

The mission of the Musculoskeletal Health Program is to reduce WMSDs, such as carpal tunnel syndrome and low back pain. This snapshot shows recent accomplishments and upcoming work.

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Musculoskeletal Health Program works with partners in industry, labor, trade associations, professional organizations, and academia to prevent work-related musculoskeletal disorders (WMSDs). WMSDs are soft-tissue injuries caused by sudden or sustained exposure to repetitive motion, force, vibration, and awkward positions. Current objectives of the program are to address risk factors for WMSDs through improved assessment methods; develop and evaluate the effectiveness of interventions; use workers' compensation data to better understand risk factors; and disseminate information on effective risk control methods and technologies.

What do we do?

- **Surveillance:** Locate and use unique sources of surveillance data (including surveys, insurance, and workers' compensation data) to identify and prioritize areas needing WMSD research for underserved worker populations.
- **Intervention Effectiveness:** Develop and evaluate cost-effective interventions to prevent WMSDs for high risk jobs. As seen in the first graph, businesses with jobs with high rates of WMSDs (e.g., manual material handlers and nursing

assistants) may need scientifically proven programs, technologies, and strategies to control WMSD risk factors. Their WMSD rates are 4-6 times greater than the industry average.

- **Communication:** Share new information, control technologies, and prevention methods through a variety of formats tailored to the needs of specific worker and employer populations.

What have we accomplished?

- **Published** a Morbidity and Mortality Weekly Report showing high levels of WMSD risk factors— frequent exertions (41.7% prevalence of repeated lifting, pushing, pulling, or bending) and standing (66.6% prevalence) at work. Data, which included many industry and occupation groups, came from the 2015 National Health Interview Survey.
- Contributed research findings to the American Conference of Governmental Industrial Hygienists (ACGIH) to revise the Threshold

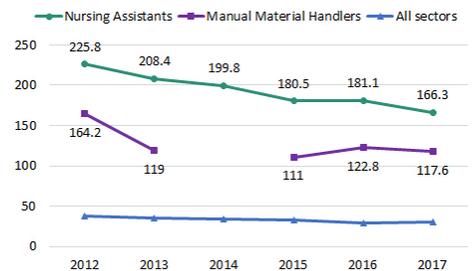
Limit Value (TLV) for the Hand Activity Level (HAL) standard.

- **Published** a study in the Journal of Safety Research describing injuries among offshore seafood processors, highlighting the need to prevent WMSDs in this high-risk work setting.
- **Published** the main finding in a study in Applied Ergonomics that a vacuum lift assist system resulted in reduced spinal loads to the NIOSH recommended low risk level for common baggage handling tasks at airports.

What's next?

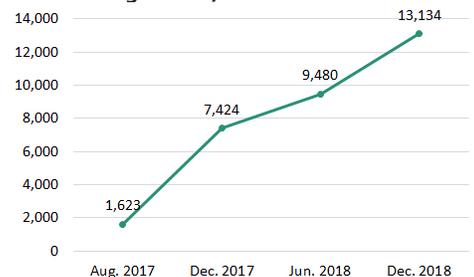
- Promote awareness of the importance of preventing workplace WMSDs through the NIOSH Science Blog, eNews, and webinars. The 2019 webinar series will have a focus on the business and communication aspects of ergonomic programs and interventions.
- Publish a brief report on prevalence, recognition of work-relatedness, and impact on work of low back pain among U.S. workers based on the 2015 National Health Interview Survey Occupational Health Supplement.
- Publish risk assessment results of working in a confined space such as handling baggage in the compartments of narrow-bodied airplanes.
- Present research findings and guidelines in WMSD risk assessments and interventions using emerging technologies, such as artificial intelligence-driven risk measurement methodologies and exoskeletons, at trade and professional conferences.

Number of lost workdays due to musculoskeletal disorders per 10,000 workers



Source: U.S. Bureau of Labor Statistics. 2014 data unavailable for manual material handlers

Cumulative downloads of NIOSH Lifting Equation Calculator mobile app: August 2017-December 2018



Source: NIOSH web team