June 2020
Issue 105

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

Occupational Exposure Banding Tool Assesses Chemical Hazards

Special Interest Articles:

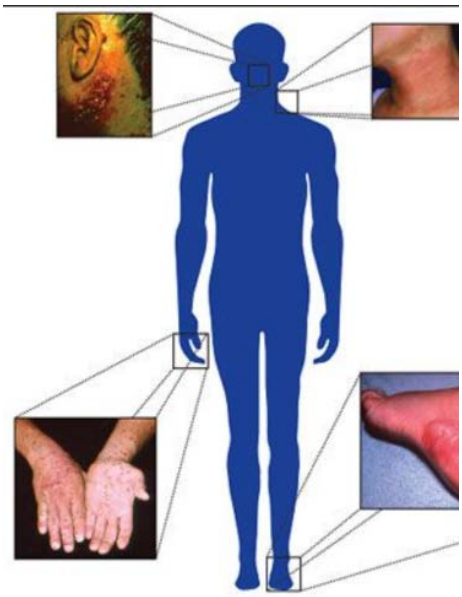
- *Diesel Particulate*
- *Emerging Disease*
- *Companion Animals*
- *State Coronavirus Safety*
- *NIOSH App*

The gold standard for assessing and controlling work-related chemical exposure is the occupational exposure limit, or OEL. While more than 85,000 chemicals are commercially available, according to the U.S. Environmental Protection Agency, only about 1,000 chemicals have an authoritative OEL. As new chemicals are developed and introduced into commerce, the number of chemicals without OELs increases. Consequently, NIOSH developed an approach called occupational exposure banding, described in a 2019 technical report pdf icon, and an accompanying electronic assessment tool (e-Tool). Occupational exposure banding is an innovative, voluntary approach that uses information about a chemical's toxicity and health effects to classify it into an appropriate occupational exposure band. The process is divided into three tiers, with each tier dependent upon available information for the chemical and user expertise. Users can enter information about a chemical into the e-Tool, which then classifies the chemical into one of five concentrations expected to protect worker health. The bands range from Band A, the highest exposure concentration range recommendation and associated with less serious health effects, to Band E, the lowest exposure concentration range recommendation and associated with more serious health effects.

Read more:
https://www.cdc.gov/niosh/enews/enewsv18n2.html#research-in

Contents:

What Do Occupational Hygienists Really Know About Skin Exposure?



This article describes responses to a questionnaire on current work practices and understanding of the management of dermal exposure issues in the workplace from members of the British Occupational Hygiene Society (BOHS) and the Australian Institute of Occupational Hygienists (AIOH). The survey comprised questions in four key areas: employment demographics, experience managing dermal exposure, knowledge of dermal exposure management, and opinions on professional knowledge gaps and preferred training methods. The survey was disseminated in 2016 in the UK and 2018 in Australia, with 116 and 114 responses from each jurisdiction, respectively. The majority of respondents had personally evaluated the risks of dermal exposure to chemicals (BOHS 92%; AIOH 86%), albeit infrequently (less than a few times per year). Occupational Hygienists reportedly adopted a range of strategies to control dermal exposure problems, including chemical elimination/substitution (BOHS 68%; AIOH 68%), changing work practices (BOHS 79%; AIOH 75%), and education (BOHS 77%; AIOH 83%). The use of gloves or other personal protective equipment remained the most commonly cited exposure control measure (BOHS 99%; AIOH 97%).

Read more:
https://academic.oup.com/annweh/article-abstract/doi/10.1093/annweh/wxaa046/5857391?redirectedFrom=fulltext

Development and Evaluation of a High throughput Inhalation Model for Organic Chemicals

Currently it is difficult to prospectively estimate human toxicokinetics (particularly for novel chemicals) in a high-throughput manner. The R software package *httk* has been developed, in part, to address this deficiency, and the aim of this investigation was to develop a generalized inhalation model for *httk*. The structure of the inhalation model was developed from two previously published physiologically based models from Jongeneelen and Berge (Ann Occup Hyg 55:841–864, 2011) and Clewell et al. (Toxicol Sci 63:160–172, 2001), while calculated physicochemical data was obtained from EPA's CompTox Chemicals Dashboard. In total, 142 exposure scenarios across 41 volatile organic chemicals were modeled and compared to published data.

Read more:
https://www.nature.com/articles/s41370-020-0238-y

A Case Study of Brass Foundry Workers' Estimated Lead (Pb) Body Burden from Different Exposure Routes

Objectives
The most pronounced occupational exposure routes for lead (Pb) are inhalation and gastrointestinal uptake mainly through hand-to-mouth behaviour. Skin absorption has been demonstrated for organic Pb compounds, but less is known about inorganic Pb species. Several legislative bodies in Europe are currently proposing lowering biological exposure limit values

and air exposure limits due to new evidence on cardiovascular effects at very low blood Pb levels. In light of this, all exposure routes in occupational settings should be revisited to evaluate how to lower the overall exposure to Pb.

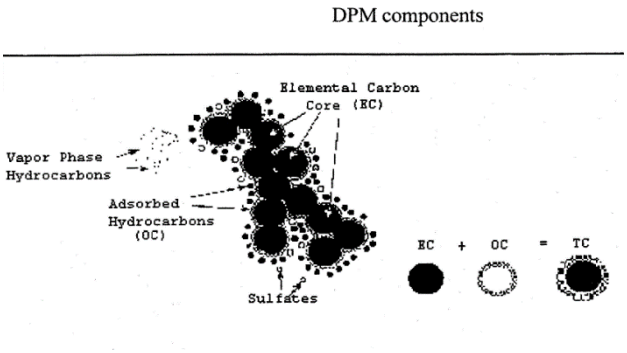
Methods

The aim of the study was to investigate the possible exposure routes in workers operating computer numerical control-machines in a brass foundry and specifically to understand if metal cutting fluids (MCFs) used by the workers could lead to skin absorption of Pb. The different bronze alloys at the facility may contain up to 20% Pb. After obtaining written informed consent from the workers (n = 7), blood, skin wipes, and personal air samples were collected. In addition, MCFs used on the day of exposure measurements were collected for *in vitro* skin absorption studies using stillborn piglet skin mounted in static Franz diffusion cells (n = 48). All samples were analysed for Pb content using inductively coupled plasma mass spectrometry.

Read more:
https://academic.oup.com/annweh/article/doi/10.1093/annweh/wxaa061/5860635?searchresult=1

Characterization and Quantification of Ultrafine Particles and Carbonaceous Components from Occupational Exposures to Diesel Particulate Matter in Selected Workplaces

Questions still exist regarding which indicator better estimates worker's exposure to diesel particulate matter (DPM) and, especially for ultrafine particles (UFP), how exposure levels and the characteristics of the particles vary in workplaces with different exposure conditions. This study aimed to quantify and characterize DPM exposures in three workplaces with different exposure levels: an underground mine, a subway tunnel, and a truck repair workshop. The same sampling strategy was used and included measurements of the particle number concentration (PNC), mass concentration, size distribution, transmission electron microscopy (TEM), and the characterization of carbonaceous fractions. The highest geometric means (GMs) of PNC and elemental carbon (EC)



were measured in the mine [134 000 (geometric standard deviation, GSD = 1.5) particles cm^{-3} and 125 (GSD = 2.1) µg m^{-3}], followed by the tunnel [32 800 (GSD = 1.7) particles cm^{-3} and 24.7 (GSD = 2.4) µg m^{-3}], and the truck workshop [22 700 (GSD = 1.3) particles cm^{-3} and 2.7 (GSD = 2.4) µg m^{-3}]. This gradient of exposure was also observed for total carbon (TC) and particulate matter.

Read more: https://academic.oup.com/annweh/article-abstract/64/5/490/5817589?redirectedFrom=fulltext

Performance Comparison of Four Portable FTIR Instruments For Direct-On-Filter Measurement of Respirable Crystalline Silica

Exposure to dusts containing respirable crystalline silica is a recognized hazard affecting various occupational groups such as miners. Inhalation of respirable crystalline silica can lead to silicosis, which is a potentially fatal lung disease. Currently, miners' exposure to respirable crystalline silica is assessed by collecting filter samples that are sent for laboratory analysis. A more timely field-based silica monitoring method using direct-on-filter (DoF) analysis is being developed by researchers at the National Institute for Occupational Safety and Health (NIOSH) to provide mine operators with the option to evaluate miners' exposure at the mine. This field-based silica monitoring technique involves the use of portable Fourier transform infrared (FTIR) instruments. As a step in the development of this new analytical technique, four commercially available portable FTIR instruments were evaluated for their ability to provide reproducible measurements from filter samples containing respirable crystalline silica. Reported testing indicates that measurements varied within ±4.1% between instruments for filter samples that contained high-purity respirable crystalline silica. Measurements varied within ±3.0% between instruments for filter samples that contained varying mineral composition. Filter samples were repeatedly analyzed by the same instrument over short and extended periods of time, and mean coefficients of variation did not exceed ±1.6 and ±2.4%, respectively. Mixed model analysis revealed that there was no statistically significant ($P < 0.05$) change in average measurements made over an extended period of time for all instruments. Results suggest that each of the four FTIR instruments evaluated in this study were able to generate precise and reproducible DoF analysis results of respirable dust samples.

Read more: https://academic.oup.com/annweh/article/64/5/536/5817577

Radiation

Far-UVC Light Safely Kills Airborne Coronaviruses, Study Finds

More than 99.9% of seasonal coronaviruses present in airborne droplets were killed when exposed to a particular wavelength of ultraviolet light that is safe to use around humans, a new study at Columbia University Irving Medical Center has found. advertisement

"Based on our results, continuous airborne disinfection with far-UVC light at the current regulatory limit could greatly reduce the level of airborne virus in indoor environments occupied by people," says the study's lead author David Brenner, PhD, Higgins Professor of Radiation Biophysics at Columbia University Vagelos College of Physicians and Surgeons and director of the Center for Radiological Research at

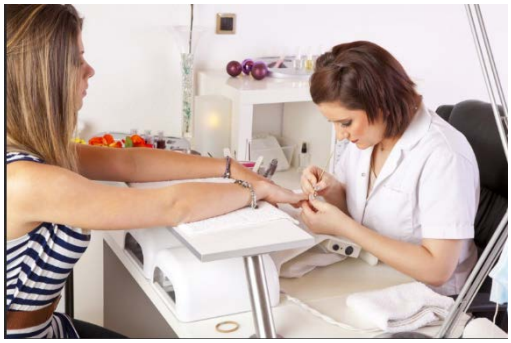
https://www.sciencedaily.com/releases/2020/06/200624172050.htm

Read more:

Ventilation

Occupational Exposure and Ventilation Assessment in New York City Nail Salons

In 2015, New York State enacted new ventilation regulations to protect employees and clients from exposure to chemicals used in nail salons. This study measured common air pollutants found in nail salons and assessed compliance with ventilation requirements. Area sampling was conducted in 12 nail salons located in New York City for three consecutive days (Thursday, Friday, and Saturday) to measure total volatile organic compounds (TVOCs), methyl methacrylate, toluene, and ethyl acetate concentrations and estimate ventilation rates.



Salon characteristics were determined through a walkthrough inspection and survey administered to the manager. The average daily concentration of carbon dioxide and TVOCs across all salons was 1070 ppm [standard deviation (SD) = 440 ppm] and 29 ppm (SD = 25 ppm), respectively. Chemical-specific air sampling showed low to non-detectable levels of the three measured chemicals. Seventy-five percent of the nail salons did not meet general minimum outdoor airflow requirements. Little temporal variation was observed in day-to-day average concentrations of contaminants within salons, indicating uniform exposure during high customer count days. Salons that met the outdoor airflow requirements had twice the average daily customers (83 versus 42) and half the TVOC concentrations compared with salons that did not (33 versus 16 ppm). Nail salons not meeting ventilation requirements tended to have fewer customers and managers that did not understand the essential components of the ventilation system. Data from this study can be used as evidence of reduction in exposure due to compliance with the ventilation requirements.

Read more:
https://academic.oup.com/annweh/article/64/5/468/5817532

PPE

The Physiological Burden of Prolonged PPE Use on Healthcare Workers during Long Shifts

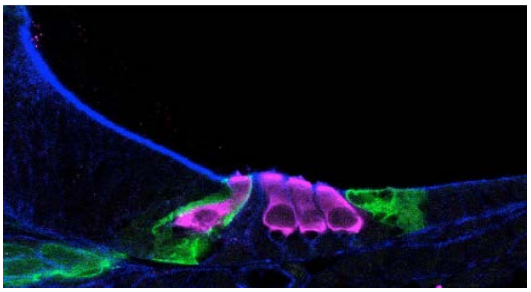
Healthcare workers (HCW) and first responders often work long, physically and mentally exhausting shifts as they provide care for patients, especially during a public health emergency. These long hours can result in fewer adequate breaks for personal care, nutrition, and hydration. During these extended work shifts, many HCWs are also required to wear personal protective equipment (PPE), which may include N95 filtering facepiece respirators

(FFRs) elastomeric half-mask respirators, or powered air-supplied respirators (PAPRs). Particular features of PPE can impose a physiological (how the body normally functions) burden on the HCW which can be exacerbated by long work hours without adequate breaks for eating, hydration and self-care.

Read more: https://blogs.cdc.gov/niosh-science-blog/2020/06/10/ppe-burden/

Noise

Study Charts Developmental Map of Inner Ear Sound Sensor in Mice



A team of researchers has generated a developmental map of a key sound-sensing structure in the mouse inner ear. Scientists at the National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health, and their collaborators analyzed data from 30,000 cells from mouse cochlea, the snail-shaped structure of the inner ear. The results provide insights into the genetic programs that drive the formation of cells important for detecting sounds. The study also sheds light specifically on the underlying cause of hearing loss linked to Ehlers-Danlos syndrome and Loeys-Dietz syndrome.

Read more: https://www.nih.gov/news-events/news-releases/study-charts-developmental-map-inner-ear-sound-sensor-mice

Preventive Medicine

New Study Looks at Post-COVID-19 Emerging Disease in Children

In recent weeks, a multisystem hyperinflammatory condition has emerged in children in association with prior exposure or infection to SARS-CoV-2. A new case series published in the journal *Radiology* examines the spectrum of

imaging findings in children with the post-COVID-19 inflammatory condition known in the U.S. as Multisystem Inflammatory Syndrome in Children (MIS-C).

The array of findings includes airway inflammation and rapid development of pulmonary edema, coronary artery aneurysms

Read more: https://www.sciencedaily.com/releases/2020/06/200625140719.htm

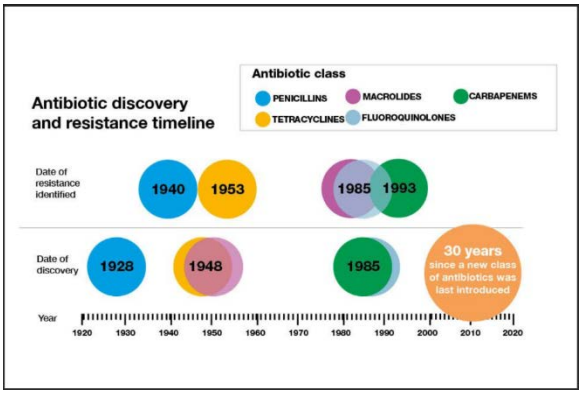
Simple Device Monitors Health Using Sweat

A device that monitors health conditions in the body using a person's sweat has been developed by Penn State and Xiangtan University researchers, according to Huanyu "Larry" Cheng, assistant professor of engineering science and mechanics, Penn State.

Read more: https://phys.org/news/2020-06-simple-device-health.html

Entry Point for Curbing the Evolution of Antibiotic Resistance Discovered

The team of Professor Tobias Bollenbach from the Institute for Biological Physics at the University of Cologne has published a study on a new approach to improving the effectiveness of antibiotics in bacterial infections. The study 'Highly parallel lab evolution reveals that epistasis can curb the evolution of antibiotic resistance,' on ways to controlling antibiotic resistance through targeted gene interactions has appeared in '*Nature Communications*'.



Read more: https://www.sciencedaily.com/releases/2020/06/200624151539.htm

Sedentary Behavior Independently Predicts Cancer Mortality

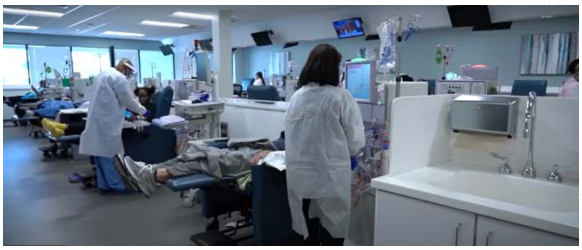
In the first study to look at objective measures of sedentary behavior and cancer mortality, researchers from The University of Texas MD Anderson Cancer Center found that greater inactivity was independently associated with a higher risk of dying from cancer. The most sedentary individuals had an 82% higher risk of cancer mortality compared to the least sedentary individuals. An accelerometer was used to measure physical activity, rather than relying on participants to self-report their activity levels

Read more:
https://www.sciencedaily.com/releases/2020/06/200618150311.htm

Severe COVID-19 Illness: CDC Expands List of Who Is at Increased Risk

On Thursday, the Centers for Disease Control and Prevention (CDC) published an expanded list of who is at increased risk for getting severely ill from COVID-19.
In addition to what we already knew–older adults and people with underlying medical conditions remain at increased risk for severe illness–CDC has further defined age- and condition-related risks.

1. **COVID-19 risk related to age** CDC has removed the specific age threshold from the older adult classification. CDC now warns that among adults, risk increases steadily as you age, and it's not just those over the age of 65 who are at increased risk for severe illness.



2. **COVID-19 risk related to underlying medical conditions** CDC also updated the list of underlying medical conditions that increase risk of severe illness after reviewing published reports, pre-print studies, and various other data sources

Read more:
http://outbreaknewstoday.com/severe-

covid-19-illness-cdc-expands-list-of-who-is-at-increased-risk-42657

Cases of SARS-CoV-2 Infection in Companion Animals — New York

Summary

What is already known about this topic?

A small number of companion animals worldwide have been naturally infected with SARS-CoV-2, the virus that causes COVID-19.

What is added by this report?

Two domestic cats with respiratory illnesses lasting 8 and 10 days are the first reported companion animals with SARS-CoV-2 infection in the United States. Both cats were owned by persons with suspected or confirmed COVID-19, and both cats fully recovered.

What are the implications for public health practice?

Human-to-animal transmission of SARS-CoV-2 can occasionally occur. Animals are not known to play a substantial role in spreading COVID-19, but persons with COVID-19 should avoid contact with animals. Companion animals that test positive for SARS-CoV-2 should be monitored and separated from persons and other animals until they recover.

Read more: https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e3.htm?s_cid=mm6923e3_e&deliveryName=USCDC_921-DM30110

Environmental Health

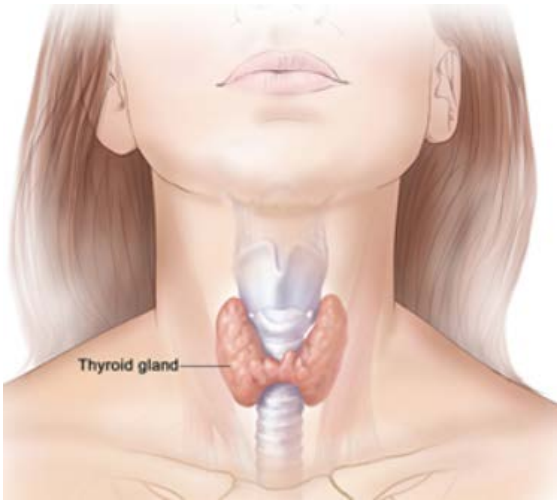
Sub-Daily Exposure to Fine Particulate Matter and Ambulance Dispatches during Wildfire Seasons: A Case-Crossover Study in British Columbia, Canada

Approximately 3% of the global land surface is burned by landscape fires every year, an area equivalent to nearly 20% of North America (Giglio et al. 2013). Over the past few decades, many areas of the world have reported longer wildfire seasons and more

severe wildfire activity in terms of fire frequency, size, and intensity (Dennison et al. 2014; Jain et al. 2017; Jolly et al. 2015; Lucas et al. 2007). These trends are partially attributed to the increasing temperatures and more drought as the global climate changes, and projections suggest a continuation of these trends into the future (Aldersley et al. 2011; Barbero et al. 2015; Westerling et al. 2006; Wotton et al. 2017). Smoke emitted from wildfires can affect large populations, even those distant from the fire, by degrading air quality at the local, regional, and global scales (Dempsey 2013; Dirksen et al. 2009; Jeong et al. 2008; Miller et al. 2011).

Read more: https://ehp.niehs.nih.gov/doi/full/10.1289/EHP5792

Finding the Right Fit: Highly Selective Binding by the Thyroid Hormone Receptor



Chemicals that alter how thyroid hormones work in the body have the potential to cause serious health problems. Thyroid hormones regulate metabolism and development, and disruption of their normal functioning raises concerns, especially for neurodevelopmental outcomes in children.[1,2] Evidence shows that several industrial pollutants interfere with thyroid hormone signaling.[3,4,5,6] Those discoveries have fueled speculation that many other chemicals might interact with thyroid hormone receptors (TRs) to cause similar effects. However, a study published in *Environmental Health Perspectives* suggests TR binding with environmental chemicals is more selective than previously suspected.[7]

Read more: https://ehp.niehs.nih.gov/doi/10.1289/EHP6520

Common Food Additive Causes Adverse Health Effects in Mice

A common food additive, recently banned in France but allowed in the U.S. and many other countries, was found to significantly alter gut microbiota in mice, causing inflammation in the colon and changes in protein expression in the liver, according to research led by a University of Massachusetts Amherst food scientist.

"I think our results have a lot of implications in the food industry and on human health and nutrition," says lead author Hang Xiao, professor and Clydesdale Scholar of Food Science. "The study confirmed a strong linkage between foodborne titanium dioxide nanoparticles (TiO2 NPs) and adverse health effects."

Read more:
https://www.sciencedaily.com/releases/2020/06/200625162252.htm

Continuous In-Home $PM_{2.5}$ Concentrations of Smokers with and Without a History of Respiratory Exacerbations in Iowa, During and After an Air Purifier Intervention

Background
Americans spend most of their time indoors. Indoor particulate matter (PM) 2.5 µm and smaller ($PM_{2.5}$) concentrations often exceed ambient concentrations.

Therefore, we tested whether the use of an air purifying device (electrostatic precipitator, ESP) could reduce $PM_{2.5}$ in homes of smokers with and without respiratory exacerbations, compared with baseline.

Methods
We assessed $PM_{2.5}$ concentrations in homes of subjects with and without a recent (≤3 years) history of respiratory exacerbation. We compared $PM_{2.5}$ concentrations during 1 month of ESP use with those during 1 month without ESP use

Read more:
https://www.nature.com/articles/s41370-020-0235-1

Advancing Systematic-Review Methodology in Exposure Science for Environmental Health Decision Making

Systematic review (SR) is a rigorous methodology applied to synthesize and evaluate a body of scientific evidence to answer a research or policy question. Effective use of systematic-review methodology enables use of research evidence by decision makers. In addition, as reliance on systematic reviews increases, the required standards for quality of evidence enhances the policy relevance of research. Authoritative guidance has been developed for use of SR to evaluate evidence in the fields of medicine, social science, environmental epidemiology, toxicology, as well as ecology and evolutionary biology. In these fields, SR is typically used to evaluate a cause–effect relationship, such as the effect of an intervention, procedure, therapy, or exposure on an outcome. However, SR is emerging to be a useful methodology to transparently review and integrate evidence for a wider range of scientifically informed decisions and actions across disciplines. As SR is being used more broadly, there is growing consensus for developing resources, guidelines, ontologies, and technology to make SR more efficient and transparent, especially for handling large amounts of diverse data being generated across multiple scientific disciplines. In this article, we advocate for advancing SR methodology as a best practice in the field of exposure science to synthesize exposure evidence and enhance the value of exposure studies. We discuss available standards and tools that can be applied and extended by exposure scientists and highlight early examples of SRs being developed to address exposure research questions. Finally, we invite the exposure science community to engage in further development of standards and guidance to grow application of SR in this field and expand the opportunities for exposure science to inform environment and public health decision making.

Read more:
https://www.nature.com/articles/s41370-020-0236-0

Ergonomics

Most Patients Say Cannabis Effective for Musculoskeletal Pain

The vast majority of people with musculoskeletal pain who have tried medical cannabis say it is an effective pain reliever and over half believe it works better than other pain medications, according to a new study released by the American Academy of Orthopaedic Surgeons.

Researchers surveyed 629 patients being treated at orthopaedic clinics to see how widely cannabis is being used for chronic muscle and joint pain that can be caused by arthritis, fibromyalgia, osteoporosis and many other conditions.

Read more:
https://www.painnewsnetwork.org/stories/2020/6/3/most-patients-say-cannabis-effective-in-treating-musculoskeletal-pain

Safety

Three-Quarters of US Workers Can't Work Exclusively From Home, Face Greater Risks during Pandemic

About three-quarters of U.S. workers, or 108 million people, are in jobs that cannot be done from home during a pandemic, putting these workers at increased risk of exposure to disease. This majority of workers are also at higher risk for other job disruptions such as layoffs, furloughs or hours reductions, a University of Washington study shows.

Such job disruptions can cause stress, anxiety and other mental health outcomes that could persist even as the United States reopens its economic and social life, said author Marissa Baker, an assistant

professor in the UW Department of Environmental & Occupational Health Sciences.

Read more:
https://www.sciencedaily.com/releases/2020/06/200623145320.htm

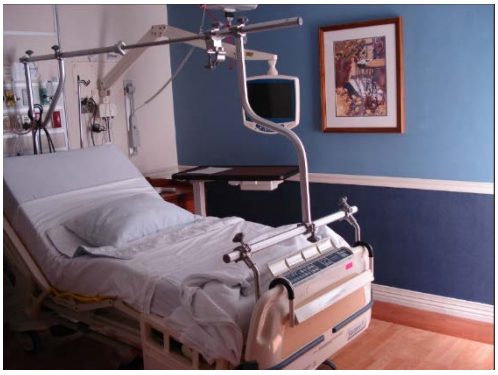
Scientists Support the Use of Ultraviolet Light to Reduce SARS-Cov-2 Transmission Indoors

The SARS-CoV-2 outbreak is posing an extraordinary challenge that requires swift worldwide action for the massive deployment of affordable and ready-to-apply measures to drastically reduce its transmission probabilities in indoor spaces, and eventually return to conventional activities such as working at the office, going to school, or even attending entertainment events.

Studies show that the virus transmission follows two main paths. Firstly, the virus can transmit through air in droplets exhaled by infected individuals and inhaled by healthy individuals. Secondly, it can be deposited on surfaces from either exhalations or hand contact. Now, several measures are being adopted to help prevent the transmission of this disease.

Read more:
https://www.sciencedaily.com/releases/2020/06/200622132941.htm

Persistence of Coronaviruses on Inanimate Surfaces and Their Inactivation with Biocidal Agents



Currently, the emergence of a novel human coronavirus, SARS-CoV-2, has become a global health concern causing severe respiratory tract infections in humans. Human-to-human transmissions have been described with incubation times between 2-10 days, facilitating its spread via droplets, contaminated hands or surfaces. We therefore reviewed the literature on all

available information about the persistence of human and veterinary coronaviruses on inanimate surfaces as well as inactivation strategies with biocidal agents used for chemical disinfection, e.g. in healthcare facilities. The analysis of 22 studies reveals that human coronaviruses such as Severe Acute Respiratory Syndrome (SARS) coronavirus, Middle East Respiratory Syndrome (MERS) coronavirus or endemic human coronaviruses (HCoV) can persist on inanimate surfaces like metal, glass or plastic for up to 9 days, but can be efficiently inactivated by surface disinfection procedures with 62–71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite within 1 minute. Other biocidal agents such as 0.05–0.2% benzalkonium chloride or 0.02% chlorhexidine digluconate are less effective. As no specific therapies are available for SARS-CoV-2, early containment and prevention of further spread will be crucial to stop the ongoing outbreak and to control this novel infectious thread.

Read more: https://phys.org/news/2020-05-green-method-enable-hospitals-hydrogen.html

Virginia Becomes First State to Enact Workplace Coronavirus Safety Rules

Virginia's health and safety board voted Wednesday to create workplace coronavirus safety rules, becoming the first state in the country to take steps toward creating such rules amid the pandemic that has infected more than 2 million people in the U.S.

The state's 14-member board voted 9-3 to create the safety rules that the board will continue to work on and finalize in coming days, The Washington Post reported. Two members of the board reportedly abstained.

Read more: https://thehill.com/homenews/state-watch/504448-virginia-becomes-first-state-to-enact-workplace-coronavirus-safety-rules

Worker Safety, Privacy Clash as Temperature Checks Become Norm

Employers are poised to collect health data from their workforces daily as they adopt temperature checks and other screening protocols to fight the coronavirus, triggering concerns about workers' privacy

and whether the practices will continue beyond the pandemic.

The way these once-taboo screenings are administered is key for employers to avoid penalties under privacy and disability laws. Major retailers such as Amazon.com, Walmart Inc., and Target Corp. already are checking their workers' temperatures, along with grocery chains, health-care providers, and other businesses.

Problems could arise if companies continue to gather and store worker information that could reveal far-reaching health issues outside of Covid-19, attorneys and academics warn.

Read more:
https://news.bloomberglaw.com/daily-labor-report/worker-safety-privacy-clash-as-temperature-checks-become-norm

The 'New Normal' When It Comes to Public Restrooms

Slowly, every state in the union is taking steps to re-open its doors. They are doing this as the number of COVID-19 cases start to inch down.In some states, such as Texas and Georgia, virtually all business doors have been re-opened. This means that restaurants, movie theaters, stores, malls, and places of work are about back to normal for the first time in almost two months.

However, when consumers, and the workers in these facilities return to these locations, they may find several things have changed.For instance, restaurant owners are testing different ways to ensure diners feel safe in their properties. Some are installing plexiglass partitions. Others are limiting how many people can be in the restaurant at once. Expect silverware and plates to be sealed and wrapped in plastic. Fewer tables will be in dining rooms and re-arranged to help improve distancing.

Read more:
https://www.ishn.com/articles/112528-the-new-normal-when-it-comes-to-public-restrooms?_sc_token=v2%253AAppwSNYq

o1-k-9lx8dVycQLtW5tON_RB4elt1gMtJOi3pwnxWEibdXIcEcU_S55ne95JX57pmuyrTufAigXiU3tv4Ba9qD1WZFMWBSyOVXIOnVde-DkOHWkpuuRtq8CNySPBpML5BIi4zjCVJjifPosUvPvmVbHqIA5xuY1jSiQZXhP2T9bg_5y3Z2ke5h72pnhJYZI7r4ddSgFbLYAamA%253D%253D

Emergency Preparedness

FEMA Ordered $10.2 Million in COVID-19 Testing Kits It's Now Warning States Not to Use

The Federal Emergency Management Agency has warned states not to use COVID-19 testing supplies it bought under a $10.2 million contract after a ProPublica investigation last week showed the vendor was providing contaminated and unusable mini soda bottles.

A FEMA spokeswoman said the agency is working with the U.S. Food and Drug Administration and the Centers for Disease Control and Prevention to analyze test tubes filled with saline and sold to the government by Fillakit LLC, whose warehouse is near Houston.

Read more:
https://www.propublica.org/article/fema-ordered-10-2-million-in-covid-19-testing-kits-its-now-warning-states-not-to-use

Deployment Health

Women Integrating into Army's Final Infantry, Armor Units

The Army will integrate female infantry and armor Soldiers into its final nine brigade combat teams this year as it modifies a requirement to have at least two female leaders in each company with junior enlisted women.

"We've had women in the infantry and armor occupations now for three years,"

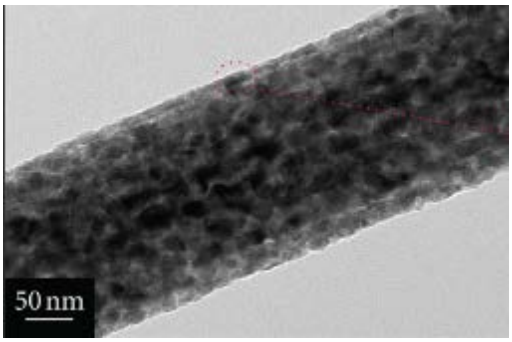
said Maj. Melissa Comiskey, chief of command policy, Army G-1. Integrating women into combat units has "changed the culture," she added. "It's not as different as it was three years ago when the Army first implemented the integration plan."
When the integration began, a "leaders first" policy required two female officers or NCOs of the same military occupational specialty to be in each company that accepted women straight from initial-entry training.

Read more:
https://www.army.mil/article/236107/wom

en integrating into armys final infantry a rmor units

Nanotechnology

Emissions and Exposures of Graphene Nanomaterials, Titanium Dioxide Nanofibers, and Nanoparticles during Down-Stream Industrial Handling



Today, engineered nanomaterials are frequently used. Nanosized titanium dioxide (TiO_2) has been extensively used for many years and graphene is one type of emerging nanomaterial. Occupational airborne exposures to engineered nanomaterials are important to ensure safe workplaces and to extend the information needed for complete risk assessments. The main aim of this study was to characterize workplace emissions and exposure of graphene nanoplatelets, graphene oxide, TiO_2 nanofibers (NFs) and nanoparticles (NPs) during down-stream industrial handling. Surface contaminations were also investigated to assess the potential for secondary inhalation exposures. In addition, a range of different sampling and aerosol monitoring methods were used and evaluated. The results showed that powder handling, regardless of handling graphene nanoplatelets, graphene oxide, TiO_2 NFs, or NPs, contributes to the highest particle emissions and exposures. However, the

exposure levels were below suggested occupational exposure limits

Read more:
https://www.nature.com/articles/s41370-020-0241-3?_sc_token=v2%253ABD7OEC2JHFlfVxo7kT0AR_8aFcGznhSfc1zkWtX1uTeie0Bk_CFf8wXaUv48H8LH6cNg4QBrr23C0wQnX7duDOdKGZrTeZidV2fXpQz0z6DS7XBxt4FXXv5sisDD4JWx1ffqiwaUkwucrbXteDbgd6-pD4iKebJwxotSDcdOR24jP45H3jJoKTzBiX2QSUGouebZsvkiuWpYY53SCTC-5A%253D%253D

Regulatory Research & Industrial Hygiene Professional News

EPA

Hazardous Waste: Final Rule from EPA Modernizes Ignitable Liquids Determinations

The U.S. Environmental Protection Agency (EPA) issued a final rule on June 8, 2020, that revises the hazardous waste regulation at 40 CFR 261.21, which addresses how the characteristic of "ignitability" is identified as a hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA states that the focus of the revisions is to provide flexibility to use modern testing methods that did not exist when the ignitability rule was first adopted in 1980. The final rule is effective 60 days after publication in the *Federal Register*.

Read more:
https://ehsdailyadvisor.blr.com/2020/06/hazardous-waste-final-rule-from-epa-modernizes-ignitable-liquids-determinations/

NIOSH

NIOSH Pocket Guide to Chemical Hazards App Features and Use Demo Video

The video will show viewers the new features to the NIOSH Pocket Guide app. This version of the NPG contains all the content from the NIOSH Pocket Guide to Chemical Hazards publication and native app, accessible via a sophisticated search engine that can search by chemical name, trade name or synonym, DOT number and CAS number. A user can also store chemical records as "favorites" for later use, and control which data about a given chemical are displayed for clarity in the field

Read more: https://www.news-journal.com/covid-19/niosh-pocket-guide-to-chemical-hazards-app-features-and-use-demo-video/video_8699f8f8-7147-571c-bfe2-9d1f2e24b999.html

OSHA

Appeals Court Rejects AFL-CIO Lawsuit over Lack of COVID-19 Labor Protections

A federal appeals court on Thursday rejected the AFL-CIO's emergency lawsuit against the Trump administration for failing to enact stronger labor protections amid the coronavirus crisis.

A three-judge panel on the D.C. Circuit Court of Appeals issued a two-page order saying that the Department of Labor's Occupational Safety and Health Administration (OSHA) has the authority to

decide whether to issue new rules during the pandemic.

Read more:
https://thehill.com/regulation/court-battles/502249-appeals-court-rejects-afl-cio-lawsuit-over-lack-of-covid-19-labor

FDA

FDA Amends Imported Non-NIOSH Approved Respirator EUA

In a June 6 Letter of Authorization (LoA), the U.S. Food and Drug Administration (FDA) reissued its March 28 LoA to revise emergency use authorization (EUA) eligibility criteria for imported, non-National Institute for Occupational Safety and Health (NIOSH)-approved disposable filtering facepiece respirators (FFR or respirator). Exhibit 1 lists authorized respirators.

Read more:
https://www.jdsupra.com/legalnews/fda-amends-imported-non-niosh-approved-38262/

In the Race to Design a COVID-Killing Face Mask, We May Soon Have a Winner

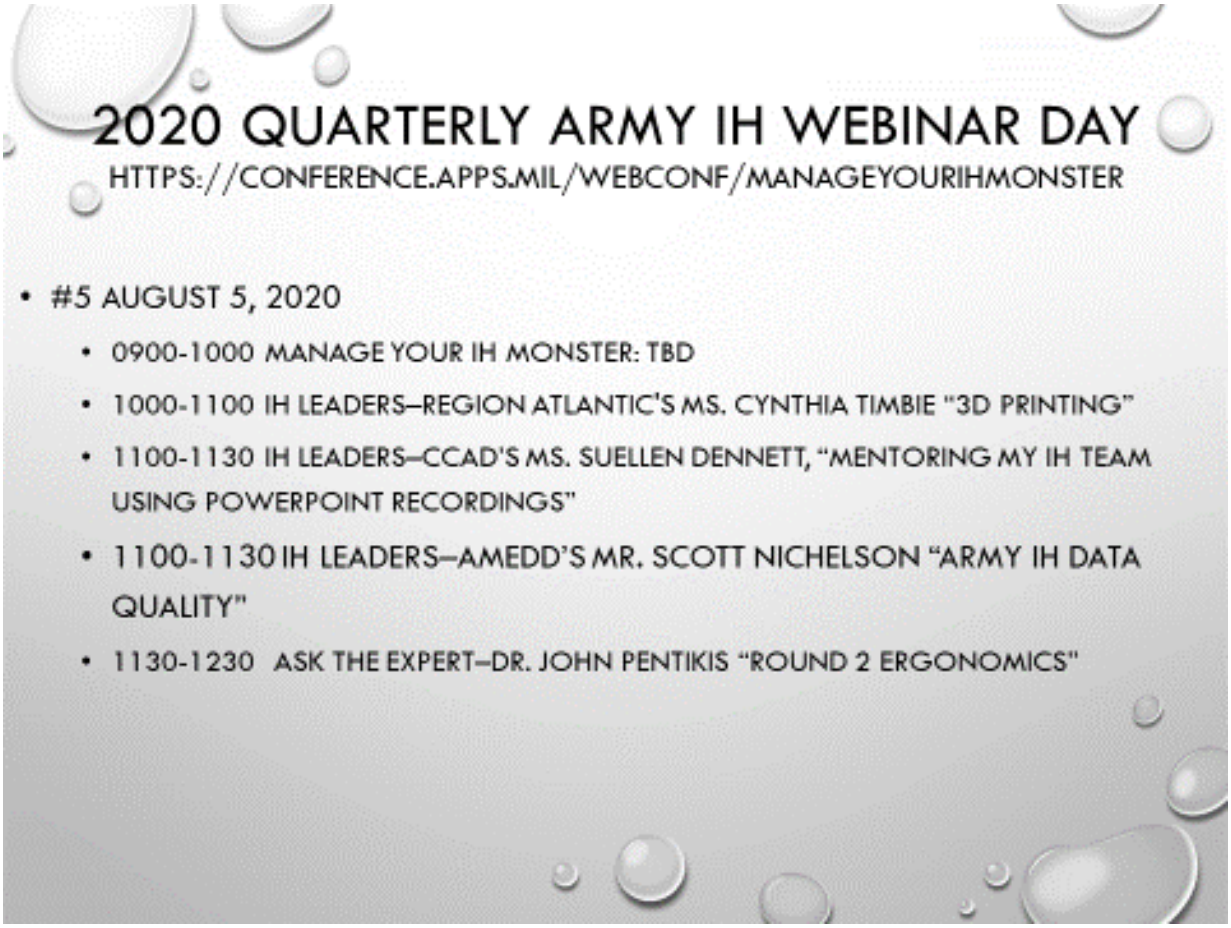
COVID-19 has prompted a surge in the production of anti-viral masks. Current designs have one major flaw: they trap the virus, but don't destroy it. Instead, they become contaminated and counter effective.

Innonix Technologies has been at the forefront of PPE for over 20 years, and they've found the game changing solution. Their patented, active-protection technology is the first of its kind on the market, and it's received not only approval, but distinguished classification by the FDA.

Read more:
https://finance.yahoo.com/news/race-design-covid-killing-face-120000041.html

APHC

Training




2021 ARMY IH WEBINAR DAYS
HTTPS://CONFERENCE.APPS.MIL/WEBCONF/MANAGEYOURIHMONSTER
#1 DEC 2, 2020
0900-0930ET MANAGE YOUR IH MONSTER: TBD
0930-1000ET IH LEADERS-TBD
1000-1100ET ASK THE EXPERT–TBD
#2 MAR 3, 2021
0900-0930ET MANAGE YOUR IH MONSTER: TBD
0930-1000ET IH LEADERS-TBD
1000-1100ET ASK THE EXPERT–TBD
#3 JUNE 2, 2021
0900-0930ET MANAGE YOUR IH MONSTER: TBD
0930-1000ET IH LEADERS-TBD
1000-1100ET ASK THE EXPERT–TBD
#4 SEP 1, 2021
0900-0930ET MANAGE YOUR IH MONSTER: TBD
0930-1000ET IH LEADERS-TBD
1000-1100ET ASK THE EXPERT–TBD
SAVE THE DATES!

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

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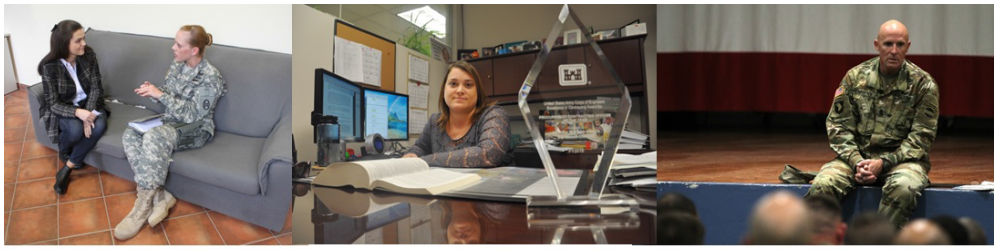

Professional Development and Career Programs

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.