slip-resistant soles and protective gloves, appropriate for the materials being handled. |

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| | <p>making them more likely to act without due caution. This, in turn, increases their risk for accidents.</p> | <p>While Lifting:</p> <ul style="list-style-type: none"> • Prepare for the lift by warming up the muscles. • Stand close to the load and face the way you intend to move. • Use a wide stance to gain balance. • Be sure you have a good grip on the load. • Keep arms straight. • Tighten abdominal muscles. • Tuck chin into the chest. • Initiate the lift with body weight. • Lift the load as close to and as centred to the body as possible. • Lift smoothly without jerking. • Avoid twisting and side bending while lifting. • Avoid carrying loads with only one hand. |