NIOSH published skin notation profiles for nine chemicals, including trichloroethylene (TCE) and 1-bromopropane (1-BP). Skin notation profiles are agency-authored technical documents that provide information supplemental to chemicals’ skin notations, including summaries of all relevant data used to help determine the hazards associated with skin exposures. Each skin notation profile includes a brief summary of epidemiological and toxicological data associated with skin contact with a chemical and the rationale behind the chemical’s hazard-specific skin notation assignment.

Skin notation profiles are now available for the following chemicals:
- arsenic and inorganic arsenic containing compounds
- disulfoton
- heptachlor
- 1-bromopropane
- 2-hydroxypropyl acrylate (HPA)
- dimethyl sulfate (DMS)
- tetraethyl lead (TEL)
- tetramethyl lead (TML)
- trichloroethylene (TCE)

NIOSH skin notations offer warnings about the direct, systemic, and sensitizing effects of chemical exposures to the skin. All skin notation profiles are currently available via the NIOSH website. To learn more about the NIOSH strategy for assigning skin notations, see NIOSH Current Intelligence Bulletin 61

Dangerous Pollutants in Military’s Open Burns Greater Than Thought, Tests Indicate

The federal government appears to have significantly underestimated the amount of lead, arsenic and other dangerous pollutants that are sent into the air from uncontrolled burning of hazardous waste at the Radford Army Ammunition Plant in Virginia, according to a draft of a long-awaited report compiled by researchers at the Environmental Protection Agency.

The plumes drift directly towards an elementary school and residents a little more than a mile away, but the Army and regulators have long maintained that the pollution level is safe, based on its computer-modeled estimates.

Read more: [https://www.propublica.org/article/health-threat-of-militarys-open-burns-greater-than-thought-tests-indicate](https://www.propublica.org/article/health-threat-of-militarys-open-burns-greater-than-thought-tests-indicate)

Certain Jobs Linked to Raised Risk of Rheumatoid Arthritis

Rheumatoid arthritis, a painful disease in which a person's immune system attacks the joints, appears to be more common among people in certain types of jobs, researchers suggest.
The findings "indicate that work-related factors, such as airborne harmful exposures, may contribute to disease development," study author Anna Ilar said. She is a doctoral student in epidemiology at the Karolinska Institute in Stockholm.


**AIHA: Cannabis Industry Workers Need Protection**

The American Industrial Hygiene Association's *The Synergist* has published an article discussing the need for proper PPE by workers in the young but expanding cannabis industry. The article, titled "Growing Pains," addresses the hazards that workers can encounter in the indoor cannabis process.

The article's authors are James Lieberman, CIH, president of THC Safety, Inc., a consulting company for the cannabis industry; Rob Brown, chair of the AIHA Protective Clothing and Equipment Committee and president of Gloves By Web, a provider of personal protective apparel and PPE; and Robert N. Phalen, Ph.D., CIH, an associate professor of industrial hygiene at University of Houston-Clear Lake.

Some hazards their article discusses include exposure to pesticides, marijuana dust and resin, ultraviolet light from high-output grow lamps, and mold spores. Recommended PPE includes gloves, respirators, safety glasses, and faceshields.

Fire Station Air Quality Puts Firefighters at Risk

Firefighters have higher than average cancer rates, and while their exposure to carcinogens during fires is well known, a new study suggests exposures in fire stations contribute to their excess cancer risk, too.

“Firefighters spend large portions of their shift waiting for calls in a station, during which they can be exposed to diesel exhaust from idling trucks (which is a known carcinogen) and off-gassing from contaminated post-fire gear (which may be contaminated with a variety of known and/or possible carcinogens),” researchers point out in the Journal of Occupational and Environmental Medicine.

Read more: http://www.reuters.com/article/us-health-cancer-firefighters-idUSKBN1AR297

Workplace Fumes Linked to Signs of Early Lung Disease

Workplace exposure to vapors, gas, dust and fumes increases the likelihood that a CT scan will show early signs of disease in the lung tissue, according to a U.S. study.

“Interstitial lung disease is a family of over 100 diseases each characterized by inflammation and/or scarring (fibrosis) in the walls of the air sacs (alveoli) of the lungs,” said study coauthor Dr. David Lederer, who co-directs the Interstitial Lung Disease Program at Columbia University Medical Center in New York. The causes of interstitial lung disease (ILD) are often unclear.

Read more: http://www.reuters.com/article/us-health-lungs-workplace-fumes-idUSKBN1AR1O1
Evaluation of Waste Isoflurane Gas Exposure during Rodent Surgery in an Australian University

Biomedical researchers use of inhalational anesthetics has increased in recent years. Use of isoflurane as an inhalational anesthetic may result in human exposure to waste anesthetic gas. Potential health effects from exposure include genotoxic and hepatotoxic effects with some evidence of teratogenic and reproductive effects. Research suggests that exposure to waste anesthetic gas within human hospital settings has improved substantially but exposures to biomedical researchers and veterinarians still requires improvement. A number of biomedical research facilities are located at The University of Queensland, Australia, where researchers and animal handlers are potentially exposed to waste isoflurane gas. There is limited published data on the exposures received by biomedical researchers performing routine procedures. This project aimed to assess isoflurane exposure received during routine rodent anesthetic protocols performed at the university. Atmospheric concentrations of isoflurane were assessed via two methods – personal active gas sampling using sorbent tubes, and direct readings using infrared spectroscopy. Total procedure and isoflurane exposure times ranged from 135 minutes to 268 minutes. Personal sorbent tube sampling detected isoflurane levels from below detectable limits (<0.01 ppm) to a Time Weighted Average for the task (TWA-Task) of 6.20 ppm (0.73 ± 9.13). Participants were not exposed to isoflurane outside of the sampling period during the remainder of the workday. TWA-8 hr adjusted levels ranged from below the limit of detection to 1.76 ppm isoflurane (0.69 ppm ± 0.61 ppm). The infrared spectroscopy readings taken in the breathing zone of participants ranged from 0.1 ppm to 68 ppm. Results indicate that if adequately controlled through good room ventilation, effective active gas scavenging and well constructed anesthetic equipment, waste anesthetic exposures are minimal. However, where industry standards are not met exposures may occur, including some high peak exposures.

Read more: Journal of Occupational and Environmental Hygiene  Accepted author version posted online: 24 Aug 2017 (Available with AIHA membership)
Radiation

NRC Amends Radioactive Materials Medical Use Requirements

The Nuclear Regulatory Commission announced that it has approved amendments to its requirements for medical uses of radioactive materials. "A final rule, approved Aug. 17, modifies 10 CFR Part 35 and makes conforming changes to Parts 30 and 32. The rule will be published in the coming months in the Federal Register after the NRC staff makes certain revisions directed by the Commission," its announcement stated.

It says the changes "will amend the definition of medical events associated with permanent implant brachytherapy; update training and experience requirements for authorized users, medical physicists, radiation safety officers, and nuclear pharmacists; address a petition the NRC received seeking to recognize the qualifications of board certified physicists and radiation safety officers not specifically named on a license; change requirements for measuring molybdenum contamination and reporting generator tests that exceed allowed concentration levels; allow associate radiation safety officers to be named on a medical license; and make several minor clarifications."

Read more:
An Intelligent FFR with a Self-Adjustable Ventilation Fan

This paper presents an intelligent Filtering Facepiece Respirator (FFR) with a self-adjustable ventilation fan for improved comfort. The ventilation fan with an intelligent control aims to reduce temperature, relative humidity, and CO₂ concentrations inside the facepiece. Compared with a previous version of the FFR, the advantage of this new FFR is the intelligent control of the fan's rotation speed based on the change in temperature and relative humidity in the FFR deadspace. The design of the control system utilizes an 8-bit, ultra-low power STC15W404AS microcontroller (HongJin technology, Shenzhen, China), and adopts a high-precision AM2320 device (AoSong electronic, Guangzhou, China) as temperature and relative humidity sensor so that control of temperature and relative humidity is realized in real time within the FFR deadspace. The ventilation fan is intelligently driven and runs on a rechargeable lithium battery with a power-save mode that provides a correspondingly longer operational time. Meanwhile, the design is simplistic. Two experiments were performed to determine the best location to place the fan.

Read more: Journal of Occupational and Environmental Hygiene Accepted author version posted online: 21 Aug 2017 (Available with AIHA membership)
resistance of type 5 chemical protective clothing against nanometric airborne particles: behavior of seams and zipper

in the field of dermal protection, the use of chemical protective clothing (cpc) (including coveralls) are considered as the last barrier against airborne engineered nanomaterials (enm). in the majority of cases, type 5 cpc, used against solid particles (iso 13982-1), perform well against enm. but in a recent study, a penetration level (pl) of up to 8.5% of polydisperse sodium chloride airborne nanoparticles has been measured. moreover, in all the previous studies, tests were performed on a sample of protective clothing material without seams or zippers. thus, the potential for permeation through a zipper or seams has not yet been determined, even though these areas would be privileged entry points for airborne enm.

this work was designed to evaluate the pl of airborne enm through coveralls and specifically the pl through the seams on different parts of the cpc and the zipper. eight current models of cpc (type 5) were selected. the samples were taken from places with and without seams and with a zipper. in some cases, a cover strip can be added to the zipper to enhance its sealing. polydisperse nanoparticles were generated by nebulization of a sodium chloride solution. a penetration cell was developed to expose the sample to airborne nanometric particles. the nacl particle concentration in number was measured with an ultrafine particle counter and the pl was defined as the downstream concentration divided by the upstream concentration.

the results obtained show that the pl increased significantly in the presence of seams and could reach up to 90% depending on the seam's design. moreover, this study classifies the different types of seams by their resistance against airborne enm. as for the penetration of airborne nacl particles through the zipper, the pl was greatly attenuated by the presence of a cover strip, but only for certain models of coveralls. finally, the values of the pressure drop were directly linked to the type of seam. all of these conclusions provide
recommendations to both manufacturers and users.

Read more: Journal of Occupational and Environmental Hygiene Accepted author

**Powered Air-Purifying Respirator Use in Healthcare: Effects on Thermal Sensations and Comfort**

Twelve subjects wore an N95 filtering facepiece respirator (N95 FFR), one tight-fitting full facepiece powered air-purifying respirator (PAPR), two loose-fitting PAPRs, and one elastomeric/PAPR hybrid for 1 hr each during treadmill walking at 5.6 km/h while undergoing physiological and subjective response monitoring. No significant interaction (p≥.05) was noted between the five respirators in heart rate, respiratory rate, oxygen saturation, transcutaneous carbon dioxide, and perceptions of breathing effort or discomfort, exertion, facial heat, and overall body heat. Respirator deadspace heat/humidity were significantly greater for the N95 FFR, whereas tympanic forehead skin temperatures were significantly greater for the hybrid PAPR. Temperature of the facial skin covered by the respirator was equivalent for the N95 FFR and hybrid PAPR, and both were significantly higher than for the other three PAPRs. Perception of eye dryness was significantly greater for a tight-fitting full facepiece PAPR than the N95 FFR and hybrid PAPR. At a low-moderate work rate over 1 hr, effects on cardiopulmonary variables, breathing perceptions, and facial and overall body heat perceptions did not differ significantly between the four PAPRs and a N95 FFR, but the tight-fitting, full facepiece PAPR increased perceptions of eye dryness. The two loose-fitting PAPRs and the full facepiece tight-fitting PAPR ameliorated exercise-induced increases in facial temperature, but this did not translate to improved perception of facial heat and overall body heat.

Read more: Journal of Occupational and Environmental Hygiene Accepted author
version posted online: 01 Aug 2017
(Available with AIHA membership)
Improved Hearing Protector Attenuation through the Use of a Lubricant

A study of 40 novice hearing protection users was conducted to determine if the use of lubricants with hearing protective plugs would enhance their attenuation. Three types of hearing protection devices (i.e., earplugs) were evaluated: roll-down PVC foam, mushroom-style polyurethane foam, and elastomeric flanged. For each earplug type, the right and left ear (dry and lubricated, respectively) personal attenuation rating was determined using a commercially available microphone in real-ear apparatus.

Earplug efficacy was observed to increase in the presence of lubricants for all 3 plug types, with average mean elevations by earplug type ranging from 1.5 to 5.1 dB. Two of three earplug types saw statistically significant improvements when used with lubrication, demonstrating heightened mean personal attenuation ratings of 2.8 dB and 5.1 dB.

The issues of handedness and gender differences (vis à vis ear canal size) are explored, and the importance of proper fitting is discussed in detail. Several specific questions yet to be answered are posed, and directions for further research indicated.

Read more: Journal of Occupational and Environmental Hygiene Accepted author version posted online: 01 Aug 2017 (Available with AIHA membership)
Outdoor Light at Night and Breast Cancer Incidence in the Nurses’ Health Study II

Background:
Animal and epidemiologic studies suggest that exposure to light at night (LAN) may disrupt circadian patterns and decrease nocturnal secretion of melatonin, which may disturb estrogen regulation, leading to increased breast cancer risk.

Objectives:
We examined the association between residential outdoor LAN and breast cancer incidence using data from the nationwide U.S.-based Nurses’ Health Study II cohort.

Methods:
We followed 109,672 women from 1989 through 2013. Cumulative LAN exposure was estimated using time-varying satellite data for a composite of persistent nighttime illumination at \( \sim 1 \text{ km}^2 \) scale for each residence during follow-up. Incident invasive breast cancer cases were confirmed by medical record review. We used Cox proportional hazard models to calculate hazard ratios (HRs) and 95% confidence intervals (CIs), adjusting for anthropometric, reproductive, lifestyle, and socioeconomic risk factors.

Results:
Over 2,187,425 person-years, we identified 3,549 incident breast cancer cases. Based on a fully adjusted model, the estimated HR for incident breast cancer with an interquartile range (IQR) (31.6 nW/cm\(^2\)/sr) increase in cumulative average outdoor LAN was 1.05 (95% CI: 1.00, 1.11). An association between LAN and breast cancer appeared to be limited to women who were premenopausal at the time of a case [HR=1.07 (95% CI: 1.01, 1.14) based on 1,973 cases vs. HR=1.00 (95% CI: 0.91, 1.09) based on 1,172 cases in postmenopausal women; \( p \)-interaction=0.08]. The LAN–breast cancer association was observed only in past and current smokers at the end of follow-up [HR=1.00 (95% CI: 0.94, 1.07) based on 2,215 cases in never smokers; HR=1.10 (95% CI: 1.01, 1.19) based on 1,034 cases in past smokers vs. HR=1.21 (95% CI: 1.07, 1.37) for 300 cases in current smokers; \( p \)-interaction=0.08].

Conclusions:
Although further work is required to confirm our results and to clarify potential mechanisms, our findings suggest that exposure to residential outdoor light at night may contribute to invasive breast cancer risk.

Read more: https://ehp.niehs.nih.gov/ehp935/

Children at Risk from Agricultural Sulfur

What is the most heavily used pesticide in California? Is it glyphosate (Roundup)? Atrazine? Chlorpyrifos? Actually, it’s none of the above. According to a new report sponsored by the National Institute of Environmental Health Sciences (NIEHS), the answer is elemental sulfur. Approximately 46 million pounds of sulfur were applied to crops in California in 2013, note the authors of the report, 7 researchers in environmental health, children’s health, and occupational and environmental medicine at the University of California at Berkeley (UC Berkeley). The researchers examined the association between agricultural use of elemental sulfur and lung function and respiratory symptoms in children living in agricultural communities in California.


Researchers Develop a Rapid Test for Antibiotic Susceptibility

A team of researchers in Sweden have developed a test that can determine antibiotic susceptibility in less than 30 minutes, according to a new study in Proceedings of the National Academy of Sciences.

The "fASTest" method, developed by researchers at Uppsala University, uses a microfluidic chip that captures bacterial cells in 2,000 parallel cell traps. Growth
media containing antibiotics is loaded into the chip, and the growth rate of the individual bacterial cells in response to the antibiotic is monitored using microscopy and compared to the growth rate of cells exposed to growth media without antibiotics. The total time for testing, from loading of the bacterial sample to diagnostic readout, is less 30 minutes—fast enough to be used at the point of care.

For the study, the researchers tested urinary tract infections (UTIs) caused by *Escherichia coli*, the primary cause of infection in 85% of UTIs diagnosed in primary care. First, they determined the antibiotic response time of *E. coli* to nine different antibiotics used to treat UTIs, and found that it was possible to detect changes in the growth rate of the bacteria within 3 to 11 minutes. In a test of 49 clinical uropathogenic *E. coli* isolates in response to ciprofloxacin, all isolates were correctly classified as susceptible or resistant in less than 10 minutes, with similar sensitivity and specificity as traditional methods of antibiotic susceptibility tests.


Guiding Principles for Developing Dietary Reference Intakes Based on Chronic Disease

For decades, nutrient intake recommendations have been issued through the Dietary Reference Intakes (DRIs) established by consensus committees of the Institute of Medicine, and now the National Academies of Sciences, Engineering, and Medicine (the National Academies). For each nutrient (e.g., vitamins, minerals, water, electrolytes, carbohydrate, or protein) deemed essential, DRI committees reviews the scientific literature to help inform nutrition standards of adequacy and toxicity for groups of people of different genders and at different life stages. These DRIs are used for planning and assessing the diets of apparently healthy individuals and groups. The National Academies convened an ad hoc committee to determine guiding principles to support future DRI committees as they make decisions about recommending DRIs for specific nutrients or other food substances (NOFSs) that could ameliorate the risk of chronic disease. The resulting report, Guiding Principles for Developing Dietary Reference Intakes Based on Chronic Disease, addresses conceptual and methodological challenges and offers recommendations and guiding principles to develop DRIs based on chronic disease endpoints.
Environmental Health

Air Pollution Ups Stress Hormones, Alters Metabolism

Breathing dirty air causes stress hormones to spike, new research suggests, which could help explain why long-term exposure to pollution is associated with heart disease, stroke, diabetes, and a shorter lifespan. Dr. Haidong Kan of Fudan University in Shanghai, China, and colleagues looked specifically at the health effects of particulate matter (PM), small particles less than 2.5 micrometers in diameter, from industrial sources that can be inhaled and become lodged in the lungs. While PM levels have gone down in North America in recent years, they are on the rise worldwide. ... Dr. Robert D. Brook of the University of Michigan in Ann Arbor, who co-authored an editorial accompanying the study, told Reuters Health by email that the stress responses triggered by these small pollution particles “are larger and more varied than previously known.”

Read more:
http://www.reuters.com/article/us-health-pollution-stress-hormones-idUSKCN1AV1VK
Trump Reversed Regulations to Protect Infrastructure against Flooding Just Days before Hurricane Harvey

Just 10 days before Hurricane Harvey descended upon Texas on Friday, wreaking havoc and submerging hundreds of miles of land under water, President Donald Trump signed an executive order revoking a set of regulations that would have made federally-funded infrastructure less vulnerable to flooding.

The Obama-era rules, which had not yet gone into effect, would have required the federal government to take into account the risk of flooding and sea-level rise as a result of climate change when constructing new infrastructure and rebuilding after disasters.

Experts are predicting Harvey — the most powerful storm to hit the US since 2004 — will cost Texas between $30 billion and $100 billion in damage. And in the coming days, Congress will be called upon to send billions of federal dollars to help with the state's recovery and rebuilding efforts.


Isolating Mercury to Protect Food Chains

Mercury gets a bad rap, and rightly so. It is incredibly toxic to many organisms, and it accumulates in the food chain. That means animals at the top of the food chain, including us humans, often get the highest doses.

To minimise the risk to humans and other living things we need to be able to accurately and efficiently measure concentrations of mercury in the environment. The problem is mercury comes in many forms and is a slippery
customer to track. But researchers from the University of Melbourne and the University of the Balearic Islands in Spain have developed a new automated technique to isolate different forms of mercury based on the risk of each form moving into the food chain.

Most people are familiar with the liquid metal known as quicksilver, which is pure mercury, but Professor Spas Kolev says that this makes up just a very small fraction of the mercury found in the environment.

Read more: https://phys.org/news/2017-08-isolating-mercury-food-chains.html

A Method for Identifying Prevalent Chemical Combinations in the U.S. Population

Background:
Through the food and water they ingest, the air they breathe, and the consumer products with which they interact at home and at work, humans are exposed to tens of thousands of chemicals, many of which have not been evaluated to determine their potential toxicities. Furthermore, while current chemical testing tends to focus on individual chemicals, the exposures that people actually experience involve mixtures of chemicals. Unfortunately, the number of mixtures that can be formed from the thousands of environmental chemicals is enormous, and testing all of them would be impossible.

Objectives:
We seek to develop and demonstrate a method for identifying those mixtures that are most prevalent in humans.

Methods:
We applied frequent itemset mining, a technique traditionally used for market basket analysis, to biomonitoring data from the 2009–2010 cycle of the continuous National Health and Nutrition Examination Survey (NHANES) to identify combinations of chemicals that frequently co-occur in people.

Results:
We identified 90 chemical combinations consisting of relatively few chemicals that occur in at least 30% of the U.S. population, as well as three supercombinations consisting of relatively many chemicals that occur in a small but nonnegligible proportion of the U.S. population.

Conclusions:
We demonstrated how FIM can be used in conjunction with biomonitoring data to narrow a large number of possible chemical
Touching Thermal Receipts May Extend BPA Exposure

When people handle receipts printed on thermal paper containing the endocrine disruptor bisphenol A (BPA), the chemical could linger in the body for a week or more, according to a new study (Environ. Sci. Technol. 2017, DOI: 10.1021/acs.est.7b03093). BPA ingested from food, however, is excreted within a day.

Jonathan W. Martin of Stockholm University and Jiaying Liu of the University of Alberta used isotopically labeled BPA to follow what happens when people are exposed to typical levels of the compound in everyday situations: handling receipts, consuming food stored in BPA-lined aluminum cans, or drinking beverages from BPA-hardened plastic bottles, for example. They tested six male volunteers, who handled simulated thermal receipts containing labeled BPA for five minutes. The subjects then wore a nitrile glove for two hours and washed their hands with soap. Afterwards, the researchers measured the labeled BPA in the volunteers’ urine regularly for two days. A week later, the researchers fed each of these volunteers a cookie containing labeled BPA, again monitoring its concentrations in urine. The doses of BPA were lower than the tolerable daily intake set by the European Food Safety Authority.

Read more:
http://cen.acs.org/articles/95/web/2017/08/Touching-thermal-receipts-extend-BPA.html
Risk Assessments Using the Strain Index and the TLV for HAL, Part I: Task and Multi-Task-Job Exposure Classifications

Background: The Strain Index (SI) and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value for Hand Activity Level (TLV for HAL) use different constituent variables to quantify task physical exposures. Similarly, time-weighted-average (TWA), Peak, and Typical exposure techniques to quantify physical exposure from multi-task jobs make different assumptions about each task's contribution to the whole job exposure. Thus, task and job physical exposure classifications differ depending upon which model and technique are used for quantification. This study examines exposure classification agreement, disagreement, correlation, and magnitude of classification differences between these models and techniques.

Methods: Data from 710 multi-task job workers performing 3,647 tasks were analyzed using the SI and TLV for HAL models, as well as with the TWA, Typical and Peak job exposure techniques. Physical exposures were classified as low, medium, and high using each model's recommended, or a-priori limits. Exposure classification agreement and disagreement between models (SI, TLV for HAL) and between job exposure techniques (TWA, Typical, Peak) were described and analyzed.

Results: Regardless of technique, the SI classified more tasks as high exposure than the TLV for HAL, and the TLV for HAL classified more tasks as low exposure. The models agreed on 48.5% of task classifications (kappa = 0.28) with 15.5% of disagreement between low and high exposure categories. Between-technique (i.e., TWA, Typical, Peak) agreement ranged from 61% to 93% (kappa: 0.16 to 0.92) depending on whether the SI or TLV for HAL was used.

Conclusions: There was disagreement between the SI and TLV for HAL and between the TWA, Typical and Peak techniques. Disagreement creates uncertainty for job design, job analysis, risk assessments, and developing interventions. Task exposure classifications from the SI and TLV for HAL might complement each other. However, TWA, Typical and Peak job exposure techniques all have limitations. Part II of this paper examines whether the
observed differences between these models and techniques produce different exposure-response relationships for predicting prevalence of carpal tunnel syndrome.

Read more: Journal of Occupational and Environmental Hygiene Accepted author version posted online: 21 Aug 2017 (Available with AIHA membership)

**Prolonged Standing on the Job = Greater Risk of Heart Disease**

Workers who stand on the job most of the time are at greater risk of heart disease than workers who predominantly sit, according to a study just published in the American Journal of Epidemiology. Even after taking into account a wide range of personal, health and work factors, people who primarily stand on the job are twice as likely as people who primarily sit on the job to have a heart attack or congestive heart failure.


**Safety**

**Study Finds High Heels and MSDs Link**

The research by academics at the University of Aberdeen and published in *BMC Public Health*, is described in the journal as “the most thorough review” of scientific studies into the health effects of high heels.

The researchers found that many studies showed a link between wearing high heels and an increased risk of developing...
musculoskeletal disorders and bunions. But they found no clear evidence of an association between the footwear and osteoarthritis.

Read more:
https://www.ioshmagazine.com/article/study-finds-high-heels-and-msds-link

Implementing the OSHA Lab Standard

OSHA issued its Occupational Exposure to Hazardous Chemicals in Laboratories standard\(^1\) (29 CFR 1910.1450) in 1990. Known as the Laboratory Standard, it was developed to address workplaces where relatively small quantities of hazardous chemicals are used on a non-production basis, according to the agency, which explains that not all laboratories are covered by the standard. Most quality control laboratories are not covered by it. The standard requires that employers designate a Chemical Hygiene Officer for their laboratories that are covered by it, have a written Chemical Hygiene Plan, and actively verify that it remains effective. The plan must address workers' training, chemical exposure monitoring where that is appropriate, medical consultation when exposure occurs, criteria for the use of PPE, engineering controls, and also special precautions for particularly hazardous substances. The Chemical Hygiene Officer is responsible for implementation of the plan and for monitoring work processes and procuring chemicals; this employee must be qualified to provide technical guidance on plan implementation.

Read more:

By Wide Margin, Members Approve Switch to American Society of Safety Professionals

The world’s oldest professional safety society, founded more than 100 years ago, will adopt a new name following a historic membership vote that was overwhelmingly in favor of the change. The American Society of Safety Engineers (ASSE) will become the American Society of Safety Professionals (ASSP) next year when it unveils a redesigned website in conjunction with Safety 2018 in San Antonio. The switch
was approved by 74 percent of voting members.

Over a 45-day period that ended August 13, ASSE members around the world cast electronic votes on the new name. The final tally was 3,651 in favor and 1,267 opposed, easily reaching a majority decision. It also was no problem obtaining the minimum voting requirement of 1 percent of ASSE’s eligible members as 14 percent cast ballots. The new name had been unanimously recommended by the ASSE Board of Directors in January and was supported by its House of Delegates in June at Safety 2017 in Denver.

NFPA Offers Reminders to Prevent Electrical Shocks in Water

NFPA has posted a reminder this month to warn people about potential electrical hazards in swimming pools, hot tubs, spas, aboard boats, and in the water surrounding boats, marinas, and launch ramps. The online page for this includes a link to a 2015 NFPA Journal article discussing how several incidents prompted a new look at the requirements for ground fault protection in the 2016 edition of NFPA 303, Fire Protection Standard for Marinas and Boatyards, which applies to the facilities that house and service motor craft.

Read more:
Sleep Apnea Rule Rollback Draws Fire

Occupational health experts are criticizing the U.S. Department of Transportation’s decision to withdraw a rule that would have required workers in safety sensitive jobs to be screened for a sleep disorder that could affect their work performance.

The American College of Occupational and Environmental Medicine (ACOEM) says that formal rulemaking is necessary to standardize the criteria used by medical examiners to evaluate the prevalence of Obstructive Sleep Apnea (OSA) among key workers in highway and rail transportation. Those who suffer from sleep apnea stop breathing repeatedly during their sleep, depriving the brain of sufficient oxygen.

Read more: http://www.ishn.com/articles/107064-sleep-apnea-rule-rollback-draws-fire

Emergency Preparedness

U.S. Academic Biomedical Labs Said Unready For Disasters

The U.S. academic biomedical research community is ill-prepared for disasters such as hurricanes and cyber-attacks, concludes a report from the National Academies of Sciences, Engineering & Medicine. Institutions should prepare for the worst “to minimize the loss of important scientific discoveries” and protect the more than $150 billion in public and private funding invested each year in medical and health research, the Aug. 10 report says. “Disasters that damage research laboratories and the institutions that house them can have enormous impacts on the safety and well-being of humans and research animals, on career trajectories,
and on scientific progress,” says Georges C. Benjamin, chair of the committee that wrote the report and executive director of the American Public Health Association.

**Deployment Health**

**Giving the Gift of Independence on Fourth of July: Veterans Receive DARPA’s LUKE Arm**

At a ceremony in New York today, two veterans living with arm amputations became the first recipients of a new generation of prosthetic limb that promises them unprecedented, near-natural arm and hand motion. The modular, battery-powered arms, designed and developed by the Defense Advanced Research Projects Agency (DARPA), represent the most significant advance in upper extremity prosthetics in more than a century.

The prosthetic “LUKE” arm system—which stands for “Life Under Kinetic Evolution” but is also a passing reference to Luke Skywalker of Star Wars fame, who was endowed with a futuristic bionic arm—enables dexterous arm and hand movement through a simple, intuitive control system. The system allows users to control multiple joints simultaneously and a variety of grips and grip forces by means of wireless signals generated by sensors worn on the feet or via other easy-to-use controllers. Years of testing and optimization in collaboration with the Department of Veterans Affairs (VA) led to clearance by the U.S. Food and Drug Administration and creation of a commercial-scale manufacturer, Mobius Bionics of Manchester, N.H. More than 100 people living with amputation were involved in initial studies, which led to a product whose natural size, weight, and shape provides unparalleled comfort and ease of use.

New Biological Identity of Inhaled Nanoparticles Revealed

The Nanotechnology Consumer Products Inventory maintained by the Woodrow Wilson International Center for Scholars has listed 1,814 nano-enabled consumer products, many of which have a potential safety hazard if inhaled. However, their potential biological risks are still largely unknown.

University of Hawai‘i at Mānoa College of Engineering Professor Yi Zuo has developed a new method to reveal the molecular mechanism of nano-bio interactions in the lungs. This research was published in the July 2017 issue of the scientific journal ACS Nano, "Unveiling the molecular structure of pulmonary surfactant corona on nanoparticles."


Regulatory Research & Industrial Hygiene Professional News

ANSI

ANSI/ISEA 105-2016 Regulation Updates

The American National Standards Institute (ANSI) recently updated its national hand protection standards. ANSI/ISEA 105-2016 is the latest revision of a voluntary standard first published in 1999, then revised in 2005.
and 2011. These standards help safety managers, employers, and workers to ensure they select the right gloves for the right jobs.


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**EPA**

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**Court Strikes Down U.S. Restrictions on HFCs**

A federal appeals court has struck down a U.S. regulation that requires manufacturers to replace hydrofluorocarbon refrigerants with chemicals that are less potent greenhouse gases.

The Aug. 8 decision hands a victory to HFC makers Mexichem Fluor and Arkema. It’s a loss for Honeywell International and Chemours, which manufacture hydrofluoroolefins, a new generation of refrigerants which have a very low potential to cause global warming.

Read more: http://cen.acs.org/articles/95/web/2017/08/Court-strikes-down-US-restrictions-on-HFCs.html

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**OSHA**

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**OSHA Scrubs Worker Deaths from Home Page**

The federal department charged with protecting workers erased data on workplace deaths from the home page of its website Friday — and changed its policy to disclose fewer fatal accidents in the future.

For the past several years, the Occupational Safety and Health Administration had
Army Industrial Hygiene News and Regulatory Summary

maintained a running list of workers killed on the job — including the date, name and cause of death — near the top of its homepage. The list included every worker death reported to OSHA, regardless of whether the company was issued a citation.

Read more:  

NIOSH Releases Lifting Equation Mobile App

NIOSH has released a free mobile app for smart phones and other mobile devices to help workers be safe when manually lifting objects. The app, NLE Calc, is based on the Revised NIOSH Lifting Equation, an internationally recognized standard for safe lifting.

The new app is designed to assist workers in manufacturing, health care, retail, and other industries where lifting is part of the job. NLE Calc determines a score based on the data a user enters about a lifting task and offers recommendations to optimize the task or perform it differently.

Read more:  
## DOEHS SUPER STARS

### Air Breathing Zone Sampled in last 90 days

**RHC-A**
- (H)-US-AL-Anniston Army Depot (01035)
- (H)-US-GA-Fort Benning (13077)
- (H)-US-GA-Fort Stewart (13834)
- (H)-US-IN-Udall Army Ammunition Activity (18174)
- (H)-US-KY-Fort Campbell (21128)
- (H)-US-MD-Aberdeen Proving Ground (24004)
- (H)-US-MD-Fort Detrick (24226)
- (H)-US-MD-Meade (24571)
- (H)-US-NC-Fort Bragg (37099)
- (H)-US-NY-Fort Drum (36216)
- (H)-US-NY-West Point Mill Reservation (36953)
- (H)-US-PA-Defense Distrib Depot Susquehanna (42598)
- (H)-US-PA-Scientific Area (42461)
- (H)-US-PA-Tobyhanna Army Depot (42877)
- (H)-US-SC-Fort Jackson (45404)
- (H)-US-VA-Fort Eustis (51281)
- (H)-US-VA-Fort Lee (51184)
- (H)-US-AZ-Fort Huachuca (04289)
- (H)-US-AZ-Yuma Proving Ground (04991)
- (H)-US-CA-Fort Irwin (06419)
- (H)-US-KS-Fort Riley (20736)
- (H)-US-KS-Fort Sill (40801)
- (H)-US-KY-McAlester AFB (40549)
- (H)-US-TX-Corpus Christi Army Depot (48186)
- (H)-US-TX-Fort Bliss (48063)
- (H)-US-TX-Fort Hood (48225)
- (H)-US-TX-Fort Sam Houston (48399)
- (H)-US-TX-Red River Army Depot (48733)
- (H)-US-UT-Tooele Army Depot (49878)
- (H)-DE-Stuttgart
- (H)-KR-Area II-USAG Humphreys (K3208)
- (H)-KR-Area II-USAG Yongsan (K9670)
- (H)-KR-Area I-USAG Red Cloud (K5599)
- (H)-KR-Area IV-USAG Daegu, Camp Walker(KS196)
- (H)-US-AK-Fort Wainwright (02955)
- (H)-US-CA-Sierra Army Depot (08821)
- (H)-US-HI-Trinity Army Medical Center (15824)
RECOMMENDED TRAINING

For the following courses, there is no longer a need to adjust compatibility or delete cache! The lectures take less time. There is no exam! Your final grade comes from the knowledge checks within the lecture. Attempt as many times as needed without re-enrollment.

Army Noise Measurement and Assessment (now only 45min)
Industrial Workplace Ergonomics (now only 42min)
Hazard Communication (HAZCOM) (now only 44min)
Non Engineering Control Basics (now only 64min)
Thermal Stressors (now only 83min)
Introduction to Indoor and Outdoor Air Quality Investigations (now only 1.8 hrs)

BRAND NEW COURSE AVAILABLE!

Industrial Hygiene Work Environments and Industrial Processes (1.0hr)

New online training format:
No need to adjust compatibility settings!
No need to delete cookies/cache!
No exams!
IH LEADER WEBINARS

Special topics for IH Leaders designed to assist you develop your leadership skills.

Use the link below to join our regularly scheduled "IH Leaders" webinars. The DCS conference window will open for participants 15 minutes prior to the scheduled webinar time. Copy and paste the below link into your browser to access the webinar.

https://conference.apps.mil/webconf/ManageYourHMmonster

This is a series of webinars held every other month. The target audience is Army IH leadership staff. Audio is available for all Webinars. Dial-In Number: Commercial, (201)249-4234; DSN, 421-3272; Overseas DSN dial (312)

OCT 25TH 1100 ET
SMART OBJECTIVES FOR THE IH
DIAL-IN-ACCESS-CODE 26506#
Manage Your IH Monster

The BEST Manage Your IH Monster Webinar of the year is coming soon!

"Data Integrity: What if your IH data goes to court?"
-Presented by LTC Richard Brown (OSHA Inspector)
-Looking at real DOEHRs-IH production data from real Army Program Offices

Previous episodes:
- Lab Interfaces
- Taming That SHOP Monster
- Taming The SEG Monster
- Don’t Be Afraid of The Big Bad Budget
- De-Mystifying The Metrics
- All About ANOVA
- Business Objects At its Best
- Magical Medical Surveillance
- Leveraging Locations
- Reinvigorating Radiation
- Chasing Away IH Managerial Nightmares

Catch up on the 2016-2017 episodes of Registration & Recordings Currently Available
https://aiph-dohs.ellc.learn.army.mil
Professional Development and Career Programs

For Army Industrial Hygienists and Industrial Hygiene Technicians, Professional Development is through the Army Safety and Occupational Health (SOH) Career Program, known as Career Program 12 (CP-12).

Career Programs were established to ensure there is an adequate base of qualified and trained professional, technical, and administrative personnel to meet the Army’s current and future needs.

Planned training and development are essential elements to building a successful career.