LOYOLA UNIVERSITY CHICAGO

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OFFICE ERGONOMICS GUIDELINES

PURPOSE:

The goal of ergonomics (i.e. the scientific study of people at work) is to prevent soft tissue injuries and musculoskeletal disorders caused by sudden or sustained exposure to force, vibration, repetitive motion, and awkward posture.

DEFIINITION:

Ergonomics is defined as an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely. Basically, the study of how people work in their environment.

TYPES OF ERGONOMICS:

There are three types of ergonomics: physical, cognitive, and organizational. Each of these contributes not only to organizational success, but also to worker satisfaction.

Physical Ergonomics: Physical ergonomics is the most commonly known form of ergonomics and deals with the physical load on the human body when performing activities. If disregarded, workers can develop musculoskeletal disorders (MSDs). Awkward body positioning, reaching overhead, and consistently repeating similar tasks are a few of the activities that the Occupational Health and Safety Administration (OSHA) identifies as causes of MSDs.

Cognitive Ergonomics: Cognitive ergonomics is the method of designing and arranging information and data to create a light cognitive load. Perception, memory, reasoning, and motor response all affects how someone interacts with and performs their work. A higher cognitive workload causes more stress on the worker.

Paper work instructions are one example of increased cognitive workload, as they require memorization and focus. A worker has to look from the paper to their work; cognitively connect the written steps to the movements needed to complete the task, complete the task, and then ensure that it was correct. Simplified work instructions that place the right information in the right place and at the right time lessen the cognitive load.

Organizational Ergonomics: Organizational ergonomics combines the knowledge gained from other areas to optimize safety and efficiency for the entire organization.

ERGONOMIC RISK FACTORS:

The three primary ergonomic risk factors that help to cause MSDs are awkward posture, high force, and high or long frequency. The combination of postures, forces, and frequencies increase the chance of developing an MSD.

Posture: In neutral posture, the joints can absorb force more easily than in others. Awkward and extreme postures increase susceptibility to injury, as they may stress joint components and reduce or block blood flow.

Force: Gripping, pinching, pushing, pulling, and lifting objects place additional force on the body's joints. Increasing these forces requires additional muscle exertion and places greater loads on joints and connective tissues which can cause fatigue and may contribute to MSD when there is inadequate time for rest and recovery.

Frequency: Higher frequency of awkward postures and/or forces increases the potential for damage to a joint.

HOW TO SELECT HEALTHY WORK TOOLS:

Chair

Choose a chair that supports the spinal curves. Adjust the height of the chair so that the feet rest flat on the floor or on a footrest and the thighs are parallel to the floor. Armrests should be adjusted such that a person's arms gently rest on them with their shoulders relaxed.

Key Objects

Key objects, such as a telephone, stapler or printed materials, should be kept close to a person's body to minimize reaching. A person should stand up to reach anything that cannot be comfortably reached while sitting.

Keyboard and Mouse

The mouse should be placed within easy reach and on the same surface as the keyboard. While typing or using the mouse, wrists should be kept straight, upper arms close to the body, and hands at or slightly below the level of the elbows. Keyboard shortcuts should be used to reduce extended time utilizing the mouse. If possible, adjust the sensitivity of the mouse so a light touch can be used to operate it. Alternate the hand used to operate the mouse by moving the mouse to the other side of the keyboard.

Telephone

If a person frequently talks on the phone and types or writes at the same time, the phone should be placed on speaker or a headset used rather than cradling the phone between the head and neck.

Footrest

If a chair is too high to keep a person's feet flat on the floor or the height of the desk requires the height of the chair to be raised, use a footrest. If a footrest is not available, a small stool may be used.

Desk

There should be enough clearance for a person's knees, thighs, and feet beneath the desk. If the desk is too high and can't be adjusted, the chair should be raised. A footrest should be used to support a person's feet, as needed. If the desk has a hard edge, it should be padded or a wrist rest should be used. Items should not be stored beneath the desk.

Computer Monitor

The computer monitor should be placed directly in front of a person, about an arm's length away. The top of the screen should be at or slightly below eye level. The monitor should be directly behind your keyboard. If a person wears bifocals, the monitor should be lowered an additional 1 to 2 inches for more comfortable viewing. The monitor should be placed so that the brightest light source is to the side.

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