

It's Time to Stop the Pain: PREVENTING OVEREXERTION INJURIES

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IN THE CONSTRUCTION INDUSTRY, OVEREXERTION INJURIES FORM A SERIOUS AND GROWING PROBLEM AFFECTING WORKERS OF ALL AGES IN VARIOUS TRADES.¹

These injuries cause employees to miss days of work, companies to lose billions of dollars and hours of productivity, and overall, fewer work opportunities within the industry as project owners and GCs increasingly prequalify subcontractors based on safety records.²

Overexertion injuries – strains, sprains, and related soft tissue injuries – continue to be a leading cause of disability among employees.^{3,4} In particular, injuries resulting from manual materials handling are among “the most frequent and expensive causes of compensable workplace injuries.”⁵

THE REALITY IS, SAFETY GLASSES AND HARD HATS ARE NOT ENOUGH TO PROTECT YOUR WORKERS OR YOUR PRODUCTIVITY.



It's Time to **PREVENTING** Stop the Pain: **OVEREXERTION** **INJURIES**

Overexertion Injuries Impact Workers, Businesses & Bottom Lines

Although the exact amount varies depending on severity, the cost that businesses pay for just one injury can be notable. As one contractor stated, “It’s a numbers thing... If we’re not doing things safely, and our [Experience Modification Rate] numbers aren’t where they need to be, we don’t get any work.”⁶

Overexertion injuries also take financial and human tolls on injured workers and their families. Some employees may not receive paid sick leave, and workers’ comp may not always provide enough coverage to replace lost wages. As a result, injured employees often continue to work, relying on prescription opioids to manage pain. As the extended use of this medication has led to an increase in opioid addiction⁷ among construction workers, there is an urgent need to reduce the risk for these types of injuries.⁸

There is evidence that reducing overexertion injuries would not only benefit workers, but also favorably impact a company’s productivity and bottom line. As such, there are strategies that companies can implement to promote safer handling of materials. For example, one study found that two-mason lift teams reduced the time it took to build a masonry wall by 37%.⁹ Experienced mason contractors using two-mason lift teams cite benefits such as safety (less wear-and-tear on workers, less lower back stress, and less fatigue) and increased productivity.¹⁰

The report, “Ergonomics Best Practices for the Construction Industry,” documented a reduction in days lost due to soft tissue injuries (back injuries, etc.) when selected lifting equipment was used. Another industry study found an average increase in production of almost 15% when lightweight block was used instead of heavier block.^{11, 12}

Despite the potential for fewer injuries and increased productivity, construction employers have been slow to adopt interventions that would reduce manual materials handling. This raises an important question: If we understand overexertion injuries are an issue plaguing our industry and are aware of known solutions and productivity benefits, how can we increase their implementation to promote prevention?

Understanding Current Practices to Improve Safety Solutions

In 2016, The Center for Construction Research and Training (CPWR) established the Ergonomics Community of Practice, which consists of researchers, industry stakeholders, and

insurance industry representatives, to help address that question.¹³

Early on, CPWR narrowed its focus to manual materials handling to address the risks associated with carrying, lifting, and handling construction materials with the belief that doing so could significantly reduce the number of injuries that occur every year as well as increase productivity.

RESEARCH-BACKED RESOURCES

In July 2018, CPWR introduced a new program based on its work, “Best Built Plans – Build Safety into Every Job” (www.bestbuiltplans.org), to help the industry engage in materials handling practices that are good for business and safer for employees.

As a first step, CPWR conducted a national survey to understand the extent to which contractors were engaging in the following practices:

- Planning for safer materials handling;
- Establishing and maintaining weight limits for manual lifting; and
- Delivering and storing materials on projects to reduce the amount of materials handling.

Over half (57%) of the contractors reported that they incorporate strategies into their site plans to minimize manual materials handling during pre-planning and when a project is underway, but the remaining 43% only did so during pre-planning, once a project is underway, or not at all. When provided with a list of common strategies for safer materials handling, two key strategies – setting lifting limits and storing materials between knee and waist height – were the least often cited.

When respondents were asked about barriers to adopting safer strategies, CPWR learned that contractors often lack:

- Awareness of the risks, solutions, and benefits of using the solutions;
- The time to determine the weights of materials, and lifting and storage options; and
- The experience or resources to plan for materials handling.

What would motivate contractors to overcome these barriers and engage in safer material handling practices? The most frequently cited responses were a workers’ comp incentive, a job contract requirement, and the need to protect the materials.

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Overcoming the Barriers to Safer Materials Handling Practices

CPWR then interviewed a small group of contractors identified as engaging in safe materials handling practices to understand how they overcame the barriers and learn about their current practices. These contractors represented a variety of trades, including GCs and specialty trade contractors, and ranged in size from fewer than 50 to more than 150 employees.

Several different practices were used to overcome the barriers, including:

- Creating a safety climate that supports safer materials handling practices;
- Recognizing and marketing the business benefits of safer practices to prospective customers; and
- Planning for materials handling throughout a project's life cycle.

Regardless of size, many contractors commonly prioritized how to plan for materials to be handled. Instead of approaching materials handling as a separate safety activity, these contractors integrate this responsibility into their ongoing operations – from the time they prepare to bid on a project, to before the project starts, each day on the job, and once the project is completed.

For this last step, they focus on identifying practices and equipment that worked well or did not work and use the lessons learned when bidding on future projects.

What motivated these contractors to overcome the barriers noted earlier and devote time and resources to plan for materials handling? The most common responses were to:

- Prevent injuries and, as a result, avoid higher insurance costs;
- Improve productivity – if less time is spent moving materials around, then there will be more time for productive work and workers will be less fatigued – both of which help keep projects on schedule; and
- Establish a reputation as a safe company in order to increase their chances of winning new work and attracting and retaining the best workers.

The connection between planning for safety and profitability is being recognized by a growing number of contractors. Surveys conducted by Dodge Data Analytics in partnership with CPWR in 2012 and 2015 found an increase in the number of contractors that said that having a safety program has

a positive impact, with more than half saying it increased their return on investment.

Among those that saw a positive impact, 76% reported an increase in ability to contract new work, 71% reported improved project quality, and 64% reported that it helped with staff retention.¹⁴

Best Built Plans: Build Safety Into Every Job

The value of planning to reduce manual materials handling and integrating these plans into a company's ongoing operations led to the development of the free Best Built Plans Program by CPWR. Designed to allow a contractor to select the materials that best meet their business and workforce needs, the program includes resources for everyone in companies of all sizes.

SITE PLANNING TOOL

The Site Planning Tool is available directly online or as part of a downloadable version of the program at www.bestbuiltplans.org. It includes materials to help contractors think through and plan for how materials will be stored, lifted, and moved at every project stage.

CPWR TOOLBOX TALK Lifting and Carrying Materials

Play the Game!

- Use mechanical equipment like a dolly to lift heavy objects, if at all possible.
- Never try to lift an item weighing over 50 pounds by yourself.
- Plan your lifts; make sure the path is clear prior to lifting.

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play the games. The games are available for iPhone and Android users and are intended to capture the attention of workers who grew up playing video games.

Each of the games reinforce the information on safe materials handling practices and the importance of planning that is covered in the toolbox talk, hazard alert card, and other Best Built Plans training resources. (A sample game description can be found on the next page.)

In addition, the program includes a series of one-page flyers with messages to remind field supervisors, workers, and management personnel of the importance of reducing the risks and preventing injuries.

For example, one message reminds everyone to “Talk through your work plan every morning. Leave safe every night,” and there are five “Contractor Tips” that focus on specific actions for reducing the risk for an injury. These flyers are set up to be printed and distributed as handouts, enlarged and posted in a central location on a jobsite, and/or distributed as infographics through social media.

Interactive Training & Coaching Resources

In addition to the Planning Tool, the PC-based program, which can be downloaded from www.bestbuiltplans.org, includes a series of interactive training and coaching resources. The training and coaching activities can be used independently, but ideally would be used in a classroom setting as part of a safety training program.

Building on the elements in the Planning Tool, the activities introduce workers to the importance of planning for materials handling, storing materials off the ground and close to where they will be used, setting weight limits for lifting, using lifting equipment, and maintaining a clear pathway when moving materials. The activities demonstrate and reinforce safe lifting practices. Users can lift and move materials and see how different practices increase or reduce the risk for injuries.

Just the Beginning

The Best Built Plans Program is currently being piloted as a first step in managing the high rates of sprain and strain injuries in the construction industry.

As part of the pilot, a small group of intermediaries (insurance companies) and contractors have agreed to review and use the materials between now and July 2019 to provide CPWR with direct feedback on what worked, what needs to be improved, and what else is needed.

Given the seriousness of the problem, CPWR has also made the materials available for use by the industry at large and are encouraging those who access, review, and/or use the materials to provide feedback by completing an anonymous online survey that can be found on the site.¹⁵

The costs are huge, the risks are known, and the solutions are available. It is time to work together to prevent overexertion injuries. ■

Endnotes

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13. www.journals.sagepub.com/doi/pdf/10.1177/1541931213601721.
14. “Building A Safety Culture: Improving Safety and Health Management in the Construction Industry,” Dodge Data Analytics, SmartMarket Report, 2016.
15. Consider helping this project either by identifying contractors willing to participate in the pilot or reviewing and providing feedback using the online survey.

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Eileen has presented at the USE Conference 2017 and the 2017 Expanding Research Partnerships: State of the Science Conference. Her recent publications include, "Engaging Construction Contractors to Identify Barriers and Promising Practices to Reduce the Risk for Occupational Injuries Associated With Manual Materials Handling," "Best Practices for Health and Safety Technology Transfer in Construction," and "Triage for Action: Systematic Assessment and Dissemination of Construction Health and Safety Research."

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Play the GAMES!



In the "Lift Coach: Plan Your Route" game, players plan how they will lift

and move materials on a job site. A player's risk of injury increases or decreases depending on the decisions they make, and as the game progresses, the jobsite becomes larger and more complex.

The "Lift Coach: Plan Your Lift" game lets a player correct the way their on-screen character lifts and moves materials. The goal is to avoid actions that can increase the risk of injury. Players will need to pay attention to avoid building up too much strain and getting hurt. Each level increases in difficulty.