

the **monitor**

keeping all with an interest in OHS informed of developments in work health and safety nationally and internationally

Issue 4 Vol 18 September 2014



No likelihood of OHS legislative changes until at least 2016

The Minister for Commerce, the Hon Michael Mischin, has announced that the Western Australian version of the Model Work Health and Safety Legislation will be introduced in the form of a green bill in the spring session of State Parliament. The green bill will be released for public comment until the end of this year.

It will contain the core principles of the Model WHS Legislation with some minor modifications to suit the Western Australian working environment.

The outcome of the current review of the national Model WHS Legislation, which is due for completion by the end of the year, together with the comments submitted on the green bill and the Western Australian Regulation Impact Statement, will provide the foundation upon which the government can consider the best WHS regime for Western Australia.

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WELCOME

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Legislative/regulatory matters

Introduction of specific resources safety legislation

The WA Government has given approval for Resources Safety to prepare drafting instructions for the Resources Safety Bill and to transfer responsibility for occupational health and safety at major hazard facilities from WorkSafe WA to Resources Safety.

The Resources Safety Bill initially will cover mine health and safety only and will be based on the Model WHS Act with provisions added from the National Mine Safety Framework.

The timetable for completion of this task is mid 2016.

When finalised, the Bill will replace the Mines Safety and Inspection Act 1994.

Stakeholder consultation will be undertaken through a Regulatory Impact Statement process conducted by an external consultant who will identify the positives and negatives of the various consolidation options under consideration.

As it is intended that the key provisions of the Model WHS Legislation will be reflected in both the proposed new Western Australian Acts the various stakeholder interests will have to be prepared to compromise.

Canada and the US to harmonise regulations

The Canadian and American governments have announced a new step towards constantly co-ordinating their regulatory environments across a broad range of industries.

The process will involve two-dozen areas including occupational safety, rail safety, marine safety, aviation and hazardous materials safety.

One item will be the adoption of future updates of the Globally Harmonised System for Classification and Labelling of Workplace Chemicals.

Source: CosMag, Sep 2014

Machinery safety standards revised

Standards Australia has recently released a number of revised parts of the Australian Standard AS4024.1 series – Safety of Machinery to align with global standards and strengthen workplace safety.

The revised parts have been individually issued at this stage with the entire Standard due to be released as a 2014 version once the application guide is finalised later this year.

The AS4024.1 series provides designers, manufacturers, suppliers, employers and users of machinery with guidelines to help reduce the risks of working with, or near, machinery.

Source: SafetySolutions, 4 Aug 2014

SAFETY



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A mindset that challenges safety and health professionals

According to a March 2014 survey of directors serving on the boards of more than 200 publicly-traded, private, not-for-profit and private equity-owned companies, safety doesn't register on the list of risks being discussed and addressed in most American boardrooms.

Threats to reputation are the number one concern followed by cyber-security, IT risks, concern about CEO succession and compliance with health care reform, accounting and tax standards.

Only 11 per cent of boards surveyed are "very concerned" about environmental compliance, with 28% "not concerned".

Workplace safety standards did not make the list of choices.

Dave Johnson, Associate Publisher and Chief Editor of ISHN, comments that "if the much more heavily-penalised and publicized environmental regulations elicit so little concern, what does that say about boards' attitudes toward safety risks?"

He offers a clue:

Less than 40 per cent of survey respondents indicated that their companies have a comprehensive enterprise risk management program, and 22 per cent don't even have a program.

He suggests that this presents a daunting leadership challenge for safety and health professionals aspiring to the highest positions in organisation.

Source: ISHN, 3 Sep 2014

WorkSafe WA 2014 workshops

WorkSafe WA is presenting a series of safety and health workshops as part of Safe Work October which is designed to benefit business owners, employers, managers, supervisors, HSR's and OSH Managers.

Notably there is no workshop to discuss the status of OHS legislation.

Full details are available on the WorkSafe website.

Source: WorkSafe newsletter, 19 Aug 2014

Mines Safety Roadshow

The Department of Mines and Petroleum – Resources Safety is conducting its Mines Safety Roadshow program during October in Perth and regional centres with the major focus on hazard awareness and risk management strategies.

Locations and dates

- Geraldton Friday, 10 October
- Bunbury Tuesday, 14 October
- Kalgoorlie Thursday, 16 October
- Newman Tuesday, 21 October
- Karratha Wednesday, 22 October
- Port Hedland Thursday, 23 October
- Mandurah Tuesday, 28 October
- Perth Wednesday, 29 October

Worksafe British Columbia fines employer over C\$700,000 but is unable to prosecute

Following a wood-dust explosion in a sawmill in 2012 in which two workers died and many others were injured, Lakeland Mills Ltd have been fined C\$724,163 in fines and levies.

According to Worksafe BC's investigation report, the explosion was preventable and all the components for a wood-dust explosion existed, including high amounts of wood-dust and an ignition source.

Despite clear evidence of gross mismanagement, this case and another similar one could not be successfully prosecuted because the evidence was gathered by Worksafe investigators without warrants and interviewees were not informed about the Charter of Rights.

Worksafe BC has subsequently made belated significant changes in managing investigations and sharpening tools used to enforce regulations.

Source: Journal of Commerce, 5 Aug 2014

Chemwatch concerned about chemical risk assessment

Chemwatch has undertaken a systematic comparison of the instances in which two separate companies have made their own assessment of the same chemical.

They have found the choice of R-codes varies significantly - in fact, they were absolutely staggered by the variation.

Where any one substance is produced by two companies the level of disagreement on the classification of risk is greater than 50 per cent.

They say that this is similar to the situation which exists where chemical suppliers assess according to Dangerous Goods Codes (between 30 per cent and 70 per cent disagreement occurs).

An irritant is an irritant, a toxin is a toxin and a burn is just that. A chemical exhibits the same properties and hazards no matter who supplies it.

Chemwatch confirm that they review many suppliers' MSDS's for one single product and create a composite picture to ensure client obligations to provide a safe workplace are met.

Source: Chemwatch Briefing Notes 6 Sep 2014

NSW to strengthen mine health and safety regulation

The NSW Department of Trade and Investment have issued a Work Health and Safety (Mines) Regulation 2014 - Regulatory Impact Statement which makes provision for particular matters, including the management of risk, the development of safety management systems and plans for principal mining hazards, specific risk controls, emergency management, health monitoring, statutory positions, mine survey plans and mine plans and worker consultation.

The content will be of considerable interest to the local industry which can expect to see similar provisions in the near future. Of particular interest to them will be the requirements for health monitoring and consultation with employees.

Source: NSW Mine Safety News

Combustible dust explosion has catastrophic consequences

In August 2014 a massive explosion in a factory in Jiangsu Province in China, manufacturing auto parts for General Motors, left 75 workers dead and 185 injured.

The explosion was sparked by a build-up of combustible dust, a by-product of the metal polishing process used to produce impeccably shiny hubcaps.

Although the plant was equipped with dust-removal gear, workers who escaped said that the production lines were always enveloped in metallic dust so thick that visibility was impaired.

Workers reportedly lacked appropriate safety training and had inadequate gear which could not prevent exposure to dust particles.

A Californian based occupational health specialist says that aluminium dust is very explosive and any major manufacturer such as General Motors knows this well and knows the control measures to take (ventilation, enclosures, training).

Source: The National, 6 Aug 2014

Grim fate for Indian workers in Alang Ship breaking yards

A preliminary report on a study commissioned in 2013 by the National Human Rights Commission (NHRC) into the safety and health of workers in India which recycles approximately half of all ships salvaged around the world has found poor enforcement of safety regulations, inadequate health facilities and an abysmal track record of punishments.

There are just two health facilities there – an understaffed nine-bed hospital run by the Red Cross Society and a small clinic run by a private doctor. There is no operating theatre or emergency facilities and injured workers have to wait for hours for the Government ambulance or the one provided by the ship breaking association to get to a hospital 50 kms away.

There are 169 plots for ship breaking with only 132 functional. Each plot employs 150-200 workers and at the end of 2013 there were around 35,000 workers. From 1983-2013 there have been 470 deaths.

Source: The Hindu News, Aug 2014



WORKERS' COMPENSATION

Workers' Compensation in Western Australia - Annual Statistical Report

The Annual Statistical Report covering the period 2009/10 to 2012/13 was released in July with its usual excellent coverage of the key indicators concerning claims, injuries and premium rates.

Important findings:

- Timeframes for claim lodgement by employers and decision making on liabilities by insurers have improved, **however, it has taken longer for insurers to finalise income claims** (6.0 months in 2010/11 to 7.3 months in 2012/13).
- The most common causes of work-related injury are body stressing and slips, trips and falls occurring on the upper limbs or trunk of the body.
- The 6.77% decrease in recommended premium rates for 2014/15 in Western Australia caused the average recommended rate to fall from 1.67% of total wages for 2013/14 to 1.56% of total wages for 2014/15, a decrease largely driven by:
 - wage growth in excess of wage inflation
 - a decrease in claim numbers for 2012/13 and in the half year to 31 Dec 2013
 - an increase in the average claim size less than inflation
 - a decrease in the expense loadings
- Between 2009/10 and 2012/13 claims with no lost time fell by 5.7% while the number of lost time claims increased by 11.9%. **The proportion of long duration claims has steadily increased as has the frequency rate. They continue to absorb more than 80% of claim costs.**
- Industries with the highest frequency rate of lost time claims in 2012/13 exceeding the all industry average of 8.7

Manufacturing	15.1
Art and Recreation Services	13.6
Health care and social assistance	13.0
Construction	12.8
Transport, postal and warehouse	12.6
Agriculture, Forestry and Fishing	11.6
Wholesale trade	10.1
Education and training	9.2
Accommodation and food services	8.9

Source: WorkCover WA, Workers' Compensation in Western Australia Annual Statistical Report, 2009/10 to 2012/13, July 2014

WorkCover WA penalties expanded for failing to meet workers' compensation requirements

Amended regulations most likely to affect employers who do not hold a current workers' compensation policy have expanded the number of offences against the Workers' Compensation and Injury Management Act.

Previously, employers who failed to keep a current policy or contravened a requirement made by an inspector could only be prosecuted.

WorkCover can now use infringement notices and modified penalties as an enforcement option.

Penalties range from \$200 to \$500.

Source: WorkCover WA, 12 Mar 2014

Another workers' compensation award linking diesel emissions to lung cancer

An employee of the New York City Transport Authority who worked as a mechanic for 28 years and died from lung cancer in 2012 has been awarded workers' compensation retrospectively on the grounds of his long term exposure to diesel emissions despite having a history of smoking.

Dr Lewis Pepper from Queens College, CUNY, commented that workers with similar exposure profiles are also likely to be at risk and in his opinion these workers would benefit from an occupational medical screening, which, in addition to traditional screening tests, could include a low dose CT scan.

Other commentators have pointed out that similar issues like exposure to silica dust and asbestos preventative steps were well known and regulatory intervention is necessary and urgent.

Source: New York Transport Workers Union, Safety and Health Newsletter, Summer 2014



AIR POLLUTION

Particulate matter from mining towns examined for lung effects

Traces of iron that are breathed in along with other particulate matter may not be as harmless to lung function as previously thought, according to animal research involving the University of WA.

The scientists built on previous research which indicated that earth derived particles caused an inflammatory response in the lungs once it is breathed in.

They set out to determine what characteristics of the particles caused the response and what that meant in terms of lung health by exposing mice to 100 micrograms of particles collected from surface soils in Kalgoorlie, Karratha, Tom Price and Newman.

They found that the particles induced an acute inflammatory response in the mice that peaked six hours post exposure and resulted in a deficit in lung mechanics seven days post-exposure.

Dr Zosky, Adjunct Associate Professor at UWA, said that it turned out that the concentration of iron in the particles was very important to the point that, the more iron there was in the particles, the bigger the lung response was. He said that the particles also contained high concentrations of silica and it is common knowledge that silica is bad for the lungs. However, the interesting thing was that, as the concentration of silica went down and the concentration of iron went up, the response was worse.

Conclusions:

The lung response to geogenic particulate matter is complex and highly dependent on the physico-chemical characteristics of the particles. In particular, the concentration of iron in the particles may be a key indicator of the potential population health consequence of inhaling geogenic particulate matter.

Source: Science WA, 11 Aug 2014

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Lead in children's blood linked with behavioural and emotional problems

Emotional and behavioural problems show up even with low exposure to lead, and as blood lead levels increase in children so do the problems, according to research published in the journal *JAMA Pediatrics* in June.

The research focussed on lower blood lead levels than most other studies and adds more evidence that there is no safe lead level, said NIEHS Health Science Administrator, Kimberly Gray, Ph.D. Gray added that it is important to continue to study lead exposure in children around the world, and to fully understand short and long term behaviour changes across developmental milestones.

Source: Chemwatch Bulletin Board, 6 Aug 2014





Ground Zero workers developing cancer

More than 2,500 Ground Zero rescuers and responders have been diagnosed with cancer. A growing number are seeking compensation for their illnesses which result from the various exposures to contamination which followed the building collapses.

According to officials at Mount Sinai Hospital, the latest tally has 1,655 responders with cancer among the 37,000 police, construction workers, city employees and volunteers it monitors.

The tragic number rises to 2,518 when firefighters and EMTs are added.

Source: OHS Repts SafetyNetJournal, 31 Jul 2014



Beijing imposes new limits to cut smog

New rules have been introduced in China's capital banning the expansion of polluting and resource intensive industries.

In a line of restrictions published on its website, the municipal government said it would ban the further expansion of a wide range of industries, including food processing, textiles, construction materials, paper making, chemicals and oil refining.

The city is choking with smog, putting the health of residents and workers at risk and also depriving the poverty-stricken surrounding regions of the opportunity to improve their economies.

Source: OHS Repts SafetyNetJournal, 31 Jul 2014

Air quality initiatives in Taiyuan, China

Since 2000 the government in Taiyuan in Shanxi Province has mounted several initiatives and mandated factory shutdowns with the goal of reducing coal burning emissions and the environmental impacts of industrialisation.

Data were collected on annual average concentrations of particulate matter and relevant health outcomes from 2001-2010. Air quality improvements were estimated to have prevented 2,810 premature deaths, 951 new cases of chronic bronchitis, 141,457 outpatient visits, 969 emergency room visits and 31,810 hospital admissions.

Researchers say that their analysis demonstrates that air pollution abatement during the last decade has generated substantial health benefits.

Source: Environment International v73 (2014), p235-242

Diesel drivers advised to buy petrol vehicles

Glasgow-based First Vehicle Leasing is warning that drivers of diesel vehicles used mainly for city driving and stop-start commuting are likely to face issues with the vehicle's filter which is crucial to reducing harmful exhaust emissions.

The filters work by trapping 'soot' particles created during the normal operation of a diesel engine.

Source: Fleetworld Magazine, July 2014

A panel of scientific experts convened by the World Health Organization's (WHO) International Agency for Research on Cancer (IARC) concluded in June 2012 that diesel engine exhaust is a Group 1 carcinogen – that is, carcinogenic to humans. Previously, the IARC classification for diesel exhaust was "probably carcinogenic to humans," but with the publication of additional epidemiological and toxicological studies over the last 20 years, the expert panel determined there was sufficient evidence to change the substance's cancer designation.

The IARC panel wrote:

"The scientific evidence was reviewed thoroughly by the Working Group and overall it was concluded that there was sufficient evidence in humans for the carcinogenicity of diesel exhaust. The Working Group found that diesel exhaust is a cause of lung cancer (sufficient evidence) and also noted a positive association (limited evidence) with an increased risk of bladder cancer."

Source: IARC Press Release, June 2012



Simple Swedish device effectively reduced harmful indoor air pollution

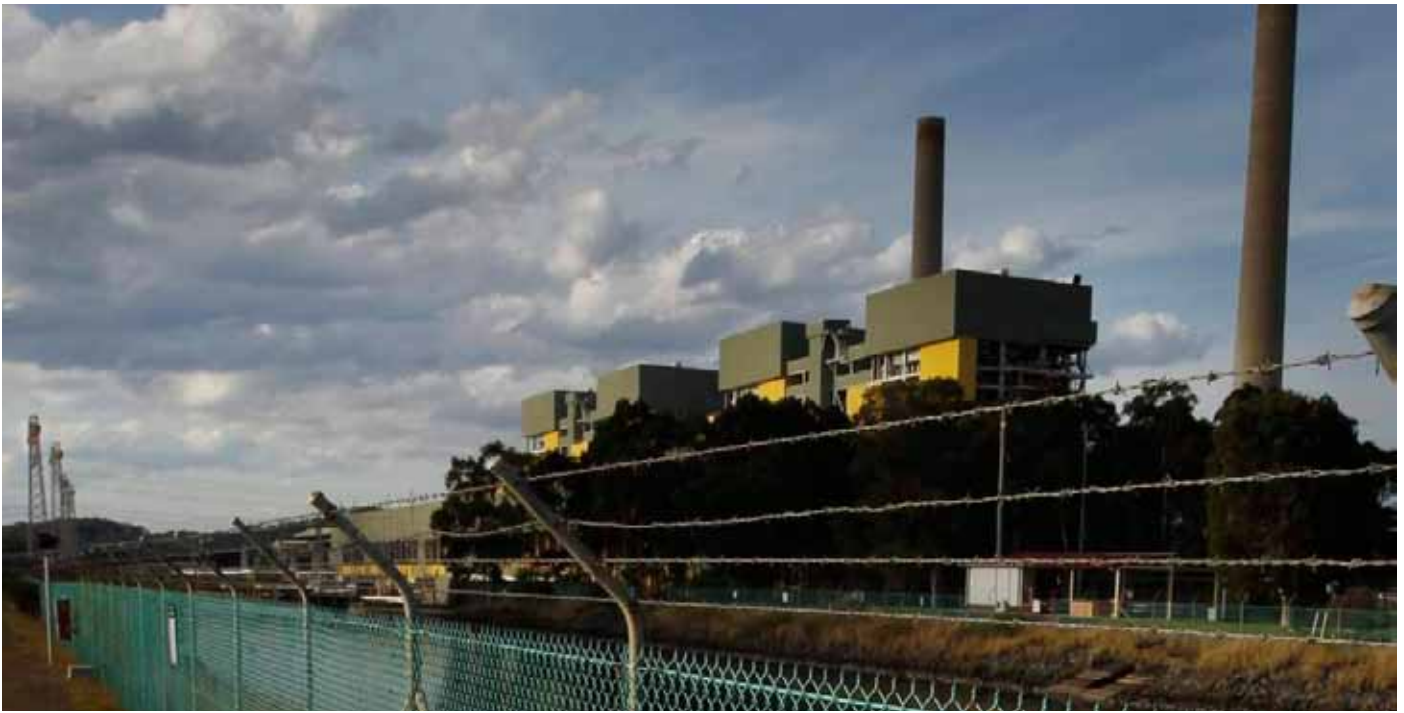
Indoor air quality can be significantly improved using a simple device which traps harmful chemicals emitted from glues, paints and building materials, a new study has shown.

Designed in Sweden, the researchers demonstrate that the 'surface emissions trap', especially effective for damp buildings, also prevents emissions from mould and can remove unpleasant odours.

The device is a laminate with two protective sheets of non-woven polyester fabric surrounding an adsorption layer and a hydrophilic polymer sheet. The device traps only emissions coming from the surface to which it is applied. The function of the polymer is to prevent emissions from the outside coming in contact with the adsorbent layer.

Researchers conclude that the device may constitute a useful means of restoring the indoor air quality e.g. after water damage leading to unwanted emissions indoors.

Source: Science for Environment Policy News Alert, 31 Jul 2014



Lake Macquarie air pollution deaths costs millions

Premature deaths from air pollution in NSW's Lake Macquarie are costing up to \$205 million a year, the city council estimates.

The disclosure comes at a time when the National Environment Protection Council is considering a proposed variation to the Ambient Air Quality Measure in relation to the standards for particles.

Submissions close on 10 October 2014, a period of four weeks, although it is now three years since a previous review recommended a revision based on the health effects of air pollution.

Lake Macquarie council has prepared a draft submission to the review, which is examining the National Environment Protection Measure for ambient air quality.

In the submission, mayor Jodie Harrison said the equivalent annual costs for air pollution in Lake Macquarie were between \$95 million and \$205 million.

Cr Harrison said Lake Macquarie had "a number of significant air pollutant sources", including two coal-fired power stations (Eraring and Vales Point) and 11 mining operations for coal and quarries.

The council supports proposed new national standards for particulates, including for particles with diameters less than 10 micrometres (PM10) and 2.5 micrometres (PM2.5).

Source: Herald Sun, 5 Sep 2014

OSHA initiatives to improve outdated permissible exposure limits for workers

In the US, in what has to be the first sign that the Federal Government truly recognises the problem of outdated Permissible Exposure Limits (PEL's), OSHA has begun an effort to provide more guidance and information to employers and workers to compare some of the many different exposure limits being used.

OSHA now provides a comparison of the existing PEL's of the following bodies:

- the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs),
- the National Institute for Occupational Safety and Health (NIOSH) recommended Exposure Limits (RELs), and
- the California Division of Occupational Safety and Health (DOSH) PELs.

The second part of the OSHA initiative is a link to a web page that provides a 'toolkit' to assist employers in establishing a chemical management system that goes beyond simple compliance with OSHA Standards.

Source: ISHN, 16 Jul 2014

HEALTH - PHYSICAL

A new era in workplace exposures measurement

A new NIOSH Center for Direct Reading and Sensor Technologies (NCDRST) has been established in the USA.

The NCDRST is a **virtual centre** hosted by the NIOSH Division of Applied Research and Technology and the NIOSH Exposure Assessment Cross Sector Program.

Direct reading and sensor technologies are opening up a whole new era of participatory research and information sharing, with new devices or smart phone applications appearing every week that promise to measure a person's environment or health status.

A promise of these technologies is that they would allow the industrial hygienist to get immediate results of a measurement so that exposures could be reduced or eliminated without delay.

Some of the major questions surrounding these technologies are:

- do those monitors or applications accurately measure what they are supposed to be monitoring?
- how are the monitors calibrated?
- how are these technologies validated?, and
- what are the best uses for these monitors, such as checking compliance?

Another issue is the large amount of data that can be collected from direct-reading and sensor technologies. How that data is analysed and interpreted presents challenges at this time.

Source: NIOSH eNews, August 2014

The human and financial burden of diabetes

Close to half (40%) of the adult population of the USA is now expected to develop type 2 diabetes at some point during their lifetime, suggests a major study published in *The Lancet Diabetes and Endocrinology*.

Dr Edward Gregg, the study leader, said "As the number of diabetes cases continue to increase and patients live longer, there will be a growing demand for health services and extensive costs. More effective lifestyle interventions are urgently needed to reduce the number of cases in the USA and other developed nations."

Source: The Lancet, 11 Aug 2014

Environmental factors can promote employee weight loss

A comprehensive workplace study has found that:

- Employees' access to outdoor areas was directly associated with lower Body Mass Index (BMI), whereas access to workout facilities within a worksite was associated with higher BMI.
- The presence of a cafeteria and fewer vending machines was directly associated with better eating habits.
- Better eating habits and meeting physical activity recommendations were both related to lower BMI.

Conclusions were that selected environmental factors in worksites were significantly associated with employee behaviours and weight status, providing additional intervention targets to change the working environment and promote employee weight loss.

Source: Journal of Occupational and Environment Medicine, Vol 56, No. 7, July 2014



Better designed offices to improve workers' physical and mental health

Adequate exposure to natural daylight is known to be crucial for governing the body's circadian rhythm – the built in clock which dictates our sleeping and waking patterns.

Researchers have found that workers forced to toil in windowless rooms have a poorer quality of life and more erratic sleep patterns than those with access to daylight.

The findings suggest that the working environment may be crucial to setting the body's own internal clock.

Independent sleep expert Dr Neil Stanley says that the body needs exposure to daylight to keep sleeping patterns on track and the problem with office lighting is that it is not made up of 'blue' light which is a wavelength of light you get from the sun and which controls your body clock.

Source: Telegraph UK, 12 Aug 2014

Ergonomics awareness

The Work Health and Safety Institute, Singapore, have developed a mobile application for IOS and Android Smartphones and tablets designed to raise awareness of ergonomics in the workplace. The target audience is health and safety professionals and the general public.

The Ergo@WSH app allows you to do the following:

- evaluate sitting and lifting postures using photographs and videos
- receive tips on how to improve postures
- monitor changes in posture and health complaints over time
- share posture analysis results via Facebook, Twitter and email
- receive stretches tips
- set exercise reminders

You can download Ergo@WSH for free from the iTunes App Store or Good Play.

Source: WorkSafe BC



Anti-bacterial soap exposes health workers to high Triclosan levels

Hand washing with an anti-bacterial soap exposes hospital workers to significant and potentially unsafe levels of Triclosan, a widely-used chemical currently under review by the US Food and Drug Administration.

Triclosan, a synthetic anti-bacterial agent, is found in consumer products like soaps, cosmetics, acne creams and some toothpastes.

The agency is reviewing its safety based on a growing body of research indicating that it can interfere with the action of hormones, potentially causing developmental problems in fetuses and newborns among other health concerns.

Dr Paul Blanc, Professor of Medicine, University of California, said that people absorb this chemical at work and at home depending on the products they use. He added that just plain soap and water is a pretty good alternative.

Source: SafetySolutions, 22 Aug 2014



Link between obesity and increased workplace fatigue

Based on results published in the Journal of Occupational and Environmental Hygiene, workers who are obese may have significantly shorter endurance time when performing workplace tasks, compared with their non-obese counterparts.

The study conducted at Virginia Tech examined the endurance of 32 individuals in four categories who completed three distinct tasks. Each task involved periods of work and rest and included pacing demands similar to those experienced by workers in manufacturing settings.

The findings indicated 40% shorter endurance times in the obese group.

Researcher Maury A. Nassbaum, PhD, a professor in the Department of Industrial and Systems Engineering at Virginia Tech, said that "Obesity is associated with physiological changes at the muscular level, including a decrease of blood flow thereby limiting the supply of oxygen and energy sources.

When performing sustained contractions, these physiological changes may lead to a faster onset of muscular fatigue. The prevalence of obesity has doubled over the past three decades and this increase has been associated with more health care costs, higher rates of workplace injury, and a greater number of lost workdays.

The results from this and related studies will contribute to a better understanding of the ergonomic impacts of obesity and age, which is important for describing the link between personal factors and the risk of workplace injury."

Source: American Industrial Hygiene Association, Press Release SPR-14-0723-01

HEALTH - PSYCHOLOGICAL

Stress linked to short term memory loss

When you are under lots of stress your body secretes chemicals (e.g. cortisol) to keep you more alert and help you cope with all types of challenges. But too much stress can result in super-high levels of cortisol, which can harm us, causing indigestion, anxiety and high blood pressure.

Researchers at the University of Iowa have discovered that prolonged exposure to abnormally high levels of cortisol affects short-term memory in adults by shrinking synapses in the pre-frontal cortex. Synapses are the connections that help us process and recall information.

The researchers say the results are preliminary and highlight the fact that stress hormones are just one of the many factors that cause memory loss as we age. Relaxation could help us to stay healthier and sharper for a bit longer.

Source: Chemwatch Bulletin Board, 11 Jul 2014

Could a blood test predict suicide risk?

In a study by the US National Institute of Health researchers analysed genetic mutations in a gene known as SKA2. The gene is expressed in a part of the brain that is responsible for blocking negative thoughts and controlling impulsive behaviour. The gene is also essential for moving stress hormone receptors, that suppress the release of the 'stress hormone' cortisol throughout the brain.

Lead researcher Zachary Kaminsky from the Johns Hopkins University School of Medicine noted that "we have found a gene that we think could be really important for consistently identifying a range of behaviours from suicidal thoughts to attempts to completions. We need to study this in a larger sample but we believe that we might be able to monitor the blood to identify those at risk of suicide."

Source: MedicineNet, 30 Jul 2014

Dads' exposure to solvents in the workplace linked to childhood brain tumours

A new Australian study published in the British Journal of Cancer has found a link between parents' exposure to chemicals such as benzene, toluene and trichloro-ethylene and brain tumours in their children.

Dr Susan Peters, an occupational epidemiologist at UWA, says that while brain tumours are relatively rare they are a major cause of cancer death among children and the causes are largely unknown.

The new study surveyed over 300 cases of parents of children up to 14 years old with brain tumours diagnosed between 2005-2010 in Australia. Researchers compared the parents' occupational exposure to solvents with those of 950 parents whose children did not have brain tumours.

The findings suggest that fathers working in jobs where they are regularly exposed to benzene in the year before their child is conceived are more than twice as likely to have that child develop a brain tumour. Women working in occupations that expose them to a class of compounds called chlorinated solvents - found in degreasers, cleaning solutions, paint thinners, pesticides and resins - at any time in their lives, also have a much higher risk of their child developing a brain tumour.

Source: Chemwatch, 1 August 2014

SLEEP

Correction of the body clock is possible

Researchers for the first time have conducted a study under real conditions on the body clocks of members of an international polar research station and have been able to demonstrate that a particular kind of artificial light is capable of ensuring that their biological rhythms can be correctly synchronised despite the absence of sunlight.

Antarctica has six months of daylight in its summer and six months of darkness in its winter.

The full significance of this result can be appreciated with the knowledge that disturbance to this biological clock causes problems with sleep, alertness, cardiovascular problems and even depression.

These results could be rapidly transformed into practical applications for all working environments that are moderately lit and could enable the design of lighting strategies intended to maintain the health, productivity and safety of staff.

On a general level the study shows that an optimised light spectrum enriched with short wave lengths (blue) can enable the circadian system to synchronise correctly and non-visual functions to be activated in extreme situations where sunlight is not available for long stretches at a time.

Source: Chemwatch Bulletin Board, 29 Aug 2014

Below: Concordia Antarctic Research Station, Copyright European Space Agency



New breakthrough to help night shift workers

Scientists at the Salk Institute for Biological Studies in the USA have identified a gene that regulates sleep and wake rhythms.

The discovery of the role of the gene, called *Lhx1*, provides scientists with a potential therapeutic target to help night shift workers or jet-lagged travellers to adjust to time differences more quickly.

Associate Professor Satchidananda Panda who led the research team said "that it is possible that the severity of many dementias comes from sleep disturbance and, if we can restore normal sleep, we can address half the problem."

The new results take the group a step closer to their goal of creating cell regeneration therapies that restore the Suprachiasmatic Nucleus (SCN) and ameliorate sleep problems.

Source: SafetySolutions, 26 Aug 2014

Missing sleep results in memory loss

A study by researchers at Michigan State University and the University of California has found that lack of sleep, already considered a public health epidemic, can also lead to errors in memory.

The researchers conducted experiments to gauge the effect of insufficient sleep on memory and found that those who were kept "awake" for 24 hours – and even those who got five or fewer hours of sleep – were more likely to mix up event details than participants who were well rested.

Kimberley Fern, a co-investigator on the study, said that people who repeatedly get low amounts of sleep every night could be more prone in the long run to develop these forms of memory disruption.

Source: Chemwatch Bulletin, 13 Aug 2014

NOISE

The importance of sound design for the workplace

The New York advertising agency, the Barbarian Group, have installed a 335 metre table which snakes through the open-plan office which, the company says, “keeps people and ideas flowing”. Meanwhile, the sceptics (mostly people working in open-plan offices) complain about the lack of privacy, extreme distraction and loss of productivity created by the resulting noisy environment. However, a report by Julian Treasure, the Chairman of the Sound Agency, which focussed on classrooms, healthcare units and open-plan-office environments, revealed that background noise, even at low levels, was associated with increased stress hormone levels, reduced attention, impaired short term memory and compromised reading comprehension, all resulting in a lack of willingness to engage with and help others.

If you have suspicions that the acoustic environment in which your staff operate might be affecting them, consider if there are any of the following tell-tale signs:

- The productivity of normally conscientious employees drops
- Employees show signs of irritability or withdrawal
- Employees have to raise their voices to carry out a normal conversation when about two metres from one another
- Employees suffer from muffled hearing at the end of the day but feel much better in the morning
- Employees struggle to follow a phone conversation
- Employees find it difficult to catch sounds like ‘t’, ‘d’ and ‘s’ and misunderstand similar words
- Employees experience ringing, humming or buzzing in their ears.

Source: ISHN, 21 Aug 2014



Pesticides and hearing loss

In a review that analyses human and experimental studies testing the hypothesis that exposure to pesticides is associated with hearing loss, researchers concluded that further studies are necessary in order to clarify the association.

However, they recommend considering pesticides as possible ototoxic (toxic to the ear) agents, particularly for vulnerable targets such as pregnant women and children during early development.

Source: Chemwatch Bulletin, Sep 2014

LEGAL/ILLEGAL DRUGS

The proactive role employers can take in dealing with opioids in the workplace

The National Safety Council (NSC) in the United States, concerned with the prescription painkiller epidemic, has released a comprehensive guide for employers to help companies to understand how employee use or abuse of painkillers can directly impact business and what employers can do to stem this issue.

According to the guide (The proactive role employers can take: opioids in the workplace) there are five things employers should know about prescription painkiller use and how it affects employee safety and the financial security of their business.

- Opioid painkillers compromise employee safety
- Workers prescribed opioids have significantly higher workers' compensation claims
- Employers play an important role in helping their employees seek treatment
- Opioid painkillers can delay recovery and return to work
- Using opioid painkillers increases the likelihood of disability claims

Deborah Herman, the CEO of NSC, said that strong drug-free workplace programs, comprehensive benefit packages, easily accessible employee assistance programs and company-wide education are risk reduction efforts every employer must undertake to help protect the health and well-being of their employees as well as company bottom lines.

Source: CosMag, 28 Jul 2014

A review of literature on cannabis smoking and respiratory health

In a comprehensive review of available literature appearing in *Respirology* on 20 July 2014 researchers concluded that the literature suggests that smoking cannabis can have a negative effect on respiratory health. Smoking cannabis in the long term is likely to cause increased cough and sputum production, damage to the mucosa and affect immune regulation such that the smoker is predisposed to lower respiratory tract infections.

There is a need to integrate research on cannabis and respiratory health effects from cannabis smoking so that gaps in the literature can be identified and the more consistent findings can be consolidated, with the purpose of educating smokers and health service providers.

Source: *Respirology*, 2014, 19, pp655-662

More airline pilots using potentially impairing medications, illegal drugs

In a study on the prevalence of drug use by pilots who died in crashes, the US National Transportation Safety Board has found an upward trend in the use of both potentially impairing medications and illicit drugs.

Almost all the crashes were in general aviation.

The Acting NTSB Chairman, Christopher A Hart says that many over-the-counter and prescription drugs have the potential to impair performance, so pilots must be vigilant to ensure that their abilities are in no way compromised before taking to the skies.

The study analysed toxicology results for 6,677 pilots who died in aircraft accidents between 1990 and 2012. None of the pilots who died in large airline accidents had recently used illicit drugs though some had been using potentially impairing medications.

Source: *ISHN* 10 Sep 2014

CANCER

Record award for asbestos claim

BHP Billiton has been ordered to make a record A\$2.2 million payout to a worker who was exposed to asbestos at a NSW steelworks, the highest ever award by the Dust Diseases Tribunal of NSW.

The worker was diagnosed with terminal mesothelioma in 2010. He began work as a labourer in the blast furnaces at the company's Newcastle steelworks in 1979 and worked there until 1981.

The Dust and Diseases Tribunal found BHP had negligently exposed the worker to the asbestos which caused the cancer.

It is the first time BHP has been ordered by the Dust Diseases Tribunal to pay compensation to a former employee who was exposed to asbestos as their Newcastle steelworks.

BHP has not ruled out appealing the decision.

Source: Australian Mining



Canada no longer mining asbestos

Quebec politicians have finally rejected asbestos.

The political climate in Quebec, Canada has undergone a complete reversal from one in which the asbestos industry was regarded as sacrosanct to one in which the cessation of asbestos mining and the remediation of contaminated sites are regarded as a priority.

The President of Canada's last asbestos mining company, which closed in 2012, and an aggressive asbestos proponent, now admits that asbestos compensation is 'dangerous'.

Incredibly, he and other owners of the mine are demanding compensation for lost profits.

Source: OHS SafetyNetJournal, 292, Sep 2014

Women more likely to survive mesothelioma than men

A new study of 14,000 American mesothelioma patients has found that women are three times more likely to survive than men are.

Of the 14,228 cases analysed, 22% occurred in women who tended to be diagnosed at around the same cancer stages as men and were offered similar treatment options.

More than 13% of women were still alive five years after diagnosis, while only 4.5% of males survived that long.

The researchers suggest that differences in asbestos exposure, tumour biology and the impact of male and female hormones on mesothelioma growth deserve further investigations.

Source: Australian Safety Matters Magazine, July 2014

WHO requests correction of false asbestos claims

The Zimbabwean National Chrysotile Taskforce and Government authorities endeavouring to reopen its asbestos mines have falsely claimed that the World Health Organization (WHO) supports “controlled use of chrysotile asbestos”. They have also misrepresented the position of the ILO.

The WHO, in fact, says asbestos cannot be used safely and has called for all use of chrysotile asbestos to stop. WHO confirmed that it has asked the Zimbabwe government to correct the misinformation.

As well as misrepresenting the WHO position, Zimbabwe’s asbestos taskforce and government have also misrepresented the position of the ILO, stating: “The ILO embraces the concept of controlled-use in chrysotile asbestos.” Like WHO, the position of the ILO is that chrysotile asbestos cannot be safely used and that all use of chrysotile asbestos should stop.

Source: OHS Repts SafetyNetJournal, 7 Aug 2014

Nano particles to help diagnosis and treatment of cancer

Research conducted by the University of California Davis Cancer Center shows that the prospect of an army of tiny weaponised robots, travelling around the human body, hunting down malignant tumours and destroying them from within, is real.

Promising progress is being made in the development of a multi-purpose nanoparticle called ‘nanoporphyrin’ that can help diagnose and treat cancers.

This year cancer surpassed cardiovascular disease to become the leading cause of death in Australia.

Source: The Conversation, 27 Aug 2014

IARC to evaluate whether nanotubes provoke cancer in humans

Advisers to the International Agency for Research on Cancer (IARC), a branch of the World Health Organization, have recommended the agency evaluate, with high priority, multi-walled carbon nanotubes in order to determine if these components might provoke cancer in humans.

Multi-walled carbon nanotubes are hollow, rolled fullerene sheets with diameters of two to 100 nanometres. They have many applications in fields as diverse as electronics, transportation, sports goods, energy and medicine.

Source: ETUI News, 11 Aug 2014

Striking a balance between short-sightedness and skin cancer

The more time adolescents and young adults spend outdoors exposed to sunlight, the lower the risk of being short-sighted (myopic), eye experts have found.

Researchers used a procedure that measures sun damage to the eye to establish how much light gets onto the eye while investigating the association between myopia and outdoor activity.

The study of 1,344 young adults from WA’s Raine Cohort Study used a new camera system to take ultraviolet photos of the participants’ eyes.

The photographs were then used to assess the sun damage to the surface of the eye.

Professor Mackey of the Lions Eye Institute says that while it is not fully understood how outdoor activity prevents myopia, there are various theories to explain the association.

He added that encouraging young people to spend more time outdoors could also increase the risk of skin cancer and can lead to eye diseases. Ongoing research needs to come up with a balance and work out what is the right amount of outdoor activity people can have.

He said that, while 20% of the WA population is myopic, in the young adult populations in Asian countries (eg. Singapore), over 90% are myopic.

Source: ScienceNet, 12 Aug 2014

Can sunscreen pills be used in place of topical sunscreens?

Consumers have myriad options to choose from when selecting a sunscreen. Now, several additional sun protection tools have become available, including sunscreen pills, drinkable sunscreen and ultra-violet monitoring bracelets.

Of the ingredients found in sunscreen pills, Dr Lim, Chairman of the Department of Dermatology at Henry Ford Hospital in Detroit, said the strongest research is linked to *Polypodium leucotomos*, an extract of a Central American fern plant, which has been shown to increase the amount of time it takes for skin to burn when exposed to ultra violet light. European studies have shown that the extract can reduce sun sensitivity in people with polymorphous light eruption, a condition that causes an itchy rash when skin is exposed to the sun.

However, Dr Lim added that “if someone wants to take a sunscreen pill, they should continue protecting their skin by seeking shade, wearing protective clothing and applying sunscreen. More research needs to be done to know the optimal way of using these pills and their long term safety.”

Source: *Safety Solutions Magazine*, 12 Aug 2014



Skin cancer by state and territory

There is a paucity of Australian state-based data on the incidence of non-melanoma skin cancer since these diseases are notifiable diseases and are not collated by state or territory jurisdictions.

A new BEACH analysis shows the number of new skin cancer problems managed per 100,000 encounters nationally and for each state and territory from April 2008 to March 2013.

Skin Cancer Problems Managed per 100,000 GP-patient Encounters 2008-2013

	Melanoma	Non-melanoma skin cancer	Unspecified skin cancer
National (all states)	40	567	57
QLD	66	1030	91
NT	89	592	0
ACT	47	587	24
NSW	32	490	77
TAS	23	488	15
WA	29	464	38
SA	26	399	11
VIC	39	362	25

Source: *Australian Family Physician*, Vol 43, No. 8 August 2014



Occupational Health Society of Australia (WA)

Incorporated in 1978, the Occupational Health Society of Australia (WA Branch) is a non-profit association which provides a forum for the wide range of disciplines engaged in the occupational health profession in Western Australia.

The aims of the Society are:

- to develop effective occupational health practice within WA
- to encourage awareness by individuals, organisations and other bodies, of the role of occupational health
- to provide a forum for professional contact between persons interested in, and working in, occupational health
- to express an independent, professional viewpoint on all aspects of occupational health considered desirable in the public interest
- to seek the improvement or an extension of the existing legislation for the promotion of safety and health at work in order to ensure uniform principles are applied in all occupational activities.

Visit www.ohswa.marcsta.com for more information.

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