GULF ISLANDS SCHOOL DISTRICT 64

MSI PREVENTION PROGRAM

		PAGE
1	Introduction	2
2	Steps in the Ergonomic Assessment Process	3
3	Consultation	4
4	Education	4
5	Risk Factors Identification and Risk Assessment Process	4
6	Risk Control	4
7	Training	5
8	Evaluation	5
APPENDIX A - Computer Workstation Checklist		6

ERGONOMICS

1. INTRODUCTION

Ergonomics is about interactions between people and their physical and organizational environments. When people's workplace conditions and job demands match their capabilities, safety and productivity improve. Ergonomics can reduce the risk of strains and sprains and other related musculoskeletal injuries (MSIs). MSIs are one of the most common work-related injury in B.C.

Musculoskeletal injury (MSI) is an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work.

The purpose of this document is to help the supervisor and the worker to:

- Identify factors that place workers at risk for MSI
- Understand the steps in preventing MSI
- Understand how control measures can reduce the risk of MSI
- Investigate injuries and signs or symptoms of MSI

Risk Factors

The factors that contribute to the risk of MSI are called risk factors. There are many risk factors associated with MSIs. Risk factors can be classified as physical and non-physical risk factors.

1. Physical Risk Factors

The main physical risk factors for MSIs associated with the demands of a job include:

- *Force* - exerting force on an object as part of a task
- *Repetition* - doing a task that uses the same muscles over and over with little rest or recovery
- *Posture* - the position of different parts of the body when taken outside of the comfortable range of motion (awkward posture); usually combined with holding a posture for a long time (static posture)
- *Contact stress* - a hard or sharp object coming in contact with the skin

2. Non-physical Risk Factors

There are many non-physical risk factors including, but not limited to:

- work space layout (working reaches, working heights, seating, floor surface),
- characteristics of objects handled (size & shape, weight distribution, handles),
- environmental conditions (heat & cold temperatures),
- organization of work (work-recovery cycles, task variability, work rate)

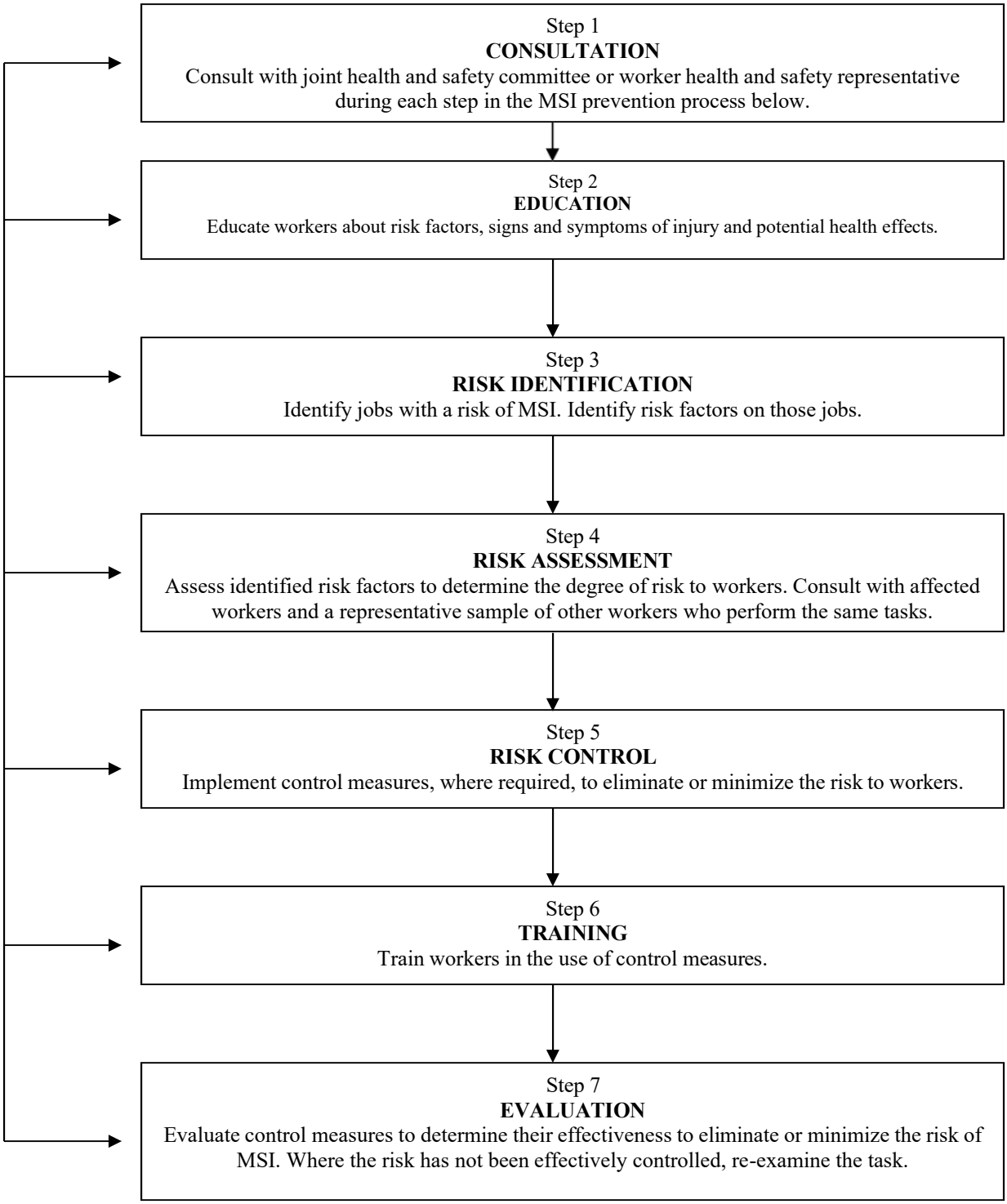
The mere presence of MSI risk factors may not in itself result in an injury. It depends on the extent of the exposure to the risk factor. Consider:

- magnitude or intensity,
- frequency of exposure, and
- duration of exposure.

It is important to note that if more than one risk factor is present at one time, the risk of injury is increased. Developing an MSI can also depend on individual characteristics that vary from worker to worker (such as

height, gender, and the body's ability to deal with the risk factors). The Occupational Health and Safety Regulation of BC requires that job tasks and duties be assessed for the potential of causing MSIs.

2. STEPS IN THE ERGONOMIC ASSESSMENT PROCESS



3. CONSULTATION

Consultation on the Ergonomics Safety Program must involve workers and the best way of doing so is at the site level through the Joint Health and Safety Committee with guidance from the District Principal for OHS.

As well, when performing an MSI risk assessment, consultation must occur with a sample of workers who carry out the tasks being assessed and with workers who have experienced signs or symptoms of MSI. Workers can also be consulted at other steps since they may know the job best.

4. EDUCATION

Workers and supervisors must be educated about:

- The signs and symptoms of an MSI
- Risk factors related to their work that may put them at risk for MSI
- The potential health effects of MSI

5. RISK FACTORS IDENTIFICATION AND RISK ASSESSMENT PROCESS

Identifying risk factors that may lead to MSIs should be performed by people who understand the work being performed. This should include supervisors, a representative sample of workers, and members of the joint health and safety committee. Occasionally subject matter experts may need to be consulted, especially if the work is complex or technical in nature.

Once risk factors have been identified they must be assessed to determine the level of risk they pose. A risk assessment can determine the level of risk for each risk factor, taking into account magnitude, frequency, and duration of the risk factors. There are many ways to perform a risk assessment and there are many risk assessment tools available. WorkSafeBC provides a risk assessment process, Guide to Musculoskeletal Injury (MSI) Risk Assessment and the accompanying tool Musculoskeletal Injury (MSI) Risk Assessment Worksheet.

A Computer Workstation Checklist is provided in Appendix A to assess MSI risk factors for workers who predominantly work at a computer.

6. RISK CONTROL

Once a risk assessment has been completed risk factors need to be eliminated, where practicable, using risk controls. It is not always possible to eliminate the risk factors. If it is not possible to eliminate the risk factors, then the risk must be minimized. When minimizing risk there is a hierarchy of risk controls that must be followed. First start with engineering controls; then consider administrative controls. And finally, personal protective equipment (PPE).

Engineering Controls

Engineering Controls are physical modifications to facilities, equipment, and processes. Consider such things as:

- mechanical lifting aids such as hoists, pallet jacks, carts, or conveyors instead of manual material handling
- modifying equipment or furniture to eliminate or reduce awkward postures

- modifying the workplace to eliminate or reduce the need for lifting of heavy objects
- installing dust or exhaust collection equipment to improve respiratory safety

Administrative Controls

Administrative Controls are changes to work practices and policies, work scheduling, awareness tools, and training. Consider:

- rotating between tasks involving different muscles, for example, stacking boxes and driving a forklift
- training workers to perform tasks using neutral postures
- giving workers time to rest or recover when lifting or handling heavy loads
- balancing work demands and work pace more effectively

Personal Protective Equipment (PPE)

Personal Protective Equipment can only be used when engineering or administrative controls cannot be applied.

Risk controls reduce the risk of MSIs by reducing the magnitude of the risk factor, the frequency of exposure to the risk factor, and the duration of exposure to the risk factor. By manipulating these variables using controls MSIs can be avoided.

7. TRAINING

School District No. 64 will evaluate our control measures to determine how effective they are in eliminating or minimizing the risk of MSI. Some ways to evaluate the controls are:

- Interviewing workers
- Looking for decreases in the number and severity of signs and symptoms of MSI
- Observing a reduction in the number of risk factors or in the severity of risk factors
- Using a checklist or other tool to compare the exposure to risk factors before and after controls are implemented

If the risk has not been effectively controlled or if new risks have been created, re-examine the task and reconsider which controls may be needed. Additionally, the School District needs to evaluate the overall MSI prevention program at least once a year to make sure it continues to meet the objective of eliminating or minimizing the risks to workers.

8. EVALUATION

The Ergonomics Safety Program must be evaluated on a regular basis to ensure it continues to meet the objective of eliminating or minimizing the risks to workers.

APPENDIX A - Computer Workstation Checklist

Name:	**Date**:
Phone:	**Tasks**:
Email:	
Location:	
Job Title:	
Supervisor:	
Signs & Symptoms:	
Other Comments (how long at current workstation; any equipment changes; any duty changes; turning points, etc.):	

1. Chair Note: sit with buttocks fully against the back of the chair		OK	No	Observations/Actions/Comments
Seat Height	Adjust seat height so feet are fully supported on floor or footrest, knees bent 90-110 degrees. (ask what kind of shoes normally worn)			
Back rest Height	Adjust the back rest height so that the lumbar support of the chair fits the curve of lower back.			
Seat Pan Depth	There should be 2-4 finger widths between the front edge of the seat and the backs of knees. (Adjust if possible)			
Tilt	Adjust seat tilt so hips and tops of thighs are at right angles or slightly greater. **Low back pain**: tilt pan forward so hips above knees.			
Chair Recline	Upright or slightly reclined posture.			
Arm rests	Arm rest height should support elbow at 90° without limiting access to desk or keyboard tray. Remove arm rests if necessary.			

Comments:

2. Keyboard and Mouse Note: Mouse and keyboard should be at same height		OK	No	Observations/Actions/Comments
Keyboard /Mouse height	Adjust height so elbows are at 90°-110° and forearms and hands form straight lines to the keyboard. *** if height is not adjustable**: adjust seat height so elbows form a 90°-110° angle when keyboarding; reassess seat height			
Mouse Location	Adjust mouse so it is directly beside keyboard and on same level. If possible, mouse with left hand to reduce reach.			
Keyboard to user distance	Keyboard-to-user distance allows shoulders to relax and arms to hang down at the sides of the body.			
Keyboard slope	Remove any positive tilt. Position keyboard flat or slightly negatively sloped (away from user)			
Mouse speed	Use Control Panel settings to increase pointer and scroll wheel speed.			
Wrist rest	No contact stress at the wrist when resting hands on the keyboard.			

Comments:

3. Monitor		OK	No	Observations/Actions/Comments
Monitor Height	Adjust monitor height so top of screen is at eye level. **Exception: Bi-focal/graduated lens users** adjust monitor height so head is straight when viewing the monitor, (depends on which part of lens they use to view screen).			
Screen to user distance	Move monitor so it is at least an arm's distance away. Larger monitors may be placed further away.			
Monitor alignment	Monitor should be in-line with keyboard and directly in front of user.			
Glare control	Monitor should be perpendicular to light source to avoid glare.			
Brightness & Contrast	Adjust settings as needed.			

Comments:

4. Work Environment and Work Surface		OK	No	Observations/Actions/Comments
Leg clearance	Width=hip width +2” Height=highest point of thighs Depth=allow knee/foot clearance			
Source document	Source documents should be on angled surface between keyboard and monitor.			
Frequently used items	Frequently used items should be within an arm’s reach.			
General task lamp	Ensure light is on hard copy.			
Telephone	Avoid tilting head to cradle phone, use hand to hold receiver, use speaker phone or headset.			

Comments:

5. Work Practices		OK	No	Observations/Actions/Comments
Breaks	Get out of chair at least once per hour to restore circulation			
Alternate tasks	Break up long periods of continuous computer use by performing small tasks/errands			
Reach posture	Stand to get items from overhead shelves, do not reach over shoulder level.			

Comments:

For Action by Supervisor and Worker.			
Recommended Measures	Person Responsible	Due date	Completed?

Report Completed by: District H&S Manager - Prevention Date:

Distribute Report as follows:

- ❑ Employee
- ❑ Supervisor
- ❑ District Health & Safety office