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Issue 121

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

Long-Term Exposure to Toxins in Operating Rooms Could Increase COPD Risk

Special Interest Articles:

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- [Hookworm](#)
- [PPE](#)
- [Elbow](#)
- [Bumps](#)
- [Water](#)
- [Treading](#)
- [Hand Sanitizer](#)

Disinfectants and surgical smoke—the gaseous by-product produced by heat-generating surgical instruments—are among the hazardous chemicals to which physicians, nurses, and other hospital staff are exposed in operating rooms (OR) during electrosurgery and laser procedures.

Long-time exposure to these chemicals in the OR may significantly increase one's risk of developing chronic obstructive pulmonary disease (COPD), according to a new study led by Boston University School of Public Health (BUSPH) researchers.

Published in the journal JAMA Network Open, the study focused on nurses and found that COPD risk among these nurses varied by nursing job type and duration in the OR. Nurses who worked in the OR for



15 or more years were 69 percent more likely to develop COPD, compared to nurses who had never worked in an OR and worked in an administrative or nursing education role, or a non-nurse job.

Read more:

<https://medicalxpress.com/news/2021-10-long-term-exposure-toxins-rooms-copd.html>

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Mothers' Occupational Exposure to Cleaning Products and Disinfectants Could Cause Asthma in Future Children



New analysis of data collected in the large international RHINESSA and RHINE studies, raises concern for adverse health effects of cleaning products and disinfectants, even in the next generation. A study led by UiB researchers have found that childhood

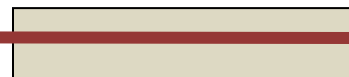
asthma was more common if the mother had worked in a job with exposure to cleaning products and disinfectants before conception of the child. This may raise our awareness of how we use disinfectants and cleaning products in these times of pandemic.

Read more:

<https://medicalxpress.com/news/2021-10-mothers-occupational-exposure-products-disinfectants.html>

Occupational Exposure to Crystalline Silica in Artificial Stone Processing

Respirable Crystalline Silica (RCS) is a hazardous substance with known effects that can be well correlated with exposure levels that still persist in many traditional sectors, such as construction or stone processing. In the past decade exposure scenarios for RCS



have been found in the sector of artificial stone processing. The aim of this study is to evaluate the levels of RCS in facilities specialized in the production of artificial stone countertops and other accessories for the furnishing of kitchens, bathrooms and offices after the introduction of some preventive technical measures such as wet processing or local exhaust ventilation systems. The study involved 51 subjects in four facilities. Personal silica exposure assessment was carried out using GS3 cyclones positioned in the breathing zone during the work shift. Quantitative determination of silica was carried out by X-ray diffraction analysis. Respirable

dust levels were in the range 0.046-1.154 mg/m³ with RCS levels within the range <0.003-0.098 mg/m³. The highest exposure was found in dry finishing operations. Although there was a remarkable reduction in RCS exposure levels compared to what was observed in the past before the introduction of preventive measures, the data still showed hazardous exposure levels for some of the monitored activities.

Read more: Journal of Occupational and Environmental Hygiene, Accepted author version posted online: 13 Oct 2021 (Available with AIHA membership)

Risk Quantification for SARS-Cov-2 Infection through Airborne Transmission in University Settings



The COVID-19 pandemic has significantly impacted learning as many institutions switched to remote or hybrid instruction.

An in-depth assessment of the risk of infection that considers environmental setting and mitigation strategies is needed to make safe and informed decisions regarding reopening university spaces. A quantitative model of infection probability that accounts for space-specific parameters is presented to enable assessment of the risk in reopening university spaces at given densities. The model uses the fraction of the campus population that are viral shedders, room capacity, face covering filtration efficiency, air exchange rate, room

volume, and time spent in the space as parameters to calculate infection probabilities in teaching spaces, dining halls, dorms, and shared bathrooms. The model readily calculates infection probabilities in various university spaces, with face covering filtration efficiency and air exchange rate being among the dominant variables. When applied to university spaces, this model demonstrated that, under specific conditions that are feasible to implement, in-person classes could be held in large lecture halls with an infection risk over the semester <1%. Meal pick-ups from dining halls and usage of shared bathrooms in residential dormitories among small groups of students could also be accomplished with low risk. The results of applying this model to spaces at Harvard University (Cambridge and Allston campuses) and Stanford University are reported. Finally, a user-friendly web

application was developed using this model to calculate infection probability following input of space-specific variables. The successful development of a quantitative model and its implementation through a web application may facilitate accurate assessments of infection risk in university spaces. However, since this model is thus far unvalidated, validation using infection rate and contact tracing data from university campuses will be crucial as such data becomes available at larger scales. In light of the impact of the COVID-19 pandemic on universities, this tool could provide crucial insight to students, faculty, and university officials in making informed decisions.

Read more: Journal of Occupational and Environmental Hygiene, Accepted author version posted online: 27 Sep 2021 (Available with AIHA membership)

Comparison of Quantitative Mineralogy and Sequential Leaching for Characterization of Ni in Workplace Dust Collected at a Stainless Steel Operation

Based on epidemiological records of workers at Ni operations, regulatory guidelines commonly target specific Ni compounds for setting exposure limits. Thus, reliable methods of Ni speciation in airborne dust samples are required for effective monitoring of workplace exposure. Zatka sequential leaching has been routinely performed industry-wide since the 1990s for characterization of Ni in dust samples; however, limitations related to leaching kinetics have been identified, and



optimization of the methodology is required to improve accuracy of data. In this study,

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Ni characterization of dust collected from a stainless steel operation was performed using Zatka sequential leaching (original and modified protocols) and quantitative mineralogy (QEMSCAN), a method novel to the field of industrial hygiene. Mineral analysis was also performed on bulk material collected from selected work areas at the plant. The results are compared with the objective of identifying opportunities to optimize the methods for characterizing dust that is unique to stainless steel manufacturing. The quantitative mineralogical analysis determined that the Ni dust is composed of oxidic Ni (chromite and trevorite, >80% of the Ni in most samples) and metallic Ni (Ni-Fe alloy), and the results were validated against chemical assays and alternate methods of mineral characterization. In contrast, the original Zatka method erroneously identified soluble Ni as a major Ni contributor, whereas the modified Zatka method identified sulfidic Ni. The mineralogy

identified Ni-barren dust and grain sizes and liberation of individual Ni compounds as potential factors that can affect leaching selectivity. Clearly, for any sequential leaching method to be useful for these workplaces, they should be optimized by including reference materials that are representative of Ni substances present at stainless steel operations (chromite, trevorite, and Ni-Fe alloy). Improving methods of sequential leaching is important because the resolution of quantitative mineralogical techniques diminishes at <3 μm (respirable dust fraction). We recommend that quantitative mineralogy be performed in parallel with methods of sequential leaching to provide a robust system of characterization.

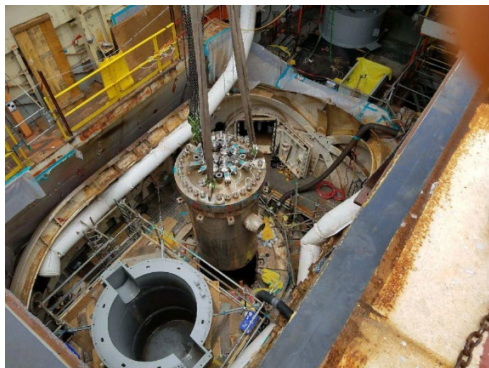
Read more: Journal of Occupational and Environmental Hygiene, Published online: 27 Oct 2021 (Available with AIHA membership)

Radiation

Decommissioning Small Medical, Industrial and Research Facilities: IAEA Project Focuses on Safety

Decommissioning a nuclear installation or facility is an essential step in ensuring safe closure of its lifecycle, so that the site can be reused. It involves safely dismantling the facility, managing all radioactive and non-radioactive materials and waste arising from decommissioning and ensuring workers, the public and the environment

are protected from radiation and from associated non-radiological hazards. This process happens at large installations, such as nuclear power plants, as well as at small medical, industrial and research facilities, and depending on the size and complexity of the facility, it can take from several months to several decades to complete.



Helping countries improve their infrastructure for the safe decommissioning of small facilities is the key focus of an

international IAEA project—MIRDEC (Decommissioning of Small Medical, Industrial and Research Facilities) - launched in 2018, and based on the IAEA's Specific Safety Guide No. SSG-49.

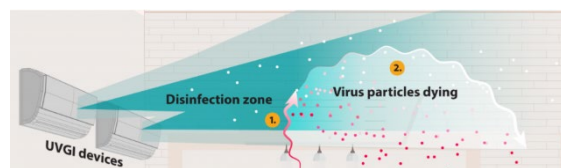
Read more:

<https://www.iaea.org/newscenter/news/decommissioning-small-medical-industrial-and-research-facilities-iaea-project-focuses-on-safety>

Ventilation

Evaluation of Multiple Fixed In-Room Air Cleaners with Ultraviolet Germicidal Irradiation, in High-Occupancy Areas of Selected Commercial Indoor Environments

The use of ultraviolet germicidal irradiation (UVGI) to combat disease transmission has come into the international spotlight again because of the recent SARS-CoV-2 pandemic and ongoing outbreaks of MDROs (multidrug resistant organisms) in hospitals. Although the implementation of ultraviolet disinfection technology is widely employed in healthcare facilities and its effectiveness has been repeatedly demonstrated, the use of such technology in the commercial sector has been limited. Considering that most disease transmission occurs in commercial, public, and residential indoor environments as opposed to healthcare facilities, there is a need to understand whether ultraviolet (UV) disinfection technology can be effective for mitigating disease transmission



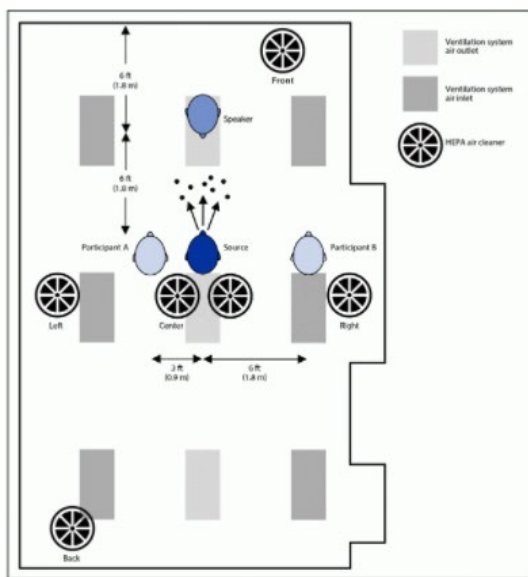
in these environments. The results presented here demonstrate that the installation of fixed in-room UVGI air cleaners in commercial buildings, including restaurants and offices, can produce significant reductions in both airborne and surface borne bacterial contamination. Total airborne reductions after UV implementation at six separate commercial sites averaged 73% ($p < 0.0001$) with a range of 71-88%. Total non-high touch surface reductions after implementation averaged 55% ($p < 0.0001$) with a range of

28-88%. All reductions at the mitigated sites were statistically significant. The mean value of indoor airborne bacteria was 320 CFU/m³ before intervention and 76 CFU/m³ after. The mean value of indoor non-high touch surface borne bacteria was 131 CFU/plate before intervention and 47 CFU/plate after. All test locations and controls had their required pandemic cleaning procedures in place for pre- and post-sampling events. Outdoor levels of airborne bacteria were monitored and there was no significant correlation between the levels of airborne bacteria in the outside air as opposed to the indoor air.

Rooms with fixed in-room UVGI air cleaners installed had significant CFU reductions on local surface contamination, which is a novel and important finding. Installation of fixed in-room UVGI air cleaners in commercial buildings will decontaminate the indoor environment and reduce hazardous exposure to human pathogens.

Read more: Journal of Occupational and Environmental Hygiene, Accepted author version posted online: 14 Oct 2021 (Available with AIHA membership)

Air Purification Study Finds 45% Reduction in Healthcare-Associated Infections, Including COVID



A new scientific study published this month in the Journal of Hospital Infection finds cutting-edge air purification technology installed at St. Mary's Hospital for Children

reduced healthcare-associated infections (HAIs) including COVID by 45 percent. The study, which took place over a three-year period and was already underway when the COVID-19 pandemic hit, is thought to be the first of its kind, examining the impact of advanced air purification technology in a real-world hospital setting.

The study results provide a window into the significant advances that could be made in reducing the transmission of airborne viruses and bacteria in hospitals. According to the Centers for Disease Control and Prevention (CDC), HAIs account for an estimated 1.7 million infections and 99,000 associated deaths each year.

Read more: <https://medicalxpress.com/news/2021-10->

air-purification-reduction-healthcare-associated-infections.html

PPE

Harnessing the Genetics of Hookworms to Develop Next Generation of PPE for Combat Troops

Researchers at Washington University School of Medicine in St. Louis have received a grant to develop the next generation of personal protective equipment (PPE) for combat troops. Harnessing the genetics of hookworms, the research is focused on developing "living factories" that produce antibodies and anti-nerve agents to protect against chemical and biological weapons.

Combat troops require special equipment to guard against chemical and biological agents that could be unleashed in a war zone. While such suits and respirators can protect against chemical and biological



weapons, they are cumbersome and can limit mobility at the worst possible times.

Read more: <https://www.news-medical.net/news/20211030/Harnessing-the-genetics-of-hookworms-to-develop-the-next-generation-of-PPE-for-combat-troops.aspx>

Noise

Retrospective Assessment of the Association between Noise Exposure and Nonfatal and Fatal Injury Rates among Miners in the United States from 1983 To 2014

Background
Mining is a significant economic force in the United States but has historically had

among the highest nonfatal injury rates across all industries. Several factors, including workplace hazards and

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psychosocial stressors, may increase injury and fatality risk. Mining is one of the noisiest industries; however, the association between injury risk and noise exposure has not been evaluated in this industry. In this ecological study, we assessed the association between noise exposure and nonfatal and fatal occupational injury rates among miners.

Methods

Federal US mining accident, injury, and illness data sets from 1983 to 2014 were combined with federal quarterly mining employment and production reports to quantify annual industry rates of nonfatal injuries and fatalities. An existing job-exposure matrix for occupational noise was used to estimate annual industry time-weighted average (TWA, dBA) exposures. Negative binomial models were used to assess relationships between noise, hearing conservation program (HCP) regulation changes in 2000, year, and mine type with incidence rates of injuries and fatalities.

Read more:

<https://onlinelibrary.wiley.com/doi/full/10.1002/ajim.23305>

Preventive Medicine

Immunocompromised May Need Fourth COVID-19 Shot: CDC



Severely immunocompromised people may require a fourth mRNA COVID-19 shot, the US Centers for Disease Control and Prevention (CDC) says. The agency did not provide an official recommendation about a

fourth shot in its updated guidelines but did say that people should talk to their doctors to determine if one is necessary, CNN reported.

In August, the CDC authorized a third dose for certain immunocompromised people ages 18 years and older who may not have a complete immune response from the first 2 doses. The US Food and Drug Administration has approved booster shots of all 3 available vaccines in the United States for certain people, including those with compromised immune systems.

Read more:

[https://www.clinicaladvisor.com/home/top-ics/infectious-diseases-information-](https://www.clinicaladvisor.com/home/top-ics/infectious-diseases-information-center/immunocompromised-may-need-fourth-covid-19-shot-cdc/)

[center/immunocompromised-may-need-fourth-covid-19-shot-cdc/](https://www.clinicaladvisor.com/home/top-ics/infectious-diseases-information-center/immunocompromised-may-need-fourth-covid-19-shot-cdc/)

Lyme Disease Often Diagnosed Later among Black Patients

Black patients with Lyme disease are often diagnosed later than White patients, according to a study published online in the *Journal of General Internal Medicine*. Dan P Ly, MD, PhD, from University of California Los Angeles, used 2015 to 2016 claims data to draw a random nationwide 20% sample of traditional Medicare beneficiaries to examine racial differences in the distribution of clinical manifestations of Lyme disease.



Read more:

[https://www.clinicaladvisor.com/home/top-](https://www.clinicaladvisor.com/home/top-ics/infectious-diseases-information-center/lyme-disease-often-diagnosed-later-among-black-patients/)

[ics/infectious-diseases-information-center/lyme-disease-often-diagnosed-later-among-black-patients/](https://www.clinicaladvisor.com/home/top-ics/infectious-diseases-information-center/lyme-disease-often-diagnosed-later-among-black-patients/)

Nurses Think about Suicide More Than Other Workers



Mayo Clinic researchers report that nurses in the U.S. experience suicidal ideation in greater numbers than other general workers and those who do are less likely to

tell anyone about it. The findings appear in the *American Journal of Nursing*.

More than 7,000 nurses responded to a national survey on well-being, with questions ranging from burnout to depression. More than 400 nurses reported having suicidal ideation within the past year. That's 5½% of the respondents, which is nearly 1% higher than the general workforce sample at 4.3%.

Read more:

<https://medicalxpress.com/news/2021-10-nurses-suicide-workers.html>



Medical Providers Less Able to Detect Authentic Pain among Black People, Study Finds

Pain management in the United States is inequitable, with Black people often receiving less aggressive and less accurate pain treatment than White people. New research in Social Psychological and Personality Science (SPPS) has identified a possible cause of this disparity, reporting that medical providers are better at discerning real from fake pain expressions for White people than Black people.

Previous studies have investigated prejudice, false stereotypes, and empathy deficits as contributors to Black people receiving less-intensive pain treatments than White people. However, the new research, led by E. Paige Lloyd of the University of Denver, also demonstrates



that participants recommended more accurate care for White people than Black people.

Read more:

<https://medicalxpress.com/news/2021-10-medical-authentic-pain-black-people.html>

Elbow Bumps May Transfer MRSA Just as Much As Fist Bumps



In another study today in the same journal, researchers from the Cleveland VA Medical Center reported that both a fist bump and an elbow bump are associated with frequent transfer of methicillin-resistant *Staphylococcus aureus* (MRSA).

Elbow bumps have been increasingly used as greetings over fist bumps and handshakes with the idea that they lessen the potential for pathogenic microorganism transfer. To test this hypothesis, the researchers enrolled 40 patients in isolation for MRSA colonization and paired them

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with a research staff member wearing sterile gloves and a piece of cotton cloth over their elbows. Each MRSA-colonized patient performed one greeting with a staff member using their right fist or elbow, and one greeting using their left fist or elbow, with the order of the greetings alternating among consecutive participants. The researchers then analyzed the fists and

elbows of the MRSA-colonized patients, along with the gloves and elbow cloth from the staff members, for the presence of MRSA.

Read more

<https://www.cidrap.umn.edu/news-perspective/2021/10/asp-scan-weekly-oct-22-2021> (scroll down to 4th heading)

Environmental Health

The Effect of Our Changing Climate on Building Design

Over the past couple decades, building codes have responded to disasters, rather than averting them. Resilience is now an essential design element needed to withstand our changing climate.

In the immortal words of Bob Dylan, “the times, they are a-changin’.” Intensified and more frequent hurricanes on the East and Gulf Coasts, more devastating wildfires on the West Coast and more frequent, powerful tornados in the heartland. Mother Nature has been particularly cruel to the United States since the new millennium. Putting aside the politics involved with climate change, the bare facts from the past 20 years reveal that we have seen more frequent category 5 hurricanes, F5 tornados, 100-year floods, and devastating wildfires. As with most devastating events



— both manmade or otherwise — we, as a society, have to learn from past experience and improve our society both culturally and physically in the world we inhabit.

Read more:

<https://www.jdsupra.com/legalnews/the-effect-of-our-changing-climate-on-5850604/>

Tuning Chemical Reactions with Light

Types of Chemical Reactions:

- 1- Combination
- 2- Decomposition
- 3- Single Displacement
- 4- Double Displacement (exchange)
- 5- Combustion

The chemical industry consumes a lot of energy, not only to initiate reactions but also to separate products from by-products. In a promising emerging field of research, scientists worldwide are trying to use nanoscale antennas to capture and

concentrate light into tiny volumes in order to initiate chemical reactions more efficiently and sustainably.

Researchers at AMOLF unraveled how such nanoscale antennas enhance the rate of chemical reactions. They also discovered that using different colors of light can cause completely different chemical reactions to take place.

Read more: <https://phys.org/news/2021-10-tuning-chemical-reactions.html>

New Research Finds Air Pollution Reduces Sperm Counts through Brain Inflammation

Researchers have long known that air pollution can increase the risk of disorders such as obesity, diabetes, and fertility, but they did not know the exact mechanism for how it can lead to these health conditions.

Now, University of Maryland School of Medicine (UMSOM) researchers have shown how air pollution reduces sperm count in mice by causing inflammation in the brain.

Scientists already know that the brain has a direct line to the reproductive organs affecting fertility and sperm count under stressful conditions. For example, emotional stress can lead to skipped



menstrual periods in women. However, this latest study, published on Sept. 8 in *Environmental Health Perspectives*,

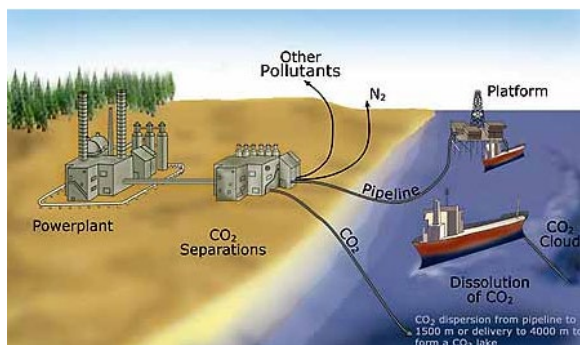
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connects the dots on how breathing polluted air can lower fertility.

Read more:

<https://www.sciencedaily.com/releases/2021/10/211025101719.htm>

Metals Supercharge Method to Bury Billions of Tons of Harmful Carbon Dioxide under the Sea for Centuries



There's a global race to reduce the amount of harmful gases in our atmosphere to slow down the pace of climate change, and one way to do that is through carbon capture and sequestration — sucking carbon out of the air and burying it. At this point, however, we're capturing only a fraction of

the carbon needed to make any kind of dent in climate change.

Researchers from The University of Texas at Austin, in partnership with ExxonMobil, have made a new discovery that may go a long way in changing that. They have found a way to supercharge the formation of carbon dioxide-based crystal structures that could someday store billions of tons of carbon under the ocean floor for centuries, if not forever.

Read more:

<https://scitechdaily.com/metals-supercharge-method-to-bury-billions-of-tons-of-harmful-carbon-dioxide-under-the-sea-for-centuries/>

EPA Finally Has an Action Plan to Improve Water Infrastructure and Sanitation for US Tribes

Hoping to step up the federal government's response to long-standing water issues facing Native American communities, the U.S. Environmental Protection Agency released an "action plan" earlier this month that will seek solutions to the many barriers tribes have to running water and wastewater services.



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The plan will guide the EPA Office of Water as it works with federally recognized tribes to implement the plan, which was prepared with input from the National Tribal Water Council, an EPA-funded advisory group. Priorities include the creation of federal baseline water-quality standards under the Clean Water Act.

According to a 2019 report from the U.S. Water Alliance, Native American

households are 19 times more likely than white households to lack indoor plumbing. The lack of a clean, reliable water source can make handwashing and hygiene difficult for Native households—inequities that were further exposed by the COVID-19 pandemic.

Read more: <https://grist.org/equity/epa-pledges-to-fix-water-infrastructure-and-sanitation-for-us-tribes/>

Ergonomics

Research Reveals Specific Molecular Mechanism That Controls Transition from Acute to Chronic Pain



A new study led by University of California, Irvine researchers is the first to reveal the specific molecular mechanism that controls the transition from acute to chronic pain, and identifies this mechanism as a critical target for disease-modifying medicines.

Findings from the study, titled “NAAA-regulated lipid signaling governs the

transition from acute to chronic pain,” published today (October 22, 2021) in *Science Advances*, show that disabling N-acyl ethanolamine acid amidase (NAAA)—an intracellular enzyme—in the spinal cord during a 72-hour time window following peripheral tissue injury halts chronic pain development in male and female mice.

Read more: <https://scitechdaily.com/research-reveals-specific-molecular-mechanism-that-controls-transition-from-acute-to-chronic-pain/>

Safety

Detector Advance Could Lead to Cheaper, Easier Medical Scans

Researchers in the U.S. and Japan have demonstrated the first experimental cross-sectional medical image that doesn't require tomography, a mathematical process used to reconstruct images in CT and PET scans. The work, published Oct. 14 in Nature Photonics, could lead to cheaper, easier and more accurate medical imaging.

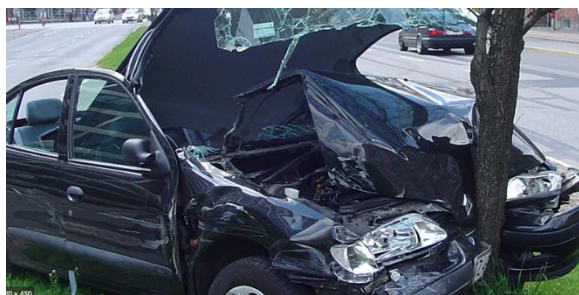
The advance was made possible by development of new, ultrafast photon detectors, said Simon Cherry, professor of biomedical engineering and of radiology at the University of California, Davis and senior author on the paper.



Read more:

<https://www.sciencedaily.com/releases/2021/10/211029134034.htm>

US Cites 'Crisis' As Road Deaths Rise 18% in First-Half 2021



The number of U.S. traffic deaths in the first six months of 2021 hit 20,160, the highest first-half total since 2006, the government reported Thursday, a sign of growing reckless driving during the coronavirus pandemic.

The estimated number was 18.4% higher than the first half of last year, prompting Transportation Secretary Pete Buttigieg to call the increase an unacceptable crisis.

That percentage increase was the biggest six-month increase since the department began recording fatal crash data since 1975.

Read more:

<https://medicalxpress.com/news/2021-10-cites-crisis-road-deaths-first-half.html>

Sleep Loss Affects How Paramedics and Health-Care Workers Respond to Patients' Feelings

A lack of sleep affects people's ability to feel for others. Sleep deprivation and emotional fatigue can hit anyone, but first responders and health-care workers are especially vulnerable due to shift work, long hours and the overall stressful nature of their jobs.

This is relevant during a pandemic when the health-care systems of many countries have been overwhelmed by the increasing number of people in hospitals.

Our research found that sleep-deprived paramedics are less able to understand how their patients feel.

Read more:



<https://medicalxpress.com/news/2021-10-loss-affects-paramedics-health-care-workers.html>

Best Water Treading Technique to Prevent Drowning



Unless you're a water-polo player, the "egg-beater" technique may mean little to you.

But new research from the University of Otago has found it may be the most effective skill you can learn to prevent drowning.

Dr Tina van Duijn, from the University's School of Physical Education, Sport and Exercise Sciences, says it is important during an emergency to be able to perform a movement in the water that is economic -- both energetically and cognitively.

"You should still be able to perform it while in panic, or while assessing the environment, making decisions, or even

alerting people who might be able to help you."

Her new research "A Multidisciplinary Comparison of Different Techniques Among Skilled Water Treaders", funded by the Swiss National Science Foundation, is the

first step in identifying what pattern of water treading is best to prevent drowning.

Read more:

<https://www.sciencedaily.com/releases/2021/10/211028120413.htm>

Some Sunscreen Mixtures Lose Effectiveness and Become Harmful During Sun Exposure

During use some sunscreens offer very limited protection against dangerous sunrays and may even be harmful.

Chemical reactions involving a main ingredient—zinc oxide—mean many sunscreens become ineffective after just two hours of sun exposure, according to a new collaborative study between the University of Leeds, the University of Oregon, and Oregon State University.

Read more:



<https://medicalxpress.com/news/2021-10-sunscreen-mixtures-effectiveness-sun-exposure.htm>

Study Finds Easy Way to Improve Hospital Soundscapes



New research from McMaster University has found that a simple tweak in the tones used by medical devices can significantly lower annoyance caused by these alarms, improving hospital working environments and even patient care.

There's no question these devices are key to communicating information to doctors and nurses about their patients, but previous studies have found the sounds they emit can be irksome, distracting,

overlap one another and can harm patient recovery.

Read more:

<https://medicalxpress.com/news/2021-10-easy-hospital-soundscapes.html>

Emergency Preparedness

Lessons from the COVID-19 Pandemic: Planning for Disaster Preparedness and Emergency Management in Hospitals

Although the COVID-19 pandemic is still active worldwide, health care industry leaders and regulators have already begun to think about how to implement post-pandemic changes to health care delivery based on lessons learned during the global emergency of the past year and a half. We have reported on some such post-pandemic changes to the health care industry in previous blog posts. For instance, some temporary solutions to challenges presented by COVID-19 are being made permanent due to their proven efficiency or effectiveness. The expansion of telehealth is a primary example of this. We have seen the Centers for Medicare and Medicaid Services (“CMS”), as well as state governors and legislators, expand and extend certain regulatory waivers that were initially designed as temporary solutions to allow



for greater access to patient care during the pandemic, but that are becoming permanent fixtures due to their usefulness in innovative patient care delivery generally.

Read more:

<https://www.natlawreview.com/article/lessons-covid-19-pandemic-planning-disaster-preparedness-and-emergency-management>

Deployment Health

This Is the Army's Plan to Stop Physically Breaking So Many of Its Soldiers



It appears the era of “a couple of Motrin should do the trick” could be nearing its end in the Army.

The 4,500-soldier brigade is part of an effort to address injuries early and give soldiers more access to physical and occupational therapy through the Army's holistic health and fitness program, which was announced in 2017 and officially put into Army policy last year. It focuses on total wellness, not just physical fitness, and urges mental and spiritual wellbeing, getting enough rest, eating well, and, more simply, just taking care of yourself.

Read more:

<https://taskandpurpose.com/news/army-holistic-health-fitness-82nd-airborne/>

Nanotechnology

New Device Developed for Treating Hearing Loss

In several instances, the tiny hairs present in the cochlea of the inner ear that enable the brain to identify electrical pulses as sounds are broken. This can lead to hearing loss. As a measure taken toward a sophisticated artificial cochlea, scientists in the ACS Nano journal describe a conductive membrane, which has the ability to translate sound waves into matching electrical signals while being implanted within a model ear. This needs no external power.



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While the functioning of hair cells present inside the inner ear stop, there is no way to revoke the damage. At present, treatment is confined to cochlear implants or hearing aids. However, such devices need external power sources and can have trouble

amplifying speech appropriately so that it is comprehended by the user.

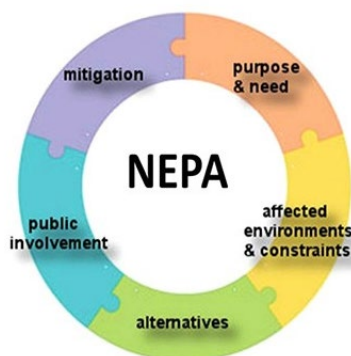
Read more:

<https://www.azonano.com/news.aspx?newsID=38210>

Regulatory Research & Industrial Hygiene Professional News

Whitehouse

Biden Administration Plans to Restore Environmental Review Policies Weakened By Trump



The Biden administration plans to restore three major provisions to a bedrock environmental law that were rolled back under President Donald Trump, it announced Wednesday.

The White House Council on Environmental Quality said it plans to restore the National

Environmental Policy Act, which requires federal agencies to assess the environmental impact of projects such as the construction of mines, highways, water infrastructure and gas pipelines.

The changes will come in two phases, the first of which is reinstating three key aspects of the law that were dismantled by the Trump administration. The second phase is a "broader" set of changes, the council said, which will focus on community feedback and fair public involvement in the environmental review process.

Read more:

<https://www.cnn.com/2021/10/06/politics/biden-restoring-nepa-trump-rollbacks/index.html>

CDC

FDA OKs Emergency Use of Pfizer COVID Vaccine in Young Kids

Following the lead of its advisers, the US Food and Drug Administration (FDA) today granted emergency use authorization (EUA) for the Pfizer-BioNTech COVID-19 vaccine for children 5 to 11 years old.

The step moves vaccination of that age-group a step closer to becoming a reality. The Advisory Committee on Immunization Practices (ACIP), which reports to the Centers for Disease Control and Prevention (CDC), will take up the matter on Nov 2. The CDC typically follows ACIP advice, and once it clears the vaccine, it will roll out to younger kids across the country.



Read more:

<https://www.cidrap.umn.edu/news-perspective/2021/10/fda-oks-emergency-use-pfizer-covid-vaccine-young-kids>

US Lowers Cutoff for Lead Poisoning in Young Kids

Lead Poisoning
is a **Danger**
for every baby and child



U.S. health officials have changed their definition of lead poisoning in young children—a move expected to more than double the number of kids with worrisome levels of the toxic metal in their blood.

The more stringent standard announced Thursday by the Centers for Disease Control and Prevention means the number of children ages 1 to 5 considered to have high blood lead levels will grow from about 200,000 to about 500,000.

Read more:

<https://medicalxpress.com/news/2021-10-lowers-cutoff-poisoning-young-kids.html>

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FDA

FDA's Withdrawal of Temporary Guidance for Alcohol-Based Hand Sanitizers

In March 2020, the Food and Drug Administration (FDA) issued temporary guidance documents allowing for the increased production of alcohol-based hand sanitizer during the COVID-19 outbreak. Due to that guidance, most consumers and healthcare personnel have been able to obtain hand sanitizer without difficulty. Now the FDA plans to withdraw the temporary guidance on December 31st, 2021. This withdrawal impacts any company manufacturing alcohol-based hand sanitizers under the temporary policies.

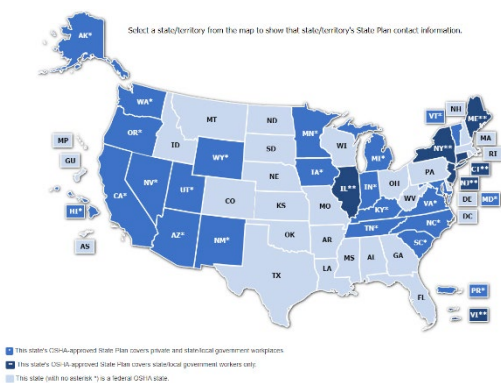


Read more:

<https://www.jdsupra.com/legalnews/fda-s-withdrawal-of-temporary-guidance-3189845/>

OSHA

Federal OSHA Threatening to Pull the Plug on State Plans Refusing to Enforce Healthcare ETS



Many states have Occupational Safety and Health Administration (OSHA)-approved workplace safety and health programs (OSHA State Plans) and enjoy enforcement autonomy over workplace safety and health in those states, particularly with respect to the COVID-19 pandemic. OSHA State Plans that have not adopted OSHA's Emergency Temporary Standard (ETS) related to COVID-19 — the healthcare ETS issued for healthcare employers on June 17, 2021

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(Healthcare ETS) and the forthcoming vaccine ETS — may soon be feeling the wrath of the federal government and risking revocation of their OSHA State Plan status.

Read more:

<https://www.natlawreview.com/article/federal-osh-threatening-to-pull-plug-state-plans-refusing-to-enforce-healthcare-ets>

Cal/OSHA Getting New Enforcement Powers in 2022

The California Division of Occupational Safety and Health (Cal/OSHA) will have expanded enforcement authority starting January 1, 2022, with the creation of two new classes of violations: enterprisewide and egregious. Governor Gavin Newsom (D) recently signed S.B. 606 into law, authorizing the new citation and penalty authority.



will be a penalty of up to \$124,709 for each enterprisewide violation.

If a cited employer has multiple worksites, there will be a “rebuttable presumption” that the violation is enterprisewide if an employer has a written policy that violates a Cal/OSHA standard or if there is evidence of a pattern or practice of violations. There

Read more:

<https://ehsdailyadvisor.blr.com/2021/10/cal-osh-getting-new-enforcement-powers-in-2022/>

EPA

EPA Announces Hydrofluorocarbons Phasedown



Congress enacted the American Innovation and Manufacturing (AIM) Act on December 27, 2021, which gives

Maximize reclamation, and minimize HFC releases from equipment. Facilitate the transition to next-generation technologies through sector-based restrictions on HFCs.

the EPA authority to:

Read more:

<https://ehsdailyadvisor.blr.com/2021/10/e-pa-announces-hydrofluorocarbons-phasedown/>

Phase down production and consumption of hydrofluorocarbons (HFC).

WEBiNAR

A hand holding a blue marker, drawing a blue line under the word 'WEBiNAR'. The word is written in a light blue, sans-serif font. The hand is positioned on the right side of the image, with the marker tip touching the end of the line.

As we continue to combat the COVID-19 virus, we are making our best efforts to provide you with Blueprint, Design Review, and Ventilation lessons that otherwise you'd travel to acquire.

Due to the changing MS TEAMS and DCS environments, and the ability to host a live event with hundreds of participants, we've been providing "Pre-recorded" webinar events.

All handouts are made available, and can be downloaded from your Blackboard webinar course shell with recorded material for you to view ad-hoc, and participation certificates awarded for each lesson survey/evaluation completed.

WEBiNAR



You may ask yourself “what’s the difference between a live webinar and a pre-recorded webinar?”

Not only does a pre-recorded webinar allow you to view in your own time zone at a time most convenient for you, it allows us to edit and re-record segments, swap out segments that didn’t work so well, add effects, graphics, and more in the post-production stage.

Pre-recorded webinars give a more polished effect than a live webinar. Right now, we’re all adjusting to having more remote meetings, watching broadcasts instead of attending live events, and spending a little more time on our computers than doing surveys.

It is our goal to connect with you, getting you the relevant and emerging information you need to help your clients. Our sustainment webinars, whether live or pre-recorded, can help you achieve those goals.

WEBiNAR



How to participate in a “pre-recorded” webinar:

1. Navigate to your “Army Industrial Hygiene Webinar” shell on our Blackboard site <https://aiph-dohs.elic.learn.army.mil>
2. Use the left navigation tile to locate SPECIAL EDITION WEBINARS
3. Select each webinar link to view
4. Record case sensitive code words while viewing
5. Use the left navigation tile to locate COLLECT CERTIFICATES
6. Select the link for your webinar and use code word to initiate certificate


NOTE: Our classroom space is not allowing traditional classroom courses due to the pandemic. We continue our efforts to provide relevant content that aligns with these courses via our webinars.

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DOCUMENT LIBRARY	All slide handouts are here
COLLECT CERTIFICATES	
NEW WEBINARS	Most recent recordings here
ASK THE SME RECORDINGS	SME recording archive
MANAGE YOUR IH MONSTER RECORDINGS	MONSTER recording archive
ARMY IH FEILD OP MANUAL RECORDINGS	FOM recording archive
IH LEADER RECORDINGS	LEADER recording archive
SPECIAL EDITION WEBINAR RECORDINGS	Special Edition archive



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 **ABOUT THE "ASK THE SME" WEBINARS**


These "Ask the SME" Webinars are about communicating freely with subject matter experts. Most of the subject matter experts have lead in slides to spark conversation, and then take questions from the live audience. If you are here, then you probably missed the live event. That's OKAY. This is why we provide recordings. If you have questions for the subject matter experts that were not addressed during the live event, we encourage you to contact the SME.


 **SLIDE HANOUTS: Ask the SME Webinars**

Enabled: Statistics Tracking

Attached Files:


- 11/4/2018 Monitor: All About ANOVA (1.918 MB)
- 11/14/2018 SME: Hexavalent Chromium 48min (451.598 KB)
- 2/27/2019 SME: Ergonomics 51min (402.939 KB)
- 8/8/2019 SME: Pharmacy Hazardous Drug Samples 28min (1.569 MB)
- 3/4/2020 SME: APHC Analytical Lab (1.425 MB)
- 6/17/20 SME: IH Contract Technical Monitors (1.0hr) (773.407 KB)
- OWAS Table.doc (90.5 KB)
- Liberty Mutual Tables.pdf (874.9 KB)
- OWAS Postures.pdf (135.149 KB)
- 12/2/20 SME: DOEHRs-IH Report Standardization 90min (1.435 MB)
- Example Standardized Ergo Survey (4.361 MB)



 **12/2/20 SME: DOEHRs-IH Report Standardization 90min**

Enabled: Statistics Tracking

Look for slide handouts and a copy of the Army DCEHRS IH Buddy v0.7 in the SLIDE HANOUTS above, or the DOCUMENT LIBRARY section of this course site.

 **12/2/20 SME: Downdraft Ventilation Q/A 7min**

Enabled: Statistics Tracking

Description

Handouts

Recordings



Downdraft Day	
12/2/20 Monster: Building Downdraft Tables in DOEHRs-IH (52min)	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 Leader: Measuring Downdraft Tables (42min)	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 SME: Downdraft Ventilation Q/A	THEME: CONTROLLING AIR CONTAMINANTS
12/2/20 SME: DOEHRs- IH Report Standardization (30min)	THEME: MANAGING ARMY IH
12/2/20 Leader: Compressed Air use with Heavy Metals (30min)	THEME: CONTROLLING AIR CONTAMINANTS

Vehicle Maintenance Day	
3/3/21 Monster: Building Vehicle Exhaust Ventilation in DOEHRS-IH (72min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 Leader: Measuring Vehicle Exhaust Ventilation (50min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 Leader: Vehicle Design Review (2hr)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 SME: Vehicle Exhaust Ototoxins (40min)	THEME: CONTROLLING AIR CONTAMINANTS
3/3/21 SME: IH Manpower Study Survey (14min)	THEME: MANAGING ARMY IH

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Coating/Painting Day	
6/2/2021 Monster: Building Paint Booths in DOEHS-IH (60min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Measuring Paint Booths (37min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Paint Spray Design (65min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: Data Mining DOEHS-IH (Paintbooth Accident Investigation) (17min)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: DOEHS Cadmium Data/Protecting Against Cadmium 49min	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 SME: Protecting Against Cadmium (combined with Cadmium Data)	THEME: CONTROLLING AIR CONTAMINANTS
6/2/2021 Leader: Particle Size Selective Sampling 35min	THEME: SAMPLING
6/2/2021 Leader: IH Professional Sampling Kit 20min	THEME: SAMPLING
6/2/2021 SME: Surface Sampling 18min	THEME: SAMPLING

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Laboratory/Healthcare Day	
9/1/2021 Monster: Building Lab Hood Ventilation in DOEHS-IH (64min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Monster: Building Dilution Ventilation in DOEHS-IH (93min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: IH Value Strategy Laboratory Engineering Controls (17min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 SME: Sampling Qualifiers (15min)	THEME: SAMPLING
9/1/2021 Leader: Laboratory Design (2hr)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: Methylene Chloride (Workplace, Data Mining, Virtual Tour) (2hr)	THEME: SAMPLING
9/1/2021 Leader: Healthcare Ventilation and Design (3hr)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: OHS for Laboratory/Healthcare (Overview, Risk Management, IH Role, Virtual Tours) (3hr)	THEME: SAMPLING
9/1/2021 Leader: Modeling Laboratory/Healthcare Exposures in DOEHS-IH (60min)	THEME: CONTROLLING AIR CONTAMINANTS
9/1/2021 Leader: Laboratory/Healthcare Compliance Survey Tour (2hr)	THEME: SURVEY
9/1/2021 SME: Ergonomic Patient Handling (28min)	THEME: HAZARD EVALUATION AND CONTROL

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<i>REVIEW</i>	<i>Recommended Healthcare/Laboratory lessons if you have not already viewed these previously)</i>
Leader	Adventures in Ventilation at Natick Laboratories (68min)
Monster	Pathology, Grossing, Morgue, Tissue, and Death Care (1.5hr)
SME	Pharmacy Hazardous Drug Samples (28min)
Leader	Audiometric Booth Testing and Certification (17min)

Army Industrial Hygiene News and Regulatory Summary

This monthly summary is published by the Industrial Hygiene Program Management Division for the Army Public Health Center.

POINTS OF CONTACT:

By Email:

ihnews@amedd.army.mil

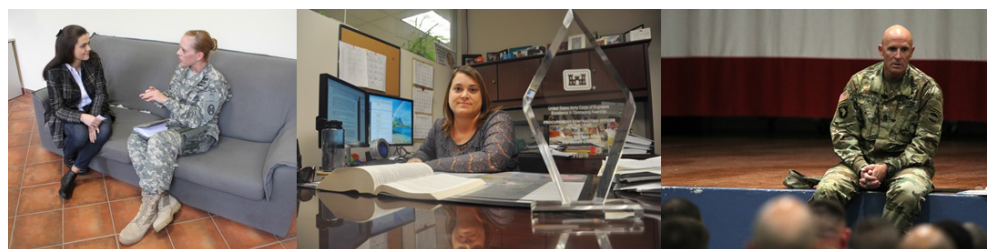
By Phone or FAX:

Office: (410)436-3161

FAX: (410)436-8795

On the Web:

<http://phc.amedd.army.mil/topics/workplacehealth/ih/Pages/default.aspx>



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.

Articles appearing in this summary are a collection of articles taken verbatim from public sources and do not necessarily represent the opinions/views, policy, or guidance of the Department of the Army, Department of Defense, or the U. S. Government.

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