MSD Solutions Lab
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Industry Spotlight: Professional, Scientific and Technical Services

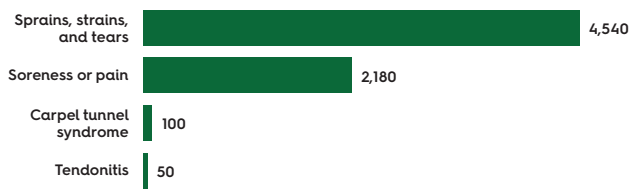
Purposeful interventions can prevent work-related musculoskeletal disorders (MSDs).

Injury Trends

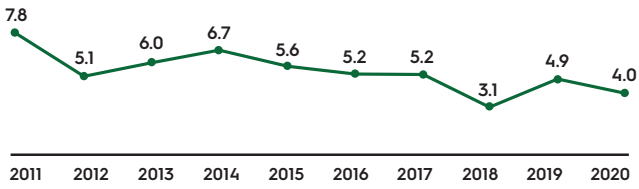
The professional, scientific and technical services industry encompasses a number of occupations focusing on performing services for others, including but not limited to, legal advising, accounting, computer services, consulting or specialized design. While there are some exceptions, the work done in this industry is largely office-based. Injury rates for musculoskeletal disorders (MSDs) in the professional, scientific and technical services industry have been steadily declining over the past decade. However, these disorders are still a concern as MSDs make up about a quarter of all non-fatal occupational injuries in this industry. BLS data show that in 2020, there were 4,540 cases of sprains, strains or tears of which many resulted in MSDs.

Additionally, in 2020, the professional, scientific and technical services industry lost over $8 billion due to nonfatal workplace injuries, with $1.6 billion lost to overexertion due to handling objects.

Professional, Scientific and Technical Services Industry Injuries



Professional, Scientific and Technical Services Industry MSD Rates*



*per 10,000 full-time, private sector workers

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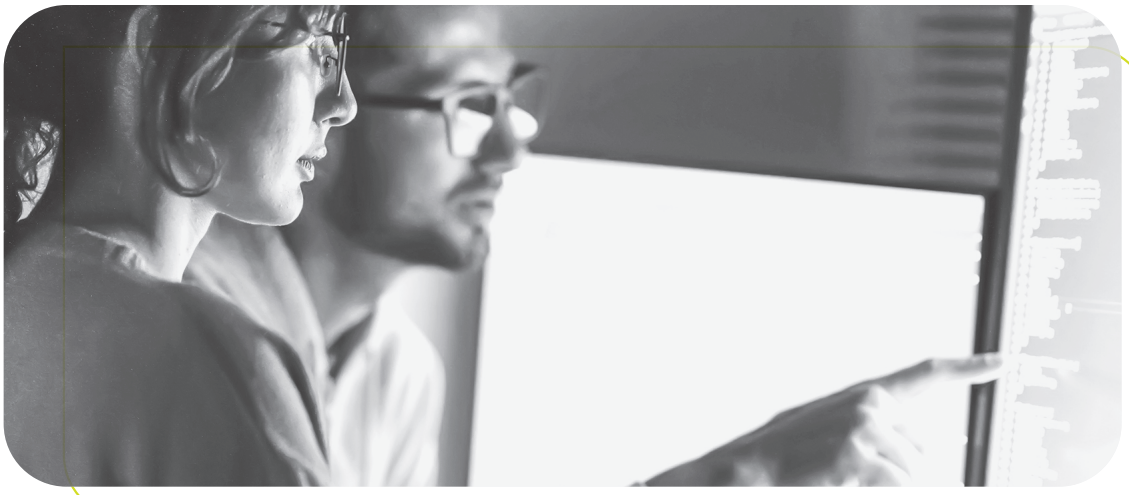
Potential Risks

Common MSD risk factors in the professional, scientific and technical services industry include:

- Manual material handling of objects (e.g., office supplies, computer equipment, job-specific tools)
- Working in the same general position for long periods of time, including but not limited to, prolonged sitting
- Prolonged computer use
- Awkward posture including bending or twisting
- Repetitive movement
- Inadequate workstation layout (e.g., not adjustable, out of reach)
- Inadequate equipment (e.g., desks or chairs)
- Lack of rest breaks or short rest periods
- Workplace stress
- High workloads
- Lack of breaks for stretching or movement
- Lack of ergonomics training



Considerations for Remote/Hybrid Work

Following the COVID-19 pandemic, many office-based jobs have shifted to a remote or hybrid format. With many workers now working from home all or some of the time, there are new and unique sets of MSD risk factors. Some of the risks associated with remote or hybrid work are:

- Variable workspace design, including:
  - Lack of dedicated workspace (e.g., working from couch or kitchen table)
  - Inadequately placed screens (e.g., screens not within arm length, not centered in line of sight)
  - Improperly adjusted chair or desk
  - Poor environment (e.g., lighting, temperature)
- Extended work hours
- Psychosocial risk factors (e.g., social isolation or lack of coworker/manager support)

Considerations for Traveling

Many office-based jobs, and other jobs, require travel as part of regular work activities. This also provides a unique set of risk factors, as it can be harder to have control over the environment when not at home or in the office. When traveling through airports or working away from home, some ways to prevent MSD risks are:

- Minimize bending to pick up luggage in the airport – consider a backpack with two straps to evenly distribute weight
- Use a four-wheeled suitcase, which requires less force, helps keep the wrist in a neutral position and prevents having to pull a suitcase from behind
- Once at a hotel, place luggage on a luggage rack or other elevated surface to prevent bending
- Adjust the hotel desk chair by using pillows to sit higher or adjust the chair armrests using pillows or towels for better support
- Use the hotel business center when applicable to work off of a full-sized monitor and keyboard, or utilize an external keyboard for a more ergonomic setup
- Vary your posture while traveling by using raised tables to work or stand after sitting for a long period
- Consider the quality of lighting on airplanes and in your hotel room if working, and use a reading light or other light source as needed to prevent eye strain

Potential Solutions

Employers are encouraged to create tailored MSD solutions best suited for their workers. However, below are potential solutions to prevent musculoskeletal pain, discomfort or injury in the professional, scientific and technical services industry as well as for employees in remote or hybrid work arrangements.

- Plan deliveries and storage to reduce manual material handling
- Use adjustable chairs and desks to account for anthropometric differences
- Utilize proper workstation design and layout consisting of:
  - Chair height adjusted so feet are flat on the floor with knees and hips at a 90-degree angle
  - Chair back supports the low back
  - Desk height that is at or slightly below elbow height
  - Use of an external keyboard and mouse within reach to prevent reaching
  - Computer screen at eye level and an arm's length away
  - If using sit-stand workstations, do not stand at work for collectively more than 4 hours, and ensure the workstation is optimally set up in both the sitting and standing position
  - If using dual screens, put them side-by-side and situate the screen used the most to be the one "straight on"
- Take regular rest breaks for standing, stretching or walking
  - Workplaces should consider implementing the 20-8-2 rule (also known as Hedge 3S's ideal work pattern), which recommends working for 20 minutes, standing for 8 minutes and then moving for 2 minutes
  - If you are using a sit-stand workstation, consider implementing 20 minutes of sitting in a good posture, 8 minutes of standing and 2 minutes of dynamic stretching (e.g., gentle movement, walking)
- Follow the 20-20-20 rule to avoid eye fatigue and rest your eyes: every 20 minutes, look at something 20 feet away for 20 seconds
- Take proper ergonomic training (delivered by a trained professional that encompasses relevant workplace risks)
- Change up the position for completing work to keep the body from becoming stiff from holding a single position for too long
- Assess risks specific to office work through ergonomics assessment tools
  - Include workers and management in risk assessments to create better awareness among employees
- Encourage employees to report potential musculoskeletal discomfort and pain to catch symptoms early
- Use technology to alert employees when they need to move, are in a risky posture or when they should take a work break

Key Takeaways

Employers are encouraged to use this information and assess the risk factors of their workplaces by consulting with their employees to create tailored MSD solutions for their workforce. Mitigating MSDs among office workers revolves around utilization of equipment as per ergonomic guidelines and well-rounded training. Employers are also encouraged to provide time for their employees to take breaks and should institute risk assessments tailored to office, hybrid and remote work.

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