



Injury Insight

Preventing Back Injury in Nurses and Caregivers

Back injury is the most common and debilitating musculoskeletal injury in the health industry.¹ In addition to assessing patients and keeping them safe, nurses and caregivers often perform labour intensive tasks that put them at higher risk for back injury. This includes lifting, transferring, and repositioning patients for comfort or for medical procedures.² It is no surprise, then, that nursing is among the professions that report the greatest number of back injuries.^{1,3} In British Columbia, reports of back strain injuries in the health industry exceeds injuries in other labour-intensive occupations such as farming, fishing, and mining.⁴ Nursing accounts for over 80% of back strain injuries within the health industry (2001-2016).⁴

Risk Factors

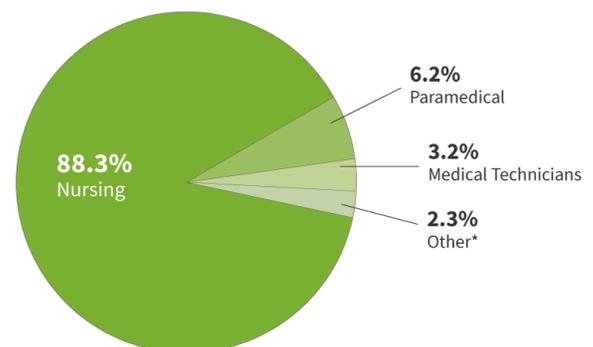
Lifting is the primary risk factor for back injury, but a combination of risk factors can increase the risk of injury.^{1,3} These risks can lead to more severe and debilitating back injuries if ignored.^{1,3}

Risk factors for back injury include:

- Poor posture^{1,5}
- Prolonged standing^{3,6}
- Handling large, overweight, or morbidly obese patients⁷⁻⁸
- Nurse fatigue or poor mental health⁹⁻¹⁰
- Lack of knowledge in proper patient handling techniques^{1,7,10}
- Specialty nursing occupations, including intensive care¹⁰ and orthopedics³

There is an average of 6,636 back strain injuries per year among people in health occupations that resulted in time-loss claims.^{A,4 (2014-2016)}

Time-loss claims on back strain injuries by suboccupations, Health Industry, BC, 2001-2016⁴



** Other includes practitioners, allied health, rehabilitation, dentistry, animal and veterinary science.*

- Repetitive movements^{1,3,6}
 - Repetitive movements such as repositioning a patient on bed rest every two hours to reduce risk of pressure ulcers; manually lifting and carrying boxes from one place to another; repeated transfers from bed to wheelchair and vice versa.¹¹
- Crowded spaces¹
 - Working in small or crowded spaces can make it difficult to complete tasks and increases the risk of back strain and injury. Passageways should be kept clear for safe and efficient movement of patients and materials, and sufficient workspace should be provided at the bedside or around the examination area.
- Increased physical workload and understaffing^{3, 7, 12-13}
 - Workload is linked to the acuity of the patient and the number of patients a nurse is providing care for (nurse to patient ratio).¹² Consequently, the risk for back injury increases with an increased acuity of the patient and nurse to patient ratio.³

Prevention Strategies

The primary prevention strategy for back strain is to avoid lifting.^{1,8,15} This is not always practical. The following are effective prevention techniques:

- Change posture and position as often as possible when performing tasks for extended periods¹
- Maintain a neutral posture with a straight back and head up when sitting, standing, or doing tasks^{1,15}
- Don't twist the body, rather reposition feet into stable positions when turning^{1,15}
- Declutter the environment and keep equipment within arms reach¹
- Keep fit and exercise core muscles^{1,14}

Risk Assessment

Assessing the risk for injury for both the patient and the health care provider is a critical step in determining how best to move a patient. This includes:

- Overall assessment for function of the patient upon admission.¹⁶
- Point of care assessment prior to each care task, with regards to the safety of completing the task relative to the:
 - Environment, including equipment availability, set-up, and the surrounding area.
 - Patient, including the patient's ability at the time of care, care needs, and functional ability.
 - Worker, including skill set and frame of mind.
 - Care Plan, including knowledge of how care is provided to this patient, and any changes.

Equipment to Lift Patients

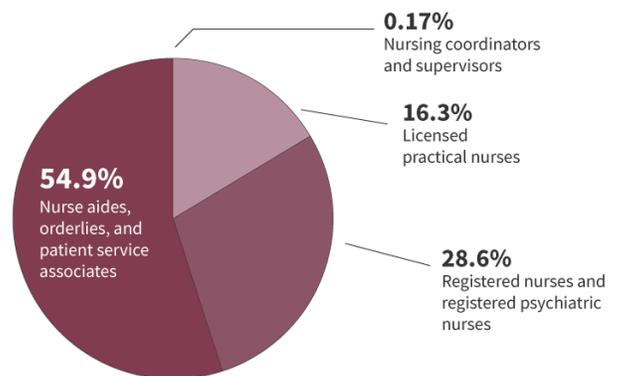
There are many tools that can be used to assist nurses and caregivers with lifting, carrying, or repositioning patients. When used appropriately, these tools can decrease the risk of back strain.^{1,5-6,15} Nurses and caregivers should ask their colleagues for help even when using equipment to increase safety and decrease strain on the body.^{3,15}

- Sit-to-stand lifts and ceiling lifts move patients who have limited ability or inability to bear weight¹⁵
- Using a ceiling lift with a repositioning sling is best practice to reposition patients in bed.¹⁶
- Air-assisted devices, such as hover sheets, reduce effort required to reposition a patient.¹⁶
- Sliding mats, sliding boards, and rolling boards are placed under patients to assist in moving and repositioning, but require more effort than an overhead lift.^{8,11,16}
- Gait and back belts are placed around a patient's waist to support them during movement.^{1,6,16} However, evidence

shows that using gait and back belts are inconclusive in reducing back strain in nurses and caregivers.¹⁶⁻¹⁷

- Floor lifts and air-assisted devices, such as hover jacks and ELK Cushions, are used to lift patients from the floor who have fallen.¹⁶

Time-loss claims on back strain injuries by nursing occupation, Health Industry, BC, 2001–2016⁴



Maintain a neutral posture with a straight back and head up when sitting, standing, or doing tasks. Use both hands to grip when practical, and balance the weight between both hands. Ask for assistance, and have a minimum of two nurses or caregivers when lifting.

Common Myths About Back Injuries

MYTH: Lifting patients is the only high-risk task for back injury performed by nurses and caregivers.^{1,3,7,11}

FACT: Many tasks performed are high-risk if not done properly. These include:^{7,11}

- Assisting a patient to and from sitting, standing, or lying positions
- Turning or holding a patient while performing care
- Providing medical and personal care (e.g., inserting catheters, providing bed baths)
- Procedures that require standing for prolonged periods of time (e.g., assisting during an operation)

MYTH: Physically fit nurses and caregivers are less likely to sustain back injuries.^{7,11}

FACT: Being physically fit and having a strong back and abdominal strength are protective factors for back injuries, but do not account for a variety of other factors that can lead to back strain.^{1,7,11}

These include:⁷

- Unpredictable patient movements
- Nurse to patient ratio (workload)
- Stress
- Previous history of back injury
- Age

MYTH: All different types of lifting devices are equally effective in handling patients.^{7,11}

FACT: Each lifting device is effective in different situations. The proper equipment used to lift, transfer, and reposition patients will depend on the patient's ability to bear weight, follow instructions, and the caregivers' expertise and knowledge.^{1,8,15} (e.g., Back belts are not effective in decreasing the incidence of back strains, as they may cause the lifter to take on a load greater than their capabilities allow).¹⁶

MYTH: Education and training are effective in reducing back injuries.^{7,11}

FACT: The transfer of new knowledge through education and training to day-to-day tasks needs to be supported with access to equipment, no-lift policies, and peer support.^{7,14} Learning occurs while applying new skills, problem solving, and debriefing.¹⁴ Education and training without social, environmental, or policy changes can lead to:⁷

- Feeling reluctant to use new and unfamiliar equipment or to apply techniques learned in the classroom¹¹
- Taking on unsafe and high-risk lifting techniques to get the job done¹⁴

No-Lift Policy, Workplace Standards and Safety

The National Institute for Occupational Safety and Health (NIOSH) recommends that nurses and caregivers should only manually lift up to 16 kg or 32 lbs in the most ideal conditions—when the patient follows instructions, the nurse has no previous back strain injuries, has worked less than 8 hours, and the working area is clean and organized.¹⁶

The Provincial Safe Resident Handling Standards for Musculoskeletal Injury Prevention in British Columbia recognizes that patient handling tasks (transferring, ambulating, and repositioning patients) often exceed this recommendation.¹⁶

To safely care for patients, the Provincial Safe Handling Standard recommends implementing a “no manual handling” policy, supported with equipment, education, training, and management and peer reinforcement of safe work practices,

because no amount of proper lifting techniques can stop an injury when the load is greater than the body can endure.^{1,16,18}

Other evidence-based standards to decrease back strain include:

- Easily accessible education and training program on body mechanics and lifts^{1,7}
- Standardized nurse to patient ratio¹⁹⁻²⁰ and mandatory allocated breaks¹
 - Physical and mental fatigue affects nursing proficiency and increases risk for injury^{1,7}
- Established communication strategies to promote safe culture²⁰
 - Proper use of lift devices and techniques must be emphasized because incorrect implementation is counterproductive^{1,3,5,7,15-16,18}



Toolkit for Preventing Back Injury

WorkSafeBC suggests that when manually lifting, carrying or repositioning a load, ensure that the load is kept close, balanced between both hands and the distance reached when picking up the object is minimized.^{8,14} WorkSafeBC has online lifting and carrying calculators to calculate injury risk and resources containing strategies to decrease the risk of injury.⁸

[LIFTING CALCULATOR](#)

[CARRYING CALCULATOR](#)

[EXERCISE AND STRETCHES FOR BACK INJURY PREVENTION](#)

Conclusion

Occupational back injury is a worldwide issue,²¹ and nurses and caregivers are among those that are at high risk for injury.^{1,3,21} It is important to raise awareness and gather support for implementing back injury prevention practices. The prevention methods provided can also be used by other occupations and the public when lifting or handling heavy loads.

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Graphs, pp. 2-3: Claims are included if a worker takes time off work due to the injury, receives a pension amount, or dies as a result of a work-related injury.

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