

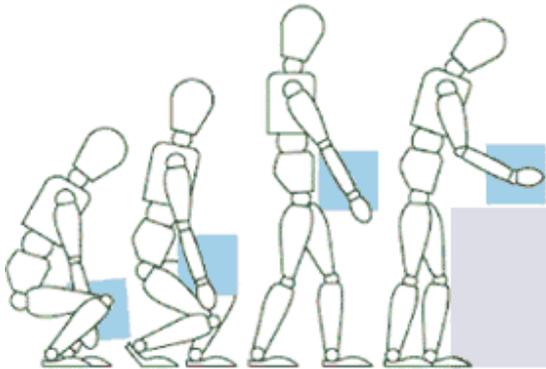


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Lifting

Manual material handling (MMH) is the most common cause of occupational fatigue and low back pain. About three of every four Canadians whose job includes MMH suffer pain due to back injury at some time. Such back injuries account for about one third of all lost work and even more than one third of all compensation costs. More important than financial cost is human suffering. Each year several thousand Canadian workers are permanently disabled by back injuries. Many others are unable to return to their former jobs. Their lives are disrupted.



All these facts make prevention of back injuries a crucial and challenging problem for occupational health and safety. This document focuses on preventing back injuries caused by MMH in the industrial workplace and is limited to the handling of inanimate objects.

Immediate and short-term effects include accidental injuries and fatigue. Sharp or

rough surfaces, and falling and flying objects are common causes of wounds, lacerations or bruises during MMH. The worker can also suffer these injuries by falling or by colliding with objects.

Fatigue is a common and expected effect of MMH. The effort required to perform MMH tasks uses up muscular energy. Where the pace of work is not too high, workers can find enough time between individual tasks to recover their energy, and work can be resumed and continued safely throughout the whole shift. On the other hand, a fast pace of work shortens the time between tasks and allows the workers to restore their energy. As a result, workers who try to maintain such a fast pace may become increasingly tired as the shift progresses. Recent development in research on the causes of back injury shows that even a moderate pace of lifting, not necessarily at the maximum lifting limit, if maintained for a prolonged time without breaks rapidly decreases workers' lifting ability by speeding up their fatigue. Fatigue not only causes instant and obvious discomfort but its effects add up over time. For that reason fatigue can also contribute to serious injuries to the musculoskeletal system. These injuries can later develop into chronic conditions that can become difficult to treat effectively. Additionally,

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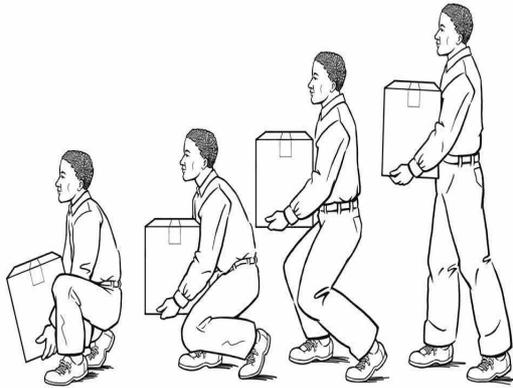




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fatigue decreases workers' alertness, making them more likely to act without due caution. This, in turn, increases their risk for accidents.



Back pain can result from various causes. The most common causes are strains and cramps in the back muscles. Back pain can also result from tears in the tendons connecting the back muscles to the spine, or from sprains and tears in the ligaments interconnecting the vertebrae (bones of the spine). Less frequently it arises from direct

damage to the vertebrae or the discs that separate them.

A worker can sustain a back injury from a single episode such as lifting too heavy a load, slipping and falling, or receiving a blow to the back. However, most often it is not the single episode that causes back injury. It is the repetition, as in manual handling, that contributes most to the occurrence of injuries. Performing MMH tasks continually, even at a moderate intensity, will cause mechanical stress to accumulate in the worker's back, increasing the likelihood of injury.

Eventually, even a mild effort in MMH can result in back injury and disabling back pain. Recovery from back injuries can take a long time and further injury may occur, making the problem worse.

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