

# Reducing Injuries and Illnesses Among Construction Workers

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## INTRODUCTION

More than 6 million workers (about 6 percent of the total U.S. labor force) are currently employed in the construction industry. Compared with other industries, construction workers experience one of the highest occupational fatality and injury and illness rates resulting in lost work days [BLS, 1996]. Of all work-related deaths in 1996, 16.9% (or 1,039) occurred among construction workers; falls were the leading cause (31%). By trade, ironworkers and roofers accounted for more than 75% of deaths due to falls in the industry [CPWR, 1998].

Nonfatal injuries also occur frequently among construction workers. In 1995, construction workers experienced more than 182,000 illnesses and injuries causing loss of work days. Having contact with or being struck by an object and musculoskeletal disorders account for more than 50% of all traumatic injuries; backs, hands/fingers, and eyes are the body parts most affected [BLS, 1998; Lipscomb et al., 1996].

In partnership with researchers throughout the United States, NIOSH is developing and evaluating methods to reduce work-related injuries and illnesses among construction workers. One approach is to develop and disseminate educational programs, training materials, and methods that address the needs of construction workers and the industry as a whole.

## FUTURE CONSTRUCTION WORKERS

In the United States, the injury rate among adolescent workers is 5.8 per 100 full-time equivalents. To reduce this rate and increase the safety awareness and education of vocational, technical, and post-secondary industrial school teachers and administrators, NIOSH is creating a comprehensive set of trade-specific teaching materials with an occupational safety and health emphasis. Currently, six trade-specific curricula are planned: electrical work, drywall and plastering (both installation and finishing), bricklaying, masonry, carpentry, and plumbing. So far, the developed material contains twelve modules on general safety and health topics relating to vocational shops, and three curricula chapters on specific trades. These will be carefully evaluated for their effectiveness. This program has the potential for reaching more than 11 million students throughout the country. Through such programs, NIOSH will help safeguard the health and life of young workers and begin to create a culture that values safety and health on the job.

## RESPIRATORY PROTECTION PROGRAM HANDBOOK FOR SMALL BUSINESSES AND CONTRACTORS

Pulmonary diseases and cancers (particularly asbestosis, lung cancer, mesothelioma, bronchitis, and occupational asthma) consistently cause disability, morbidity, and death among the U.S. construction workers. These conditions are attributed to exposures to asbestos, silica, diesel fumes, wood dust, paint vapors, resin adhesives, and other respiratory hazards. In 1998, OSHA implemented a new respiratory standard to reduce such exposures [CFR, 1997]. This standard requires that both large and small employers have respiratory protection programs if their work sites pose

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respiratory hazards to workers. A series of easy-to-read handbooks will provide small contractors with the tools for establishing and maintaining good respiratory protection programs. The first handbook will target drywall finishing contractors. Drywall finishers may be exposed to high concentrations of dust that may contain silica and may exceed current OSHA standards for total and respirable dusts.

## **FALL-SAFE: AN INTERVENTION PROGRAM**

The Fall-Safe Construction Program was designed by researchers, educators, and practitioners at the West Virginia University Health and Safety Extension (Fall-Safe Construction Program, 130 Tower Lane, P.O. Box 6615, Morgantown, WV 26506-6615) in collaboration with NIOSH and the Center to Protect Workers' Rights. The program was created as a comprehensive fall hazard management system to (1) increase fall safety knowledge, awareness, accountability, and communication among different levels of workers in an organization or at a job site, and (2) provide a systematic approach to training and managing fall-prevention activities. The Fall-Safe system includes modules for training all levels of the workforce: contractors and safety coordinators, competent persons or field supervisors, and workers. At the end of the program, contractors participating in Fall-Safe are awarded the status of Fall Safe Contractor. West Virginia University audits their performance by quarterly site audits. Poor performance on two successive site audits results in withdrawal of Fall-Safe status. Currently, the program is being evaluated for effectiveness.

## **REDUCING MUSCULOSKELETAL DISORDERS THROUGH TRAINING**

Musculoskeletal disorders among construction workers account for 22.5% of injuries resulting in lost work days [BLS, 1998]. In a survey of 3,000 construction workers, more than 70% reported having symptoms related to musculoskeletal pain in the 12 months before the survey [Cook, 1992]. Through its extramural program with universities, NIOSH currently sponsors five research projects to develop training programs and materials that

teach workers and managers how to identify risk factors for musculoskeletal disorders and how to change the work environment to reduce or eliminate them. Steps for developing training materials include symptom surveys of workers and work-site assessments. Most of the course work and training materials encourage participatory training and prevention activities. These programs have been immensely successful in increasing worker and management awareness of musculoskeletal disorders and risk factors. However, more work is needed to determine whether they effectively prevent work-related musculoskeletal disorders.

## **WHERE DO WE GO FROM HERE?**

Although many safety and health training programs and courses are designed for construction workers, more research is needed to determine their effectiveness in reducing work-related injuries and illnesses. Furthermore, more work is needed to identify the safety and health training needs of each level of employment in the construction industry (including young adults who are not yet in the industry) and to determine how the information is most effectively translated and transmitted to each level.

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