SPRAINS & STRAINS

Why Your Prevention Efforts Aren’t Working!

Our Presentation Will Begin Soon

SPRAINS & STRAINS

Why Your Prevention Efforts Aren’t Working!

ICW Group Risk Management Services

Today's Presenter:

Brian Piñon

Risk Management Team Leader – Northern California Region

Today's Topics

- Myths vs. Facts
- ICW Group's Risk Framework
- 5 Tips to Reduce Sprain/Strain Risk
- ICW Group's Risk Reduction Tool

MYTHS vs. FACTS

What you think is

FACT

may actually be a

MYTH!

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MYTHS vs. FACTS

MYTH #1

Sprains & Strains are not a problem

FACT

- 23% of all lost time claims
- #1 injury type for agriculture, construction, manufacturing & warehousing
- 521,350 lost time claims in 2021/22
- Average of 14 lost workdays per injury

Source: National Safety Council

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Our customers….
5-Year Total

- **$647M** in claim costs
- **28%** of overall claim costs
- **28%** of claim count

MYTHS vs. FACTS

MYTH #2

Training workers how to lift properly is effective at
preventing sprains and strains

FACT

Studies show training has no impact on manual lifting injury rates

Training…

5 ½ year study of 3000+ postal workers found no reduction of:

- median cost per injury
- time off from work per injury
- back & related musculoskeletal injuries
- rate of repeated injury after return to work
- Only the subjects' knowledge of safe behavior was increased by the training!

"A Controlled Trial of an Educational Program to Prevent Low Back Injuries",
The New England Journal of Medicine; National Institutes of Health

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MYTHS vs. FACTS

MYTH #3

Back belts prevent injuries caused by lifting

FACT

Studies show back belts, while reducing back bending during lifting, don't reduce incidence of back injury claims or low back pain

BACK BELTS

Case Study

160 Retail Stores

89 Required Back Belts

6311 workers surveyed

New England Journal of Medicine 2000; 284:2727-2732

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BACK BELTS

“In the largest prospective cohort study of back belt use…, neither frequent back belt use nor a store policy that required belt use was associated with reduced incidence of back injury claims or low back pain. "

New England Journal of Medicine; 284:2727-2732

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MYTHS vs. FACTS

MYTH #4

Using the squat lifting technique helps prevent back injuries

FACT

Spinal compression forces are estimated to be equal or higher in squat lifting

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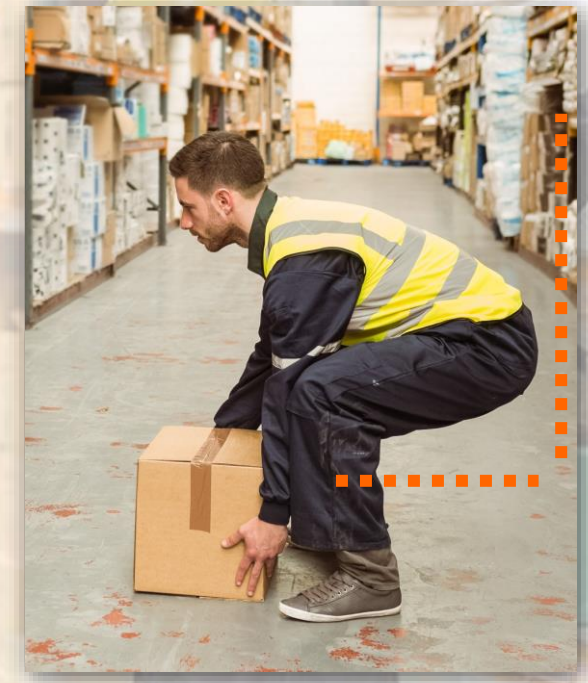
Stoop vs Squat Lifting

?



Which is safer?

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Stoop vs Squat Lifting

"The current in vivo biomechanical study…

does not provide evidence that spinal loads differ substantially between stoop and squat lifting."

Journal of Biomechanics

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Stoop vs Squat Lifting

"…joint moments and powers in the back were found not to be significantly different between lifting techniques,

therefore, imposing similar musculoskeletal loading on the back during squat and stoop lifting."

Journal of Applied Sciences

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Stoop vs Squat Lifting

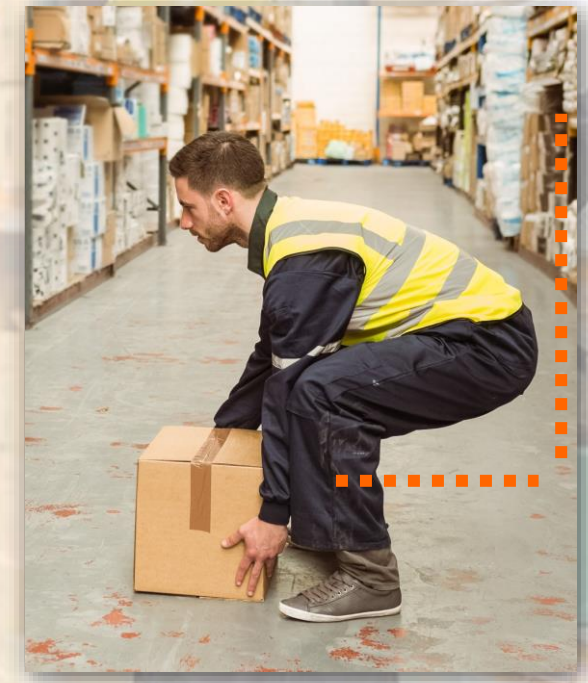
"In conclusion, this work showed that stoop lifting produced lower total and compressive lumbar loads than squat lifting."

"The findings of this study provide further support to the notion that there is no one-size-fits-all approach."

Frontiers in Bioengineering and Biotechnology

Stoop vs Squat Lifting

VS



Encourage workers to lift using the posture they find most comfortable

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MYTHS vs. FACTS

- Investing in mechanical lift aids isn't worth the expense

Fact:

- Mechanical lifts can result in a great ROI – considering a single sprain / strain injury costs …

$18,000+ average cost

MYTH #5

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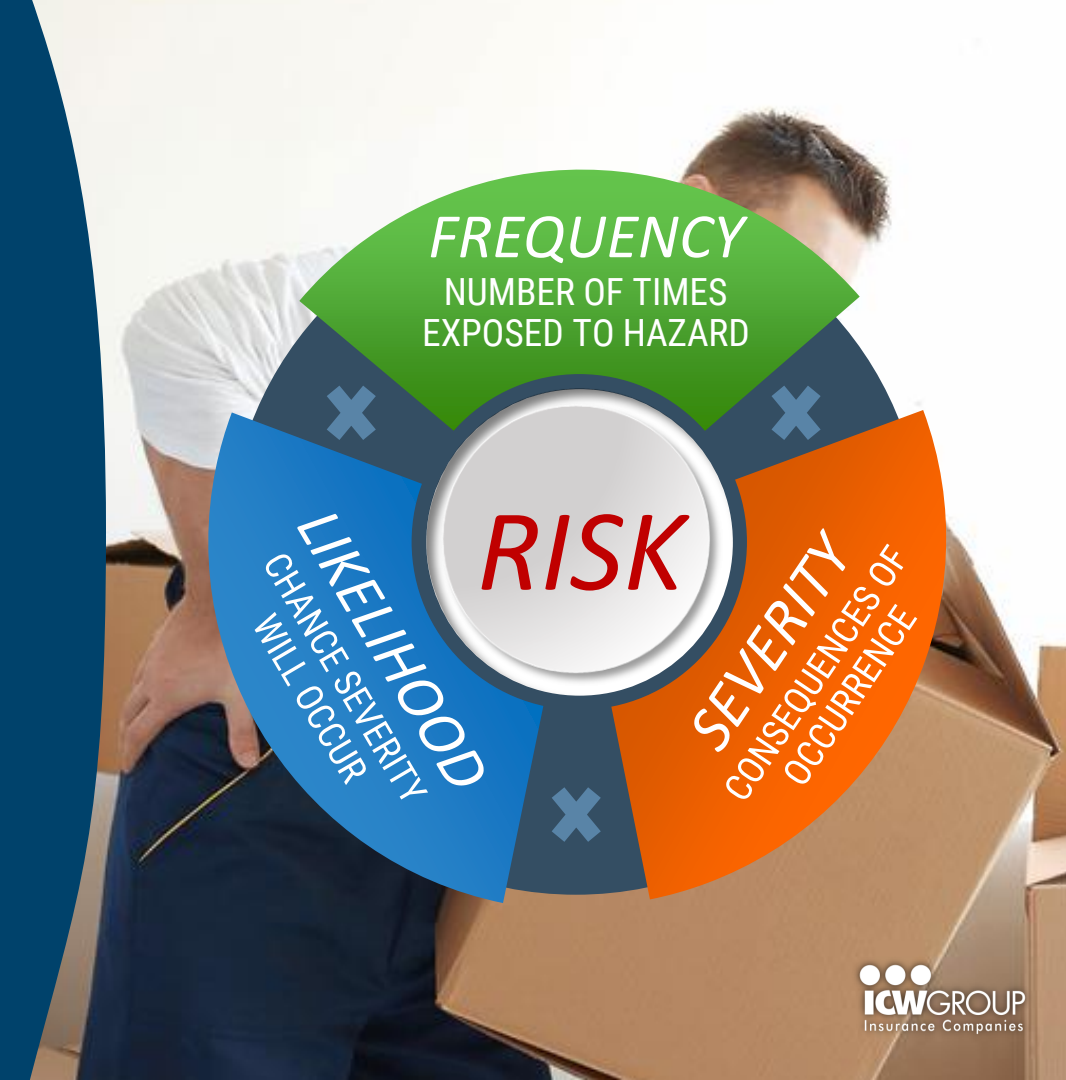
Traditional Approaches

- Body Mechanics Training
- Back Belts
- Get Workers to Keep their Backs Straight

The ICW Group Risk Framework

The Traditional Approaches Give Way to New Methods



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The ICW Group Risk Framework

- Number of lifts / pushes / pulls required for tasks

- Torso twisting
- Below-the-knee lifts
- Over-the-shoulder lifts
- Extended arm lifts
- Load weight
- Force push / pulls
- Task duration

- Prior injuries
- Health of the worker
- Availability of modified duty

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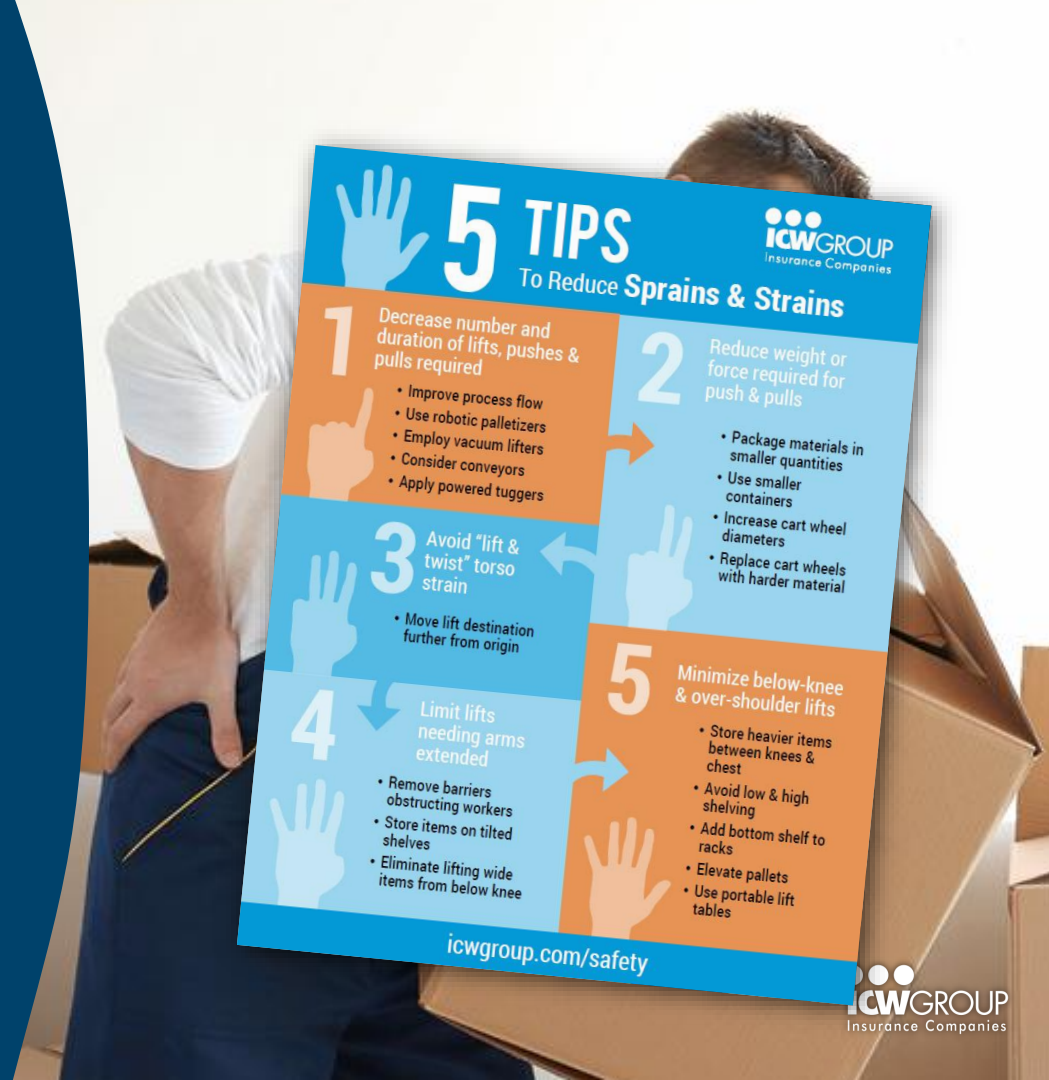
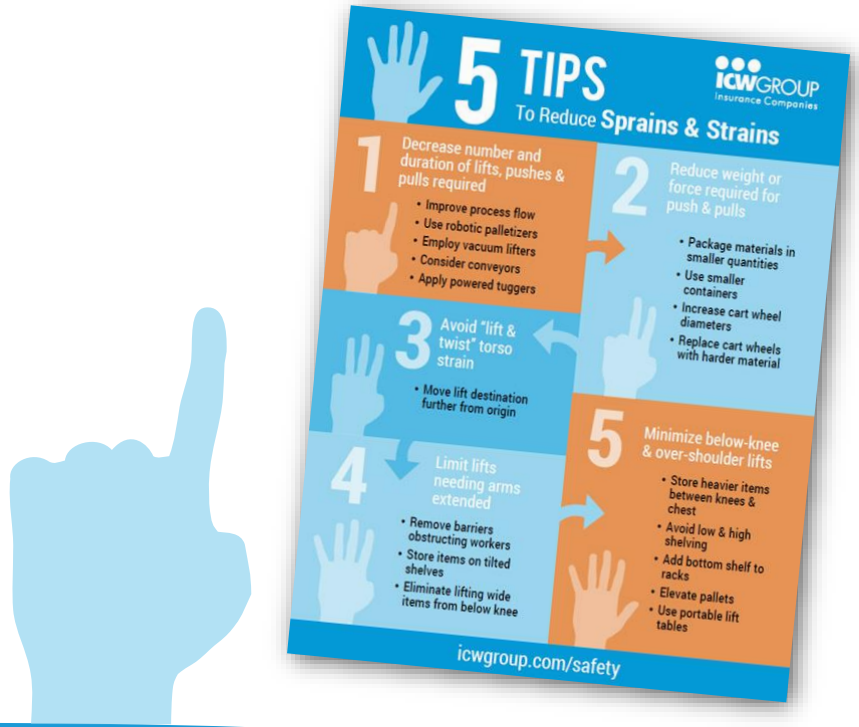
5 Practical Tips to Reduce Sprains & Strains



- Improve process flows
- Use robotic palletizers
- Employ vacuum lifters
- Consider conveyors
- Apply powered tuggers



1 Decrease number and duration of lifts, pushes or pulls required

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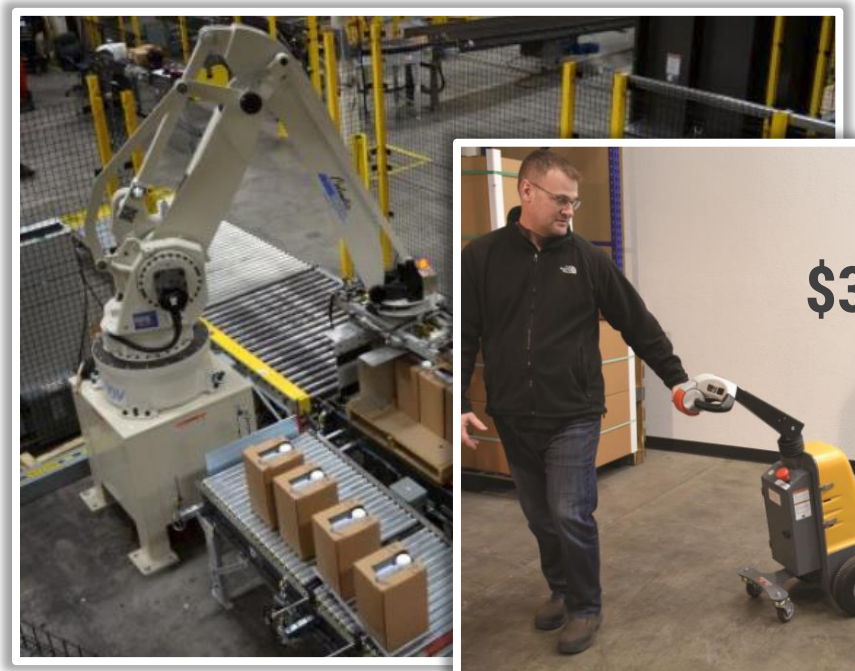

1 Decrease number and duration of lifts, pushes or pulls required

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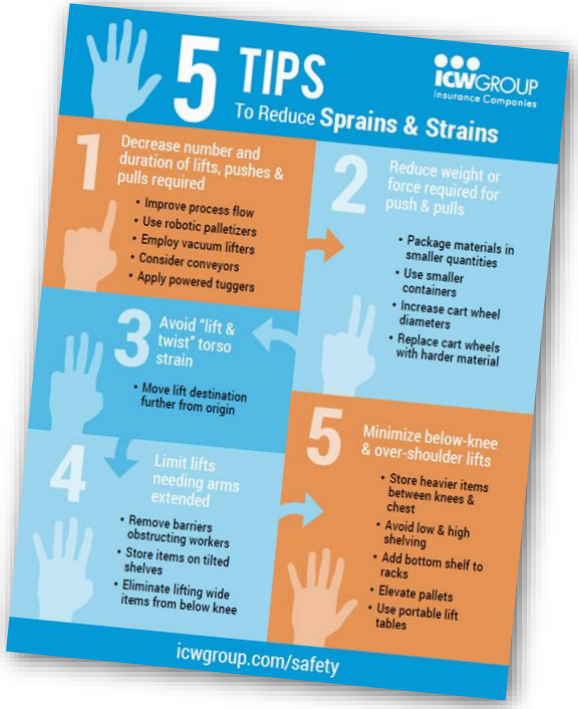
- Package materials in smaller quantities
- Use smaller containers
- Increase cart wheel size
- Replace cart wheels with wheels made of harder material



2 Reduce weight or force required for push & pulls

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Cost of Reducing Weight Lifted

- Local Hardware Store Pricing on concrete mix:
  - 80 lbs bag: 6.3¢ per lbs
  - 50 lbs bag: 7.8¢ per lbs (24% more expensive)
- Contractor using 8,000lbs/mth switches to smaller bags = $1428 increased cost per year

$18,000 avg. cost of just one sprain/strain claim

12.5 years it would take to reach this cost!

2 **Reduce weight or force required for push & pulls**

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Cart Push/Pull Forces

- Doubling wheel diameter halves the force required to get moving and keep moving
- Replacing hard rubber wheels with harder material, like polyurethane…

…can reduce required forces over 80%

Cost of Replacing Cart Wheels

- 6” light-medium duty polyurethane = $200 per cart
- 15 carts = $3000
- Wheel maintenance comparable to hard rubber wheels

$18,000 avg. cost of just one sprain/strain claim

2 **Reduce weight or force required for push & pulls**

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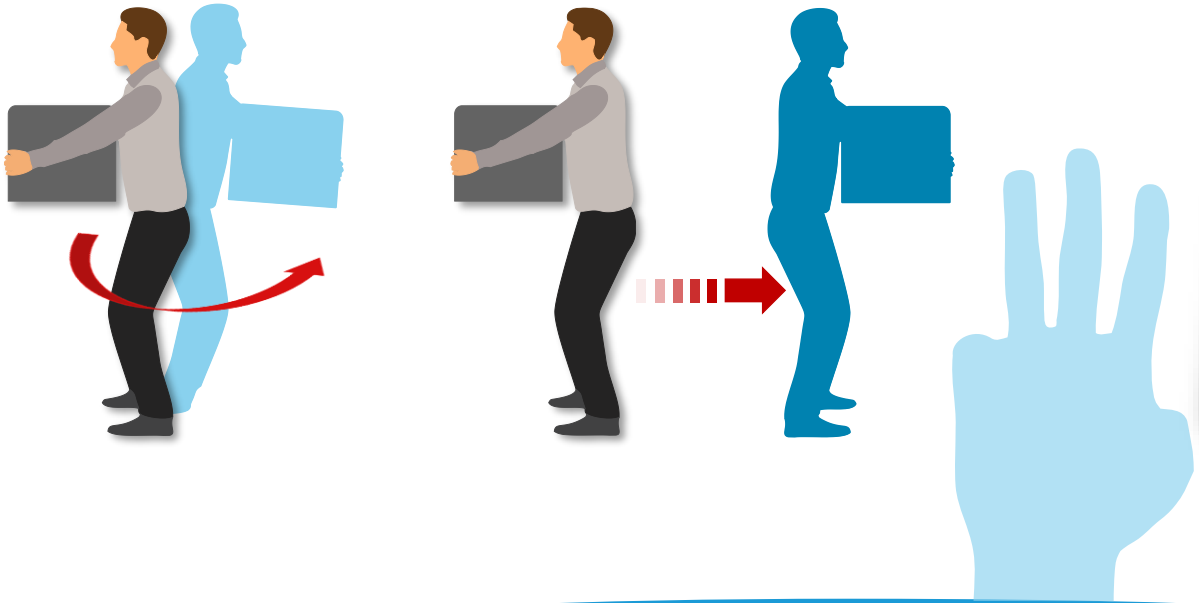
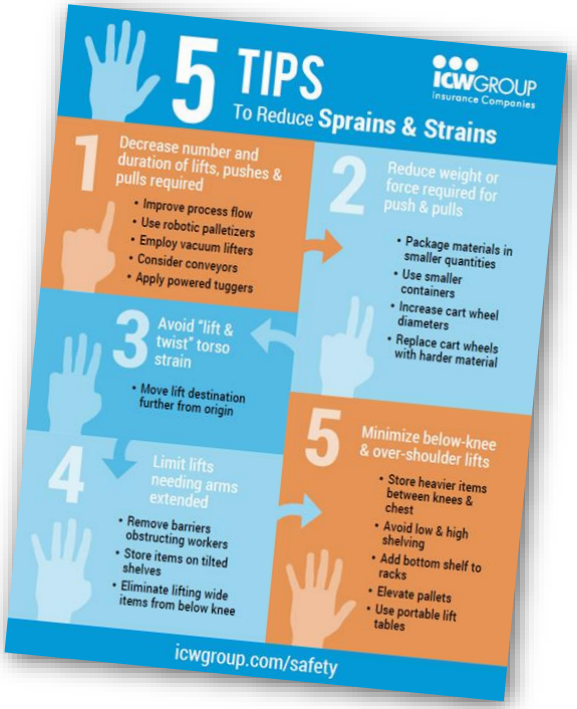
- Move lift destination further from origin





3 **Modify lifts that encourage torso twisting**

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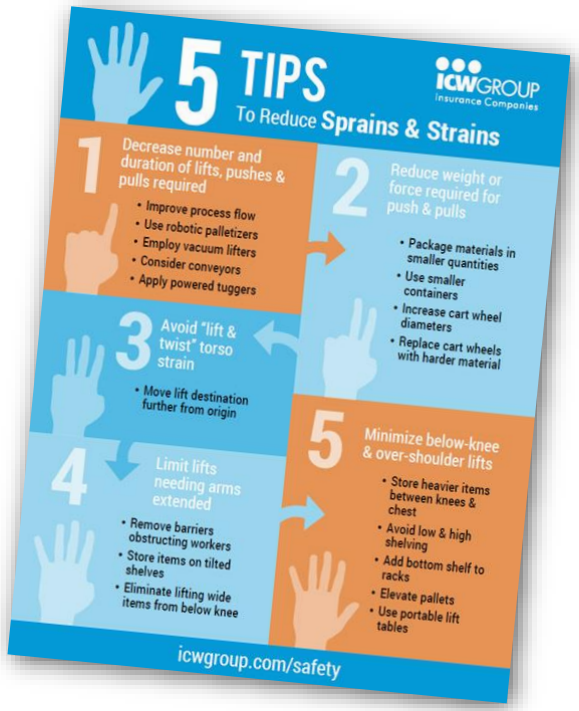
- Remove barriers obstructing workers
- Store items on tilted shelves
- Eliminate lifting wide items from below knee height



4 Limit lifts needing arms extended

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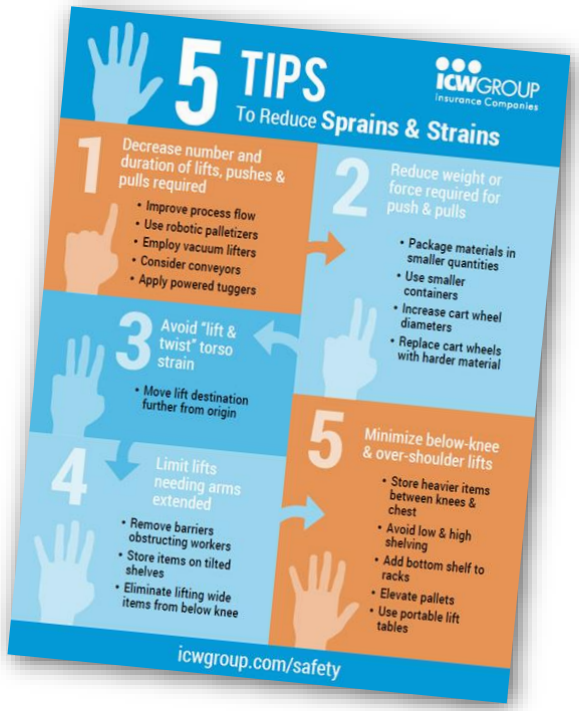
- Store heavier items between knees & chest
- Avoid low & high shelving
- Elevate pallets
- Use portable lift tables



5 **Minimize below-knee & over-shoulder lifts**

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$250 - $800

$2K - $10K

5 Minimize below-knee & over-shoulder lifts

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5 Minimize below-knee & over-shoulder lifts

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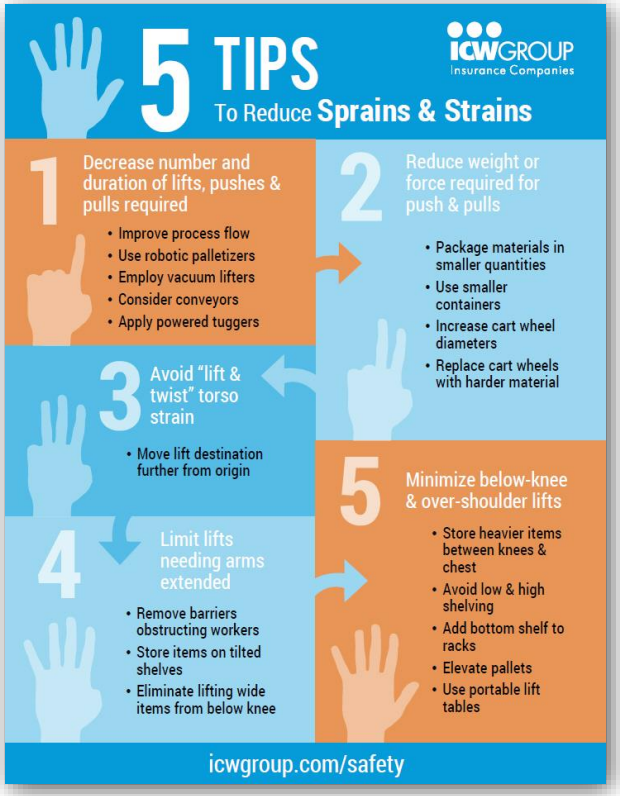
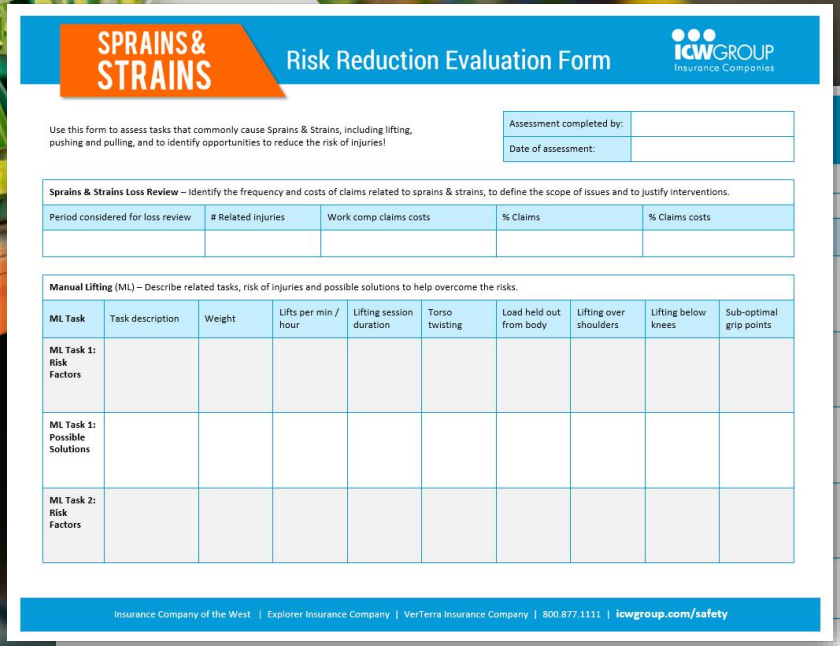
1. Decrease number and duration of lifts, pushes & pulls required
2. Reduce weight or force required for push & pulls
3. Modify lifts that prompt torso twisting
4. Limit lifts needing arms extended
5. Minimize below-knee & over-shoulder lifts



Sprains & Strains Risk Reduction Tool

- Assess tasks
- Identify risk factors
- Identify practical solutions



SPRAINS & STRAINS

Risk Reduction Evaluation Form

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Use this form to assess tasks that commonly cause Sprains & Strains, including lifting, pushing and pulling, and to identify opportunities to reduce the risk of injuries!

Assessment completed by:	
Date of assessment:	

Sprains & Strains Loss Review – Identify the frequency and costs of claims related to sprains & strains, to define the scope of issues and to justify interventions.

Period considered for loss review	# Related injuries	Work comp claims costs	% Claims	% Claims costs

Manual Lifting (ML) – Describe related tasks, risk of injuries and possible solutions to help overcome the risks.

ML Task	Task description	Weight	Lifts per min / hour	Lifting session duration	Torso twisting	Load held out from body	Lifting over shoulders	Lifting below knees	Sub-optimal grip points
ML Task 1: Risk Factors									
ML Task 1: Possible Solutions									
ML Task 2: Risk Factors									

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Sprains & Strains Risk Reduction Tool

Loss Review – Complete this section to identify the frequency and costs of MMH claims. This can be used to define the scope of issues and help justify interventions.

Period considered for loss review	# MMH injuries	MMH work comp claims costs	% MMH claims	% MMH claims costs
8/2014 – 8/2019	8	$144,000	42%	60%

Loss Review Section

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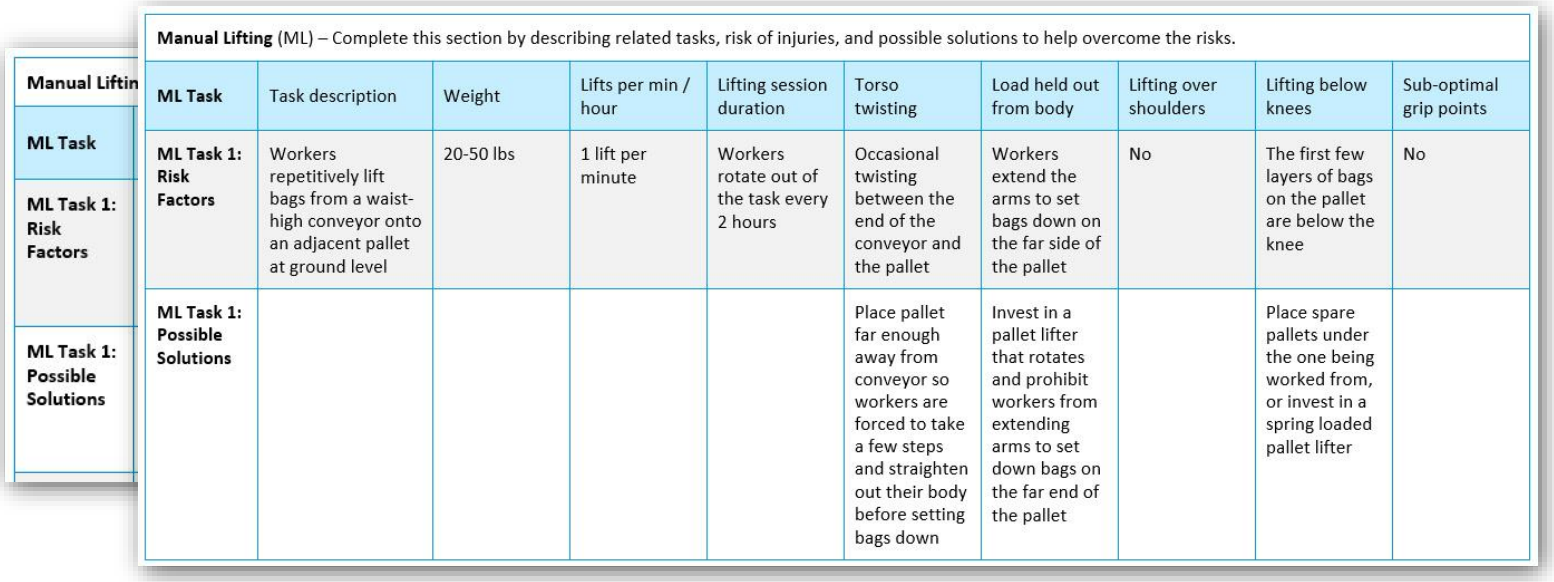
Sprains & Strains Risk Reduction Tool



Manual Lifting (ML) – Complete this section by describing related tasks, risk of injuries, and possible solutions to help overcome the risks.

ML Task	Task description	Weight	Lifts per min / hour	Lifting session duration	Torso twisting	Load held out from body	Lifting over shoulders	Lifting below knees	Sub-optimal grip points
ML Task 1: Risk Factors	Workers repetitively lift bags from a waist-high conveyor onto an adjacent pallet at ground level	20-50 lbs	1 lift per minute	Workers rotate out of the task every 2 hours	Occasional twisting between the end of the conveyor and the pallet	Workers extend the arms to set bags down on the far side of the pallet	No	The first few layers of bags on the pallet are below the knee	No
ML Task 1: Possible Solutions					Place pallet far enough away from conveyor so workers are forced to take a few steps and straighten out their body before setting bags down	Invest in a pallet lifter that rotates and prohibit workers from extending arms to set down bags on the far end of the pallet		Place spare pallets under the one being worked from, or invest in a spring loaded pallet lifter	

Loss Review Section

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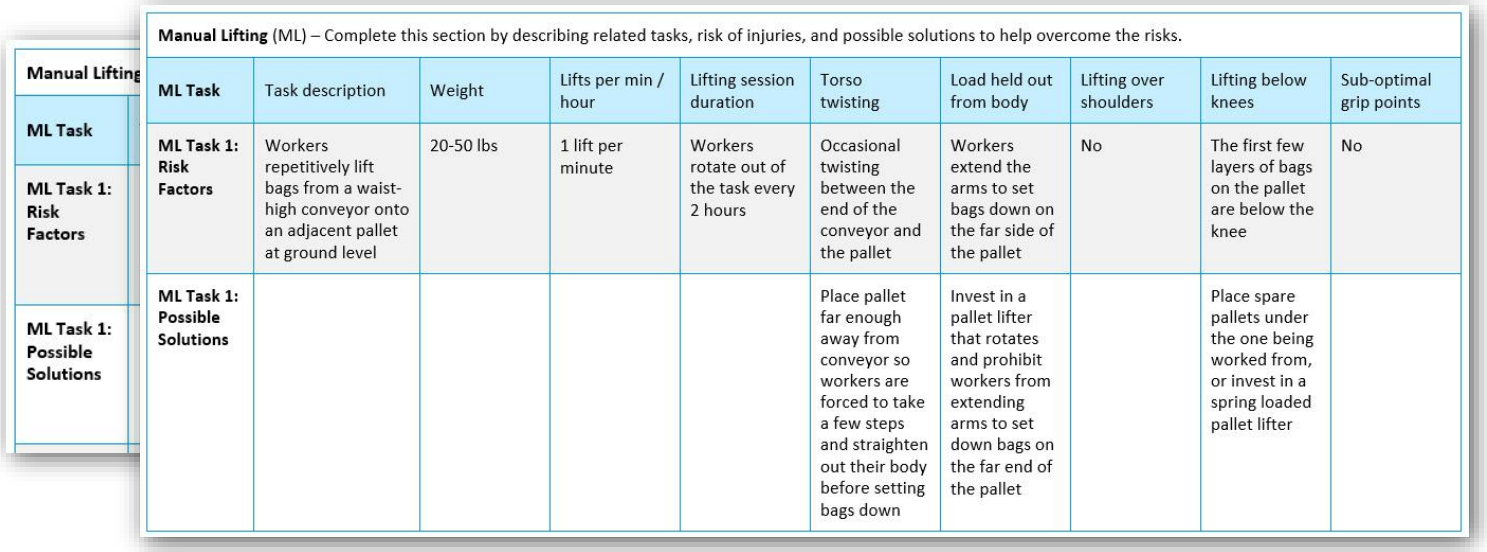
Sprains & Strains Risk Reduction Tool



Manual Lifting (ML) – Complete this section by describing related tasks, risk of injuries, and possible solutions to help overcome the risks.

ML Task	Task description	Weight	Lifts per min / hour	Lifting session duration	Torso twisting	Load held out from body	Lifting over shoulders	Lifting below knees	Sub-optimal grip points
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ML Task 1: Possible Solutions					Place pallet far enough away from conveyor so workers are forced to take a few steps and straighten out their body before setting bags down	Invest in a pallet lifter that rotates and prohibit workers from extending arms to set down bags on the far end of the pallet		Place spare pallets under the one being worked from, or invest in a spring loaded pallet lifter	

Manual Lifting Section

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Sprains & Strains Risk Reduction Tool

Manual Pushing/Pulling (MPP) – Continue completing this section by describing related tasks, risk of injuries, and possible solutions to help overcome the risks.

MPP Task	Task description	Subjective sense of force required	Frequency of push/pull	Duration (min/sec)	Optimal grip points for applying force	Pushing/pulling over the shoulders	Pushing/pulling below the knees
MPP Task 1: Risk Factors	Workers push heavy carts 50 feet across the facility throughout day	Workers must lean heavily into cart to get it moving and travel slower than average walking pace	Once every 10 minutes	60 seconds	Yes	No	No
MPP Task 1: Possible Solutions		Consider replacing cart wheels with those of a larger diameter or harder material	Consider investing in a powered tugger	Consider how rearranging workstation layout could result in a smaller travel distance			

Manual Pushing/Pulling Section

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Sprains & Strains Risk Reduction Tool

Next Steps – Prioritize the Manual Lifting and Manual Pushing/Pulling tasks you've identitified. Which will you work on first? Add your next steps and proposed date for improving the risk for these tasks. If you have questions or need assistance with your plan, contact your ICW Group Risk Management Consultant – we're here to help!

Priority #	Task identified (from above)	Decribe your next steps	Proposed date	Completed?
1	ML Task 2 – Replace 80 lb concrete bags	Discuss with buyer to procure concrete in 50 pound bags. This should be fairly easy as our first step.	6/14/2019	Yes
2	MMP Task 1 – Replace cart wheels	Check with manufacturer on replacing cart wheels with those of a larger diameter or harder material.	7/29/2019	Yes
3	MMP Task 1 – Invest in power tugger	Observed 4 carts typically being used at same time. Create request for procurement to get quotes on 4 power tuggers. Get these by 3rd quarter.	9/9/2019	No

Next Steps Section

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ICW Group Safety & Risk Resources

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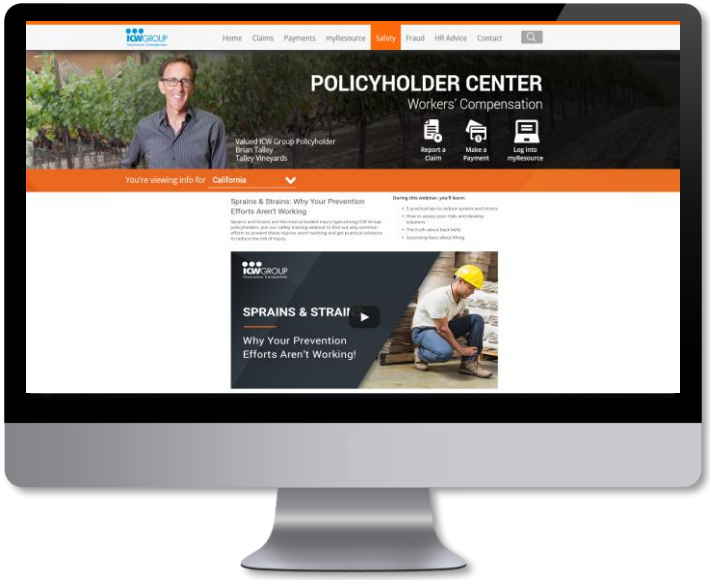
ICW Group Policyholder Website

Icwgroup.com/safety

- Go to Safety Webinars page
- Click on the topic to find a recorded version of the presentation, slide deck & resources
- **BONUS MATERIALS!**
- List of Safety *OnDemand*® sprains and strains prevention materials



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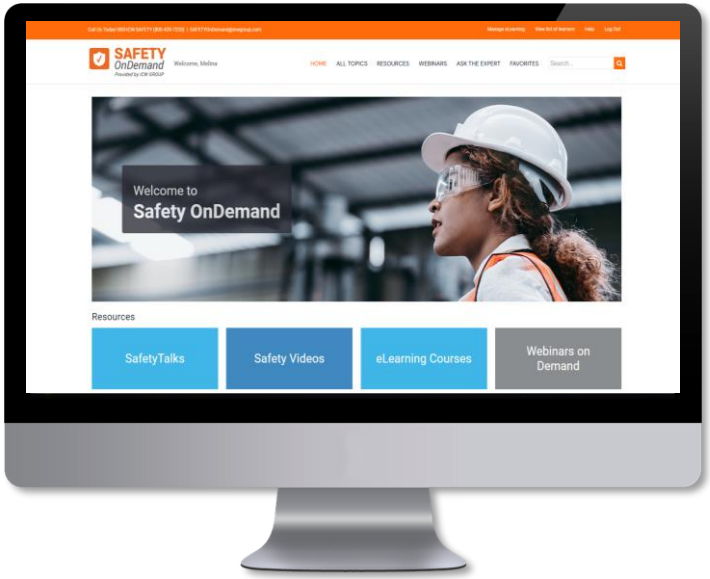
Safety *OnDemand®- Free with your Policy*

- Log into **MyResource**
  - If not registered, it's easy!
- **5000+ resources available**
- Materials in Spanish & English
- Start using it today!



Handouts, checklists, quizzes, safety talks and more!

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Articles & Insights

Blog.icwgroup.com

- Find more on sprains and strains
- Helpful articles on numerous safety topics, work comp fraud prevention and HR advice
- Written by ICW Group experts

Expert advice to keep your workforce safe, informed and thriving

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Questions?

Contact Us: riskmanagement@icwgroup.com

THANK YOU!

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