

# Manufacturing Program

## 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
- Preventing work-related illnesses such as musculoskeletal disorders and respiratory disease
- Reducing exposure to occupational safety and health hazards
- Evaluating new and emerging technologies, both for potential risks to workers and for ways these technologies might protect workers.

## What do we do?

- Promote research findings, practical guidance and technologies to manufacturers, stakeholders, and the public in general.
- Conduct research and provide recommendations to manufacturers on new technologies including nanomaterials, robotics, wearable sensors, safe equipment design, and operation to prevent injuries to workers.
- Evaluate the effectiveness of occupational safety and health interventions through research, [systematic reviews](#), and outreach activities.
- Develop mechanisms for effective translation of research into practice in the manufacturing sector.

## What have we accomplished?

- Published a [report](#) on Field Evaluation of a Mobile Dust Control Booth for Stone Countertop Grinding.
- Published posters on health and safety information to protect workers when [3D printing with filaments](#) and [3D printing with metal powders](#).
- Created a seminar series, Manufacturing Mondays, to highlight research conducted in the sector. Both full length presentations and rapid-fire presentations from chosen cross sectors were held virtually. Attendance at the webinars includes external partners and other interested stakeholders.
- Published a [study](#) that found free (no polymer) carbon nanotubes and nanofibers and their bundles in air samples collected at a manufacturing plant that uses three-dimensional printers with thermoplastic filaments containing carbon nanotubes and carbon nanofibers.
- A webpage, "Small Business Respiratory Protection and Face Covering Guide" was posted by the COVID-19 workgroup in 2022.
- Established a COVID-19 workgroup led by external partners that meets to discuss topics of interest to the Manufacturing sector. The group published a webpage hosted on the National Association of Manufacturers website on pandemic ventilation resources for workplaces.
- Published a paper, "Effective and Efficient Ventilation for a Healthy Work Environment during Aircraft Painting."
- As part of the COVID-19 pandemic response, published [MMWR: Factors That Might Affect SARS-CoV-2 Transmission Among Foreign-Born and U.S.-Born Poultry Facility Workers — Maryland, May 2020](#).

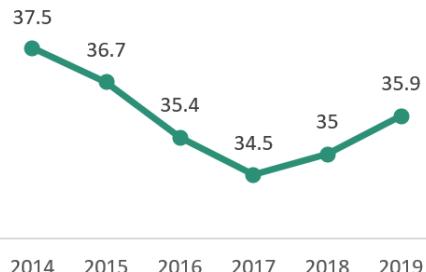
## What's next?

- Publish additional reports on stone countertop grinding to reduce occupational exposures to respirable crystalline silica during manufacturing and finishing.
- Publish an analysis of the risk of developing work-related rotator cuff syndrome using separate or specific combinations of biomechanical risk factors.
- Host additional seminars in the Manufacturing Mondays series.
- Disseminate additional research on aircraft painting exposures through conference presentations, journal articles, and participation in American Society for Heating Refrigerating and Air-conditioning Engineers committees.

## 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.

### 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

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



Source: U.S. Bureau of Labor Statistics

### Incidence Rate of Workplace Machine-Related Injuries in Manufacturing\* (per 10,000 full-time workers)



Source: U.S. Bureau of Labor Statistics