Hand Tool Ergonomics – Job Design – Fact Sheet



HOW CAN WORK ORGANIZATION HELP PREVENT WORK-RELATED MUSCULOSKELETAL DISORDERS (WMSDS) THAT CAN RESULT FROM USING HAND TOOLS?

People working at a correctly designed workstation and using the best available tools can still get injured. It happens where their work is poorly designed. Work organization involves:

- job content – task variety
- work pace
- work breaks
- rest breaks
- adjustment or acclimatization time
- training

Task variety

Jobs that involve using only one kind of tool for one or a few tasks that do not vary in the movements and muscles used can cause an overload of those muscles, ligaments, tendons or tissues. The resulting overload on the same part of the body can cause pain and injury. A greater variety of tasks allow for changing body position to distribute the workload over different parts of the body, and to give overtaxed muscles some relief and recovery time.

- Rotate tasks among workers; have workers move from one task to another according to a schedule. Ensure tasks are different in the type of movement and body parts used.
- Add more tasks to the job.
- Assign a larger part of work to a team: workers form a team and each member of the team shares several different tasks.

Work pace

A fast pace of work is a strong risk factor for WMSDs. If the pace is too fast, the muscles involved do not have enough time to recover from the effort and to restore sufficient energy to continue the work.

- If the pace of work is imposed externally – assembly line speed, for example – adjusts it to the speed that is acceptable for the slowest worker.
- Incentive systems that reward for the quality of work naturally determine the "right" pace of work.
- Incentive systems that reward for the amount or quantity of work increase the risk for WMSDs and, in the long run, will compromise quality as well.

Work breaks

The work break is a time period between tasks. Even short periods of time, literally seconds, that allow one to relax muscles involved in operating tools are important in preventing injuries.

Rest breaks

The rest break is the period after work stops. Besides allowing for refreshment, rest breaks can be used to stretch and relax.

Adjustment period

An adjustment or acclimatization period is the time needed to get "in shape" when returning to work after a long absence, or when starting a new job. It should allow one to refresh old work habits or get used to a new routine. An adjustment period is a very important element of injury prevention. Inexperienced and "new" workers, as well as "old timers" returning to work after a period of recovery and rehabilitation, are more prone than most workers to both injury and re-injury, so adjustment periods are a vitally important way to reintegrate them into the workflow.

Training

Training workers on the safe use of tools, and on the hazards involved in working with them, has always been extremely important. Today, more than ever, when new materials, new technologies and new equipment are replacing older ones faster then ever before, the importance of such training is magnified. The introduction of a new tool or equipment, as well as any change in way the job has been done previously should be preceded by refresher training that includes new information relevant to the changes being introduced. Even the best-designed tool, or the most ergonomically correct workstation, or the most up-to-date work organization will fail to prevent injuries if the worker is not properly trained.,

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