



OPERATIONS MUSCULOSKELETAL

MUSCULO- SKELETAL

Best practices for prevention of
occupational musculoskeletal disorders

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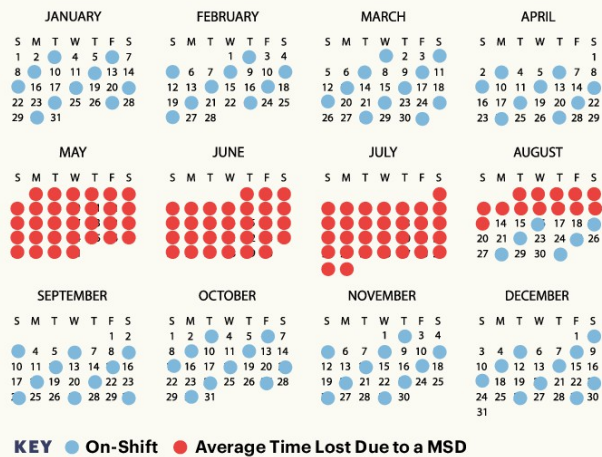
Fire fighters and Emergency Medical Services (EMS) personnel work in complex environments resulting in significant risk for occupational injuries. Whether it's fighting a fire, providing EMS, transporting patients, responding to an emergency, training on the drill ground, participating in routine physical fitness, or completing simple tasks around the fire station, the risk for injuries and musculoskeletal disorders is present. Every year, tens of thousands of emergency responders are injured while performing their job.

What are occupational musculoskeletal injuries and disorders?

Musculoskeletal injuries and disorders (MSD) are non-impact injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs (Centers for Disease Control and Prevention [CDC], 2020) caused by workers' forceful exertions, highly repetitive motions, awkward postures, and vibration. A musculoskeletal injury usually results from a single event, whereas a musculoskeletal disorder results from cumulative exposures. Fire fighters are exposed to occupational risks for MSDs, such as lifting and carrying heavy items, pushing and pulling heavy loads, working in awkward positions, bending, twisting or reaching overhead, and performing the same tasks repetitively (Occupational Safety and Health Administration [OSHA], n.d.). Furthermore, environmental factors can contribute to MSDs, such as heat, cold, noise, vibration, inadequate lighting, and poorly designed or inadequate equipment. Examples



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Although, fire fighters tend to recover and return to work more quickly than many other occupations, the average time lost from work due to an MSD was 105 days.

of MSDs include but are not limited to strains, sprains, tears, numbness and tingling, back pain, joint pain, and carpal tunnel syndrome (CDC, 2020).

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Fire fighters experience lost time MSDs at more than four times the rate of all other occupations in Washington; the rate of MSDs is among the highest for all occupations.

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The most common type of injuries were sprains, strains, and pain of the back, shoulder, and knee, with overexertion as the leading cause of the work-related musculoskeletal disorders. It is important to note that these numbers only represent employees who actually reported their on-duty injury. Some estimates suggest that only 10% of work-related MSDs are reported to their employer or the workers' compensation system (Morse, 2005).

Why is the prevention of musculoskeletal disorders important in the fire service?

The primary purpose of any injury prevention programs is to prevent workplace injuries, illnesses, and deaths (OSHA, 2012). Occupational injuries create an extensive amount of physical, financial, and emotional hardship for employers, employees, and their families. In addition to physical pain and suffering, MSDs can cause a loss of wages and productivity, an increase in absenteeism and debt, an increase in workers' compensation and healthcare costs, a permanent disability, and a reduction in quality of life. Preventing occupational injuries is not only important for employee health and well-being but also for organizational morale and productivity. When occupational injuries increase, employee morale and productivity decrease.

DEVELOPING AND IMPLEMENTING WORKPLACE CONTROLS

Reducing and limiting exposures to hazards through risk assessments and ergonomic controls can reduce musculoskeletal injuries and disorders to fire fighters and other emergency responders. Reducing the MSD risk requires an assessment of the work environment, tools and equipment used, and department policies and procedures fostering MSD risk identification and prevention. Once risks are identified, the goal is to control the hazards using two different approaches:

- Implementing changes that automatically make the work safer (elimination, substitution, and engineering controls).
- Making changes that rely on people to do the right thing (administration controls) (NIOSH, 2023).

The best approach is to make the work automatically safer by eliminating, if possible, the hazardous task, or by substituting away the hazard—think using lighter equipment or designing easier access to equipment. The second approach relies on the fire department administration or fire fighter to change the work or work processes to reduce the hazards. Administrative controls reduce exposure without changing the workplace by using actions like rotating jobs and organizing work to allow specific staffing levels in response to emergency calls, for example, so you can lift a patient through teamwork. Work practice controls can be used to modify work tasks to reduce ergonomic hazards through safe work procedures such as proper body mechanics and education.

- One-third of respondents (33%) reported a work-related injury or illness in the past year, over 5 times higher than expected among other workers.
- Musculoskeletal symptoms were very high among respondents. Most fire fighters reported problems in the low back (84%), shoulders (75%), and neck (69%).

Source: Washington Firefighter Survey 2018
Safety and Health Assessment and Research for Prevention (SHARP) Program
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