

Musculoskeletal Disorder Control Program

Musculoskeletal disorders (MSDs) of the arm and wrist, such as carpal tunnel syndrome, tendinitis, tenosynovitis and bursitis are a major source of Workers Compensation injuries. MSDs cost employers billions each year.

These disorders are caused by repeated physical exertion to the hands and wrists due to improper postures (positioning) and excessive pressure being exerted. This results in injuries to the tendons, tendon sheaths, nerves and muscles.

Program organization

If MSDs are a source of loss for your company, a control program can reduce the frequency and severity of these disorders. This program should be administered by a suitably trained individual. Many departments within the company will eventually be involved in the process, which may necessitate the formation of a committee to manage the program. Committee members should come from management, labor, engineering and safety.

Program implementation

Accident/Job analysis

An analysis of MSDs must be made to identify problem areas. Typically the information for accident analysis comes from first aid records, OSHA logs, First Reports of Injury, or insurance carrier loss information.

The results of this analysis should provide a list of departments and jobs which have had an incidence of MSDs. Each job should then be reviewed and evaluated to identify those risk factors which contribute to the disorders.

A typical job analysis consists of listing the actions of each hand in a job sequence, then evaluating each action for the occurrence of any of the risk factors associated with MSDs.

- Risk factors include:
- High repetition
- Poor posture (positioning)
- Shoulder: Elbow above mid-torso; reaching down and behind torso
- Forearm: Inward or outward rotation; full extension
- Wrist: Bent upwards or downwards, or to the sides
- Mechanical pressure or force on palm or fingers
- Vibrating tool use
- Exposure to cold

Engineering controls

The most successful controls for MSDs are engineering controls. Risk factors can be eliminated through changes in the job, process or tools. Some general solutions are:

Sustained exertion — can be reduced by reducing weights of objects or tools, changing size or shapes and balancing objects held in the hands. Fewer objects can be picked up at one time or objects can be picked up with both hands rather than one.

Mechanical stress/force — can usually be controlled by increasing the size of handles, eliminating sharp edges and using soft materials. Handles should be as large as will fit comfortably in the hand.

Tools — should be selected to minimize awkward wrist postures. As a general rule, tools and tasks should be designed so they can be used with a straight wrist. The wrist should be maintained in the same position as if the arm were hanging relaxed at the worker's side or when shaking hands.

Administrative controls

Selection — If done, post-offer/ pre-hire medical exams should include tests for early signs of MSDs. For example, there are simple tests that can be administered to demonstrate carpal tunnel syndrome. Contact your medical provider for assistance.

Job assignment — Women are much more susceptible to carpal tunnel syndrome, particularly post-menstrual women, women on oral contraceptives and pregnant women. These high risk employees should avoid the jobs identified as high risk jobs in the job analysis.

Job rotation — Where feasible, employees should be rotated in high risk jobs to minimize the effect of repetitiveness.

Training — Employees should be trained in proper operation of tools to minimize the posture and wrist flexion that contribute to MSDs. Employees should also be trained in recognizing early symptoms of carpal tunnel syndrome or other MSDs. An employee reporting early symptoms should be referred to a physician for evaluation.

Program evaluation

The program will need regular evaluation in order to judge its effectiveness. Regular reports should be made to top management to apprise them of the effectiveness of the program.

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