Manufacturing Program

July 2017

At-A-Glance

The Manufacturing Program provides leadership to reduce occupational diseases, injuries, and fatalities among workers in manufacturing industries. This snapshot shows recent accomplishments and upcoming work.

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Manufacturing Program works with partners in industry, labor, trade associations, professional organizations, and academia. The program focuses on these areas among manufacturing workers:

- Preventing injuries and fatalities from contact with objects and equipment
- Reducing hearing loss
- Reducing musculoskeletal disorders (MSDs)
- Identifying and preventing hazardous exposures to nanomaterials

What do we do?

- Promote scientific research findings, practical guidance and technologies to manufacturers, stakeholders, and the public in general.
- Conduct research and provide recommendations to manufacturers on sensors including wearable sensors, safe equipment design and operation, use of machine guarding, and the control of hazardous energy to prevent injuries.
- Evaluate the effectiveness of interventions to reduce noise and prevent hearing loss through research, Cochrane Systematic Reviews, and the Safe-in-Sound Excellence in Hearing Loss Prevention Award™.
- Evaluate risk factors and interventions to prevent MSDs.
- Conduct research to describe exposure and risks from nanomaterials among manufacturing workers and approaches to evaluate the effectiveness of interventions.

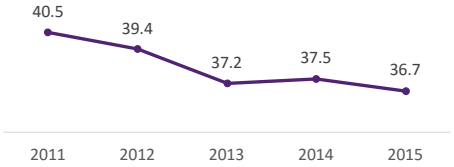
What have we accomplished?

- Published a NIOSH Science Blog on an ethical framework for making decisions towards the adoption and use of wearable sensors.
- Published a scientific paper and a NIOSH Prevention-thru-Design document describing examples from the manufacturers who received the Safe-in-Sound Excellence in Hearing Loss Prevention Award™. Their real-world examples demonstrate that noise control is desirable, within reach, and that noise control benefits extend beyond the prevention of hearing loss.
- Organized the Hear and Now Noise Hearing Loss Challenge in partnership with the Occupational Safety and Health Administration and the Mine Safety and Health Administration, to bring together entrepreneurs and potential investors.
- Published a three-part NIOSH Science Blog series summarizing the solutions presented by the Challenge winners and finalists.
- Launched an iOS based free sound level meter app that measures and characterizes occupational noise exposure similar to professional instruments.
- Published a study on the assessment of self-reports of MSDs and the use of the revised NIOSH Lifting Equation to identify specific factors related to low back pain among a group of manufacturing workers.
- Published a systematic review and a NIOSH Science Blog on challenges and approaches for developing recommendations to control exposure to nanomaterials.

What's next?

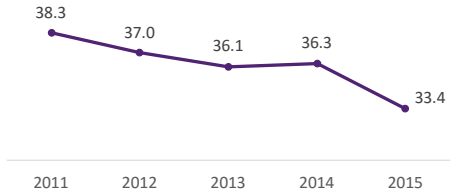
- Evaluate if sensors, Internet-of-Things (IoT), controlled access technology, and personnel location tracking can be integrated to improve situational awareness during maintenance operations and prevent unexpected startup or energy release.
- Complete and publish new online resources with recommendations on the control of hazardous energy on the NIOSH website.
- Update a systematic review on the effectiveness of interventions to prevent the effects of noise in the workplace.
- Launch a NIOSH topic web page for Hearing Protector fit-testing to provide best practice recommendations to integrate fit-testing into hearing loss prevention programs.
- Launch NIOSH Lifting Equation smartphone app to assess the risk of lifting tasks.

Incidence Rate of Workplace Injuries by Contact with Objects & Equipment in Manufacturing* (per 10,000 full-time workers)



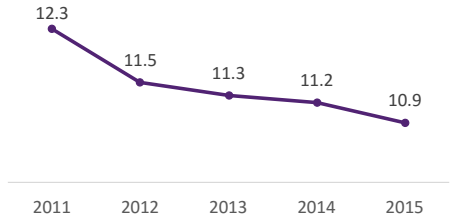
Source: U.S. Bureau of Labor Statistics
* Non-fatal cases involving days away from work.

Incidence Rate of Musculoskeletal Disorders in Manufacturing* (per 10,000 full-time workers)



Source: U.S. Bureau of Labor Statistics
*Non-fatal cases involving days away from work.

Incidence Rate of Hearing Loss in Manufacturing* (per 10,000 full-time workers)



Source: U.S. Bureau of Labor Statistics
* Non-fatal occupational illnesses involving hearing loss.

To learn more, visit https://www.cdc.gov/niosh/programs/manuf/default.html

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