Safe Lifting Injury Prevention Manual

State of Wisconsin

Produced in partnership with the Bureau of State Risk Management and the UW System

State of Wisconsin Lifting Summary

Lifting, Moving, or Restraining Load injuries continue each year to be a leading cause and worker's compensation expense driver for State of Wisconsin employees. Over the past ten fiscal years, State of Wisconsin employees sustained 5,862 worker's compensation claims as a result from Lifting, Moving, or Restraining a Load. Over the same time period, the State of Wisconsin paid $41,299,376 on Lifting, Moving, or Restraining Load claims:

FISCAL YEAR	NEW LIFTING CLAIMS	NEW LIFTING CLAIMS OVERALL CAUSE RANK	LIFTING CLAIMS WITH PAYMENT	LIFTING CLAIMS WITH PAYMENT WC EXPENSE	LIFTING CAUSE PAYMENT EXPENSE RANK
2015	516	2	722	$5,073,193	2
2014	482	2	606	$4,243,423	2
2013	430	2	635	$4,361,917	1
2012	588	1	760	$4,525,987	1
2011	587	2	770	$4,312,422	2
2010	583	1	771	$4,088,891	2
2009	624	2	816	$3,395,292	2
2008	684	2	878	$4,046,271	1
2007	632	1	854	$3,583,779	1
2006	736	1	928	$3,668,201	1
TOTALS	**5,862**	**2**	**7,740**	**$41,299,376**	**2**

In effort to reduce Lifting, Moving, or Restraining Load injuries for State of Wisconsin employees, the Bureau of State Risk Management & UW System Risk Management partnered in producing the included statewide campaign:

- Stretch – Improve Flexibility and Reduce Tightness
- Protect Your Backs – Proper Lifting Techniques
- Moment – Power Zone Lifting
- Proper Transfer Techniques – Guidelines for Nursing
- Shovel – Prevent Snow Shoveling Injuries

Supplement:

- Ergonomics Process Checklist

Steps

To

Reduce

Extra

Tightness of Muscles and

Cultivate

Healthy Flexibility

The overall goal of ergonomics is to match the job demands to the capabilities of humans. Primary focus should remain on changing the job demands but stretching compliments good engineering solutions. Humantech research indicates stretching in itself may not reduce musculoskeletal disorders but it may improve flexibility and reduce tightness.

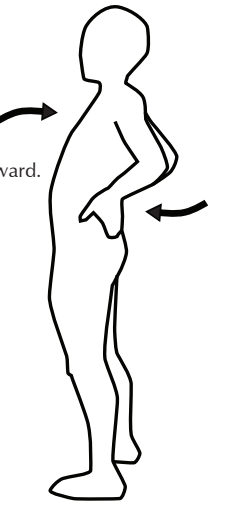
Stretch slowly and gently prior to activity; don't force a muscle to stretch.
Take deep breaths when stretching.

SHOULDER STRETCH

Stand, hands clasped behind head.
Pull elbows back as far as possible.
Hold ten seconds.

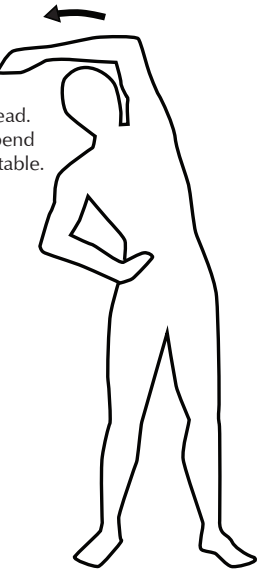
LOW BACK STRETCH

Place hands on lower back.
Using hands as support, arch backward.
Try to keep knees straight.
Hold ten seconds.



SIDE STRETCH

Stand, one arm straight overhead.
Place other hand on hip and bend to that side as far as is comfortable.
Hold ten seconds.
Repeat to other side.



Safe Handling Initiative Eliminates Lifting Dangers

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PROTECT YOUR

Balanced gradual lifting

Aid used for excessive weights

Comfortable lifting

Keep objects close to your body

Straight posture avoiding any twisting or bending

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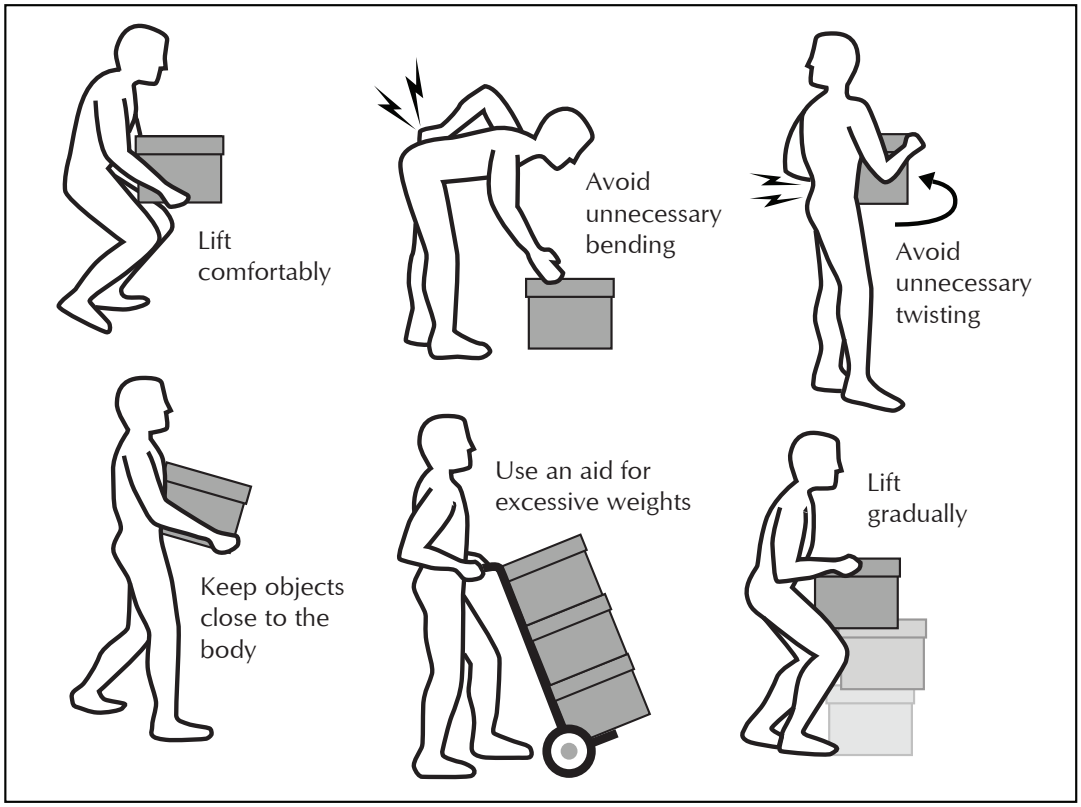

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PROTECT YOUR BACKS

Over the past five years, the State of Wisconsin averaged 331 new coded low back workers compensation claims per year representing 11% of total new claims and the #1 body part injured. The average annual spend on all coded low back workers compensation claims was $2,631,707 representing the #2 most costly body part.

Proper body mechanic strategies to protect:

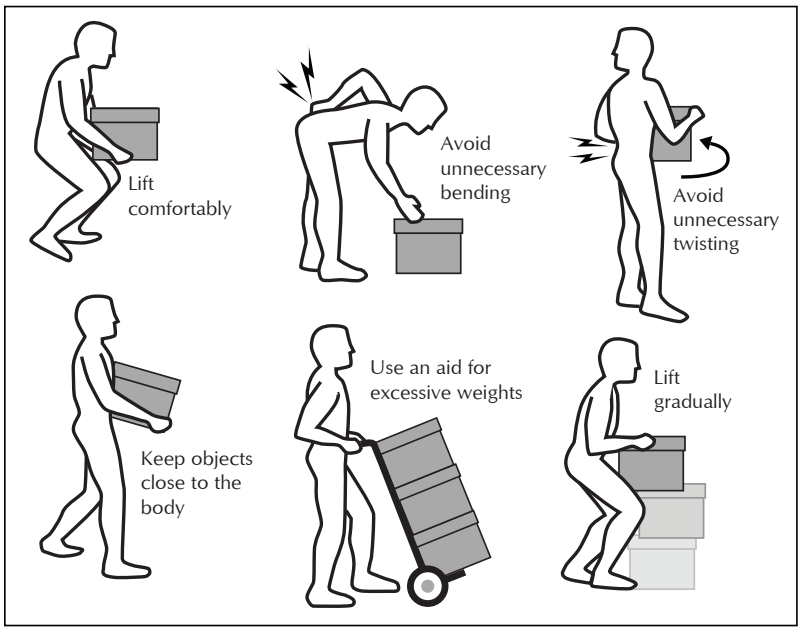
Balanced gradual lifting

Aid used for excessive weights

Comfortable lifting

Keep objects close to your body

Straight posture avoiding twisting or bending



Liberty Mutual provided the following ergonomic research figures and training to protect workers from the risk of manual material handling injuries:

1. Choose the position that feels best, preferably maintaining natural back curvature.
2. Do not place objects on the floor if they must be picked up later. Use a table, platform or hoist device.
3. Leave enough room to be able to turn your feet instead of your hips or shoulders. Never twist and bend at the same time.
4. Handle objects close to the body. Don't reach out to pick up an object. Get help with bulky loads.
5. If the load is too heavy to lift comfortably, don't lift it. Get help or use a mechanical aid.
6. Grasp the object firmly with both hands. Prepare for the lift and look forward.
7. Get a good grip on the object and lift smoothly and slowly. Avoid jerking to lift or pull the load. Breathe out as you lift.
8. Minimize the distance the load has to be moved (both vertically and horizontally).
9. Push or slide the load rather than lift or lower it.

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FORWARD

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Maximize power zone lifting

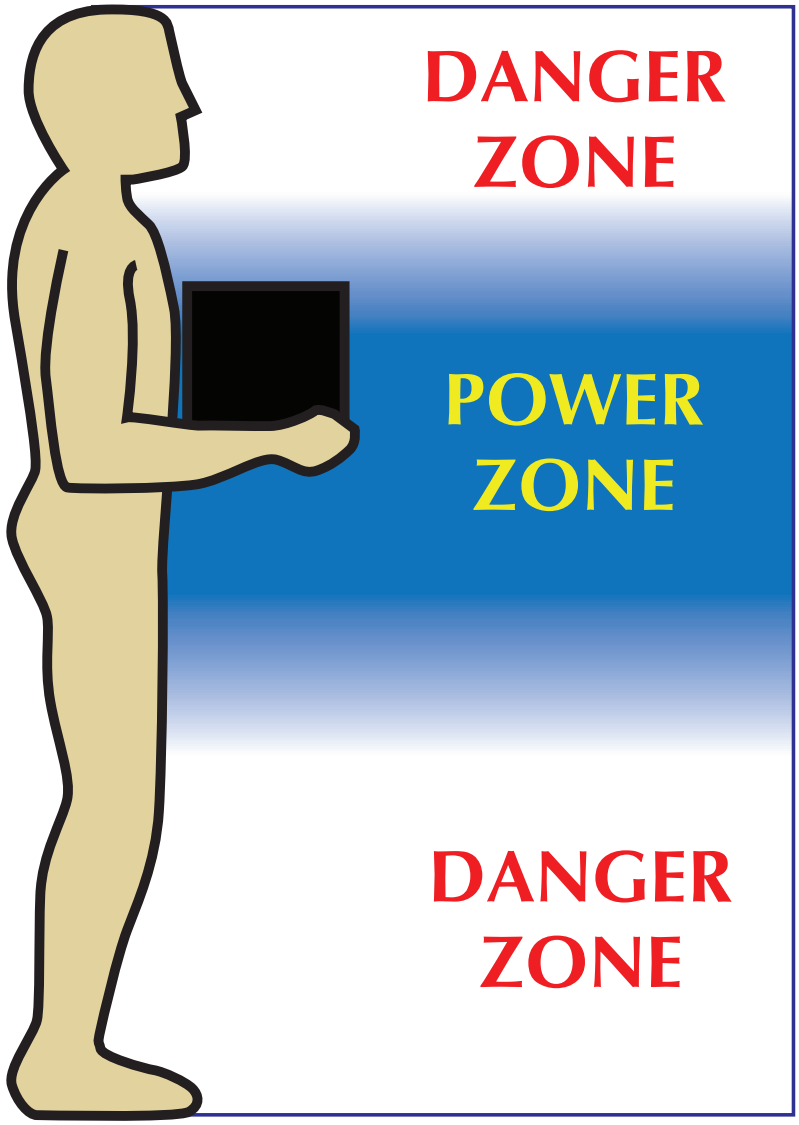
Obtained with

Minimized load weights

Eliminates

Needless

Trauma



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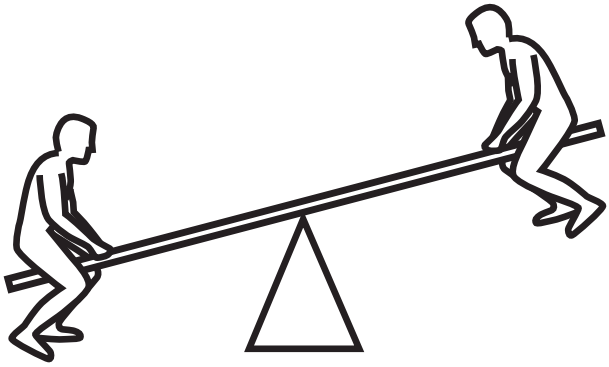
MOMENT

In Physics, moment is the force acting over a distance: Moment = (Force) x (Distance). Moment can also be expressed as the weight of load multiplied by the distance from the center of weight of load to a fulcrum. Picture the intervertebral disc as the fulcrum of a "teeter totter." Applying the moment formula to a lifting scenario, imagine holding a 40 pound sack of flour 20 inches extended in front of the body. This would equate to approximately 800 pounds of compressive force to the lower spine. Research suggests that low back pain risk increases when the compressive force at the L5-S1 disc exceeds 770 pounds. Please consider that this scenario only includes moment from the load and does not consider additional exposure factors from movements or upper body mass weight. Keeping the load weight to a minimum is extremely important reducing the risk factor in the moment equation. The NIOSH lifting



equation always uses a load constant multiplier of 51 pounds, which represents the maximum recommend load weight to be lifted under ideal conditions.

Staying in the power zone for lifting close to the body, between mid-thigh and mid-chest height, also limits the distance risk factor. This zone is where the arms and back can lift the most with the least amount of effort. This can also be called the "hand shake zone" or "comfort zone." The principle is to ensure "shaking hands with work," to minimize excessive reach and maintain neutral posture.

Maximized power zone lifting

Obtained with

Minimized load weights

Eliminates

Needless

Trauma

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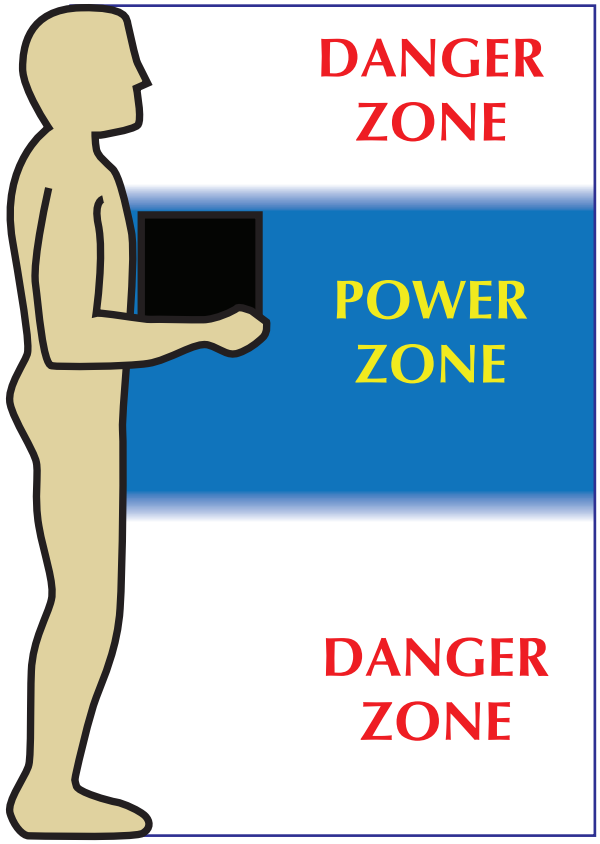

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Prevent Snow "Shovel" Injuries

Safe Handling Initiative Eliminates Lifting Dangers

Stretch before & after

Have right size & height tools

Operate regularly staying ahead of storm

Value pushing light amounts of snow

Eliminate twisting

Lift using legs & keeping back straight

Center For Injury Research and Policy Facts:

An estimated 11,500 snow shovel-related injuries and medical emergencies are treated annually in United States Emergency Departments.

The most common mechanism of injury/nature of medical emergency was acute musculoskeletal exertion (54%).

Most snow shovel-related incidents (96%) occurred in and around the home.

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Prevent Snow "Shovel" Injuries

According to the Center for Injury Research and Policy, an estimated 11,500 snow shovel-related injuries and medical emergencies are treated annually in United States Emergency Departments. The most common mechanism of injury/nature of medical emergency was acute musculoskeletal exertion (54%). Also of note, most snow shovel-related incidents (96%) occurred in and around the home.

Safe Handling Initiative Eliminates Lifting Dangers

There are a number of simple tips to help prevent musculoskeletal outdoor winter work injuries:

Stretch before & after

Have right size & height tools

Operate regularly staying ahead of storm

Value pushing light amounts of snow

Eliminate twisting

Lift using legs & keeping back straight

Quick and easy tips for clearing the driveway:

1. Clear a strip down the middle of the driveway.
2. Push the snow on one side towards the outer edge.
3. Repeat on the opposite side of the driveway.

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OSHA Recommended Transfer Techniques

Tasks	Patient Condition: Not Cooperative	Cannot Assist	Can Partially Assist	Cannot Bear Full Weight	No Upper Body Strength	Recommendations
Transfer To and From: • Bed to Chair • Chair to Toilet • Chair to Chair • Car to Chair • Bed to Wheelchair			●	●		**Gait/Transfer Belt** using a Stand and pivot technique -1 caregiver **OR** **Powered Standing Assist Lift** -1 caregiver
	●	◆		●	●	**Full Body Sling Lift** -2 caregivers
				●		**Seated Transfer Aid:** may use **Gait/Transfer Belt** until the patient is proficient in completing transfer independently.
Reposition in Bed: • Side to Side • Side up Straight			●			**Friction Reducing Device:** patients<200lbs 2-3 caregivers **Friction Reducing Device:** patients>200lbs-3 caregivers
		●				**Friction Reducing Device** or **Full Body Sling Lift:** 2 or more caregivers.
Reposition in Chair: • Wheelchair • Dependency Chair		●				**Friction Reducing Device:** for reclining chair-2 caregivers. **Non-Powered Stand Assist Aid:** for non-reclining chairs.
	●	●				**Full Body Sling Lift:** 2 or more caregivers.

*Reference OSHA 3182-3R-2009 Guidelines for Nursing Homes.

*All caregivers are recommended to consult with lead medical staff before utilizing lifting devices.

*Always error on the side of caution; lifting equipment offers greater protection than manual handling.

Safe Handling Initiative Eliminates Lifting Dangers

Produced By Bureau of State Risk Management and Wisconsin Department of Veterans Affairs

Proper Transfer Techniques

Lower back injuries are the most costly musculoskeletal disorder affecting workers. Studies of back-related workers compensation claims reveal that nursing personnel have the highest claim rates of any occupation or industry.

According to the National Institute of Occupational Safety and Health (NIOSH) and the American Nurses Association:

- 53% of the work-related injuries and illnesses among nursing, psychiatric, and home health aides were related to overexertion and musculoskeletal disorders.
- OSHA recordable injury rates decreased by 46% after lifting equipment was implemented.
- Patient handling programs have led to a 60-95% reduction of injuries at various VHA hospitals.
- Healthcare workers have 4.5 times as many back overexertion injuries than any other type of worker.

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Proper utilization of lift aid techniques can substantially reduce these types of injuries and increase the long-term health of nursing personnel. OSHA completed a study, Guidelines for Nursing Homes, which provides basic knowledge for nursing staff to safely transfer patients including:

- The level of assistance the resident requires
- The size and weight of the resident
- The ability and willingness of the resident to understand and cooperate
- The medical conditions that may influence transfer methods

Please reference poster included for detailed table of OSHA recommendations.

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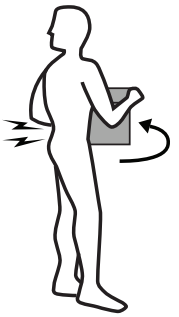
Ergonomics Process Checklist

Back

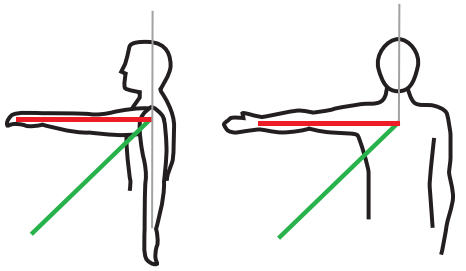
☐ Design space to move freely avoiding any twisting.



☐ Provide self-leveling lift tables or mechanical lifts to prevent bending.

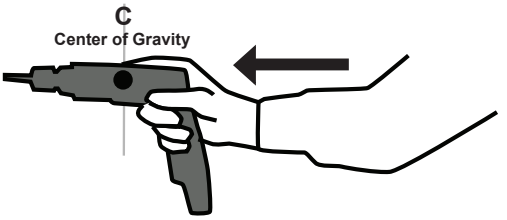
Shoulder

☐ Work height allows for shoulder angles no greater than 45 degrees (respect to torso & side of body).



Wrist

☐ Supply tools to keep wrist in a neutral position.



Anti-Fatigue Matting

☐ 15/16" thick with yellow beveled edges.