The Burden of Work-related Musculoskeletal Disorders (MSDs)

What are work-related musculoskeletal disorders?

“Work-related musculoskeletal disorder” (MSD) is the term used to describe a painful or disabling injury to the muscles, tendons or nerves caused or aggravated by work. (Back pain is usually—but not always—regarded as a separate condition.)

Most work-related MSDs affect the hands, wrists, elbows, neck, and shoulders, but can also occur in the legs, hips, ankles and feet. Such soft tissue injuries can be non-specific—that is, the symptoms are generalized pain, weakness or discomfort. However, in some cases the symptoms develop into specific disorders like carpal tunnel syndrome.

How common are work-related MSDs?

“No one really knows,” says Institute for Work & Health scientist Dr. Donald Cole, an occupational and community medicine specialist and expert in workplace interventions to prevent and reduce MSDs. “But unlike 50 years ago, when traumatic injuries were dominant, disabling injuries of the back and upper extremities associated with overexertion and overuse now constitute the majority of all work-related injuries.”

- MSDs (including back pain) account for up to 70 per cent of all claims made by workers to the Ontario Workplace Safety & Insurance Board (WSIB). Almost half are due to non-traumatic causes like carpal tunnel syndrome or tendonitis.

- In one survey of 1,200 office workers, 60 per cent reported experiencing some neck or upper-limb pain in the previous year; 20 per cent reported moderate-to-severe upper-limb pain that recurred at least monthly or lasted more than a week. More than half believed their symptoms were aggravated by work to some extent.

- A 1998 survey found that musculoskeletal disorders were the main cause of disability in Quebec. One in four workers reported pain in the lower back that disrupted their normal activities “quite often or all the time.” About 20 per cent reported pain in the upper limbs; ten per cent reported neck pain.

These statistics likely underestimate the true extent of the problem, says Institute researcher Dwayne Van Eerd. Many workers never report their symptoms and still show up on the job, where they may be less productive.

What is the economic burden of work-related MSDs?

When health economists and others calculate total costs of illness to society, they look at both direct and indirect costs. Direct costs include hospital care, drug costs and payment to physicians and other care providers. Indirect costs include lost productivity—the value of economic output never achieved because of illness or disability—and negative effects on workers’ quality of life.

About ten years ago, a Health Canada study on the economic burden of illness, disability and premature death calculated that the annual direct and indirect costs of musculoskeletal disorders to Canadian society was around $17.8 billion (second only to cardiovascular diseases which cost $19.7 billion).
The report, which was updated in 1998, found indirect costs were highest for musculoskeletal disorders, cancer and cardiovascular disease. While indirect costs for cancer and heart disease related mainly to mortality (deaths caused by the illness), costs associated with MSD were overwhelmingly due to long-term disability.

**Why is it so hard to estimate the real burden of work-related MSDs?**

- A small number of clinicians still don’t recognize MSDs as genuine health problems. There are clinical challenges in the definitive diagnosis of MSDs and we still lack clear methods for classification, diagnosis, treatment and management of these disorders.

- We don’t have a common language for discussing MSDs. One Institute study found 44 distinct names for various MSDs and 27 different classification systems currently used by clinicians and researchers. This makes it difficult to add up the numbers and get an accurate estimate of burden.

- Many work-related MSDs go unreported. A 1997 study of newspaper office workers conducted by IWH researchers found just 29 per cent of those with work-related neck or arm pain had consulted a health practitioner. The majority of those with pain said they had not mentioned it to their employers. Many said they felt their symptoms were not worth mentioning, or that they didn’t see a connection between their symptoms and their work. Others were concerned about the reaction of their employers— for example, they expressed fear of layoff, fears that the complaint might lead to changes in their job tasks, uncertainty that they would be taken seriously, and worries about how co-workers and supervisors might perceive them.

**Why is it so important to accurately measure the burden of MSDs?**

There is some evidence that interventions can prevent or reduce disabling musculoskeletal symptoms. These include modifying the design of workstations, allowing workers to take more frequent breaks and changing how work is organized.

“Continuing efforts to accurately describe the burden of MSDs is important,” says Institute President Dr. Cameron Mustard. “But this should not distract us from implementing proven and promising practices to prevent MSDs or reduce disability.” More research is needed in several important areas—for example, how to fill the current knowledge gap when designing workspaces and processes, and whether provinces should be developing and enforcing ergonomic standards for workplace design.

**Sources:**