National Safety Management Society DIGEST

Updating members on current Society news and moves

NSMS September 2005 DIGEST

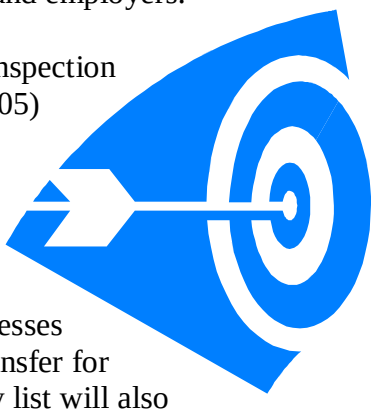
Calling All NSMS Members: Volunteers Are Needed for Our National Conference Planning Committee

NSMS is seeking volunteers to form a working committee for planning our 2006 National Conference. We need the efforts and support of all members to keep the information exchange and networking possible. If you are interested in participating, please email us at nsmsinc@yahoo.com or call and leave a message at (800) 321-2910. You may also wish to directly contact NSMS Board Member Ed Ratzenberger who is chairing the committee to plan our annual conference (safetycouncilse@earthlink.net). Please spread the work! Thank you.

OSHA Announces Targeted Inspection Plan for 2005

OSHA will focus on about 4,400 high-hazard worksites for unannounced comprehensive inspections over the coming year during its 2005 site-specific targeting plan (http://www.osha.gov/OshDoc/Directive_pdf/CPL2_05-05.pdf).

"Our targeted inspection program maximizes the effectiveness of our inspection resources to those workplaces with the highest safety and health hazards," said Jonathan L. Snare, deputy assistant secretary of labor for OSHA. "This program gives us the opportunity to focus our enforcement efforts where it will have the most benefit for workers and employers."



Over the past seven years, OSHA has used a site-specific targeting inspection program based on injury and illness data. This year's program (SST-05) stems from the agency's Data Initiative for 2004, which surveyed approximately 80,000 employers to attain their injury and illness numbers for 2003.

This year's program will initially cover about 4,400 individual worksites on the primary list that reported 12 or more injuries or illnesses resulting in days away from work, restricted work activity, or job transfer for every 100 full-time workers (known as the DART rate). The primary list will also include sites based on a "Days Away from Work Injury and Illness" (DAFWII) rate of nine or higher (nine or more cases that involve days away from work per 100 full-time employees).

Employers not on the primary list that reported DART rates of between 7.0 and 12.0, or DAFWII rates of between 5.0 and 9.0, will be placed on a secondary list for possible inspection. The national incident DART rate in 2003 for private industry was 2.6, while the national incident DAFWII rate was 1.5.

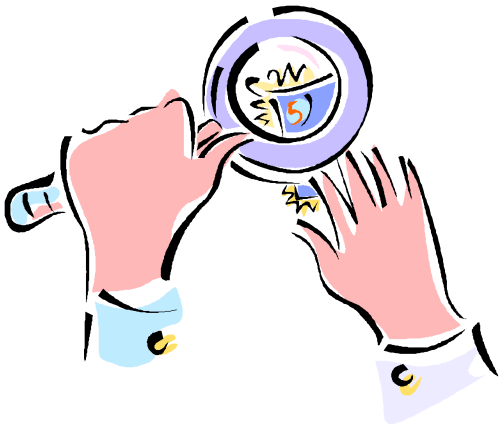
OSHA will again inspect nursing homes and personal care facilities, but only the highest 50 percent rated establishments will be included on the Primary List. Inspections will focus primarily on ergonomic hazards relating to resident handling; exposure to blood and other potentially infectious materials; exposure to tuberculosis; and slips, trips and falls.

The agency also will randomly select and inspect about 400 workplaces (with 75 or more employees) across the nation that reported low injury and illness rates for the purpose of reviewing the actual degree of compliance with OSHA requirements. These establishments are selected from those industries with above the national incident DART and DAFWII rates.

Finally, the agency will include on the primary list some establishments that did not respond to the 2004 data survey.

Significant changes in this year's plan are:

- Change the threshold DART rate and DAFWII case rate for the Primary and Secondary Inspection Lists.
- Increase the number of low-rate establishments from high-rate industries that are added to the Primary Inspection List.
- Revise the provision concerning OSHA's Enhanced Enforcement Program (EEP).
- Add to the Primary Inspection List some establishments that did not respond to the 2004 OSHA Data Initiative survey.
- Add a Tertiary Inspection List.
- Add a provision to clarify procedures when an establishment is an Office Only site.
- Require compliance officers to conduct only a comprehensive safety inspection in most situations.
- Revise the criteria for establishments to receive a "records only" inspection.



Changes to the Texas Workers' Compensation System Resulting from House Bill 7 during the 79th Legislative Session.

Governor Rick Perry signed House Bill 7 (HB 7) into law on June 1, reforming the Texas Workers' Compensation System. The law changes will be effective September 1, 2005.

Key provisions of HB 7 for health care providers can be found at:
http://www.tdi.state.tx.us/wc/transition/hb7provider.html

Key provisions of HB 7 for employees can be found at:
http://www.tdi.state.tx.us/wc/transition/hb7worker.html

Key provisions of HB 7 for employers can be found at:
http://www.tdi.state.tx.us/wc/transition/hb7employer.html

In addition, statuatory time line for HB 7 can be found at:
http://www.tdi.state.tx.us/wc/transition/hb7timeline.html

Major provisions of HB 7 include the creation of a new Division of Workers' Compensation at the Texas Department of Insurance (TDI) to assume the responsibilities of the Texas Workers' Compensation Commission (TWCC). The new TDI division will be overseen by a commissioner to be appointed by Gov. Perry.

In addition, HB 7 contains many provisions that will enable improvements to the administration of workers' compensation system. For more information on the TDI-TWCC transition, please click here to see the document titled Summary of House Bill 7 (79th Legislature) (PDF):
http://www.twcc.state.tx.us/commission/TWCCHB7SummaryofChanges6-23.pdf
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More information about the implementation of HB 7 and changes in governance for the workers' compensation system will be posted on the TWCC website at www.twcc.state.tx.us and the Texas Department of Insurance website at www.tdi.state.tx.us.

NIOSH Nanotechnology Research Developments

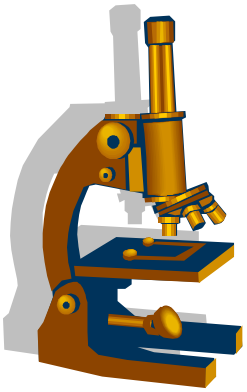
NIOSH has introduced a web newsletter entitled, "Focus on Nanotechnology: Occupational Safety and Health Applications and Implications Research at NIOSH." The URL for the Web newsletter is http://www.cdc.gov/niosh/topics/nanotech/focus.html and will provide ongoing information about developments in NIOSH's strategic research program on nanotechnology.

NIOSH conducts its multidisciplinary research program with a diverse community of partners under the National Nanotechnology Initiative (NNI). Consistent with the NNI's goals, the program is intended to advance new studies that will help support the responsible development of nanotechnology, and help maintain U.S. competitiveness in this new industrial revolution. The products of this research will help practitioners, with greater certainty, to apply the well-established principles of occupational safety and health to workplace exposures involving nanomaterials.

"As our research in this emerging field continues to grow, 'Focus on Nanotechnology' will report new developments as soon as they happen," said NIOSH Director John Howard, M.D. "We are pleased to add this web-based newsletter to our other array of resources for informing our stakeholders."

"Focus on Nanotechnology" will be regularly updated with timely news summaries about studies in NIOSH's own state-of-the-art laboratories, new findings and recommendations, NIOSH support for extramural research, partnerships with other leaders in this emerging area of technology, upcoming scientific conferences, and other developments. In addition, further resources can be found on NIOSH's Web topic page on research related to the implications and applications of nanotechnology for occupational safety and health, http://www.cdc.gov/niosh/topics/nanotech.

For additional information about NIOSH research, call the toll-free information number (800) 356-4674 or visit http://www.cdc.gov/niosh.



ACOEM Calls For Employers To Implement Medical Surveillance Programs For Silica

More than one million U.S. workers are exposed to crystalline silica -- a basic component of soil, sand, granite and other minerals, quartz being its most common form. Of these workers, more than 100,000 participate in activities associated with high risk of silica exposure, including mining, rock drilling, construction activities, and foundry work.

Silicosis is incurable; however, it is preventable if a proper workplace medical surveillance program is implemented, according to a new a position statement by the American College of Occupational and Environmental Medicine (ACOEM).

"It is important to stress that the single most important aspect for preventing silicosis and other silica-associated diseases is limitation of exposure which can be achieved through engineering and administrative controls," said Lawrence W. Raymond, MD, co-lead author of the statement. "A workplace medical surveillance program helps to ensure that exposure is appropriately limited ... only when employers, workers, and physicians and other health professionals take the team approach to medical surveillance can exposures to silica be reduced or eliminated."

When workers inhale silica dust, the dust enters the lungs and may cause the formation of scar tissue, which in turn can reduce the lungs' ability to take in oxygen. Workers exposed to silica are in danger of developing silicosis -- an irreversible and sometimes fatal disease. And, since silicosis affects lung function, workers can develop other lung disorders, including tuberculosis, chronic bronchitis, and cancer.

ACOEM advocates the implementation of medical surveillance programs for the primary purpose of detecting adverse health effects early on so that the progression of the disease can be halted.

"A medical surveillance process provides an organized means of identifying cases of silicosis as early as possible, and such early identification can help identify problems for groups of workers and for an individual worker simultaneously," said Stephen Wintermeyer, MD, MPH, co-author and past chair of the College's Occupational and Environmental Lung Disorders Committee, which developed the statement. "The goal remains to prevent and eventually eliminate silicosis both nationally and internationally."

The position statement outlines a surveillance program that would require that all at-risk workers be given a baseline evaluation before they begin the job, with follow-up evaluations conducted one year after being hired and every three years following that. In addition, an exit evaluation should be performed upon the conclusion of employment.

Medical Surveillance of Workers Exposed to Crystalline Silica is available online at http://www.acoem.org/guidelines/article.asp?ID=82.

Study May Help Predict Who Is Most Likely To Develop Repetitive Strain Injury

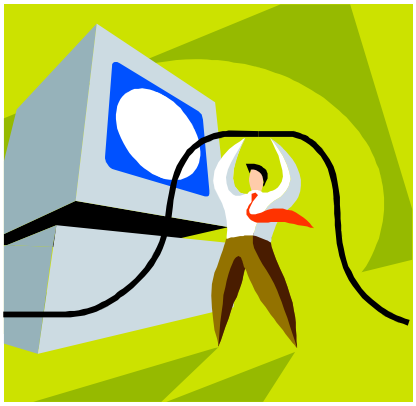
Who is most likely to develop a repetitive strain injury such as wrist tendonitis or certain kinds of low-back pain?

According to a new study from the Institute for Work & Health in Toronto, Canada, the most vulnerable person would probably be a female college or university graduate employed in a full-time job. If her job is both psychologically and physically demanding and the employer is on the verge of downsizing -- her risk is even higher.

Results of the study, led by Dr. Donald Cole, were published in the July issue of the *American Journal of Public Health* and announced by the Institute on Aug. 3.

Cole and his team analyzed data from 2,800 individuals across Canada who took part in four successive Statistics Canada's National Population Health Surveys.

"We looked at a wealth of health and demographic information collected from these people over the course of seven years, starting with the first survey in 1994 and ending with the last survey in 2001," explained Cole, a senior scientist at the Institute who is also an associate professor with the Department of Public Health Sciences, University of Toronto.



At the time of the final survey, 155 participants reported that they had developed a new RSI. The most common RSI was in the wrist or hand (37 percent), shoulder or upper arm (20 percent), elbow or lower arm (15 percent) and lower back (11 percent).

"We then looked at the earlier data collected from the same people to see what, if anything, they had in common," Cole said.

The team found that the predictors for RSI included being female (more women than men developed these injuries); having some post-secondary education; and working at a full-time job.

"Women's jobs, especially office jobs and micro assembly work, often involve a high risk for RSI which may explain why more women reported a new RSI in our study," said researcher Harry Shannon, an adjunct scientist and professor at McMaster University. "We also suspect that individuals with more education may be more aware of the link between work, demanding conditions and RSI, and therefore may be more likely to attribute their injury to work."

The study also found that high levels of job insecurity, and jobs with high psychological demands or physical demands (such as manual labor), were strong predictors of RSI. Cole, an expert in workplace interventions, said these are modifiable risk factors and the findings can be used to support efforts for prevention.

"Repetitive strain injury creates significant personal and economic burden for workers and employers and also has an impact on health care costs," Cole said. "While there are programs in place to prevent RSI, we need to complement our knowledge of predictors with rigourous evidence on the effectiveness of workplace interventions to convince employers and policymakers to take action to prevent work-related RSIs."

According to Statistics Canada, 10 percent of Canadian adults -- about 2.3 million people aged 20 or older -- reported having an RSI the previous year in the 2000-2001 Canadian Community Health Survey.

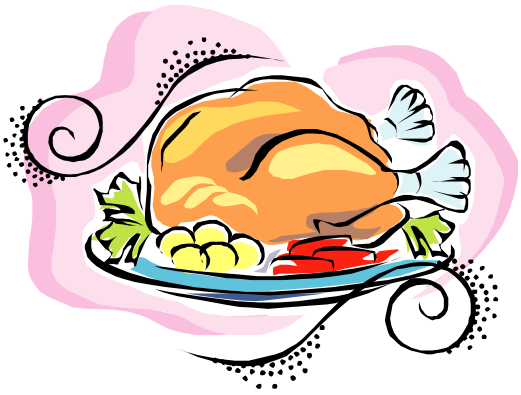
The Institute for Work & Health (http://www.iwh.on.ca) is an independent, not-for-profit organization whose mission is to conduct and share research with workers, labor, employers, clinicians and policy-makers to promote, protect and improve the health of working people.

Obesity Studies Focus On Injuries, Sedentary Workplaces

The more a man sits at his desk, the more likely he is to be overweight, according to an Australian study. Another study, by Ohio State University (OSU) researchers, suggests that extremely obese people are more likely than normal-weight people to injure themselves.

In the Australian study, lead researcher Kerry Mummery, Ph.D, of Queensland University, and colleagues collected data on 1,579 Australian men and women in full-time jobs. They looked at age, sex, occupation, physical activity, occupational sitting time and body mass index (BMI), a measure of body fat based on height and weight. People with a BMI of 25 to 29.9 are considered overweight, and 30 or greater, obese.

The researchers found that the workers sat an average of more than 3 hours a day, with 25 percent sedentary at the job more than six hours a day. Men sat an average of 209 minutes on the job, 20 minutes more than women.



"The current findings present the sedentary workplace as a potentially hostile environment in terms of overweight and obesity," according to authors of the study, reported in the August issue of American Journal of Preventive Medicine (Mummery WK, et al. "Occupational sitting time and overweight and obesity in Australian workers". *American Journal of Preventive Medicine* 29(2), 2005).

Men's 20 extra minutes off their feet appear to make a difference. Statistical analyses showed significant associations between occupational sitting time and a BMI of 25 or above in men but not in women.

"Time and productivity lost due to chronic diseases associated with overweight and obesity may make it financially worthwhile for employers to be more proactive in the health of their employees by promoting physical activity at work," the authors suggest. Energy imbalance -- expending less energy than energy consumed in the form of food -- has long been identified as cause of increasing overweight and obesity. In the current study, the authors write, "Higher total daily sitting time was associated with a 68 percent increase in the odds of having a BMI above 25."

Obesity has been identified as a risk factor for numerous chronic diseases including diabetes, coronary heart disease, high blood pressure, stroke and certain forms of cancer. In 2000, the World Health Organization estimated that the number of obese adults worldwide is 300 million. The study researchers did not address why women in general spent less time sitting than men, but noted that professional and white-collar women worker spent significantly more time sitting than blue-collar women.

In the OSU study, researchers collected health and injury data during a one-year period on more than 2,500 adults living in Colorado. More than one out of four (26 percent) of the extremely obese male participants reported personal injuries, and more than one out of five (21.7 percent) extremely obese women also reported injuries.

By comparison, about 17 percent of normal-weight men reported injuries, as did nearly 12 percent of normal-weight women, said Huiyun Xiang, the study's lead author and an investigator with the Center for Injury Research and Policy at Columbus Children's Research Institute.

Although other studies have looked at the relationship between obesity and injury, those studies were conducted either among adults in highly structured work environments or high school students, Xiang said. The current study is one of the first to look at the risk of injury in the general population.

The results appear in the current issue of the *American Journal of Preventive Medicine*.

The researchers categorized study participants based on individual BMI measurements. The National Institutes of Health recommends that BMI be used to classify someone as underweight, at a normal weight, overweight or obese, said Xiang, who is also an assistant professor of pediatrics at OSU.

In this study, people with a BMI lower than 18.5 were considered underweight, and those with a BMI of 18.5 to 24.9 were considered within a normal weight range. People with a BMI of 25 to 29.9 were considered overweight, but not obese. Participants with a BMI of 30 to 34.9 were considered obese, while those with a BMI of 35 or higher were considered extremely obese.

Overexertion and falls were the most common causes of non-fatal injuries among obese and extremely obese people in the study.

"Obesity may limit what a person can physically do," Xiang said. "People with such limitations are often at a higher risk for injury than healthy people."

He and his colleagues gathered data from the Colorado Behavioral Risk Factor Surveillance System, which is sponsored by the Centers for Disease Control and Prevention. Through telephone surveys, the system monitors lifestyles and behaviors related to the primary causes of mortality and morbidity. Of the 2,575 adults who agreed to participate in the study, a total of 370 reported injuries within a one-year period.

The extremely obese participants reported the most injuries, while underweight people reported the least.

About 17 percent of women listed as obese, but not extremely so -- those with a BMI of 30 to 34.9 -- reported injuries. But fewer than one out of 10 (9.3 percent) obese men reported injuries, a finding that puzzled the researchers.

"We had a fairly small number of participants in this category, which could have resulted in this smaller number for men," Xiang said. "We expected it to be higher."

More than half -- 51.7 percent -- of the injuries sustained by obese and extremely obese people happened inside the home. Transportation areas, such as store parking lots, bus stations and airports, came in a distant second, with 16.3 percent of all reported injuries happening there.

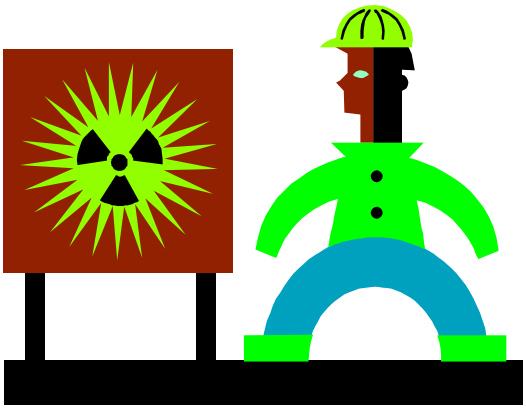
More than a third of the injuries (35.2 percent) were caused by acute overexertion. Falls took second place, causing 29.9 percent of the injuries.

Injury rates reported by people who were overweight -- but not obese -- were similar to those of normal-weight participants. Results showed that 16.3 percent of overweight men and 12.3 percent of overweight women reported injuries, compared to 16.8 percent of normal-weight men and 11.3 percent of normal-weight women. Underweight participants -- those with a BMI of 18.5 or lower -- reported the least number of injuries. With the exception of obese men, injury rates increased with BMI in both men and women. "There is undeniably a link between obesity and injury risk in adults," Xiang said. "Efforts to promote optimal body weight may reduce not only the risk of chronic diseases, but also the risk of unintentional injuries."

Xiang conducted the work with Lorann Stallones, a professor and director of the Colorado Injury Control Research Center at Colorado State University. Coauthors included Ohio State colleagues Gary Smith, director of the Center for Injury Research and Policy at Columbus Children's Research Institute; J. R. Wilkins, a professor with the division of epidemiology and biostatistics in Ohio State's School of Public Health; and Guanmin Chen and Sarah Hostetler, both with Columbus Children's Research Institute.

Nuclear Regulatory Commission (NRC) Proposes Further Strengthening Drug-Testing, Worker Fatigue Provisions

The Nuclear Regulatory Commission is proposing improvements to the agency's fitness-for-duty requirements for workers who have unescorted access to a nuclear power plant's protected areas.



The changes are outlined in a proposed rule that would apply to all currently operating plants, as well as any future plants licensed by the NRC. The drug- and alcohol-testing provisions would also apply to facilities that transport or handle strategic special nuclear material, including the Department of Energy's proposed mixed-oxide fuel facility.

"The NRC has long had strong fitness-for-duty requirements, and the proposed changes would provide even greater assurance that workers with unescorted access are trustworthy and reliable," said NRC Executive Director for Operations Luis Reyes. "The changes we're proposing will also set work hour limits to ensure nuclear power plant employees get enough rest to carry out their jobs."

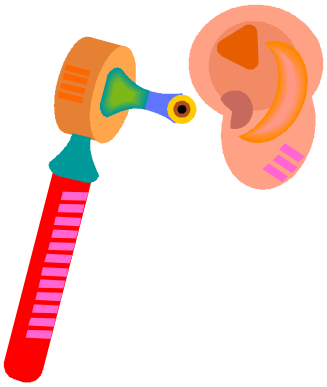
The proposed rule sets out detailed requirements in many areas of fitness-for-duty programs, including:

- Requiring validity tests for urine samples to determine if a specimen has been adulterated, diluted or substituted.
- Toughening sanctions for violations, including permanent denial of unescorted access for refusing or attempting to subvert a test.
- Adding the position of Substance Abuse Expert and specifying the role that person would fulfill in the fitness-for-duty and return-to-duty processes.
- Codifying individual work hour limits for some workers of no more than 16 hours in a 24-hour period, 26 hours in a 48-hour period and 72 hours in a week, excluding shift turnover time.
- Establishing minimum individual breaks for some workers of at least 10 hours between shifts, a 24-hour break each week and a 48-hour break every two weeks.
- Requiring some groups of workers to average a maximum of 48 hours per week while the plant is operating.

The proposed changes represent the resolution of the NRC's activities in response to petitions for rulemaking regarding work hour limits and certain inspections of fitness-for-duty programs. The rule would also, in part, replace and expand on an Order the NRC issued on April 29, 2003, setting work hour limits for security personnel, as well as codify a Commission policy statement on fatigue issued in 1982. For more information on the proposed rule, contact staff member Rebecca Karas by phone at (301) 415-3711 or via e-mail at rlk@nrc.gov.

Workplace Safety Accommodations for Hearing-Impaired Workers

According to the National Institute for Occupational Safety and Health (NIOSH), about 10 million American workers have permanent hearing loss resulting from exposure to excessive noise at work. This number is expected to increase over time as the workforce ages, OSHA noted in a bulletin that focuses on emergency response, evacuations, and also workplace safety and health considerations for these workers.



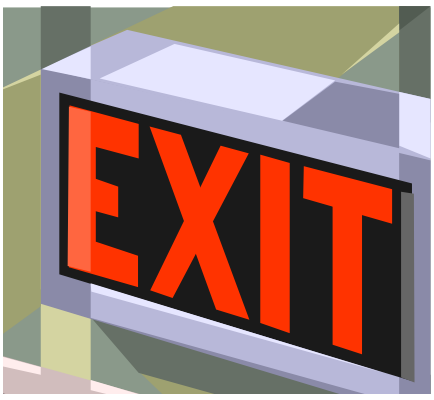
Hearing-impaired workers face challenges responding to emergencies, working safely around machinery, communicating with coworkers and receiving training. Accommodations necessary to address these challenges may not be part of an employer's current hearing conservation practice.

The bulletin is intended for employers, workers, and professional organizations that offer guidance on accommodating hearing-impaired workers' needs. It discusses in some detail various devices and also current standards (such as OSHA's emergency action plans standard at 29 CFR 1910.38 and 29 CFR 1910.160, fire extinguishing systems, as well as the Americans with Disabilities Act) that apply.

A. Emergency/Evacuation Response Considerations for Hearing-Impaired Workers

Customizing Worksite Emergency Preparedness for Hearing-Impaired Workers

The OSHA Emergency action plans standard (29 CFR 1910.38) requires an employer to develop a written emergency action plan when such a plan is required by a specific OSHA standard, such as 29 CFR 1910.120 hazardous waste operations and emergency response, and 29 CFR 1910.160 fire extinguishing systems. When the plan is required, it must describe the actions employees should take to ensure their safety if a fire or other emergency situation occurs. At a minimum, the plan must include: emergency escape procedures; procedures for employees who remain to operate critical plant operations before they evacuate; procedures to account for all employees after emergency evacuation; and procedures for reporting fires and other emergencies. The plan also must include the types of evacuation to be used in emergency circumstances. The employer must review the plan with each employee covered by the plan when it is developed, whenever the plan changes and upon an employee's initial assignment. Employers must consider employees with disabilities in the development of an emergency action plan when such a plan is required by a specific OSHA standard.



The plan must be in writing, kept in the workplace, and available to employees for review. For employers with 10 or fewer employees, the plan may be communicated orally and the employer does not have to maintain a written plan. The Appendix to 1910, Subpart E, Exit Routes, Emergency

Action Plans, and Fire Prevention Plans is a nonmandatory guideline to assist employers in complying with the requirements of the employee emergency plan.

The Americans with Disabilities Act (ADA) does not require employers to have an emergency evacuation plan, but if an employer decides to have such a plan, they are required to include people with disabilities.

To help prepare workers for emergencies, the Office of Disability Employment Policy (ODEP), at the Department of Labor, provides recommendations on emergency preparedness for people with disabilities. The ODEP report suggests three essential parts to an emergency evacuation plan: plan development, plan implementation and plan maintenance.

Plan development includes identifying the potential hazards, the accommodation needs of persons with disabilities, and key personnel who will be involved in an emergency. In developing a plan, employers should ask their employees for their input, and workers with disabilities should take responsibility for their safety by offering their ideas and input. The plan should address after-hours situations, and include a method to identify visitors with special needs. The plan also should include details on how information will be conveyed to hearing-impaired workers when they are away from their work areas. Finally, the plan should be easy to read and understandable.

Employers should consult with local fire, police and emergency departments as well as community-based organizations in developing the plan. While the plan should be in writing, it should be viewed as an ongoing process, periodically revised and updated to reflect changes in technology, personnel and procedures.

Plan implementation involves distribution of the plan in an accessible format to all employees and the integration of the plan into the employer's standard operating procedures. Drills, both scheduled and unscheduled, should be performed regularly. Such practice drills should encompass the needs of all individuals, including workers with disabilities, to ensure familiarity with the procedures and to determine where improvements are needed.

Plan Maintenance involves developing a system for identifying new safety concerns and the needs of new disabled employees, reviewing and modifying plans after practice drills, and ensuring that emergency equipment is being properly maintained in good operating condition.

Alerting Device Options

Traditionally, notification of an emergency has been done through the use of auditory devices which are effective for most workers. OSHA's Employee Alarm Systems standard (29 CFR 1910.165), addresses all emergency alarms required to be installed by specific OSHA standards. The standard indicates that an alarm system must provide warning for necessary emergency actions and be capable of being perceived above ambient noise by all employees. Since hearing-impaired employees may not be able to hear auditory alarms, OSHA considers strobe lights or similar lighting devices and tactile devices to meet the requirement of the standard.

Hearing-impaired workers also may have difficulty understanding voice communication over the public address (PA) system. The alarm may interfere with or drown out voice announcements, making the emergency voice communication system ineffective. Alerting device accommodations are available to notify hearing-impaired workers of emergencies, and they cause minimal distraction to other workers. Visual alarms equipped with flashing strobe lights or vibrating alerting devices can be hard-wired into the existing emergency notification system. The Underwriters Laboratories Standard for Emergency Signaling Devices for the Hearing-Impaired (UL 1971), establishes criteria for systems used for emergency notification.

Section 4.28 of the ADA Accessibility Guidelines (ADAAG) specifically addresses specialized alarms. To be effective for notification, visual alarms must be installed where hearing-impaired people can see them.

Many alerting device options are available for use in the workplace, depending on the particular needs of the hearing-impaired worker. However, not all of the devices listed below are appropriate for every hearing-impaired worker. Some of the devices are more appropriate for individuals with a severe-to-profound hearing loss, while others are appropriate for workers with a mild hearing impairment. The employer should work together with hearing-impaired employees, and perhaps with an occupational audiologist, in determining the device or combination of devices that work best for their particular situation.

Some alerting device options include:

- Exit signs set to flash when an emergency alarm sounds. These signs are typically connected to the emergency power system.
- Strobe lights or vibrating alarm signals placed in all areas occupied by hearing-impaired workers.
- Visual or vibrating alarm signals at the worker's workstation.
- Vibrating pagers worn by hearing-impaired workers.
- Vibrating watches or other type of body alarm that is strapped on to the individual to alert a hearing-impaired worker.
- Two-way vibrating pagers that receive text messages and have the ability to respond in full length text.
- "Hearing Dogs"- trained to alert the hearing-impaired worker to a person entering the room, abnormal machinery sounds, malfunctioning equipment, the telephone ringing or other alerting needs.
- Buddy systems where a coworker alerts a hearing-impaired worker to an emergency situation. This system should not be relied on as the sole means of alerting the hearing-impaired worker to an emergency situation because of the relatively low reliability of this approach.
- Amplified telephone ring signaler to alert the worker to a phone ringing.
- A modem that converts the personal computer into a Telecommunications Device for the Deaf (TDD).
- Instant messaging or e-mail pop-up.
- A flashlight provided to hearing-impaired individuals for signaling their location in the event they are separated from the rescue team or buddy.

B. Workplace Safety and Health Considerations for Hearing-Impaired Workers

Responding to Vehicles in the Workplace

Workers with hearing loss working around or operating powered industrial trucks (e.g., forklifts) or other heavy equipment may be concerned about their ability to detect dangerous situations. The employer should work together with hearing-impaired employees in determining the accommodation or combination of accommodations that work best for their particular situation. The following are suggested accommodations that can be made to minimize such safety risks:

- Use tape, paint or ropes to highlight paths of travel for forklifts, vehicles and heavy equipment.
- Designate separate doors for mechanized and people traffic.
- Establish rules requiring that all forklifts and vehicles must stop at all intersections.
- Install sensor warning lights that blink as the vehicle approaches. Directional warning lights such as the left light signals traffic on the left, and the right light signals traffic on the right, may be beneficial.
- Install flashing strobe lights on vehicles or forklifts to alert hearing-impaired workers to oncoming vehicles.
- Install mirrors at all intersections within the warehouse. Dome mirrors situated along aisle ways may be beneficial.
- Use vibrating pagers - place a transmitter in the moving equipment so that the driver can press a button that sends a signal to the vibrating receiver worn by the hearing-impaired employee to alert the worker to the approaching forklift.
- Position a rear vision camera so that a vehicle operator will be able to see behind him/her.

Training Accommodations

Training is an integral component of a safe workplace, yet training may pose unique challenges for employers who have workers with hearing impairments. Training programs that ensure that procedures are understood and followed are paramount to creating a safe work environment.

Hearing-impaired workers often need customized training tools to ensure their safety. There are a variety of training mechanisms that can be tailored to hearing-impaired individuals in the workplace. Again, the decision to use a particular training accommodation is one that should be made by the employer and employee after considering the needs of a specific situation.

- Assisted Listening Devices (ALDs). These devices amplify sound and transmit it to a person's hearing aid or to a receiver worn by the individual. The speaker talks into a microphone or transmitter and the listener either uses the telecoil (t-coil) on their own hearing aid or wears a receiver designed to work with the specific ALD.
- Captioned videotapes; open or closed. Closed captioning requires the use of a decoder to view the captions, while open captioning displays the text automatically. These captions are identical to captions displayed at the bottom of the screen in foreign language films. No special equipment is required to view open captioning.

- Scripting. A script of the video might be provided as a last resort if there is no captioning, and if the visual content is not of great significance to the information provided through the video. However, providing the script as a supplement to the captioned video in advance of viewing the video gives the user additional preparation time to understand what will be communicated.
- Qualified sign language interpreter. For more information, see the Equal Employment Opportunity Commission's (EEOC) *ADA Technical Assistance Manual for Title I, Chapter III, Providing Qualified Interpreters.*
- Communication Access Realtime Translation (CART) Services. CART is a service in which an operator types the spoken word into a computer that instantly displays the typed words in English on a monitor or other display. This service is useful during small and large group situations when verbatim conversation is essential to effective communication. CART offers word-for-word translation. This service typically needs to be scheduled in advance of a meeting.
- Computer-Assisted Notetaking. This service can be used to provide effective communication during group training sessions. It involves the use of a laptop or personal computer, word processing software, and possibly a PC projector. Typically, a typist who participates in the group activity acts as a notetaker while the hearing-impaired individual either watches the computer monitor or the text projected onto a wall or screen.
- Web-based training. Use web-based meeting software or video conferencing.
- Tape recorded meetings. After the training session, the tape can be listened to separately in a controlled listening environment with the ability to rewind and playback as often as necessary. The tapes can also be transcribed.
- TTY Videophone in a video conferencing format. This allows for full view of the group in addition to TTY communication directly on the TV monitor.
- Communication Access Software. Currently, there are innovative systems that provide multisensory, interactive communication by converting speech to text, and to real-time onscreen sign language. More information about these products is available on the internet.
- Area and meeting room systems. Options may include: FM desktop systems: portable sound field-desktop or tote bag; FM System with Speakers-Wireless; Conference Microphone; Ceiling Speakers.

Tips for Assisting People with Hearing Impairments

- Speak in a clear, normal tone; do not overenunciate or exaggerate words.
- Speak directly to the individual, even if there is a sign language interpreter present.
- Face into the light when speaking and do not cover or turn your face away.
- Flick the light on and off when entering a room to draw attention to your presence.
- Offer pencil and paper. While writing a message, do not talk; a hearing-impaired person cannot read a note and your lips at the same time.
- In situations where lights may be inadequate, provide the individual with a flashlight to help the hearing-impaired person lip-read in the dark.
- Use a microphone when speaking to a group.
- A presenter should repeat a question raised by the audience into the microphone before answering the question.

Safety Training Strategies – Shake hands and say "Hello."

I know what you're thinking -- "But I work with these people all the time, and they know me already." So? Isn't this a special occasion? Aren't you happy you're getting the chance to get together to learn about a vital topic that will have an impact on everyone's life?
Even though everyone on-site might know you, you may still want to walk around and said hello before starting your meeting or safety training session.

Even if you don't shake hands, go around the room and talk with as many audience members as you can. It's fine if you don't get to everybody. Spending time with your audience before you start does two things:

1) Helps loosen you up--you'll be more relaxed and ready to go once you "officially" start the meeting.

2) Shows you care. Your audience will get the signal that you care about them as individuals--that this is for them, and you're not just fulfilling an obligation to hold a scheduled safety meeting. Unless it's impossible, due to logistics, try going around and talking with folks in the audience. It will make a difference!

Safety Training Strategies – DIAL AND CATCH

Toss 2-3 small balls to someone, one after another. Easy to catch, right? Then have the person dial a string of numbers on their cell phone (turned off) while you toss the balls to them. They will almost certainly fail to catch or "drop the ball(s)".

Ask the audience: If they can't do a simple task like catching balls when on their cell phone, how do they expect to complete a complicated task like driving a truck while on the phone?

This demo makes a big point and doesn't take much time or expensive props.

MORE DANGEROUS THAN YOU THINK

Balloons: *The British Medical Journal* tells of the man who, after blowing up twenty party balloons, went to the emergency room complaining of chest pains, or hearing crunching noises with every heartbeat, and of feeling air bubbles trapped under his skin. Diagnosis: the poor chap had burst some of the air sacs in his lungs, so that with each puff, he inflated himself a little bit more. The man was treated and, within ten days, his symptoms had deflated. Source--*I'm Afraid Your Afraid* by Melinda Muse

Fish Tanks: *The Journal of Accident and Emergency Medicine* reported about the dangers of cleaning fish tanks. An immersed hand with even the tiniest cut or abrasion can become infected with a brutish bacteria that commonly thrives in home aquariums. Doctors call the bacterial skin disease "fish tank granuloma," and usually prescribe a two-to-four-month antibiotic regimen to cast away infection. If you're angling to prevent the stubborn rash and swelling, a pair of long rubber gloves will do the trick.

Safety Tidbits (from "Safety Stuff" by Richard Hawk Inc. http://www.richardhawkinc.com)

- The amount of nicotine the average pack-a-day smoker inhales in a week--400 milligrams--would kill a person instantly if it were taken in all at once.
- You are three times more likely to be killed by a rainstorm than a blizzard.
- The Chinese use to scatter firecrackers around the house. Reason: fire alarms.