



S (I-A) Tuesday, October 15, 2025; 8:30 am – 10:45
am

Noise, Impact including Exposure to silica,
Ergonomics and Safety Risks from Power Tools

Who's In Your ToolBox?



JMS ENGINEERING AND CONSULTING



HELP BUILDING A STRONGER AND
HEALTHIER WORKPLACE



WITH CONTROLS TO SUPPORT THE
INTERSECTION BETWEEN THE
WORKER AND THE WORKPLACE

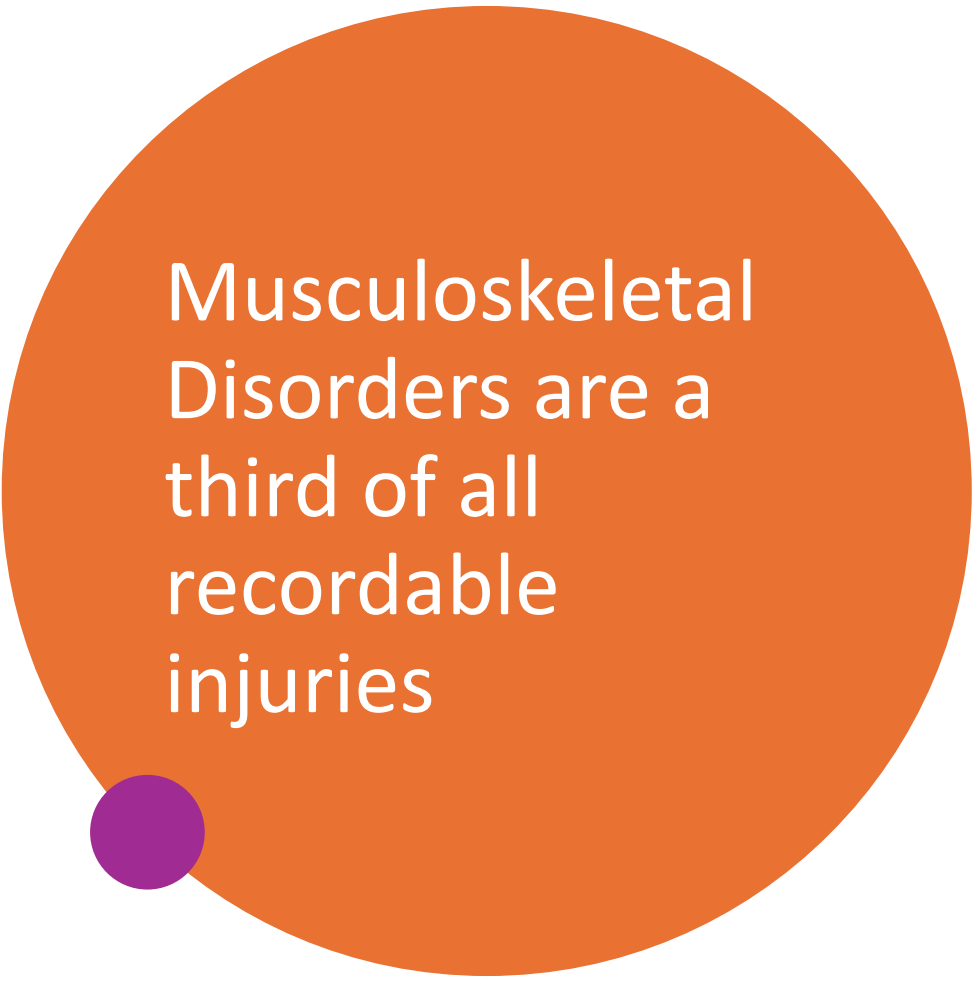
Musculoskeletal Disorders or MSD

Conditions and Injuries that impact the movement of the human body or its musculoskeletal system




Occupational Health and Safety (OHS) professionals

If you're involved in the safety profession at all, you're likely very familiar with the problem of MSDs or musculoskeletal disorders



Musculoskeletal Disorders are a third of all recordable injuries



This is due to the fact that MSDs are currently the most frequent and expensive injuries occurring in workplaces. They represent the largest category of injuries, making them particularly costly for employers.



Associated Cost of a MSD

- For employers, these are extremely expensive injuries. The average strain costs over \$30,000 in direct medical costs, and about another \$34,000 in indirect costs – things like lost productivity, legal expenses, lost time, and – as you’re well aware as a safety manager – increased administrative time and hassle. So that’s over \$64,000 for a single injury, which gets very costly for employers.



Effects On Personal Life

For industrial athletes, these injuries can be quite devastating and lead to a downward spiral in a person's life.

MSDs are the leading cause of disability, which can dramatically reduce the quality of life and the ability to provide for someone's family.

Healthcare Cost and Age of working

- With both the costs of healthcare and the age of the working population rising, the problem of MSDs is going to be around for a while. The cost and severity of these injuries could rise over the next decade as these trends play out.



But here's the good news:

- The causative risk factors leading to MSDs are well-known and the control measures for them are readily available to you.
- It's just up to you to implement them and take ownership of the outcomes.



- +
- • This can seem overwhelming at first because MSD injuries are complex and multifactorial, but here's a very simple way to think about it.



The Cross Roads

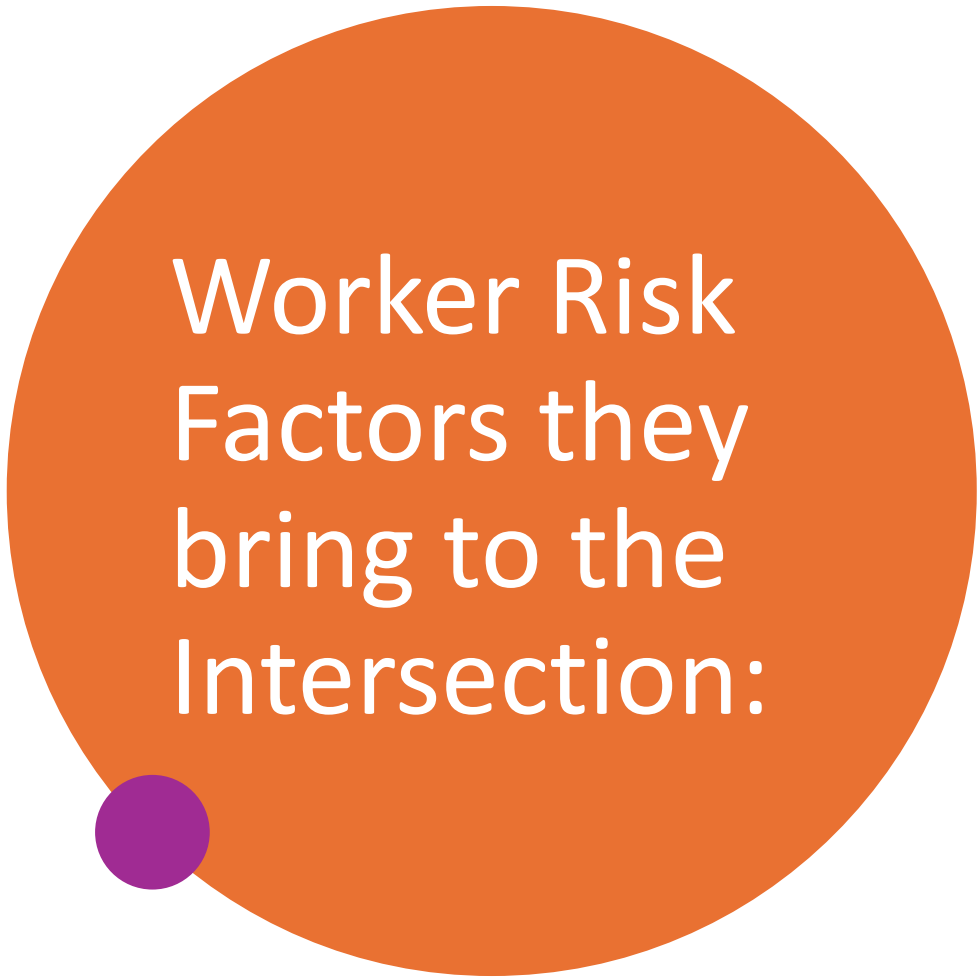
- The field of ergonomics looks at the interaction between the work and the worker
- We know from research into the the development of MDS's that both the work and the worker bring risks into this intersection



Risk Factors:

- Workplace risk factors are things that put increased stress on the musculoskeletal system: So things like high force requirements, awkward postures, repetitive motion, contact stress, impact stress, high vibration, and cold temperatures.





Worker Risk Factors they bring to the Intersection:

It's also important to consider the risk factors the worker contributes to the situation. Each individual brings their own distinct musculoskeletal system, influenced by factors such as age, gender, and general musculoskeletal health. Since it's their musculoskeletal system that's involved, how effectively they prepare it for work, utilize it during work, and recover after work are all crucial elements in determining musculoskeletal health outcomes.



Known Research Factors

So what your ergonomics process should be doing is looking at these very well-known and researched risk factors, and putting control measures in place at each stage of the interaction.



Implement Controls

- Engineering controls address the work environment – the physical worksite and equipment.
- Administrative controls address how work gets done
- And Industrial Athlete Controls address how workers prepare and recover from work
- Engineering controls ensure the workplace is designed to fit the worker's capabilities and that the correct ergonomic equipment is provided to do the job well.

Administrative Controls

- include things like job rotation, team lifting guidelines, and proper body mechanics and work methods
- Industrial athlete controls include things like warm-up stretching programs, early intervention, and work recovery programs.
- Prepare yourself for your Job, allow employees to spend time before their shift to allow them to warm up their bodies





Shift you Paradigm

Providing control measures at each stage of the interaction is the key to addressing a problem like MSDs, which are multifactorial and occur over a longer period of time. We call this the prevention. Implementing this process is not easy, but it is relatively straightforward.

Preventing MSDs in a consistent, predictable way because they are able to implement known solutions to known risks.

Process Placement

So, in summary, MSDs have known risks and known solutions, you just have to put a process in place to implement engineering, administrative, and industrial athlete control measures to prevent them.