FEATURE

A worker's wellbeing can be deeply affected by cumulative wear and tear on the body.

The Impact of Musculoskeletal Injuries

Editor's Note: This article is part of the series being authored by Cal Beyer, Vice President of Workforce Risk & Worker Wellbeing for Holmes Murphy. Cal invited CURT Wellness & Safety Committee member Kathi Dobson to be a guest author for this article.

By Kathi Dobson, Safety Director for Alberici Constructors

Construction is a difficult and strenuous career. Regardless of a worker's age or physical capabilities, the risk for musculoskeletal injuries is significant. Heavy manual material handling and lifting; working in tight, cramped quarters in awkward positions; temperature extremes, production pressures, and schedule deadlines create an environment where musculoskeletal injuries are likely to occur.

The more productive an individual is, the more likely they are apt to be kept working during shutdowns and outages, regardless of the risks placed on their bodies. Hard work, and the willingness to work without asking for help or using equipment, is often expected and rewarded. Manually handling equipment is seen as a positive effort. When workers do this repeatedly, they increase their exposure to injury. Construction activities required of workers can introduce overexertion stress if worker's techniques are incorrect or if they work with poorly designed equipment.

Often, it isn't the initial stress on one's body, but the cumulative wear and tear on vulnerable body parts that lead to the point where a small twist or turn can cause an injury that may be life- and career-changing. Although a single event (acute) may trigger the pain, most musculoskeletal disorders (MSDs) are brought on over time (chronic), and the Occupational Safety & Health Administration (OSHA) considers these to be illnesses for recordkeeping purposes.

MSD injury statistics

In a 2021 study by the Center for Construction Research & Training (CPWR), researchers (Gambatese & Jin) noted that MSDs accounted for 19,380 cases in 2018 (Bureau of Labor Statistics (BLS), 2020). The incident rate was 28.9 per 10,000 full-time workers. They also reported that musculoskeletal disorders are revealed through signs and symptoms – "sprains and strains" and "soreness, pain." In 2017, this represented 27.3 percent and 17.3 percent of all construction worker injuries and illnesses, respectively (Center for Disease Control (CDC), 2018).

In 2014, Dong et al., found that during their working lives, 21 percent of construction workers experienced "overexertion" injuries, a type of MSD-related injury that poses lifetime risks. More recently, Dong et al. (2020) pointed out that about 34 percent of construction workers had at least one MSD symptom. Research has also shown that MSDs are an important cause of functional impairment and disability among construction workers (Boschman et al., 2012).

A June 2018 online article by Kevin Lombardo, President of Dorn Companies, reports annual costs from injuries to construction workers amounts to $11.5 billion in the United States. This increases with multipliers of indirect costs of lost workdays, decreased productivity, and the lingering effects of chronic pain after an MSD-type injury occurs.

Some companies have found success addressing the MSD problem among construction workers by initiating proactive plans to reduce injury risk at job sites. By setting goals and implementing holistic, data-informed strategies, an organization can mitigate the risk sources to their construction workers and make a measurable impact on injury rates and the significant costs associated with MSDs (Lombardo, 2018).

MSD injury prevention strategies

Education is key. Providing multiple resources to workers on a regular basis assures that they have the information they may need if they experience an MSD.

- Always establish a pre-task analysis, which increases awareness of how the work is going to be performed. Identify high-risk body positioning or maneuvers that could lead to strains/sprains and/or create a longer-term MSD.
- Assure workers have the proper tools for the tasks they are performing.
- Assure workers are properly using their tools.
- Perform ergonomic assessments of various activities using a third-party, such as a physical or occupational therapist, who can provide alternative, improved body, or body part positioning for performing their tasks.
- Share findings with workers. Solicit their input regarding tool use and body positioning.
- Always encourage the use of assistive devices, such as hand carts, dollies, and mobile equipment rather than manually handling materials.
- Always encourage workers to ask for help when manually moving heavy, bulky, or awkward materials. In most industrial settings, heavy is defined as that which is more than 35 to 50 pounds in weight.
- Dynamic exercises that focus on large muscle groups give workers a chance to see how they feel at the start of their work shift, and to make them aware of aches and pains they may not know they have. Encourage workers to be conscientious about how they perform work every day. This also gives them the opportunity to advise their supervisor that they have some discomfort or limitation that day.
- Educate the workforce to report all injuries, regardless of whether they believe them to be significant or not. This may improve the chances of early intervention and treatment before more significant injury/illness occurs.
- Use advances in technology to gain ergonomic advantages for the workforce. Using artificial intelligence has allowed companies to evaluate both their workers and the work environment simultaneously, detecting risk factors and alerting management so that hazards can be removed and problematic worker techniques can be corrected in real-time. Technology to identify fatigue can identify risks before the employee starts their day, helping to drive down injuries and overall risk. For example, ergo-assistive robotic tools are now available and accessible to many.
- If feasible, and not prevented by any bargaining unit agreements, evaluations made post-offer ensure workers have the ability and agility to successfully perform job tasks that require a high level of physical exertion. These tests are typically designed by a Certified Industrial Ergonomist and are completed either at a clinic or on site if the proper safeguards are in place. They can screen out candidates who cannot perform the physical job demands, reduce work-related injuries, and gather baseline data in motion, strength, and functional status.

Chronic pain and opioids

Unfortunately, many workers find themselves in chronic pain, but because of their circumstances, believe they must remain at work and suffer. This affects work performance and their long-term health and wellbeing. Over time, workers may turn to treatment choices that may create additional health problems. Opioids are one of those choices.

Recent BLS data (2019) shows us that:

- The vast majority of preventable drug overdose deaths (73 percent) involve opioids.
- Preventable opioid overdose deaths increased 457 percent since 1999.
- The drug category most frequently involved in opioid overdoses and growing at the fastest pace is synthetic opioids other than methadone (specifically, fentanyl and drugs chemically like fentanyl).

First dose options to opioids

When workers treat on their own (outside the workers comp system), they are significantly more likely to be prescribed opioids and to remain on opioids long after their effectiveness is over. One key strategy to prevent physicians and other health care providers from prescribing opioids is to establish a working relationship with the clinic of choice. If health care providers know that alternate methods are preferred, that modified duty is available, and that the employer understands the importance of following a treatment plan, they are more likely to prescribe alternatives to opioids.

The National Safety Council (NSC) has many resources for workers, employers, and prescribers (https://www.nsc.org/community-safety/safety-topics/opioids/prescription-drug-misuse). There are alternatives to opioids that may offer equal or better pain relief. To ensure workers are prescribed an opioid only if needed, get "Opioids: Warn-Me" labels (https://www.nsc.org/community-safety/safety-topics/opioids/prescription-drug-misuse) from the National Safety Council. A Warn-Me label on an insurance card or prescription card is a sign to doctors and pharmacists that answers to the following questions are imperative:

- Is what is being prescribed an opioid?
- If so, is there a non-addictive alternative?
- If not, is a short-term prescription possible?
- Are there medical conditions, mental health issues or a family history that could increase the risk of addiction?

Keeping our workforce both physically and mentally healthy is our most important job. Not only will we see the benefits reflected in a project's safety, productivity, and scheduling stats, we'll achieve our most important goal – ensuring our team members make it home to their loved ones after every single shift.

Kathi Dobson is a Safety Director, registered nurse, and passionate advocate for worker well-being and a zealot regarding issues affecting the underrepresented in the construction industry. Her 20-plus year career with Alberici Constructors has taken her across North America to improve safety cultures (and yes, she got into safety by accident). You can contact Kathi at kdobson@alberici.com.

References:

1. Boschman, J.S., van der Molen, H.F., Sluiter, J.K., and Frings-Dresen, M.H. (2012). Musculoskeletal disorders among construction workers: A one-year follow-up study. BMC Musculoskeletal Disorders, 13:196, https://doi.org/10.1186/1471-2474-13-196
2. Dong, X.S., Ringen, K., Welch, L., and Dement, J. (2014). Risks of a lifetime in construction part I: traumatic injuries. *American Journal of Industrial Medicine*, *57*(9), 973-983, https://doi.org/10.1002/ajim.22363
3. Dong, X.S., Brooks, R.D., and Brown, S. (2020). Musculoskeletal disorders and prescription opioid use among U.S. construction workers. *Journal of Occupational and Environmental Medicine*, 62(11), 973-979, https://journals.lww.com/joem/Abstract/2020/11000/Musculoskeletal_Disorders_and_Prescription_Opioid.13.aspx
4. Gambatese, John, Jin, Ziyu. (2021). Identification and Assessment of Musculoskeletal Disorders (MSDs) Risk for Concrete Formwork Systems. Oregon State University, https://www.cpwr.com/wp-content/uploads/SS2021-Gambatese-identify-assess-MSDs.pdf
5. Lombardo, Kevin (2018). Managing Musculoskeletal Disorders among Construction Workers. https://dorncompanies.com/managing-msds-among-construction-workers