



## NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

The **National Institute for Occupational Safety and Health (NIOSH)** is the U.S. federal agency that conducts research and makes recommendations to prevent worker injury and illness. NIOSH research is key to these efforts and provides practical solutions to identified problems. The Institute's work in this area protects the safety and health of the nation's 155 million workers<sup>1</sup>. NIOSH provides the only dedicated federal investment for research needed to prevent the societal cost of work-related fatalities, injuries and illnesses in the United States, estimated in 2007 at \$250 billion in medical costs and productivity losses alone<sup>2</sup>. These safety and health risks take huge tolls on workers, their families, businesses, communities, and the nation's economy; NIOSH works to promote a healthy, safe and capable workforce that can rise to the challenges of the 21<sup>st</sup> Century.

### NIOSH Vision

Safer, Healthier Workers

### NIOSH Mission

To develop new knowledge in the field of occupational safety and health, and to transfer that knowledge into practice.

### About NIOSH

The Occupational Safety and Health Act of 1970 established NIOSH. NIOSH is part of the U.S. Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services. It has the mandate to assure "every man and woman in the Nation safe and healthful working conditions and to preserve our human resources." NIOSH has more than 1,300 employees from a diverse set of fields including epidemiology, medicine, nursing, industrial hygiene, safety, psychology, chemistry, statistics, economics, and many branches of engineering. NIOSH works closely with the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) in the U.S. Department of Labor to protect American workers and miners.

- 1 U.S. Department of Labor, Bureau of Labor Statistics. *Current Population Survey*. 2012. <http://www.bls.gov/cps/cpsaat01.pdf> June 2013.
- 2 Leigh JP. Economic burden of occupational injury and illness in the United States. *Millbank Q* 2011;89:728-72.

## NIOSH Research

Through the National Occupational Research Agenda (NORA), a public-private partnership, now in its second decade, NIOSH works closely with diverse partners to identify the most critical issues in workplace safety and health. NIOSH and its partners then stimulate and conduct innovative research that addresses needs in a wide range of industries central to our society and economy:

### Agriculture, Forestry, and Fishing

A review by independent experts lauded NIOSH for the relevance and impact of its agriculture, forestry, and fishing research and its strategic partnerships in this sector. The report cited accomplishments such as reducing child death rates from agricultural worksite risks, reducing fatalities from tractor rollovers, and adopting life-saving personal flotation devices in commercial fishing.

### Construction

NIOSH has completed research projects on the most salient needs of this large and diverse sector and have provided solutions to the construction community. Projects have addressed the causes of falls and electrical hazards, musculoskeletal disorders associated with construction work, and health hazards such as noise, asphalt fumes, silica, and welding fumes.

### Healthcare and Social Assistance

NIOSH provides detailed recommendations for workers who serve the sick and those in need of assistance. Partnerships have resulted in development of safe patient handling guidance that minimizes musculoskeletal disorders in nurses, and improvement of facility designs to minimize risks. NIOSH has worked closely with The Joint Commission, which accredits and certifies more than 20,000 healthcare organizations in the U.S., as well as the American Nurses Association. Researchers are now working on a web-based training program on workplace violence prevention for healthcare workers.

### Manufacturing

NIOSH has developed and distributed education materials on major hazards in this sector and promoted reduction of injuries and fatalities due to contact with equipment, falls, hearing loss, and other exposures. The rapidly developing area of nanotechnology also has the potential to influence large numbers of industrial processes and products. NIOSH is developing key information that can be used to develop training materials, guidance, and recommendations to control worker exposures.

### Mining

NIOSH has created engineering controls for reducing noise levels in the mines, proximity detection systems for mining equipment, and LED cap lamps. NIOSH has developed practical solutions to critical problem areas in mining, which include providing emergency oxygen through self-contained self-rescuers and improving underground communications and personnel tracking. NIOSH and its partners designed, developed and patented the coal dust explosibility meter and personal dust monitor, both commercially available and used in underground coal mines. Training packages and emergency response protocols for mining companies are being developed to identify and address emerging issues in mine emergency response planning.

## SAFER • HEALTHIER • WORKERS

To receive documents or other information about occupational safety and health topics, contact NIOSH: Telephone: 1-800-CDC-INFO (1-800-232-4636) | TTY: 1-888-232-6348 | Web: [www.cdc.gov/info](http://www.cdc.gov/info) or visit the NIOSH Web site at [www.cdc.gov/niOSH](http://www.cdc.gov/niOSH)

DHHS (NIOSH) Publication No. 2013-140 | October 2015

### Oil and Gas Extraction

NIOSH developed a research program for the upstream oil and gas industry that addresses the major causes of injury and illness among these workers. NIOSH utilized partner worksites to produce two training videos for roughnecks and truckers and developed a set of safety check lists for rig workers. NIOSH continues to work with diverse partners to develop engineering and administrative controls for silica during hydraulic fracturing operations.

### Public Safety

NIOSH has built a library of literature addressing law enforcement and wild land firefighting, produced and promoted education materials on safety and health in law enforcement, and continues to expand partnerships. NIOSH published one of the first population-based studies to integrate psychological, physiological, and subclinical measures of stress, disease and mental dysfunction in *Annals of Epidemiology*, studying the effects of policing and stress. Additionally, recent research published in the *Journal of Safety Research* describes fatal and non-injury data for correctional officers. NIOSH networks with fire service and law enforcement professionals and promotes best practices among public safety workers responding to emergency calls.

### Services

NIOSH supports workers in service establishments such as automotive repair, hotels, and fast food service. In addition to completing health hazard evaluations, NIOSH has been involved in research programs that address health risks in the education sector. NIOSH conducts research on chemical exposures and associated health effects in workers providing embalming services, and in workers in dry cleaning.

### Transportation, Warehousing, and Utilities

NIOSH research and interventions in this sector include guidance for commercial truck drivers, a study of safety ordinances for violence against taxi drivers, reducing musculoskeletal disorders in package drivers and airline baggage handlers, and aviation safety. NIOSH established a Center for Motor Vehicle Safety to find solutions for fatalities and severe injuries in transportation.

### Wholesale and Retail Trade

NIOSH has identified emerging issues in this sector and developed products such as alternative keyboards for work posture and a video on practical measures for identifying risk factors for workplace violence. As a result of NIOSH research, nonskid mats were installed for warehouse workers handling liquids, and improved dust exhaust hoods were installed in lumber stores. NIOSH initiated discussions between users and manufacturers of equipment designed to reduce musculoskeletal hazards, an approach that has been adopted by other entities.