

Strains and sprains (known as musculoskeletal injuries) are the most common type of work-related injury. Musculoskeletal injury (MSI) is a term used to describe an injury of the muscles, tendons, ligaments, and joints.

Muscle **strains** usually happen when a muscle is stretched too far and becomes torn. Muscle **sprains** result when the ligaments that hold bones together are stretched or torn as a result of being twisted.

Strains to the back, neck, shoulder, elbow, wrist, or leg are common and can arise from heavy, awkward, or repetitive work. Muscle strains can occur suddenly or develop over time.

Signs and Symptoms of MSI

- A sign can be observed. Swelling, redness, and the inability to move a body part normally can be signs of MSI.
- A symptom can be felt, but not observed. Pain, numbness, and tingling can be symptoms of MSI.
- Don't ignore any of these signs and symptoms! Recognizing and reporting them as soon as possible—and seeking medical attention right away—can help them from getting worse.
- While experiencing some muscular aches is normal when a person first starts a new job (especially one involving physical labour), if the ache persists and becomes painful, this discomfort is **not** normal and should be reported.

Potential Health Effects

If early signs or symptoms of MSI are ignored, they can progress into more serious problems such as tendonitis or bursitis. These conditions can have long-term effects on a person's health, work, recreational options, and other aspects of life. Problems may include persistent pain, pain with movement, or an inability to move limbs normally.

Is Back Pain Different from a Back Strain?

Yes! Up to 60 percent of young people will have **back pain** by the time they reach age 18—that 60 percent will also likely experience back pain again as adults, to the point of missing work or having to visit a doctor. **Back strain** resulting from heavy lifting or working in an awkward position are also common, but generally affect far fewer young people than back pain.

Fact: Back pain is not just an “old person’s” complaint.

A 12-year-old has a 10–15 percent chance of experiencing back pain. An 18-year-old has a 50–60 percent chance of experiencing back pain.

Fact: Back pain is one of the biggest reasons for missed work.

Back injuries are the second most common reason for missed work (the common cold is the first).

Fact: Eight out of every 10 people will see a doctor for back pain during their life.

This means you have an 80 percent chance of suffering back pain—unless you work smarter.

Fact: Workers or not, 70–90 percent of all people will have some significant low-back problem during their life.

Two common causes of low-back problems in students are carrying backpacks overloaded and carrying them improperly. It's estimated that 96 percent of students carry backpacks.

Back pain in teens or adults can result from many things. Some reasons include doing awkward or heavy lifting, being overweight, carrying heavy loads (e.g., a backpack), or spending too much time in front of a computer (especially when the workstation is not well set-up to fit the needs of an individual).

Strains and Sprains to the Shoulder, Arm, Elbow, and Wrist

Teens work in a variety of workplaces, serving food and bussing tables, washing dishes, mopping floors, cashiering, stocking shelves, using tools on a construction site, and planting trees. All of these jobs can be very repetitive, awkward, or strenuous on the shoulders, arms, and wrists.

Fact: High-repetition jobs pose a greater risk than low-repetition jobs.

Fact: Jobs that are heavy and repetitive are more likely to cause harm than jobs that are not.

What Causes MSI?

The hazardous activities that contribute to the risk of MSI are called risk factors. A risk factor is something that may cause or contribute to an injury. The risk factors for MSI include job-related factors, awkward postures, and repetitive movements of long duration.

- **Job-related factors**—The main risk factors for MSI (especially lower back problems) are the physical demands of a job (e.g., forceful exertions during physical work, handling loads—especially if the load is heavy, awkward, slippery, cold, hot, alive, unbalanced, or wet), as shown below.
- **Awkward postures** (e.g., reaching down, reaching overhead, holding the neck in a bent position, sitting at a poorly organized workstation), as shown below.
- **Repetitive movements of long duration** (e.g., working at a cash register, using tools, using the computer for prolonged periods of time), as shown below.

Other risk factors for MSI may include:

- **Environmental conditions of the workplace**, including lighting, temperature, and air quality.
- **Personal factors**, including personal work style, age, smoking, height, weight, habits, and education.

It is important to recognize such factors in the workplace and be aware of what puts you at a high risk of injury. For example, if you must bend awkwardly to lift a heavy object because you are working in a cramped area, you will be at a greater risk of MSI than someone who uses a mechanical lifting device or has enough room to use safe lifting procedures.

Prevention Practices

While employers have the primary responsibility for protecting the safety and health of their workers, you are also responsible for following safe work practices outlined by your employer.

At work, any work-related injuries and signs or symptoms of MSI must be reported without delay. Don't ignore early signs and symptoms of MSI. Treatment may be required or steps may need to be taken to prevent the injury from getting worse.

If a worker reports an injury that needs medical attention or an unsafe condition that could lead to injury, the employer must investigate. An investigation will help to identify risk factors that contributed to the injury and lead to workplace changes to eliminate or minimize the risk factors.

Some ways to help prevent or control the risk of MSI include the following:

- Limit lifting by hand. Use equipment such as hand carts, trolleys, forklifts, and pallet jacks to help lift and transport products.
- Do not manually lift heavy loads alone; get help.
- Do not overdo it. Be aware of being pressured to do something that may cause injury.
- Minimize the distance the load must be moved or carried.
- Avoid manual lifting tasks for items that lie below knee height (instead, use scissor lifts, pallet jacks, or other equipment).
- Avoid manual lifting tasks for items that lie above shoulder height (instead, limit shelf heights, improve storage practice, or be raised up to the load).
- Avoid handling heavy or unbalanced objects while sitting down (e.g., stand so that stronger muscles are used).
- Improve your grip on the load (e.g., fix good handles on containers; add clamps or other devices to improve grip; use gloves).
- Stack items used most frequently at a convenient waist level.
- Use a stool or ladder to access items on shelves. Do not stand on chairs or boxes that might tip over.
- Lighten the load to be lifted (e.g., by separating component parts; by encouraging employer to purchase smaller and therefore lighter cartons of stock).
- When going up or down stairs, use handrails, avoid undue speed, and carry only items that do not obstruct vision.
- Avoid grasping vibrating tools with a hard grip.
- Use a desk, chair, mouse, etc. that is well designed and appropriate to the task.
- Reduce the total time spent pushing or pulling, or break the total time into smaller blocks of time doing that task.
- Recognize the potential for MSIs even in tasks that seem harmless.
- Use proper lifting techniques when performing manual lifts to minimize the risk of injuring the back. Keep in mind, however, that a heavy load can cause an injury even with perfect technique.

Safe Lifting Techniques

To help prevent injuring your back, use these suggested lifting techniques:



- Warm up your muscles by stretching.
- Size up the load and ask yourself:
 - Is the load an awkward size or shape? Is it too heavy for one person?
 - Do I need help?
 - Do I need a tool to assist me?
- Plan your route: make sure it is free of tripping and slipping hazards.
- Hug the load: keep it close to your body.
- Avoid overreaching.
- Avoid twisting your back: pivot with your feet.
- Squat down; do not bend at the waist.
- Use your legs to do the lifting.
- Use smooth movements.
- Acknowledge your limitations; get help when you need it!
- Use a wide stance.
- Get a good grip; gloves may help.

For more information

- WCB publication *Back Talk*:
http://www.worksafebc.com/publications/health_and_safety_information/by_topic/assets/pdf/back_talk.pdf
- WCB publication *How to Make Your Computer Workstation Fit You*:
http://www.worksafebc.com/publications/health_and_safety_information/by_topic/assets/pdf/comptr_wrkstn.pdf
- WCB publication *Understanding the Risks of MSI*:
http://www.worksafebc.com/publications/health_and_safety_information/by_topic/assets/pdf/msi_workers.pdf
- Washington State Department of Labor and Industries publication *Ergonomics for School Children and Young Workers*:
www.lni.wa.gov/WorkplaceRights/files/ErgoForSchoolChildrenandYoungWorkers.pdf
- To find out more on ergonomics for schools, visit these websites:
<http://www.ergonomics4schools.com/>
<http://ergo.human.cornell.edu/MBergo/intro.html>
<http://www.aota.org/featured/area6/links/link02af.asp>
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