SAFE WORK PROCEDURE FOR THE PREVENTION OF LIFTING AND STRAIN INJURIES

Introduction

In Canada, soft tissue injuries account for 60% of all Workers Compensation claims, but tally 81% of all compensation costs.

Musculoskeletal disorders predominantly include:
- back injuries (the leading injury in frequency and disability by far)
- finger, wrist, elbow, and shoulder injuries
- neck injuries
- knee injuries

Why are back and soft tissue injuries so common?

Much of the problem arises because of how our musculoskeletal system is designed. First, **your spine** is a column of bones called the spinal column, which has two basic functions:

1. It must be highly mobile to allow you to bend and twist in all directions with a wide range of motion.

2. It must be very stable in order to maintain upright posture all day long.

It is very difficult for any part of your skeleton to be both mobile and stable at the same time. Mechanically, this is very challenging, and makes your spine vulnerable to injury.

Second, the typical **joint** in the human body, where two or more bones meet, are held together by ligaments, tendons and muscles. This soft tissue contracts and relaxes whenever bodily motion is initiated. Soft tissue stress results from the following:

1. Excessive physical demand on the joint (the amount of exertion).
2. Prolonged physical demand on the joint (fatigue)
3. The physical condition of the joint, personal health and physical preparation of the joint
4. Awkwardness of motion
5. Exposure to cold or vibration

Probability of soft tissue or back injury

Jobs and working environments present various risk factors. Add to this a persons age, physical fitness, home activities, and other physical demands, and these determine the probability of a musculoskeletal problem. The level of risk depends on the frequency, intensity and duration of exposure to these conditions, and the individuals cognitive and physical capacity to meet these demands.

The Lower Back and lifting

Most of the stress when bending or lifting is absorbed by the lower back. To take some pressure away from the spine, your abdominal muscles, and to a lesser degree your back muscles (they are much smaller), contract to give added support. For example, when you lift a load, your abdomen and back muscles help equalize the effort, so that the entire weight is not transmitted to your spine, but is absorbed in the abdominal cavity. This is called intra-abdominal pressure. The use of your legs in the performance of lifting also relieves that spinal pressure.

These are the reasons that technique and fitness is important in jobs that include bending or lifting.

Main causes of back injury are:

- overexertion in lifting, pulling, or pushing
- improper or awkward technique in lifting, pushing, or pulling
- poor posture
- slips and falls
- excessive weight
- lack of exercise
- medical factors (age, disability)
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Steps in Prevention of Back injuries at work:

Use good lifting techniques

i Never lift an item that is too heavy or awkward. Get help, or a mechanical lifting aid (dolly, pallet jack, forklift or similar device
Ii Place feet astride object, one foot slightly ahead
iii. Lift smoothly, don't jerk objects when lifting
iv. Use your legs to lift
v. Keep items close to the body

- don't twist, but pivot by moving your feet when moving objects
- don't force objects when pulling or pushing
- push, rather than pull heavy objects
- limit activities while bending if possible
- limit exertion when in an extended position

If I do hurt my back, what do I do?

- If your back is hurt in the middle of a task, stop immediately.
- Tell your supervisor and / or co-workers.
- Get off your feet
- If persistently painful or debilitating seek immediate medical attention

What are musculoskeletal injuries?

Musculoskeletal injuries are a result of trauma that affects:

- muscles and tendons
- ligaments and cartilage
- joints
- spinal discs

These injuries are usually the result of:

- overexertion (while pulling, pushing, lifting, carrying)
- repetitive motion or force
- vibration or impact
- poor, extreme, or awkward postures
- any of the above factors combined with cold

About half of all soft tissue injuries are caused by over-exertion, and of those, about half are non-back related.

Further Causes...

A major cause of strains and sprains is the result of engaging in rigorous activities when muscles are **stiff, cold, or at rest**.

If you have engaged in recent rigorous activity, the usual result, the next day, is **stiff muscles**. That stiffness is the result of a build-up of lactic acid. This buildup and resulting stiffness is your bodies' way of informing you those muscles need rest. When you re-engage those same muscles in demanding activity while still stiff, you dramatically increase the possibility of injury because:

- your muscle tissue needs time to regenerate
- your flexibility is decreased
- fatigue sets in early and this limits ability to perform tasks, which can lead to frustration and over-exertion

If your muscles are **cold or at rest**, such as first thing in the day or after a period of inactivity, you will also increase risk of injury. When muscles are cold or at rest, they are receiving minimum blood flow and have limited flexibility. **They are simply not prepared for rigorous activity.**

Athletes never engage in rigorous physical activity without first loosening up and stretching, or **warming up.** Your warmup is "waking up" your muscles and increasing blood flow and flexibility.

You should never go from an "at rest" state of inactivity without first waking up your muscles.

Prevention of soft tissue injuries

1. Adopt ergonomic principles
   - good job planning - storing materials close to where they are used, ensuring product is not handled more than necessary.
   - use carts, dollies, or mechanical aids where possible for heavy lifting or moving
   - where mechanical aids are not available, enlist help
   - take breaks to rest and stretch muscles
   - where possible, rotate activities
   - Use footwear with cushioning in-soles.
   - If working off a ladder, take stretch breaks, and try not to work over your head – keep work at shoulder level when possible.
   - reduce the weight, or change container design of products being handled.
   - lubricate and keep clean joints and connections so they don't stick (and tempt you to "reef" on them)
   - minimize bending, extreme reaches, and twisting while engaged in labour
   - minimize "push and pull" distances
   - use anti-vibration PPE or tools that limit that effect
   - if possible reduce the weight and awkwardness of tools – use leverage where possible
   - Carry only the tools you need on your tool belt. Carrying all tools all the time causes fatigue

2. Maintain reasonable body weight. Less body weight means muscles and soft tissue aren't tiring or getting misaligned by carrying extra weight during normal activities.

3. Exercise. Regular exercise keeps muscles and soft tissue flexible, increases blood flow, develops greater strength, and reduces fatigue.
   ***as an added bonus, you will live a longer, healthier, active life!!*

4. Stretch before rigorous work.

What to do if you have (or may have) a soft tissue injury

- stop work immediately. Tell a co-worker or supervisor.
- rest and elevate the body part
- apply cold locally (heat and cold after a day)
- take pain or inflammatory relief (aspirin or ibuprofin)
  (Analgesics like "absorbine jr." relieve symptoms, but do not heal)
- seek medical attention if chronic pain, swelling, or lack of normal motion persists