



Pic: This metastasis animation shows the primary tumour. Source: Barts Cancer Institute, QMUL

## **Surprising findings reveal how cancer spreads in the body**

Cancer cells appear to depend on an unusual survival mechanism to spread around the body according to a study led by Queen Mary University of London (QMUL). The discovery could help with future development of novel treatments to prevent metastasis and secondary tumours.

The spread of cancer around the body – metastasis – is one of the biggest challenges in cancer treatment. It is often not the original tumour that kills but secondary growths. These happen when cancer cells are able to break away from the primary site, travel around the body and ‘seed’ new tumours.

A key question in cancer research has been how cancer cells are able to survive once they break away from a tumour to spread around the body. Cells are relatively protected when they are attached to other cancer cells and their surroundings, but become more vulnerable when they detach and ‘float’, and normally undergo cell death.

Lead researcher Dr Stephanie Kermorgant from QMUL’s Barts Cancer Institute says that “our research advances the knowledge of how two key molecules communicate and work together to help cancer cells survive during metastasis. We are hoping that this might lead to the discovery of new drugs to block the spread of cancer within the body.”

The study examined the changes that occur in cancer cells as they break away from tumours in cell cultures, zebrafish and mice. The researchers revealed a previously unknown survival mechanism in cancer cells and found that ‘integrins’ could be the key.

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# WELCOME

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## Legislative/regulatory matters

*Continued from page 1*

Integrins are proteins on the cell surface that attach to, and interact with, the cell's surroundings. "Outside-in" and "Inside-out" signalling by integrins is known to help the cancer cells attach themselves to their surroundings. But the study suggests that when the cancer cells are floating, as they do during metastasis, the integrins switch from their adhesion role to take on an entirely new form of communication which has never been seen before – "inside-in" signalling in which integrins signal within the cell.

Integrins are already major targets for cancer treatment with drugs either being tested or in use in the clinic. Most integrin inhibitor drugs target adhesive function and block them on the surface of the cancer cell.

The researchers say that the limited success of these drugs could be partly explained by this newly discovered role of integrins within the cancer cell.

A new strategy could be to prevent the integrin from going inside the cell in the first place. The researchers hope that these insights could lead to the design of better therapies against metastasis and more effective treatment combinations that could prevent and slow both tumour growth and spread.

The study was published in *Nature Communications*.

### Society response to WorkSafe's "Discussion Paper Work Health and Safety Regulations"

The Society has provided its responses to recommendations contained in the above paper and has expressed grave concern that the approach taken by WorkSafe WA does not reflect the main object of the Work Health and Safety Bill 2014, which is "to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces."

Specific recommendations contained in the Discussion Paper of concern to the Society include:

- The non-retention of records for training, hazardous substances exposures, airborne contaminant exposures and health monitoring by PCBU's.
- Modification of noise exposure and audiometric requirements.
- Proposed changes to first aid provisions.
- Removal of requirements for safety signage.
- Proposed management requirements re asbestos exposures.
- Modification of the requirement to commence health monitoring where there is a risk of exposure to hazardous chemicals.

The Society is strongly opposed to any reduction in the standards of occupational health and safety in Western Australian workplaces and supports the implementation of a nationally consistent framework to secure the health and safety of workers and workplaces to the level enjoyed in other jurisdictions in Australia.

Members and readers are urged to take an active interest in ensuring that the standards of occupational health are not reduced below the level existing elsewhere in Australia.

The Society's full response is available at [www.ohswa.marcsta.com](http://www.ohswa.marcsta.com). Readers' comments are welcome.



# SAFETY

## Bangladesh indicts 41 on murder charges after 2013 factory collapse

Following the deaths of more than 1,100 people in the collapse of the Rama Plaza building that housed five garment factories, investigators say that they will indict 41 people on charges of murder.

Initially, investigators said they would be charged with culpable homicide which carries a maximum punishment of seven years in jail. But they changed the charges to murder due to the gravity of the disaster.

Masud Rana, who owned the building outside Dhaka and 33 other people pleaded not guilty when the charges against them were read out in court. Another seven who absconded will be tried in absentia, said the prosecutor.

Source: OHS SafetyNet Journal, 371

**Pic above:** In this April 25, 2013, file photo, Bangladeshi people gather as rescuers look for survivors and victims at the site of a building that collapsed a day earlier, in Savar, near Dhaka, Bangladesh. A Bangladesh court on Monday, July 18, 2016, indicted 41 people for murder in the 2013 deaths of more than 1,100 people in the collapse of a building that housed five garment factories outside the capital. (A.M. Ahad / AP

## Fatalities in Bangladesh shipbreaking yards continue unabated

At least five shipbreaking workers have been killed and five more severely injured in a series of fatal accidents in Bangladesh in one month.

Muhammed Ali Shahin, the NGO Platform's local coordinator says "this horrific series of accidents shows that occupational health and safety measures are absent. We are witnessing the same accidents again and again: workers are not equipped with safety harnesses and fall to their death. Others are crushed under heavy steel parts as a consequence of the dangerous gravity method by which cut steel sections are simply dropped into the sea and on the beach. Gas cylinders cannot be handled safely on the beach and explosions cause death and terrible burn wounds. As long as ships are scrapped on the beaches, workers will continue to die."

The NGO Platform has called on the Government of Bangladesh to investigate these accidents and apply sanctions to yards with regular fatal and severe accidents, such as Kabir Steel and Seiko Steel. Moreover, the Platform demands that European ship owners stop selling their end-of-life vessels to the beaching yards of Bangladesh. It is not acceptable to turn a blind eye to the precarious situation for the sake of maximum profit – **European ship owners are fully aware of the dire conditions in Chittagong and more sustainable alternatives to the beaching method exist.**

Source: [shipbreakingplatform.org](http://shipbreakingplatform.org), 27 June 2016

#NEWS



## RESCUERS REMOVE RUBBLE AT BIRMINGHAM RECYCLE PLANT ACCIDENT SITE

### Five die in recycling plant tragedy

Five recycling workers died on 7 July in Birmingham UK when a 15 foot wall of concrete and scrap metal fell on them. The last two bodies buried in the rubble were recovered the following day. The men were Spanish citizens of Gambian heritage.

Brian Rye of the construction union UCATT said **“This tragedy underlines that in dangerous industries it is imperative that the Health and Safety Executive plays an active and high profile in ensuring safety is maintained. The ongoing cuts to the HSE have meant that in general the number of inspections and inspectors has been declining.”**

Source: TUC Risks 759

### Failure to comply with training order following a workplace fatality attracts appropriate fine

In Queensland, a worker who failed to comply with a training order after being prosecuted for his role in a workplace death has been fined \$5,000.

In June 2015, he pleaded guilty to having failed to meet his work health and safety duties when he reversed a truck into a worker, killing him. The sentence included a good behaviour bond as well as an order to undertake training.

The worker did not undertake the requisite training. He was fined \$5,000 plus costs and given a new training order.

**The court noted that achieving work health and safety was not necessarily all about fines. Training orders were made for very good reasons and to provide defendants with opportunity to address work health and safety in a practical sense.**

Source: WorkCover Queensland, Release 30 June 2016

### Employer justified in sacking workplace bullies

The Fair Work Commission has endorsed the sacking of two Queensland Toll Holdings' employees who persistently humiliated a fellow worker in front of other personnel. Senior Deputy President, Peter Richards found that they were part of a “wider workplace culture which targeted a vulnerable employee.”

Source: SafetyNet 369, 6/7/16



## UK WOMEN REPORT NO IMPROVEMENT IN PPE

Women are being forced to use ill-fitting personal protective equipment causing discomfort and putting safety at risk, according to a Prospect Survey. Just 29 percent of the women who took part in the union study reported that PPE they wear at work was designed for women. According to Prospect, this represents only a small improvement on a 2009 survey by the Women's Engineering Society that found 74 percent of such equipment was designed for men. Trousers, overalls, jackets and gloves were identified as the items least likely to provide a suitable fit.

Excluding overalls, these items were also cited as the worst PPE clothing in the previous research.

As well as the risk to safety, women reported that ill-fitting PPE could cause discomfort, especially during pregnancy and the menopause.

Source: *TUC Risks 757, 2/7/16*

## Alarm bells as UK work tragedies strike

An upturn in workplace fatalities in the UK over the last 12 months suggests that the government is prioritising business profits over human lives says the TUC Hazards Campaign.

Spokesperson, Hilda Palmer, said the group "completely opposes any deregulation of safety and employment rights, a key objective of the Brexit campaigners. "We

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know, and the families of those killed at work know, that red tape is far better than bloody bandages. No one died from too much regulation and enforcement but from quite the opposite. We demand that the Government put an end to the constant denigration of health and safety regulations and enforcement, and reverse the attack on budgets and policies at the HSE and local authorities, so that workers can be properly protected at work."

Source: *TUC Risks 759*

## WHS conviction for failing to consult

The South Australian Industrial Relations Court has recorded the first conviction against a company for failing to comply with the duty to consult, cooperate and coordinate activities with other duty holders in relation to work health and safety matters.

The company, a trainee and apprentice placement organisation had placed an apprentice with a roofing company at a construction site and while working he suffered "horrific injuries" when a section of the guttering he was handling came into contact with power lines.

The Court found that the organisation had not engaged in a consultation process with the roofing company about its WHS policies and procedures and admitted that an audit it had conducted on the roofing company's operations prior to the incident was inadequate.

The Court's decision serves as a reminder that the consultation obligations in WHS legislation must not be overlooked.

Source: *SafetySoapbox, 29 June 2016*



## Regulator announces quad bike rebate scheme

WorkSafe Victoria and the Victorian Farmers' Federation have released details of a \$6 million safety rebate scheme for purchasers of quad bikes in an effort to reduce the incidence of fatalities and severe injuries.

From 1 September 2016, rebates of up to \$600 for the purchase of a rollover protection device for a quad bike or up to \$1,200 for the purchase of a safer vehicle such as a side-by-side vehicle (SSV) or a small utility vehicle (SUV) will be available.

Source: OHS Repts SafetyNet Journal, 24 August 2016

## Fatality statistics in Australia

As at 5 August 2016, 100 fatalities have been reported to SafeWork Australia this year. The bulk of these fatalities, 74 percent, occur in three industry sectors:

<b>Transport, Postal and Warehousing</b>	<b>32</b>
<b>Agriculture, Forestry, Fishing</b>	<b>28</b>
<b>Construction</b>	<b>14</b>

No other sector has more than five fatalities.

The UK's HSE has just released the Fatal Injuries in Agriculture, Forestry and Fishing in Great Britain 2015/16 Report, which showed that farm machinery continued to be the biggest killer on farms accounting for more than one third of fatal injuries which is similar to the situation in Australia.

Source: OHS Repts SafetyNet Journal, 374, 10 August 2016

## Cleanaway charged over crash

Federal work health and safety regulator Comcare today began legal proceedings against national waste management company Cleanaway over a truck crash that killed two people in Adelaide.

Comcare has filed a complaint and summons in the Magistrates Court of South Australia alleging Cleanaway Operations Pty Ltd (formerly Transpacific Industries) breached the Commonwealth Work Health and Safety Act eight times in relation to the collision. Each of the charges carries a maximum penalty of \$1.5 million.

The accident involving one of the company's sewage tankers occurred on Adelaide's South Eastern Freeway on 18 August 2014. The loaded tanker collided with three cars at the Cross Road intersection, killing two people and seriously injuring two others including the truck driver.

Comcare alleges Cleanaway failed to provide adequate training and supervision to the truck's inexperienced driver. This included instruction on safely negotiating the freeway's steep descent from the Adelaide Hills, using arrester beds and driving a heavy vehicle with a manual gearbox.

It is also alleged Cleanaway did not maintain a safe system of work to ensure driver competency.

The matter will be heard in the Magistrates Court on a date to be set.

Source: Comcare Media release - 15 Aug 2016

# AIR POLLUTION



## INDOOR AIR QUALITY CAN NOW BE MEASURED TO ENSURE HUMAN HEALTH

Under the leadership of Professor Richard de Dear, director of the IEQ (Indoor Environmental Quality) Lab at the University of Sydney, a compact device using new sensor technology has been developed by PhD student Tom Parkinson, and his research-assistant brother Alex. The device, termed SAMBA – Sentient Ambient Monitoring of Buildings – is designed to be placed on workstations a couple of metres apart across an office floor so that all vital indoor environment quality (IEQ) factors can be tracked.

The units can measure around a dozen different aspects, including air temperature, radiant heat, air movement, humidity, light, sound, carbon dioxide and monoxide, along with various pollutants emitted from building materials.

The huge volume of data captured by SAMBA is then wirelessly relayed in real time to the university's IEQ lab to be immediately analysed and interpreted by the lab's IEQ analytics software against IEQ performance standards set by Green Star and NABERS rating systems.

**Professor de Dear said: "Many of us now spend our working lives almost exclusively inside office buildings. We therefore need to be better [at] managing indoor environmental factors for the sake of human health and wellbeing long term."**

*Source: SafetySolutions, 21 June 2016*

Pic above: ©SAMBA (Sentient Ambient Monitoring of Buildings in Australia), the pioneering technology developed by the University of Sydney to monitor indoor air quality.

Pic right: Professor Richard de Dear with SAMBA





## Particulate air pollution and kidney disease

While air pollution is known to cause respiratory and cardiovascular disease, a new study indicates that it also may cause damage to the kidneys.

To examine how particulate matter in the air is affecting kidney health, a Chinese team analysed data on kidney biopsies taken over 11 years from 71,151 patients from 938 hospitals in 282 cities across China encompassing all age groups.

On average, the likelihood of developing membranous nephropathy, an immune disorder of the kidneys that can lead to kidney failure, increased 13% annually over the 11-year study period, whereas the proportions of other major kidney conditions remained stable.

Regions with high levels of fine particulate air pollution had the highest rates of membranous nephropathy.

Dr Hou, the team leader from the Southern Medical University of Guangzhou, said "Our primary finding is that the frequency of membranous nephropathy has doubled over the last decade in China. We show that the increase corresponds closely with the regional distribution of particulate air pollution."

Source: ScienceDaily, 30 June 2016

## Illegal devices that increase air pollution outlawed

The US EPA and the Department of Justice have announced a settlement with Harley-Davidson Motor Group Companies that requires the companies to stop selling and to buy back and destroy illegal devices, known as "super tuners", that increase air pollution from their motorcycles, and to sell only models of these devices that are certified to meet Clean Air Act emissions standards.

Harley Davidson will also pay a US\$12 million civil penalty and spend US\$3 million to mitigate air pollution through a project to replace conventional wood-stoves with cleaner burning stores in local communities.

EPA's assistant administrator, Cynthia Giles, said "this settlement immediately stops the sale of illegal aftermarket defeat devices used on public roads that threaten the air we breathe."

Source: EPA Media Relations, 18 August 2016



## WHO reports 3 million premature deaths from air pollution annually

The World Health Organization recently declared that more than 80% of people living in urban areas that monitor air pollution are exposed to air quality levels that exceed WHO limits. It says that ambient air pollution, made up of high concentrations of small and fine particulate matter, is the greatest environmental risk to health – causing more than 3 million premature deaths every year.

The American Lung Association's 2016 "State of the Air" report found that 166 million Americans live with unhealthy levels of air pollution, putting them at risk of premature death and other serious health effects like lung cancer, asthma attacks, cardiovascular damage and developmental and reproductive harm.

Source: Clean Technica, 18 August 2016

## Air pollution linked to shorter survival with lung cancer

Exposure to air pollution has long been associated with an increased risk of lung cancer, and a new study suggests it might also be tied to a faster death from the disease.

Patients with lung cancer may be a new subgroup of people susceptible to the health impacts of air pollution, since exposures after diagnosis may impact how long they live, said lead study author Sandrah Eckel, a researcher at the University of Southern California.

Researchers examined cancer registry data on more than 350,000 people diagnosed with lung cancer in California and found patients who lived in communities with higher than average levels of air pollution typically died sooner than their peers who lived in places with cleaner air.

The findings add to a small but growing body of evidence linking pollution to worse outcomes after a lung cancer diagnosis.

Source: Fox News, 8 August 2016



# LONDON'S TECHNICAL SOLUTION TO AIR POLLUTION

The only reminder of the dirty air we breathe is usually just the black stuff that lines every commuter's nostrils, so it's easy to forget that those sputtering exhaust fumes kill up to 9,500 people per year in London.

London mayor Sadiq Khan is tackling London's toxic air by introducing a £10 charge on the most polluting vehicles, but imagine if there was a way to avoid the most heavily polluted areas of the city through the clothes you wear.

This is the thinking behind Human Sensor, a high-tech fashion range designed by media artist and environmentalist Kasia Molga, in collaboration with professors from King's College London.

It may make the models look like geometric-shaped sheep, but the tech is clever. As the wearer breathes, sensors embedded in the material collect data on the quality of the air, then LED lights flash white or blue if the air is clean, and danger zone red with high levels of PM 2.5.

New research published by the World Health Organisation in May showed that London has regularly breached safe levels of pollutant particles.

*Source: TimeOut, 3 August 2016*



# HEALTH - PHYSICAL

A young child with dark hair, wearing a red and black plaid shirt and blue pants, is sitting on a light-colored floor. The child is seen from behind, looking out a large window. To the left of the child is a small, gold-colored toy airplane. The background shows a blurred view of trees and buildings outside the window.

## Mouse study suggests Autism is not just a disorder of the brain

Autism spectrum disorders (ASDs) are characterised by impaired social interactions and repetitive behaviors, often accompanied by abnormal reactions to sensory stimuli.

ASD is generally thought to be caused by deficits in brain development, but a study in mice, published in the June 9 edition of *Cell*, now suggests that at least some aspects of the disorder -including how touch is perceived, anxiety, and social abnormalities -are linked to defects in another area of the nervous system, the peripheral nerves found throughout the limbs, digits, and other parts of the body that communicate sensory information to the brain.

Senior author, David Ginty, a professor of Neurobiology at Harvard Medical School said "advances in mouse genetics have made it possible for us to study genes linked to ASD by altering them only in certain types of nerve cells and studying the effects."

In the new study, the researchers examined the effects of gene mutations known to be associated with ASD in humans. In particular, they focused on *Mecp2*, which causes Rett syndrome, a disorder that is often associated with ASD, and *Gabrb3*, which is also implicated in ASD. They looked at two other genes connected to ASD-like behaviours as well.

These genes are believed to be essential for the normal function of nerve cells, and previous studies have linked these mutations to problems with synaptic function--how neurons communicate with each other.

The investigators measured how the mice reacted to touch stimuli, such as a light puff of air on their backs, and tested whether they could discriminate between

objects with different textures. Mice with ASD gene mutations in only their sensory neurons exhibited heightened sensitivity to touch stimuli and were unable to discriminate between textures. The transmission of neural impulses between the touch-sensitive neurons in the skin and the spinal cord neurons that relay touch signals to the brain was also abnormal. **Together, these results show that mice with ASD-associated gene mutations have deficits in tactile perception.**

The investigators also examined anxiety and social interactions in the mice using established tests looking at how much mice avoided being out in the open and how much they interacted with mice they'd never seen before. **Surprisingly, the animals with ASD gene mutations only in peripheral sensory neurons showed heightened anxiety and interacted less with other mice.**

**Ginty says "A key aspect of this work is that we've shown that a tactile, somatosensory dysfunction contributes to behavioural deficits, something that hasn't been seen before. In this case, that deficit is anxiety and problems with social interactions."**

First author Lauren Orefice, a postdoctoral fellow in Ginty's lab, says, "The sense of touch is important for mediating our interactions with the environment, and for how we navigate the world around us. **An abnormal sense of touch is only one aspect of ASD, and while we don't claim this explains all the pathologies seen in people, defects in touch processing may help to explain some of the behaviors observed in patients with ASD."**

*Source: Science Daily, 9 June 2016*

## Vision loss due to diabetes

According to a report in the *Journal Diabetes* in August by a global consortium led by researchers at Nova Southeastern University's (NSU) College of Optometry in Fort Lauderdale/Davie, Florida, and the Vision and Eye Care Unit at Anglia Ruskin University in Cambridge, UK, diabetes has become one of the top causes of vision loss around the world.

Poor control of glucose levels and lack of access to eye health services in many parts of the world are thought to contribute to this increase, according to the researchers.

"With the alarming prevalence of vision loss due to diabetes rising more than two-thirds in the last 20 years, the precipitous global epidemic of diabetes must be addressed," said Rupert R.A. Bourne, FRCOphth, M.D., lead investigator of the report, ophthalmologist and professor and associate director of the Vision and Eye Research Unit at Anglia Ruskin University.

Source: *Ddd mag*, 25 August 2016

Pic: Diabetic retinopathy



## Copper as an essential nutrient for human physiology

Researchers at the University of California – Berkeley have found that copper plays a key role in metabolising fat. Long prized as a malleable, conductive metal used in cookware, electronics, jewelry and plumbing, copper has been gaining increasing attention over the past decade for its role in certain biological functions. It has been known that copper is needed to form red blood cells, absorb iron, develop connective tissue and support the immune system.

The new findings, published in the July 2016 issue of *Nature Chemical Biology*, establishes for the first time copper's role in fat metabolism.

Chris Change, a co-study leader said "We find that copper is essential for breaking down fat cells so that they can be used for energy. It acts as a regulator. The more copper there is, the more the fat is broken down. We think it would be worthwhile to study whether a deficiency in this nutrient could be linked to obesity and obesity-related diseases." Chang added that copper could potentially play a role in restoring a natural way to burn fat.

Source: *Chemwatch*, 7 July 2016

## Gender gap found in cardiac arrest care

Women who have a cardiac arrest are less likely than men to receive potentially life-saving procedures such as angiography to look for blocked coronary arteries or angioplasty to open them, according to new research in the *Journal of the American Heart Association*, the Open Access Journal of the American Heart Association/American Stroke Association.

The study is the first to report sex-based disparities across a representative spectrum of cardiac arrest patients from more than 1,000 US hospitals nationally.

During the 10-year study, in-hospital death rates fell for both sexes, but remained higher for women. Of those who were treated in hospital for cardiac arrest, 64 percent of women died compared to 61 percent of men.

Adjusting for factors including patient age, health, hospital characteristics and previous cardiac procedures, researchers also found that women who had a cardiac arrest from a shockable rhythm were:

- 25 percent less likely to receive coronary angiography;
- 29 percent less likely to have angioplasty, also known as percutaneous coronary intervention (PCI);
- 19 percent less likely to be treated with therapeutic hypothermia, in which body temperature is lowered to help improve odds of survival and reduce risk of brain damage.

The study cannot pinpoint causes of the gender gap, the authors said.

Source: *ScienceDaily*, 22 June 2016

## Artificial pancreas likely to be available by 2018

The artificial pancreas -- a device which monitors blood glucose in patients with type 1 diabetes and then automatically adjusts levels of insulin entering the body - is likely to be available by 2018, conclude authors of a paper in *Diabetologia* (the Journal of the European Association for the Study of Diabetes).

Issues such as speed of action of the forms of insulin used, reliability, convenience and accuracy of glucose monitors plus cybersecurity to protect devices from hacking, are among the issues that are being addressed.

Currently available technology allows insulin pumps to deliver insulin to people with diabetes after taking a reading or readings from glucose meters, but these two components are separate. It is the joining together of both parts into a 'closed loop' that makes an artificial pancreas, explain authors Dr Roman Hovorka and Dr Hood Thabit of the University of Cambridge, UK.

The authors conclude: "Significant milestones moving the artificial pancreas from laboratory to free-living unsupervised home settings have been achieved in the past decade. Through inter-disciplinary collaboration, teams worldwide have accelerated progress and real-world closed-loop applications have been demonstrated.

Given the challenges of beta-cell transplantation, closed-loop technologies are, with continuing innovation potential, destined to provide a viable alternative for existing insulin pump therapy and multiple daily insulin injections."

Source: *ScienceDaily*, 30 June 2016

## Living longer associated with living healthier

Research has shown that the human lifespan has the potential to be extended. But would this merely mean people living longer in poor health? The upbeat findings from a new study in the *Journal of the American Geriatrics Society* indicate that those extra years could well be healthy ones. **In a study of nearly 3,000 people, the onset of illness came decades later in life for centenarians than for their younger counterparts.**

This study compared

- the health status of 483 long-lived **Longevity Genes Project** (LGP) participants with 696 LGP comparison individuals 60-94 years old, and
- the health status of 1,498 long-lived **New England Centenarian Study** (NECS) participants with 302 NECS comparison subjects aged 58-95.

For both sets of comparisons, the researchers looked at the ages at which individuals developed five major age-related health problems: cancer, cardiovascular disease, hypertension, osteoporosis and stroke.

Analysis revealed a consistent pattern of delayed onset of illness in the LGP and NECS centenarian groups compared to their respective comparison groups.

The findings suggest that discoveries made in one group of centenarians can be generalized to diverse populations. And they contradict the notion that the older people get, the sicker they become and the greater the cost of taking care of them.

Source: *ScienceDaily*, 5 July 2016

## Workplace exposures to asthmagens

SafeWork Australia has advised that the Extended Australian Work Exposures Study (AWES-2) has found that workers could be exposed to more than one asthmagen depending on the types of task undertaken at work.

Farmers and animal workers are most likely to be exposed to asthmagens.

Men in the study who worked with metal or wood and in food preparation also had a high exposure probability, while women working as carers, cleaning, food preparation or as nurses were more likely to be exposed.

The research showed that 47% of males and 40% of female workers were exposed to one or more asthmagens in their workplace.

Source: *SafeWork Australia*, 12 August 2016

## US tightens chemicals usage rules

The US EPA will present plans to update the worker safety provisions of its new chemical rules, under a proposed regulation.

The changes the EPA will propose align with updated requirements the Occupational Safety and Health Administration has established.

The EPA also will propose to clarify that the worker safety requirements it establishes for chemical manufacturers should be implemented consistent with OSHA's hierarchy of controls approach for workplace health and safety.

Under that hierarchy, where possible workplaces should eliminate hazardous chemicals or working situations, substitute hazardous chemicals, use engineering controls and adopt workplace or administrative controls before they require workers to use personal protective equipment.

Source: *Bloomberg BNA News*, 28 July 2016

# HEALTH - PSYCHOLOGICAL



## Suicide rates in the US workforce

A new US report has found that for certain occupations the odds of suicide are significantly higher. From 2000 to 2012, the overall rates of suicide for people aged 16 and older rose 21 percent, an approximate increase from 13 to 16 suicides per every 100,000 people in the United States. But among farmers, fishers and foresters, the suicide rate was dramatically higher -- at 85 suicides per 100,000 people. For males in those jobs, the rate was even greater. Their suicide rate was 90.5 suicides per 100,000, according to the report.

**“People working in certain occupations are at greater risk for suicide due to job isolation, a stressful work environment, trouble at work and home, lower income and education, and less access to mental health services,”** said lead researcher Wendy LiKamWa McIntosh, a health scientist at the U.S. Centers for Disease Control and Prevention.

Farmers have additional risk factors like social isolation and unwillingness to seek mental health services. Their exposure to pesticides may affect their neurological system and contribute to depression.

Other occupations that carried significantly higher-than-normal rates of suicide included construction and extraction, installation, maintenance and repair.

Men working in fishing, forestry or farming had the highest rates of suicide for their gender.

Among women, the highest rate was seen in those working in protective services, such as policing and firefighting. Their rate was 14 per 100,000. Men in the protective services field had a suicide rate of 34 per 100,000, the report noted.

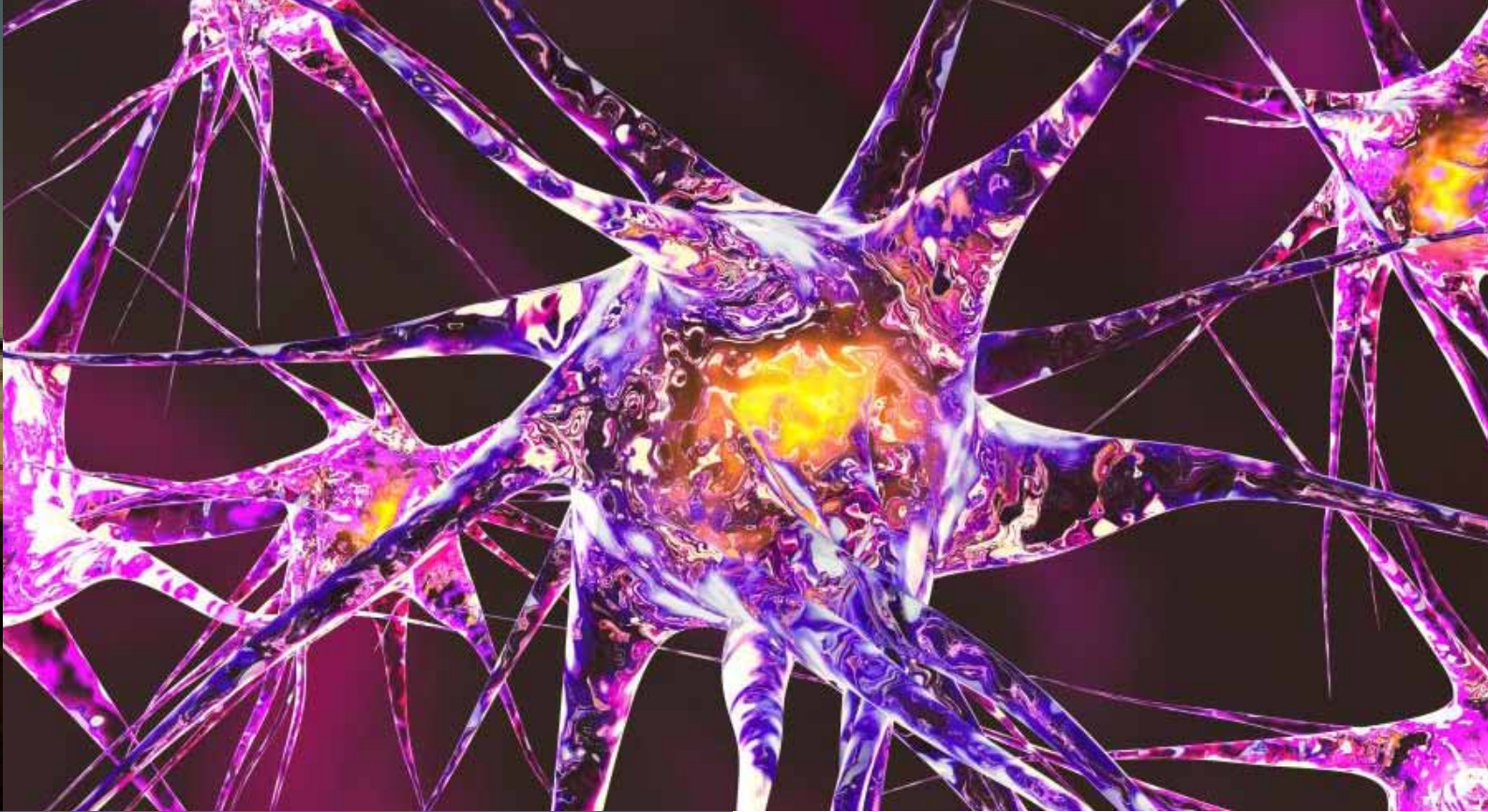
*Source: MedicineNet, 30 June 2016*

## Mental health support for Victorian farmers

Farmers in Victoria will be able to tap into extended counselling and support services as part of the Victorian Government's assistance package to assist dairy farmers and their families.

The package provides more support for phone-based services and up to 30 additional mental first-aid sessions in impacted communities. The Look Over the Farm Gate programme will be expanded and support for 23 local government areas will be provided to drive easy access to that support by developing area-specific information and advice.

*Source: SafetySolutions, 22 July 2016*



## Genetic sites linked to depression

Depression is caused by a combination of factors, including biological predisposition triggered by environment, which makes the disorder so complex.

A recent study published in *Nature Genetics* has revealed 15 locations in the human genome associated with the development of major depressive disorder. It showed that the genetic regions linked with depression correspond with developmental areas of the brain.

The researchers from Massachusetts General Hospital analysed the genetic variations of 75,607 people of European ancestry who self-reported being diagnosed or treated for depression and 231,747 healthy controls.

They found 17 single nucleotide polymorphisms (SNPs) linked to depression at 15 general locations.

One SNP was found to affect a region of the brain involved in the function of the amygdala which governs emotions and fear and is implicated in other psychiatric disorders, like anxiety.

Study co-author Roy Perlis MD said that “we hope these findings help people understand that depression is a brain disease, with its own biology. Now comes the hard work of using these new insights to try to develop better treatments.

Source: *Dddmag*, August 2016

## Neck pain linked to specific psychosocial risks in the workplace

Investigators at the US National Institute for Occupational Safety and Health have found that work factors are a major pain in the neck, highlighting the prevention measures that could resolve the problem. They confirmed the link between neck pain and specific psychosocial and organisational risks in the workplace.

The study, which analysed data from the 2010 National Health Intervention Survey (NHIS), found that neck pain was significantly more common among workers who reported one or more psychosocial and organisational risks in the workplace than it was among other workers.

These risks included: work-family imbalance, exposure to a hostile work environment and job insecurity; non-standard work arrangements, such as contracting, consulting, on-call or temporary work; multiple jobs and long work hours.

Intervention programmes targeted to these specific risk factors for neck pain could benefit workers according to the investigators.

Long-term studies of both psychosocial and physical risks for work-related neck pain are important to confirm these findings and identify other risk factors, the investigators said.

According to NIOSH, neck pain and other injuries to the upper arms and back are the underlying causes of approximately one-third of injury-related lost work days in manufacturing in the United States.

Across all industry, neck pain affects an estimated 15 percent of workers.

Source: *SafetyNetJournal* 377, 31 August 2016

AUGUST 2016 / MONITOR / 15



## PSYCHOLOGICAL HEALTH CRUCIAL IN THE WORKPLACE

While firefighters, paramedics and police officers are easily identified as being more prone to PTSD, an often-overlooked but equally high risk group is nurses in Manitoba, Canada.

Nurses' experiences with PTSD have received very little attention in the past. Some of this can be attributed to the fact that nursing is a predominantly female profession and PTSD symptoms among women can be misdiagnosed or overlooked as anxiety, burnout or depression.

Canadian research studies have continuously shown that more than 30 per cent of nurses report experiencing one or more symptoms of PTSD. In Manitoba, the number is much higher, with more than half of the nurses in this province having experienced critical incident stress, a precursor to the development of PTSD. Furthermore, one in four nurses report consistently experiencing PTSD symptoms.

The Manitoba Nurses Union hopes that the inclusion of psychological health in WHS legislation will formally recognise the unique health and safety hazards in health care work environments. It goes without saying that psychological health and safety within the health care profession is paramount in ensuring a healthy health care system where nurses can provide the highest level of care to their patients.

*Source: Winnipeg Free Press, 27 July 2016*

### Scotland's college staff near stress breaking point

A Scottish union survey has revealed more than four out of five college support workers have experienced stress at work, with one in five becoming so sick they were unable to work.

Responses to the survey revealed the main reasons for stress were cited as "too much work" and "a demotivating environment."

The chair of UNISON Scotland's further education committee, Chris Greenfields, said:

"The stress levels of college staff are reaching breaking point and the government needs to step in urgently to address these failings."



## Resistance to antidepressants linked to metabolism

Often, clinical depression has company; it shows up in the brain alongside metabolic abnormalities, such as elevated blood sugar, in the body.

Rockefeller University researchers and their colleagues at Karolinska Institutet in Sweden found some molecular connections between the two disorders, while studying an experimental antidepressant in rats.

"Many patients who suffer from depression do not respond to conventional antidepressant treatment, so we set out to examine the molecular changes that might explain this resistance," says first author Benedetta Bigio, a bioinformatics specialist in Bruce McEwen's Rockefeller lab.

**"Our results linked the activity of energy metabolism genes within one part of the brain to a predisposition to depression, as well as resistance to treatment," she said.**

The research is described in the Proceedings of the National Academies of Science.

Source: *ddmag*, 29 July 2016

## Chronic fatigue syndrome may be in your gut, not your head

Physicians have been mystified by chronic fatigue syndrome, a condition where normal exertion leads to debilitating fatigue that isn't alleviated by rest. There are no known triggers, and diagnosis requires lengthy tests administered by an expert.

Now, for the first time, Cornell University researchers report they have identified biological markers of the disease in gut bacteria and inflammatory microbial agents in the blood.

In a study published on June 23 in the journal *Microbiome*, the team describes how they correctly diagnosed myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) in 83 percent of patients through stool samples and bloodwork, offering a noninvasive diagnosis and a step toward understanding the cause of the disease.

Maureen Hanson, the paper's senior author said: "Our work demonstrates that the gut bacterial microbiome in chronic fatigue syndrome patients isn't normal, perhaps leading to gastrointestinal and inflammatory symptoms in victims of the disease. Furthermore, our detection of a biological abnormality provides further evidence against the ridiculous concept that the disease is psychological in origin."

In the future, the research team will look for evidence of viruses and fungi in the gut, to see whether one of these or an association of these along with bacteria may be causing or contributing to the illness.

Source: *Microbiome*, 27 June 2016

# SLEEP/FATIGUE

## Fatigue – a useful TUC guide

The Trade Union Congress in the UK has released a new guide for elected safety representatives on the topic of fatigue.

The guide provides an easy-to-read explanation of fatigue, its causes and effects and explains the legal duty of employers. The guide also documents the advice of the Health and Safety Executive on how to manage fatigue and explains the role of unions.

Readers are encouraged to download the Guide from the SafetyNet website. <https://www.tuc.org.uk/workplace-issues/health-and-safety/fatigue-guide-health-and-safety-representatives>

Source: *SafetyNet* 369, 6/7/16

## Report confirms night work harm

Working night shift leads to sleep and metabolic disorders, and some serious diseases, according to a study by the French Agency for Food, Environmental and Occupational Health and Safety (ANSES).

The review of 24 recent epidemiological studies found there is a proven link between night shift work and sleep disorders, particularly drowsiness. It also established a connection between night shifts and 'metabolic syndrome', a grouping of conditions including obesity and increased blood pressure.

The researchers also believe that night work is likely to increase the risk of developing type 2 diabetes, coronary disease and, due to disruption of biological cycles, even breast cancer.

The 2015 European Survey on Working Conditions by Dublin-based thinktank Eurofund revealed that 19 percent of European workers are engaged in night work. It revealed that night shift workers are generally subject to a higher number of physical risks, greater time pressure - work schedules, time constraints, tight deadlines - and increased tensions with colleagues or the public.

Source *TUC Risks* 759, 16 July 2016

# HAZARDOUS MATERIALS

## The public health impact of chemicals

Chemical exposures are causing a public health catastrophe claiming over a million lives worldwide each year, a World Health Organization (WHO) report has concluded.

The 2016 report estimates that 1.3 million lives and 43 million disability-adjusted life-years were lost in 2012 due to exposures to selected chemicals.

However, data are only available for a small number of chemical exposures and people are exposed to many more chemicals every day.

Just over one third (35%) of ischaemic heart disease, the leading cause of deaths and disability worldwide, and about 42% of stroke, the second largest contributor to global mortality, could be prevented by reducing or removing exposure to chemicals such as those from ambient air pollution, household air pollution, second-hand smoke and lead.

Chemicals such as heavy metals, pesticides, solvents, paints, detergents, kerosene, carbon monoxide and drugs lead to unintentional poisonings at home and in the workplace. Unintentional poisonings are estimated to cause 193 000 deaths annually with the major part being from preventable chemical exposures.

Source: WHO



THE PUBLIC HEALTH IMPACT OF  
CHEMICALS: KNOWN AND  
UNKNOWN

Horizon Programme on Chemical Safety



## European Commission discounts the dangers associated with endocrine disrupting chemicals

The long awaited and highly contested proposed criteria on endocrine disrupting chemicals (EDCs) were announced on the 16th June by Commissioner Andriukaitis from the European Commission. But the long wait did not result in the much hoped-for rigorous criteria which would protect human and animal health and our environment.

The proposed criteria have been called 'shameful', 'astounding' and 'woefully inadequate' by the many scientists and organisations who have lobbied for binding control of EDCs and proper legislation for the last three years while the process was stalled by industry lobbying and the resulting internal EU processes.

The disappointment and frustration at the failure of the proposed criteria to offer any protection against EDCs is palpable as they demand an impossibly high burden of proof to link EDCs to adverse human health effects, which means that few EDCs will be banned as a result. Shockingly the core underpinning principle of all EU chemicals legislation, the precautionary principle, has been totally omitted.

The Alliance for Cancer Prevention believes that the EU Commission will be responsible for the diseases and deaths of millions by adopting these abysmally inadequate criteria. They say we will not see any cessation in the epidemic of cancers related to exposures to endocrine disruptors in the home, workplace or in the wider environment.

Source: Alliance for Cancer Prevention, UK, 17 June 2016

## Jail sentence for Italian Olivetti management

The former Olivetti president Carlo De Benedetti and his brother Franco have been jailed for five years and two months following the asbestos-related deaths of 20 former employees. They were among a number of people sentenced in July 2016.

Source: SafetyNet, 371

## Exposure to chemicals found to cause breast cancer

In a breakthrough case, the Supreme Court of Canada has ruled that workers made ill by hazardous substances at work do not need to prove their case with scientific certainty in order to receive workers' compensation.

Three laboratory technicians who developed breast cancer after working at a Mission, British Columbia hospital were found to be entitled to compensation after claiming their work environment, which involved working with solvents and reagents containing known carcinogens, had caused their breast cancer.

Their employer fought their claims for more than a decade.

The Supreme Court ruled "while the record on which that decision was based did not include confirmatory expert evidence, the Tribunal nonetheless relied on other evidence which, viewed reasonably, was capable of supporting its finding of a causal link between the workers' breast cancers and workplace conditions."

Source: *TUC Risks*, 757, 2/7/16

## European Commission extends glyphosate licence for 18 months

After months of lobbying and EU member state indecision, the European Commission has replaced its previous proposal to renew the licence for weed-killer glyphosate for up to 15 years with a suggested 12 to 18 months extension pending further scientific study.

Source: *Reuters*, 28 June 2016

## Malta set to ban glyphosate

Malta will become the first EU country to ban the use of the controversial weedkiller glyphosate, which was reauthorised for continued use by the European Commission in July 2016.

A Maltese spokesman said "Malta's position remains opposed to the use of glyphosate and it voted against its reauthorization without reservations."

Source: *OHS Repts, SafetyNet* 371



## Canadian public service union to campaign on multiple chemical sensitivity

As part of a long-running campaign (20 years) on multiple chemical sensitivity (MCS) the Public Service Union in Canada has produced a new video which provides an introduction to the issue and a discussion starter for workshops and health and safety activities.

MCS symptoms include trouble breathing, headaches, unexplained pain and chronic fatigue.

The union says the most common triggers are chemicals in commonly used products such as perfumes, deodorants and cleaning products.

In Australia, NICNAS undertook a review in 2010 and found "the pathogenic mechanisms involved in MCS have not been established, and precise diagnostic methods and treatments have yet to be agreed by the medical profession."

It recommended that further research be undertaken, however this has not occurred.

Source: *OHS Repts SafetyNet Journal*, 367, 22 June 2016

## New chemicals database now available

**Safe Work Australia has launched a new chemicals database to help manufacturers, importers, suppliers and users of chemicals comply with the Globally Harmonised System of Classification and Labelling of Chemicals which will become mandatory under WHS laws on 1 January 2016.**

**The Hazardous Chemical Information System (HCIS) replaces the Hazardous Substances Information System (HSIS), and provides information on more than 4500 chemicals.**

**Dr Paul Taylor, the occupational hygiene policy director, says that "HCIS is an easy-to-use, searchable chemical database which displays labelling information including pictograms and information on workplace exposure standards."**

**He noted that while end-users of chemicals would not be required to relabel existing stock in January, they "must ensure that any new supplies received from 1 January onwards are labelled in accordance with the GHS".**

Source: *OHS Alert*, 11 July 2016

# CANCERS

## Asbestos related cancers in Canada cost billions

A first-ever estimate of the toll of asbestos-related cancers on Canadian society puts the cost of new cases at C\$1.7 billion per year in Canada, and notes this is probably an under-estimate. The economic burden of lung cancer and mesothelioma from work-related asbestos exposure averages CAN\$818,000 per case according to the Toronto-based Institute for Work and Health.

The Institute notes that new cases are likely to grow in the near future due to long latency periods of these diseases and continued exposure.

Source: *TUC Risks*, 757, 2/7/16

## Wittenoom's indigenous mesothelioma legacy

A University of Western Australia study has found that 67 per cent of mesothelioma cases in WA's Aboriginal population were a result of the mining of asbestos in the Pilbara town, compared with fewer than 25 percent of cases in non-Aboriginals.

The disparity is not because of biological differences but rather because the indigenous population was predominantly exposed to crocidolite—also called blue asbestos and the most potent form, UWA epidemiologist Dr Peter Franklin says.

"Many of the Aboriginal cases worked in the dusty, lower-paid job of loading raw crocidolite for transport to the ports, more than 300km from the mine," Dr Franklin says.

The study showed members of WA's Aboriginal population die from mesothelioma at more than double the rate of people in the United Kingdom—which has the world's highest national average.

Source: *ScienceWA*, 6 July 2016



## Mesothelioma cases in the UK

The latest information in a document published by the Health and Safety Executive on the incidence of mesothelioma shows:

- There were 2,515 mesothelioma deaths in Great Britain in 2014, a similar number to the 2,556 deaths in 2013, and 2,549 deaths in 2012.
- The latest projections suggest that there will continue to be around 2,500 deaths per year for the rest of this current decade before annual numbers begin to decline.
- The continuing increase in annual mesothelioma deaths in recent years has been driven mainly by deaths among those aged 75 and above.
- In 2014 there were 2,101 male deaths and 414 female deaths.
- There were 2,215 new cases of mesothelioma assessed for Industrial Injuries Disablement Benefit (IIDB) in 2014 compared with 2,145 in 2013.
- Men who worked in the building industry where asbestos was used extensively are now among those most at risk of mesothelioma.

Source: *Mesothelioma in Great Britain*, HSE

## As BMI increases so does the spread of multiple myeloma

In a new study published in *Cancer Letters*, American University researchers show how, as body mass index increases, so does the growth and spread of the blood cancer multiple myeloma, which accounts for about 10 percent of all blood cancers in patients.

Researchers say that as a patient's BMI increases, fat cells communicate with multiple myeloma cells. Fat cells grow larger, gain additional lipid and secrete proteins linked to cancer. The researchers also found a correlation between BMI and angiogenesis and adhesion, key indicators of progression.

Lead researcher Katie DeCicco-Skiller said "Obesity increasingly plays a role in cancer cases as the number of those who are obese rises. Improving our understanding of how fat cells aid cancer cells to communicate with each other, and how the communication changes during obesity, is critical."

DeCicco-Skiller's research suggests a new approach for the treatment of multiple myeloma. Physicians may want to consider tailoring drugs based on a patient's BMI because a drug may not be as effective in obese or morbidly obese patients

Source: *ScienceDaily*, 12 July 2016

# MINESAFE INTERNATIONAL 2017

The Resource Industry  
Health & Safety Conference

1–2 May 2017  
Perth, Australia



The Australasian Institute of Mining and Metallurgy (AusIMM) is re-establishing the popular Minesafe International conference series in conjunction with the Chamber of Minerals and Energy of Western Australia and WA Department of Mines and Petroleum.

This conference series is designed to ensure that health and safety within the resources industry maintains an appropriate and ever-increasing position of awareness. The conference will be inclusive of all sectors in the resources industry (minerals, oil and gas).

This conference will provide the opportunity for Australian and international key health and safety practitioners to discuss their research findings, network and share their achievements and challenges in one of the great mining hubs in the world – Perth, Western Australia.

The Minesafe International 2017 – The Resource Industry Health and Safety Conference organising committee invites you to be part of this inaugural conference.

Showcase your organisation at Minesafe International 2017 by signing up as a sponsor or exhibitor today!

#### BENEFITS OF SPONSORSHIP

Minesafe International 2017 can provide your organisation with:

- maximum exposure at a premier conference devoted to those involved in health and safety within the resources industry
- time to network with industry colleagues and develop strategic relationships with key decision makers
- finding new business opportunities
- time to present latest innovations and new products or services to a relevant audience, and showcase your expertise and capabilities
- increased marketing opportunities including visibility on the conference website and associated marketing materials.

Hosted By

**Ausimm**  
THE MINERALS INSTITUTE

In conjunction with



Government of Western Australia  
Department of Mines and Petroleum  
Resource Safety

#### EVENT MANAGEMENT | The AusIMM

For further information, please contact:

Rachel Magill, Senior Coordinator, Events

Telephone: + 61 3 9658 6128 | Email: [rmagill@ausimm.com.au](mailto:rmagill@ausimm.com.au)

[www.minesafe.ausimm.com.au](http://www.minesafe.ausimm.com.au)

# WORKERS' COMPENSATION

## Queensland initiative to promote the health benefits of work

Queensland doctors will be taking a new approach to work-related injuries thanks to a new work capacity certificate which came into effect on 1 July 2016.

Minister for Industrial Relations Grace Grace said the new certificate promoted the health benefits of work.

The old medical certificate, which will be phased out over the next six months, focused on what restrictions and limitations had to be in place because of the injury. 'The new certificate pinpoints the capabilities of injured workers, which supports the earliest possible return to meaningful work.

Work plays an important role in the rehabilitation process because 'doing' promotes recovery. Workers have only a 70% chance of returning to work after being absent for one month, and that drops to just 35% after two months away.

The new certificate has been developed with input from the medical and legal professions, as well as insurer, union and employer representatives, to ensure a fully supported and smooth rollout, with full implementation due by 1 January 2017.

*Source: WorkCover Queensland, 30 June 2016*



## Independent review of Conciliation and Arbitration Services

Work Cover WA has released the "Review of WorkCover WA Conciliation and Arbitration Services 2016" conducted by Professor Tania Sourdin of Monash University, Victoria.

The review, according to WorkCover WA, found that the Conciliation and Arbitration Services (CAS) meet core objectives to be timely, cost effective, fair and accessible. Professor Sourdin also found that most stakeholders consider that CAS works well.

However, interested parties are encouraged to read carefully the 12 recommendations made by Professor Sourdin which point to improvements needed to many aspects of the current processes.

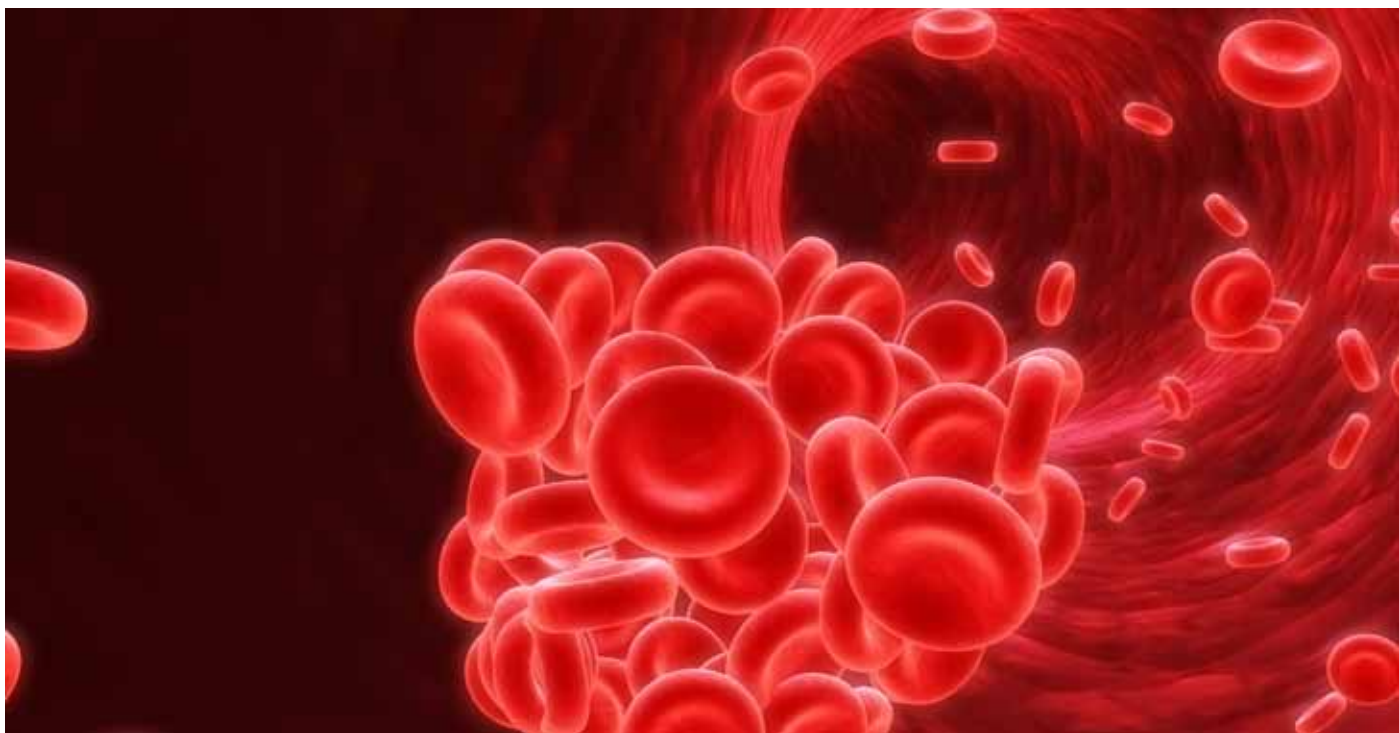
Work Cover says it is already working to implement many of the recommendations.

Hopefully a report on progress will be released publicly and any delays identified and justified.

The Review is very informative and makes interesting reading.

*Source: WorkCover WA, 8 July 2016*

# NANOPARTICLES



## CAN NANOPARTICLES ASSIST BLOOD CLOTTING?

Whether severe trauma occurs on the battlefield or the highway, saving lives often comes down to stopping the bleeding as quickly as possible.

Many methods for controlling external bleeding exist, but at this point, only surgery can halt blood loss inside the body from injury to internal organs.

Now, researchers have developed nanoparticles that congregate wherever injury occurs in the body to help it form blood clots, and they've validated these particles in test tubes and in vivo.

Trauma remains a top killer of children and younger adults, and doctors have few options for treating internal bleeding. To address this great need, Lavik's team developed a nanoparticle that acts as a bridge, binding to activated platelets and helping them join together to form clots. To do this, the nanoparticle is fitted with a molecule that sticks to a glycoprotein found only on the activated platelets.

"When you have uncontrolled internal bleeding, that's when these particles could really make a difference," says Erin B. Lavik, Sc.D, University of Maryland, Baltimore. "Compared to injuries that aren't treated with the nanoparticles, we can cut bleeding time in half and reduce total blood loss."

Initial studies suggested that the nanoparticles, delivered intravenously, helped keep rodents from bleeding out due to brain and spinal injury, Lavik says. But, she acknowledges, there was still one key question: "If you are a rodent, we can save your life, but will it be safe for humans?"

The researchers presented their work at the National Meeting and Exposition of the American Chemical Society held in August.

In future studies, the researchers will test whether the new particles activate complement in human blood. Lavik also plans to identify additional critical safety studies they can perform to move the research forward.

*Source: DDD Mag 23 August 2016*



## Occupational Health Society of Australia (WA)



Membership of the Society is open to all those interested in occupational health and safety.

\$50 ordinary membership

\$20 student membership.

Simply email [safety@marcsta.com](mailto:safety@marcsta.com) with your details.

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](http://www.ohswa.marcsta.com) for more information.**

## MEMBERSHIP OF THE OCCUPATIONAL HEALTH SOCIETY OF AUSTRALIA (WA)

### Membership Fees

At the first meeting of the incoming Committee of the Society on 26 February, 2016 the matter of annual subscriptions was considered at length. It was agreed that the current fees should be retained at \$50 for ordinary members and \$20 for students.





## Occupational Health Society of Australia (WA)

### Members - Ordinary

Dean BUTLER, Occumed  
Alan CLARKSON (COHSPrac), SHEQ Australia  
Allaine COLEMAN, CGU Workers' Compensation  
Dr Peter CONNAUGHTON  
Maria DANIEL  
Debbie GASKIN, DFES  
Paulette GAYTON  
Lynette GILBERT, QHSE Consultant, Tidehill Pty Ltd  
Patrick GILROY AM, MARCSTA  
Ross GRAHAM  
Anthony GREEN, Holcim  
Zoe HOLDAWAY, Zone Workplace Health Solutions  
Chris JACOBS  
Dr Janis JANSZ, Curtin University  
Ralph KEEGAN, Frontline Safety and Training Services  
Sheryl KELLY, Kreating Inventive Safety Solutions  
Dave LAMPARD, WA Police Union  
Shona LINDLEY, Jardine Lloyd Thompson  
Robert LOERMANS  
Kylie LONGHURST, Prensa Pty Ltd  
Dr John LOW, OccuMed  
Joe MAGLIZZA, Holcim Australia Pty Ltd  
Alison MARTINS, OH&S Consulting  
Peter McMAHON, Main Roads WA  
Peter NICHOLLS, FMR Investments  
Dr Nicol ORMONDE, Ormonde Health Consulting  
Dr Karina POWERS, Ability OPN  
Dan RAYNER, Bengalla Mining Company Pty Ltd  
Peter ROHAN, Department of Mines and Petroleum  
Prof Geoffrey TAYLOR, Curtin University  
Dr Kar Chan WAN, OccuMed

### Members - Student

Muhammad AHMED, Student, Curtin University  
Georgina GREENLAND, Student, Curtin University  
Rachel HAMMOND, Student, Curtin University  
Jacqueline LUSENO, Student, Curtin University  
Deepak MARU, Student, Curtin University  
Tim RICHARDS, Student, Curtin University  
Izzie SHMUKLER, Student  
Stephen WALKER, Student, Curtin University

### Subscription to the *Monitor*

The *Monitor* is the only publication available at this time that provides readers with information on events and research being carried out worldwide, ensuring a wide and authoritative coverage of occupational health, hygiene, workers' compensation and safety.

Readers of the *Monitor* are therefore being encouraged to consider completing the Application for Membership which appears in every edition.

The Committee feels that membership of the Society is warranted and the nominal fees assist in ensuring the continuation of the *Monitor*.

Local members enjoy discounts at events organised by the Society.



# Occupational Health Society of Australia (WA)

## APPLICATION FOR MEMBERSHIP

### MEMBER INFORMATION

Title (Mr, Mrs, Ms, Dr etc)	
Firstname	
Surname	

### PREFERRED MAILING DETAILS

Address			
Suburb		Postcode	
Home Phone			
Mobile			
E-Mail			

### EMPLOYMENT INFORMATION – Only complete if you wish company to be recorded against your name

Company/Self Employed	
Work Phone	
E-Mail	

### EDUCATIONAL/PROFESSIONAL DETAILS (if applicable)

Please attach your resume.
----------------------------

### APPLICATION FOR: (an invoice will be issued)

- Student Membership \$20       General Membership \$50

### AGREEMENT / SIGNATURE

I certify that the information provided in this application is correct and I agree to adhere to the constitution and code of ethics of the Association. I also give consent to the Society to collect, use and disclose my personal information in accordance with the National Privacy Principles in matters relating to the Society.

Signature \_\_\_\_\_ Date \_\_\_\_\_

POST OR EMAIL THIS APPLICATION TO THE ADDRESS BELOW: