



# Construction Industry Update

## How to Prevent Injuries from Manual Materials Handling

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It is probably fair to say that every worker who lifts or does other manual handling tasks is at some risk for musculoskeletal injury. Low back injury is the most likely kind of injury. The complete elimination of this risk is not realistic, because manual materials handling (MMH) usually involves awkward postures and repeated forceful movements. However, people can reduce the number and the severity of manual handling-related injuries substantially by using safe work practices.

### How to Prevent Back Injury Resulting from MMH

To prevent occupational back injuries, it is essential to identify the factors of MMH that make the worker more susceptible to injury or that directly contribute to injury.

When efforts to prevent injuries from MMH focus on only one risk factor, they do not significantly reduce the injury rate. A more successful approach, such as the one offered by ergonomics, combines knowledge of engineering, environment, and human capabilities and limitations. The following aspects should be considered:

- Organization of work flow
- Job design/redesign (including environment)
- Pre-placement procedures, where necessary
- Training

#### Organization of the Work Flow

Often, poor planning of the work flow results in needless or repeated handling of the same object.

When articles are temporarily stored in one place, moved to another, stored again, and moved again, a more efficient work flow can eliminate many potentially harmful MMH tasks.



Manual Materials Handling (continued on page 2)

#### In this issue...

<b>Manual Materials Handling</b> .....	1-3
<b>Workers Compensation Experience Modification FAQs</b> ...	4
<b>FOCUS Seminars</b> .....	4
<b>Risk Control Corner — Safety Attitude and Behavior</b> .....	5
<b>Surviving Summertime Scorchers</b> .....	6

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### Job Design/Redesign

The design or redesign of jobs involving MMH should be approached in the following stages:

- Eliminate heavy MMH
- Decrease MMH demands
- Reduce stressful body movements
- Improve environmental conditions

### Eliminate Heavy MMH

Consider using powered or mechanical handling systems if eliminating MMH tasks completely is not possible. Mechanical aids lower the risk for back injury substantially by reducing the worker's physical effort required to handle heavy objects.

Manual handling such as lifting and carrying can be easier and safer if mechanized by using lift tables, conveyors, yokes or trucks. Gravity dumps and chutes can help in disposing of materials. Mechanical aids also reduce the need to select workers for the task, but it is essential that the worker is properly trained in the safe use of the available equipment.

### Decrease MMH Demands

If mechanical aids cannot eliminate manual handling, decrease the MMH demands. There are several ways to achieve this:

- Decrease the weight of handled objects to acceptable limits
  - Assign two people to lift the load or split the load into two or more containers
  - Use light plastic containers to decrease the weight of the load
- Change the type of MMH movement
  - Lowering objects causes less strain than lifting
  - Pulling objects is easier than carrying
  - Pushing is less demanding than pulling
- Change work area layouts
- Reducing the horizontal and vertical distances of lifting substantially lowers MMH demands

- Reducing the travel distances for carrying, pushing or pulling also decreases work demands
- Assign more time for repetitive handling tasks – this reduces the frequency of handling and allows for more work/rest periods
- Alternate heavy tasks with lighter ones to reduce the build-up of fatigue

### Reduce Stressful Body Movements

It is important that the design of MMH allows the worker to do tasks without excessive bending and twisting. These body motions are particularly dangerous and can cause back injury even when not combined with handling loads.



- Provide all materials at a work level that is adjusted to the worker's body size
- Eliminate deep shelves to avoid bending
- Ensure sufficient space for the entire body to turn
- Locate objects within easy reach
- Ensure that there is a clear and easy access to the load
- Use slings and hooks to move loads without handles
- Balance contents of containers
- Use rigid containers

- Change the shape of the load so the load can be handled close to the body

### Improve the Environment

The design of the work environment is an important element of back injury prevention.

- Keep the temperature of the working area between 18°C and 21°C when practical
- Ensure an adequate work/rest schedule
- In extreme cases that require heavy MMH in temperatures above 30C, rest periods or light work load tasks may account for 75% of the work time
- Wear properly designed clothing to decrease the heat absorption by the body and to increase evaporation – this is particularly important for people required to work in high temperature environment

- Encourage using proper protective clothing for people working in a cold environment – this is essential to protect the worker from hypothermia and to preserve dexterity needed for safe work
- Illuminate the work area for MMH tasks at the level of 200 lux
- Use task lights or other additional light sources to improve the ability to see clearly where MMH requires fine visual discrimination
- Use angular lighting and color contrast to improve depth perception – this helps the worker where MMH involves climbing stairs or moving in passageways



### **How Effective Is Pre-Placement Screening in Back Injury Prevention?**

The objective of pre-placement screening is to select individuals less likely to be injured in work involving MMH. X-rays, medical examination, physiological testing may be hazardous under certain circumstances or may not be specific enough to achieve the intended objective. They do not reduce the occurrence of occupational back injury among selected individuals. Worse, the selection procedures can be abused when applied as a substitute for work design.

The only situation where pre-placement screening may be justified as a preventive measure is where a job involves heavy MMH in an unpredictable and uncontrollable environment. Examples of these are firefighting, mine and water rescue, and police work. Even here, the selected tests should closely reflect with the anticipated requirements of the job. By far the best pre-selection method, if one must be used, is performance of the actual task.

### **Does Training Reduce Back Injuries?**

There is little evidence to indicate that training alone reduces the number of MMH injuries. However, when combined with work design, training is

an important element in the prevention of injuries. Proper training also shows the worker how to actively contribute to the prevention of injuries. A good training program should:

- Make the worker aware of the hazards of MMH
- Demonstrate ways of avoiding unnecessary stress
- Teach the worker to handle materials safely

Instruction on how to lift “properly” is the most controversial issue concerning training in MMH. There is no single correct way to lift because lifting can always be done in several ways. Because of this, on-site, task specific training is essential. In fact, it is sometimes safer to allow the worker to use common sense acquired by experience rather than force new biomechanically correct procedures. Some general lifting rules follow:

- Prepare to lift by warming up the muscles
- Stand close to the load, facing the way you intend to move
- Use a wide stance to gain balance
- Ensure a good grip on the load
- Keep arms straight
- Tighten abdominal muscles
- Tuck chin into the chest
- Initiate the lift with body weight
- Lift the load close to the body
- Lift smoothly without jerking
- Avoid twisting and side bending while lifting
- Do not lift if you are not convinced that you can handle the load safely

It is also important that workers take advantage of rest periods to relax tired muscles – this prevents fatigue from building up. ✨

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*Disclaimer: This article is written from an insurance perspective and is meant to be used for informational purposes only. It is not the intent of this article to provide legal advice, or advice for any specific fact, situation or circumstance. Contact legal counsel for specific advice.*

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# Workers Compensation Experience Rating FAQs

By Jeffrey W. Cavignac, CPCU, ARM, RPLU, CRIS

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## Why Experience Rating?

Insurance is based on the theory of spreading or sharing of risk by members of a group who are likely to experience losses. The losses of an entire group can be predicted with a fair degree of accuracy. However, it is not possible to determine which group member will actually have a loss.

Because of this, the cost of insurance is apportioned to each member on the basis of average cost for the group. It is assumed that each member's own experience will approximate the average.

In reality, very few risks are really "average;" some are much worse, some much better. A method is needed to recognize those differences to encourage the prevention of industrial accidents. Experience rating provides that method.



## What Is It?

California's Workers Compensation Experience Rating Plan, approved by the Department of Insurance and overseen by the Workers Compensation Insurance Rating Bureau (WCIRB), tailors the cost of insurance to the performance of the individual employer. It compares the employer's past loss record to all members of that same industry classification. The workers compensation insurance "cost" is then adjusted based on that comparison.

This system allows the employer the opportunity to control insurance costs through measurable loss control programs. The potential premium savings provide the incentive to establish and maintain meaningful safety programs.



## Who Is Eligible?

Every policyholder is required by California law to participate, if their payroll during the experience rating period produces a premium at published pure premium rates of \$33,200 (effective 01/01/02).



## How Does It Work?

The insured's manual premium (class rate times payroll in hundreds of dollars) is adjusted by the experience modification, which is expressed as a percentage factor. The result is called the standard premium.

If employers have good loss records, they receive "credit" modifications. A credit mod is less than 100%. On the other hand, if employers have poor loss records, they receive "debit" modifications. A debit mod is more than 100%. If loss experience is average, they will receive "unity" modifications of 100%

The experience modification factor is computed and published annually for each experience rated risk by the WCIRB, not the insurance company. This factor is applied on the policy anniversary date for a period of one year. Any insurer issuing a policy must use the published modification. ✨

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# Risk Control Corner

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## Safety Attitude and Behavior

**H**umans instinctively seek to avoid pain and death; yet we often behave in a manner that is a threat to our well-being. There are a couple of reasons why this occurs. The first is lack of knowledge. What you don't know *can* hurt you!

The second reason why we may act in a risky manner is attitude. Now might be a good time to do a quick self-analysis. What is *your* attitude toward safety?

When asked, some will say they are all for it. Others will complain about any safety effort being made. The difference between the two is one of attitude. Your attitude affects almost all that you do and the way you do it.

Have you ever noticed that people who are successful in life – or are just happy – tend to have a positive attitude? And so it is with safety. Look at it this way – safety rules and procedures are written to protect you from harm. They are not written to make your work life more inconvenient or uncomfortable. After all, safety equipment and training costs your employer a lot of money.



If you cooperate in safety matters, not only is there a lesser likelihood of you getting hurt, you will not be doing battle with the boss, who is just trying to do his job by enforcing safety rules. In addition, you should feel more confident on the job knowing you have a better chance of making it thorough the day without injury. Less fear of injury – and the boss no longer on your back – has to brighten your day!

No one is perfect. Even the best of us can forget, or make errors in judgment. To maximize our safety efforts, we must look out for one another. If someone tells you that you are not working in a safe manner, do not become angry or defensive. They are just looking out for your well-being. If you did not know you were doing something wrong, be thankful your errors were noted before someone got hurt. If you simply forgot or got a little careless, be grateful that someone cares enough to get you back on track.

If you see someone doing something unsafe, speak up, but do so diplomatically. Treat others just as you would like to be treated in the same situation.

Remember, attitude affects behavior. If you have a positive attitude, odds are you will exhibit safe behavior. A negative attitude toward safety will only cause conflict, stress and, ultimately, an accident. ✨

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# Surviving Summertime Scorchers

Article courtesy of  
Cavnac & Associates' Employee Benefits Department

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**T**o make sure your day at the beach is exactly that — a day at the beach, and not a trip to the emergency room — you'll need to be aware of common summer bums such as heat-related illnesses.

Prolonged or intense exposure in hot temperatures can cause heat-related illnesses such as heat exhaustion, heat cramps, and heat stroke.

- **Heat exhaustion** occurs when the body loses large amounts of water and salt.
- As in heat exhaustion, **heat cramps** can strike when the body loses excessive amounts of fluids and salt, and is accompanied by the loss of other essential nutrients such as potassium and magnesium.
- The most serious of the heat-related illnesses, **heat stroke**, occurs when the body suffers from long, intense exposure to heat and loses the ability to cool down itself.

By reducing excessive exposure to high temperatures and taking other precautionary steps, most heat-related illnesses can be avoided. Prevention is your best defense to protecting your health when temperatures are extremely high

Remember to keep cool and use common sense. Below are some important prevention tips to follow:

- **Drink plenty of fluids**, regardless of your activity level - don't wait until you feel thirsty and don't drink liquids that contain caffeine, alcohol, or large amounts of sugar — these actually cause you to lose more body fluids.

- **Wear appropriate clothing** - choose lightweight, light-colored, loose-fitting clothing, a wide-brimmed hat, and sunglasses.

- **Schedule outdoor activities carefully** — plan your activities during morning or evening hours rather than during the sun's peak times. Also, try to find as much shade as you can and rest often.



- **Pace yourself** — if you're not accustomed to being in heat, don't push your body to stay out in it all day.

Although anyone can suffer from heat-related illnesses, some people are at greater risk than others. Check regularly on:

- Infants and young children
- People aged 65 or older
- People who are mentally ill
- Those who are physically ill, especially with heart disease or high blood pressure. ✨

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