Office Workstation Ergonomics – Compliance Game Plan

Protecting office workers and telecommuters against MSI hazards.

Serious injuries don't happen just to construction, plant, energy, mine and other workers who perform physical work. They also happen to workers who work in office buildings and home offices. In fact, sitting in a computer workstation behind a desk all day makes these workers especially vulnerable to a series of nasty and painful injuries to the muscles, nerves, bones and joints known as musculoskeletal injuries ('MSIs,' sometimes referred to as 'musculoskeletal disorders' or MSDs).

What the Law Requires

While not fatal, MSIs ruin careers and lives and represent the fastest growing segment of workers comp lost time injury claims. The OHS regulations of most jurisdictions require employers to implement what are known as 'ergonomic' and other measures to protect workers from MSI risks. In New Brunswick, Nova Scotia and Ontario, the obligation isn't spelled out in a specific regulation but implied under the part of the OHS Act that imposes a general duty on employers to implement reasonable or reasonably practicable measures to protect workers' health and safety.

5-Step Office Workstation Ergonomics Compliance Game Plan

No matter what part of Canada you're in, you should implement an MSI prevention policy that provides for 5 basic elements.

Step 1: Do an Ergonomic Hazard Assessment

As with other hazards, the first step in controlling office MSI hazards is to do a hazard assessment. But detecting MSI hazards is tricky. Most office-related MSIs are cumulative rather than traumatic. In other words, they happen gradually as a result of repeated stress over a period of time rather than as a result of a discrete incident:

- **Traumatic MSI:** Jane hurts her wrist when trying to lift a heavy object;
- **Cumulative MSI:** Jane hurts her wrist as a result of bending it on her keyboard for 6 hours per day over a 3-year period.

Implementation Strategy: Methods of office workstation MSI hazard assessment include examination of the physical space, including the home office where possible, analyzing ergonomic injury report records, surveying workers and directly observing workers as they actually perform their duties. Consider 14 risk factors:

MSI Hazard Assessment When Workers Work from Home

Perform MSI hazard assessment for all office workstations, including home offices. In the latter situation, you'll need workers' cooperation, either by letting you into the home to do the assessment or carrying out the assessment themselves under a supervisor's guidance and direction.

1. Worker's posture: The body should be in a neutral position with the:

   - Hands, wrists, and forearms straight, in-line and roughly parallel to the floor;
   - Head level;
   - Upper arms hanging normally at the side of the body;
   - Elbows close to the body and bent between 90ø and 120ø;
   - Feet fully supported by the floor or a footrest if the desk height isn't adjustable;
   - Back fully supported when the worker sits vertically or leans back slightly;
   - Thighs and hips supported by a padded seat that's parallel to the floor;
   - Knees about the same height as the hips; and
   - Feet slightly forward.

2. Worker's distance from computer monitor: The preferred viewing distance from your eyes to the front surface of the computer is between 20 and 40 inches/50.8 to 101.6 cm.
3. Angle of computer monitor: Monitors should be tilted no more than 35ø to either side.
4. Height of computer monitor: The top of the computer monitor should be at or slightly below eye level so that the center of the monitor is 15ø to 20ø below horizontal eye level.
5. Height of keyboard: The keyboard should be at a height that enables the worker to maintain a neutral body posture.
6. Worker's distance from keyboard: The keyboard should be at a distance that enables the worker to keep the elbows close to the body and forearms roughly parallel with the floor.
7. Position of worker's wrists when using keyboard: Wrists should be in a neutral position and not bent.
8. Position of the mouse: The mouse should be at a distance

and in a position that enables the worker to use it without bending the wrists.

9. Amount of work surface on desk: The desk work surface should be deep enough to allow the worker to view the monitor at a distance of at least 20 inches/50.8 cm and position the monitor directly in front of him.
10. Amount of space under desk: There should be enough clearance under the desk to allow the worker to keep the appropriate distances between herself and the computer and change postures.
11. Height of desk: The desk should be at a height that allows the worker to maintain a neutral position while sitting at it.
12. The worker's chair: The chair should:

    - Provide adequate back support;
    - Be adjustable or set at a height that enables the worker to maintain a neutral posture;
    - Have padded armrests that are adjustable or set at a position that supports the lower arm and enables the worker to keep the upper arm near the torso; and
    - Be free of sharp corners that can cause contact stress to the forearm.

13. Lighting: The workplace should be lit bright enough to enable the worker to see without squinting or straining the eyes but not so brightly as to cause glare, shadows or contrast problems.
14. Repetition: Steps should be taken to minimize repetitive tasks requiring worker to use the same muscles over and over without ample recovery time.

OHSI Resources

Know the Laws of Your Province: Ergonomics Requirements

Office Workstation MSI Prevention Policy

General MSI Hazards Prevention Policy

How to Identify & Assess Ergonomic Hazards

Office Ergonomics Risk Factors Checklist

Ergonomic Injury Records Review Form

Workers' Ergonomic Comfort Survey Form

OHS Duties to Protect Workers Who Work from Home

Office Ergonomics Checklist

Home Office Safety Checklist

Step 2: Implement Controls to Eliminate MSI Hazards

Follow the 'hierarchy of controls' in deciding how best to protect workers from the MSI hazards you identify.

First Choice: Elimination

If reasonably practicable, completely eliminate the hazard, such as by not carrying out workstation operations that expose workers to MSI hazards

Second Choice: Engineering Controls

If, as is likely to be the case, elimination isn't reasonably practicable, use a combination of engineering and work/administrative controls and PPE to minimize MSI hazards. **Implementation Strategy:** Engineering controls for MSIs consist principally of ergonomic measures designed to change the physical work environment and way work is carried out so that job tasks are fitted to the person, rather than the other way around, such as by putting objects on shelves at waist height so that workers can work on the objects without having to bend down or reach up. Measures to consider include:

Workstation Design: Designing the physical workstation so that

the work space is both comfortable and ergonomically sound.

Workstation Furnishings and Equipment: This typically includes:

- Chairs that:
  - Are adjustable in height and incline;
  - Provide lumbar support;
  - Have padded, appropriately sized armrests;
  - Have five-legged bases; and
  - Can be further adjusted with seat pads and footrests.
- Desktop items designed to reduce MSI risks, including:
  - Ergonomically designed keyboards, mouses and mouse pads;
  - Document holders;
  - Wrist and palm supports; and
  - Hands-free headsets for phones and computers.
- Desks that:
  - Are adjustable in height;
  - Provide adequate work surface allowing workers to place computer monitors, keyboards, and other frequently used equipment in places where workers can use them while maintaining a neutral posture;
  - Provide adequate clearance space so workers can maintain optimal workstation postures and shift postures; and
  - Are free of sharp edges and other potential sources of contact stress.
- Lighting designed to make computer work easy to see while minimizing reflection and glare.

Third Choice: Work/Administrative Controls

Use work or administrative controls that minimize MSI hazards by affecting how workstation work is carried out if

engineering controls aren't reasonably practicable or as a supplement to such controls. **Implementation Strategy:** Design the work so that workers can carry it out:

- While maintaining a safe posture;
- With minimum repetition;
- With minimum contact stress; and
- Without having to reach above, below or across the body.

Example of a workstation MSI work control: Frequent breaks for workers who perform repetitive tasks to maximize recovery and minimize repetitive stress.

Fourth Choice: PPE & Protective Equipment

The last line of defence is to ensure that workers exposed to workstation MSI hazards have and use appropriate protective equipment, which may include wrist and palm supports and footrests and ergonomically designed office furnishings referred to above.

OHSI Resources

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Office Workstation MSI Prevention Policy

General MSI Hazards Prevention Policy

Guidelines for Setting Up Ergonomically Safe Workstation

Ergonomic Task Design Assessment Checklist

5 Keys to Effective Ergonomics Programs

Step 3: Provide Appropriate

Ergonomics Training

Educate and train workers on MSI hazards and how to protect against them. **Implementation Strategy:** At a minimum, ergonomic safety training for workstation work should cover:

- What MSIs are;
- The causes of MSIs and how workers can get them from workstation work;
- How to set up their workstations safely;
- The safe postures workers should maintain to avoid MSIs;
- How to use the ergonomic equipment and furnishings provided to maintain safe posture;
- Other measures in place to protect workers from MSIs;
- The symptoms and signs of an MSI and what workers should do if they experience them; and
- The procedures for reporting injuries and hazards.

Verify that workers actually understand and are capable of applying their training on the job by:

- Quizzing workers on the lesson after you deliver it;
- Making workers demonstrate the safe workstation postures and methods covered during the training; and
- Observing workers perform workstation operations to ensure they're actually following their training.

Step 4: Monitor Your Ergonomic Controls

You need to continually monitor the controls you implement to ensure they're effective, identify problems and make the necessary corrections. **Implementation Strategy:** Carry out monitoring on a regular basis, perhaps as part of monthly work inspections and scheduled safety audits, and in response to indications that current measures may be inadequate. Red flags to look for:

- Workers exhibit or report signs and symptoms of MSIs;

- Workers complain or report ergonomic hazards;
- Actual injuries or incidents involving workstation operations;
- Significant changes to workstation operations that weren't accounted for or anticipated in the current hazard assessment.

You also face the challenge of inspecting the home workstations of workers who work from home.

Step 5: Document Your Ergonomic Control Measures

Last but not least, keep careful records documenting the program you implement to assess and correct MSI hazards so you can review the effectiveness of your efforts and demonstrate compliance with OHS requirements.