Worker Safety

Whitepaper: Managing Pain – Ergonomic Equipment Can Reduce MSDS and Days Lost

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Every day, when workers report to jobsites, each person brings along 206 bones and almost 700 muscles.[1] Throughout the day, muscles, nerves, tendons, ligaments, joints, cartilage, or spinal discs can suffer wear and tear, causing work-related musculoskeletal disorders, or MSDs.

The injuries are made worse by work conditions that require workers to:

- Lift, push, pull, or carry cumbersome or irregularly shaped objects
- Maintain awkward/unnatural postures
- Withstand cold temperatures
- Withstand vibrations from machinery and tools.

The effects of all of these can be more prevalent with increased intensity, frequency, and duration of activities.[2]

MSDs happen when workers **adjust their bodies** to the job as they crawl, crouch, climb, lift, dig, kneel, or stoop throughout their day. But, as a growing number of workers and employers recognize, it's possible to **adjust the job** to the workers' bodies instead, using ergonomically tested equipment and practices. The National Institute of Occupational Safety and Health (NIOSH) defines ergonomics as: "The science of fitting workplace conditions and job demands to the capabilities of the working population."[3]

Ergonomics supports the goals of every organization: Safety and health, plus productivity and profitability. A practical benefit of maximizing safety and health is that it helps ensure enough hands are on deck working productively to reach profitability.

Worker shortage

It's more important than ever to keep workers healthy and on the job. The construction industry is expected to add nearly 800,000 wage-and-salary jobs between 2014 and 2024, double the rate projected for the overall economy (12.9% versus 6.5%).[4]

In December 2020, most contractors (83%) reported moderate to high levels of difficulty finding skilled workers. Of those, 83% are asking skilled workers to do more work, 71% report struggling to meet schedule requirements, and 39% are turning down work.

Everyone agrees: Workers need to return home just as healthy as when they reported for work. MSDs are preventable with ergonomic equipment and policies that fit the job to the workers' bodies instead of fitting the workers' bodies to the job.

Ergonomics: Data makes the difference

"Ergonomic" has become somewhat of a buzzword in the tool and equipment industry, especially when discussing musculoskeletal injuries and disorders. It's easy to make product claims but, unfortunately, not all have been proved. The strength and health of workers and overall company costs can be positively impacted only when a product claim is supported with objective ergonomic measurement. As technology developed to measure factors affecting sprains, strains, and repetitive motion injuries, Milwaukee® added an in-house ergonomic innovation known as electromyography, or EMG. An EMG study uses the electrical activity produced by a person's skeletal muscles to measure muscle effort during equipment use. With the ability to measure exertion in separate muscle groups, EMG technology helps produce equipment that reduces peak muscle efforts and fatigue. The investment in EMG allows Milwaukee® to acquire large amounts of objective information in-house while testing equipment. Milwaukee® incorporates this research into their 5commitment to safety in design.

Meanwhile, 64% of contractors say worker health and safety remains a top concern for their business.[5]

According to the National Occupational Research Agenda (NORA) for Musculoskeletal Health, in 2018 the median days away from work for all lost-time injuries was 8 days. The median days away from work for MSDs was 12 days, but higher for some occupations. For instance, for plumbers, pipefitters, and steamfitters, the median days away from work for MSDs was 80.[6]

Hiring more new workers, especially those new to the skilled trades, in this labor market means that employers and crews will need every resource available to support their safety.

Back injuries lead MSDs and costs

Injuries including sprains or strains, tendonitis and bruising can show up in varied ways, including weakness, pain, stiffness, joint noises like creaks and clicks, loss of movement, and days away from work. Of all incidents of MSDs in construction, backs are by far the most common body part injured.[7]

The cost of medical care rises each year and, in the U.S., back injuries lead health spending, according to a 20-year study by the Institute for Health Metrics and Evaluation. In 2020, the institute said among 154 conditions, low back and neck pain generated the highest health care expenditures at $ 134.5 billion. The second highest category in the 2016 data was all other musculoskeletal disorders, such as joint and

limb pain, osteoarthritis, and rheumatoid arthritis, estimated at $ 129.8 billion.[8] Specific to jobsites in 2017-2018, the average workers' compensation costs were between $ 33,154 and $ 61,510 for some common injuries.

Other MSD data shows:

Frequency: In 2016, MSDs of all types comprised about 40% of all lost-time workplace injuries (356,910 of 902,200).[9] The numbers are likely low, as several studies have found that both workers and employers may under-report MSDs, according to the NORA for Musculoskeletal Health. In one study, the estimated undercount of MSDs ranged from 20% to 70%.[10]

Most common types: For workers, injuries including sprains, strains, and tears are the most frequent. About 65% of MSDs in construction resulting in days away from work were related to sprains, strains, and tears.[11] The injuries may develop into chronic conditions and permanent disabilities.

For employers, along with the stress of a human injury and cost of medical care, each incident means a productivity drop with days lost to injuries. Staff needs time to investigate an incident. Also, workers' compensation insurance rates may increase from recordable incidents. While there is no federal ergonomics standard, if an employer is in violation of obvious ergonomics principles, the Occupational Safety and Health Administration (OSHA) enforces the General Duty Clause that requires employers to provide a safe working environment.[12]

A new way of working

What can bring sustained safety improvements to protect both workers' bodies and business continuity? Answer: A new way of working on jobsites.

Today, crews have a new mindset and expectations. They realize many traditional risks of yesteryear, including wrenched backs and strained leg muscles, can be addressed on a jobsite. They don't want to endure related health issues later in life, so look for the right equipment for the right job, to stay safer and more productive.

It's time to work in new ways. Battery-operated light equipment offers user-driven solutions that enhance productivity and add safety and ease of use that translates into fewer MSDs.

Reduce MSD risk in sewer cleaning

Many common tasks can cause MSDs, but one of the greatest strains on a body is hauling a 200-pound sewer machine up an entire flight of basement stairs or pulling it up into a service van. This type of repetitive strain can have a major impact on the upper body including spine, lower body, forearms, and biceps.

Overexertion (lifting-lowering) is the greatest risk factor for MSDs.[13] Yet, unfortunately, this is a daily situation for many professionals on sewer calls – and in order to avoid becoming an injury statistic, they often bring an extra person to help with transportation of the machine. That second person could have been sent out on another call, bringing the business added revenue.

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