July 2018 | Published by RCPA

Issue #082

In This Issue

Interesting Facts

60 - 100%

The percentage of those who drink heavily that develop fatty liver[1].

5,785

The estimated number of Australians aged 15+ years who died of alcohol-attributable disease and injury in 2015[2].

Welcome to the July 2018 edition of ePathWay

This month's issue of ePathway will look at the following:

- The methamphetamine epidemic and property contamination
- Dry July – time to take a closer look at liver disease
- Osteosarcoma – the forgotten cancer; and
- Pathologists recognised in the Queen's Birthday 2018 Honours List

The current ice epidemic in Australia and New Zealand is in the media and is a growing issue. Have you ever wondered what happens if your house was inhabited by a methamphetamine user before you moved there? Or worse, if someone was using the property as a meth lab before you purchased your home? We take a look at the risks of methamphetamine contamination in the home and what to keep in mind.

Lots of people are embracing Dry July, which gave us the ideal opportunity to take a closer look at liver disease, what it is, who is most susceptible to the disease and what people can do to protect themselves.

The forgotten cancer osteosarcoma (bone cancer) is rare and, due to the lack of symptoms and the propensity for the tumours to metastasize to the lungs, its survival rate is low. We discuss how pathologists are at the centre of the decision making process in treatment of patients with this cancer.

Last month, seven RCPA fellows in Australia and New Zealand were recognised for their achievements in the Queen's Birthday 2018 Honours List. We spoke to Associate Professor Paul McKenzie and Professor Anthony Gill, both of whom were recognised for their services to pathology.

Remember to follow us on Facebook (@TheRoyalCollegeofPathologistsofAustralasia), Twitter (@PathologyRCPA) or on Instagram (@the_rcpa). CEO, Dr Debra Graves can be followed on Twitter too (@DebraJGraves).

The methamphetamine epidemic and property contamination

7

The number of RCPA fellows recognised in the Queen's Birthday 2018 Honours List.

Source:
[1] http://mapi.betterhealth.vic.gov.au/saywhen/know-the-facts/consequences-of-drinking-alcohol-and-the-liver

[2] http://ndri.curtin.edu.au/NDRI/media/documents/naip/naip016.pdf

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Methamphetamine is a man-made stimulant drug which comes in three main forms, ice (also referred to as crystal meth or P), base, and speed. Highly addictive and illegal, methamphetamine is mainly used recreationally.

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Dry July – time to take a closer look at liver disease

With many people taking part in Dry July this year, an annual campaign which challenges people to abstain from drinking alcohol for the month of July, we spoke with Dr Bastiaan de Boer, Head of Department, Anatomical Pathology, PathWest, Fiona Stanley Hospital to discuss alcoholic liver disease.

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Osteosarcoma – The Forgotten Cancer

Dr Grace Moshi is a Senior Consultant Haematologist at the National University Hospital in Singapore, and is the Director and Founder of the ‘Kick Sarcoma - Sarah-Grace Sarcoma Foundation’ in Australia and also the 'Sarah-Grace Sarcoma Organisation' in Singapore.

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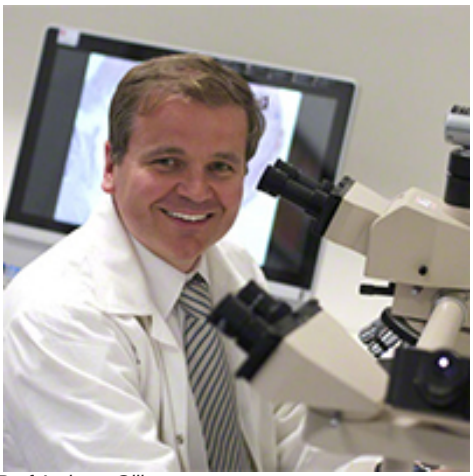
The Queen's Birthday 2018 Honours List recognises pathologists

On Monday 11 June 2018, the Queen’s Birthday Honours List was announced by the Governor-General, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd).



Prof Anthony Gill

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The methamphetamine epidemic and property contamination

Methamphetamine is a man-made stimulant drug which comes in three main forms, ice (also referred to as crystal meth or P), base, and speed. Highly addictive and illegal, methamphetamine is mainly used recreationally.

In April 2018, The Australian Criminal Intelligence Commission released the fourth report of the National Wastewater Drug Monitoring Program, revealing that consumption of methylamphetamine (also known as methamphetamine) and cocaine has increased across Australia[1].

Given the high level of methamphetamine use in Australia and New Zealand, pharmacologist and toxicologist, Professor Olaf Drummer, Department of Forensic Medicine, Monash University, explains the health implications of methamphetamine residue in dwellings and how this may affect unsuspecting new tenants or new property owners. Professor Drummer is a founding fellow of the RCPA's Faculty of Science, established in 2009 to train and develop a career path for senior scientists working within the field of pathology.

Professor Olaf Drummer says,

"Methamphetamine is a strong stimulant used to achieve highs. One of its more common names is 'ice' and it is also known as 'speed', but particularly ice which is the more pure form of methamphetamine. The use of ice does tend to be rising in both Australia and New Zealand, certainly in Australia."

Ice comes as small clear crystals that look like ice, or as a white or brownish crystal-like powder with a strong smell and bitter taste. It is usually smoked or injected; sometimes it is swallowed or snorted. This can lead to residue being left behind in dwellings, either as traces of powder or through smoke infiltration.

“In the home, often ice users inhale the drug and powder traces can often be left behind. Unless the residue is cleaned up then, ice residue can remain in the home potentially forever.”

As a result, Professor Drummer explains that it’s possible that new tenants or home owners could be unaware of this residue in their homes.

“The residue can of course be touched by children, especially if they are crawling on the floor. If they then lick their fingers, they will get absorption of the ice. Symptoms that someone may have been contaminated include an increased heart rate and blood pressure. If larger amounts are consumed by children then this could lead to longer term health issues. The best way for a doctor to test for contamination would be to take a urine sample which would then be tested by a lab,” says Professor Drummer.

Residues deposited from smoking methamphetamine are not likely to pose as nearly as high a level of risk as living in a house where the drug was manufactured in the past. The level of risk is dependent on the amount of contamination and the age of the individuals living in the contaminated house. Methamphetamine contamination has no smell, and there are concerns that houses in both Australia and New Zealand are affected.

“I am certainly aware of some homes where drug traffickers are using larger amounts in a dwelling, so those properties are likely to be more contaminated than those with causal users. Obviously, if the owner is aware of it then they should make sure that the house is cleaned up,” says Professor Drummer.

A recent report in New Zealand by Professor Peter Gluckman says that passive, third-hand exposure to methamphetamine can arise through residing in a dwelling previously used as a clandestine meth lab, or where a significant amount of methamphetamine has been smoked. However, there are no published (or robust, unpublished) data relating to health risks of residing in a dwelling formerly used only for smoking methamphetamine[2].

It is therefore recommended that testing takes place in properties where meth lab activity is suspected or where very heavy use is suspected. A procedure intended to remove illicit drug residues normally includes several washes with an alkaline detergent.

[1] https://www.acic.gov.au/media-centre/media-releases-and-statements/fourth-wastewater-report

[2] http://www.pmcsa.org.nz/wp-content/uploads/Methamphetamine-contamination-in-residential-properties.pdf

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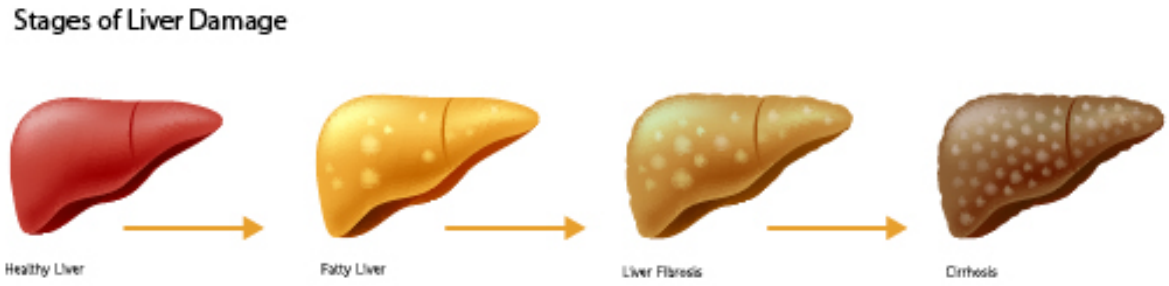
Dry July – time to take a closer look at liver disease



With many people taking part in Dry July this year, an annual campaign which challenges people to abstain from drinking alcohol for the month of July, we spoke with Dr Bastiaan de Boer, Head of Department, Anatomical Pathology, PathWest, Fiona Stanley Hospital to discuss alcoholic liver disease.

Dr Bastiaan de Boer said,

“Alcoholic liver disease is a pattern of damage in the liver that is due to the long term consumption of excess alcohol. It is male predominant in the population, usually affecting people in adulthood (50’s and older); however, we are also occasionally seeing it in younger people in their 30’s and 40’s. Alcohol is one of the top two causes of liver disease in Australia along with viral hepatitis.”

Alcohol consumption increases the risk of liver disease and can lead to a number of health complications. In those who drink heavily, fatty liver develops in 60-100%, alcoholic hepatitis occurs in 10-30%, and alcohol-related cirrhosis occurs in 10-15%.[1]

“Consuming excess alcohol can happen in all socio-economic groups, but is more prevalent in lower socio-economic groups. Other risk factors that may affect the degree of damage that develops include age, gender, genetic background, nutritional status, occupational hazards and viral infection. It is still not clear why there are some individuals that can drink their whole lives and never develop liver disease and there are others that can develop liver disease quite quickly, but it is thought that genetic predisposition is important. Some people develop a similar pattern of liver damage linked to metabolic factors such as

obesity, diabetes and hyperlipidaemia which is called non-alcoholic fatty liver disease (NAFLD) and again is thought to have a significant genetic predisposition."

The National Alcohol Indicators (NAI) project, conducted by the National Drug Research Institute (NDRI) at Curtin University, found that an estimated 5,785 Australians aged 15+ years died of alcohol-attributable disease and injury in 2015. Of these people, liver disease was the most common cause of alcohol attributable deaths in males (18%) and the second most common cause in females (15%)[2], the leading cause in females being breast cancer.

Alcoholic liver disease is usually asymptomatic until complications arise, and many people are not diagnosed until the later stages of the disease. The pathologist plays an important role in the testing, diagnosis and treatment of alcoholic liver disease.

Dr de Boer explains,

"Alcoholic liver disease can percolate for a long time without being detected so just because people are feeling ok doesn't mean that their liver is ok. If they went to the doctor the first investigation might be a panel of blood tests called liver function tests. An increased level of one or more of certain enzymes would indicate liver damage. In a liver biopsy, the earliest sign of alcoholic liver disease I might see is a fatty liver."

"Fatty liver is the first stage of alcoholic liver disease. It indicates toxicity and that alcohol is damaging the liver. Over time, liver cells will start dying and there will be inflammation and scarring. At a late stage, the entire liver is scarred and stops working properly; that's called cirrhosis of the liver and liver failure."

"If it can be diagnosed earlier, a positive step is to stop drinking alcohol. This will let the liver recover – the liver is extremely good at regenerating. However, if alcohol intake continues, it will get to a stage where the liver can't return to normal and there is permanent scarring. If the permanent scarring is severe, and the patient goes into liver failure, then the only option is to replace the liver. Liver transplantation is the only effective treatment for late stage alcoholic liver disease."

There is no safe level of alcohol use that will remove all risk of developing alcoholic liver disease. However, by reducing alcohol consumption the lifetime risk of alcohol-related disease and injury can be reduced.

Dr de Boer concludes,

"If you are still going to drink, then it is better to drink periodically. For example, drinking on a Friday and Saturday night, rather than continuously through the week. This will allow the liver to get a rest and to do some repair and regeneration before permanent damage is caused."

[1] http://mapi.betterhealth.vic.gov.au/saywhen/know-the-facts/consequences-of-drinking-alcohol-and-the-liver

[2] http://ndri.curtin.edu.au/NDRI/media/documents/naip/naip016.pdf

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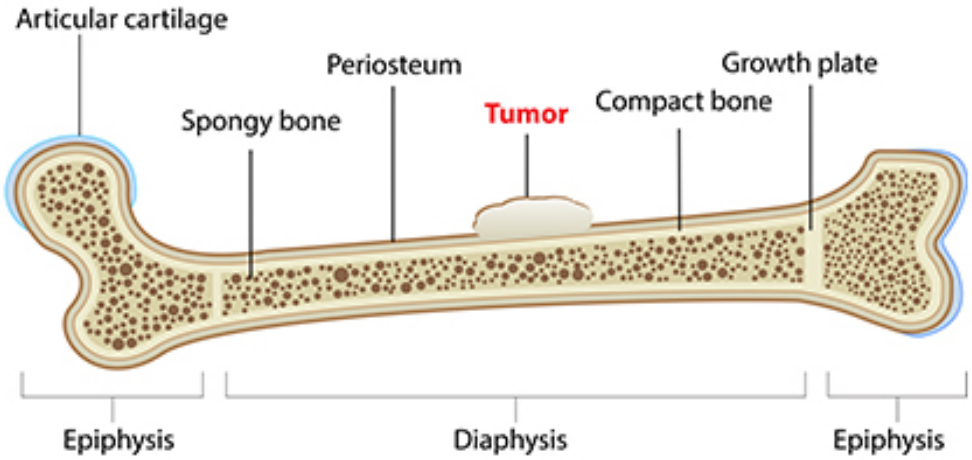
Osteosarcoma – The Forgotten Cancer



Dr Grace Moshi is a Senior Consultant Haematologist at the National University Hospital in Singapore, and is the Director and Founder of the 'Kick Sarcoma - Sarah-Grace Sarcoma Foundation' in Australia and also the 'Sarah-Grace Sarcoma Organisation' in Singapore.

Sarcoma is the general term used for a broad group of cancers that begin in the bones and in soft tissue, which includes fat, muscle, nerves, subcutaneous (beneath-the-skin) tissue, blood vessels and the tissue that surrounds joints. There are more than 50 subtypes of sarcoma, one of which is osteosarcoma, a primary bone cancer.

Dr Grace Moshi says,

"Osteosarcoma is one of the 50 or so subtypes of aggressive malignant neoplasm that arises from primitive transformed cells of mesenchymal origin. Osteosarcomas tend to occur in areas of rapid bone growth, at the narrow section of long bones, such as the proximal ends of the humerus and tibia or distal ends of the femur, although they can occur in any bone."

Osteosarcoma is one of the most common types of bone cancer and affects cells that grow in bone tissue. Other types of primary bone cancer include chondrosarcoma, which grows in the cartilage, and Ewing's sarcoma, which affects cells in the bone or soft tissue that multiply rapidly.

"The incidence of osteosarcoma in Australia is 400 cases per year. Children and young adults are most at risk, particularly during stages of rapid bone growth, with a peak incidence seen during the teenage years."

“When diagnosed early, patients with osteosarcoma have a survival rate of about 63%. However, due to the propensity of these tumours to metastasize to the lungs (even once the primary tumour has been removed), and the likelihood of a delayed diagnosis, often due to vague symptoms, osteosarcoma generally has a dismal prognosis. The overall survival of all sarcomas is 50% within five years of diagnosis.”

“As mentioned, osteosarcomas tend to metastasize early. However, patients can present with a vague ache that can be misdiagnosed as growing pains or a sporting injury, pain, fullness or swelling, or even a spontaneous bone fracture.”

“The role of the pathologist is crucial in the early and accurate diagnosis of osteosarcoma. With osteosarcomas, there are different histological grades and subtypes, including osteoblastic, chondroblastic, fibroblastic and telangiectatic. Correct histological identification makes a big difference to the type of surgery and overall treatment of the patient, as sarcomas do not all respond to the same type of treatment. Within the osteosarcomas, decisions such as whether the patient has limb salvage therapy or amputation depend on the how far the disease has progressed, as assessed by the pathologist” says Dr Moshi.

Limb salvage therapy (or limb-sparing therapy) is surgery to remove the cancer but spare the limb. This is the most common type of surgery for bone cancer. Under general anaesthetic, the surgeon removes the affected part of the bone where the cancer is growing. The bone that is removed is replaced with either an implant (prosthesis) or a bone graft, using healthy bone from another part of the body or from a ‘bone bank’. When it is not possible to remove all of the cancer without affecting the arm or leg too much, the limb will be removed.

“Surgery is the mainstay of treatment, followed by chemotherapy in some cases. Most children and young adults who have limb salvage surgery need metal frames to stretch transplanted bone. The patients who need an amputation have to adjust to life with a disability.”

For some types of bone cancer, chemotherapy can be used in combination with surgery, either to shrink the tumour before surgery or to kill any cancer cells left behind after surgery.

In the process of trying to improve the prognosis of sarcomas globally, the Sarah-Grace Sarcoma Foundation has:

- Established a PhD award program at the John Curtin School of Medical Research, Australian National University, which has been researching sarcoma metastasis and is now trialling three molecules that have the potential to block sarcoma metastasis and therefore improve prognosis; and
- Promoted the Kick Sarcoma Heath initiative to raise awareness in schools, sporting teams and in the community in general, in order to improve the early diagnostic rates.

If you would like to support the Sarah-Grace Sarcoma Foundation research, please donate by visiting https://kicksarcoma.org.au/support-us/donate-now/. For further information, visit www.kicksarcoma.org.au

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The Queen's Birthday 2018 Honours List recognises pathologists

On Monday 11 June 2018, the Queen's Birthday Honours List was announced by the Governor-General, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd).

The Queen's Birthday 2018 Honours are appointments of various orders and honours to reward and highlight good works by citizens of some 16 Commonwealth countries. This year, a diverse group of Australians and New Zealanders from a wide range of fields were recognised in the Queen's Birthday Honours List. The following six fellows from the Royal College of Pathologists of Australasia (RCPA) were recognised in Australia and one in New Zealand.

- Companion in the General Division (AC)
  - The late Professor David Albert Cooper AO (FRCPA)
- Officer in the General Division (AO)
  - Professor James McCluskey North Melbourne (FRCPA and FSc)
- Member in the General Division (AM)
  - Professor Anthony James Gill Greenwich NSW. (FRCPA and FSc)
  - Dr Domenico (Dominic) Spagnolo Mount Lawley WA. (FRCPA)
- Medal in the General Division (OAM)

- Associate Professor Paul Richard McKenzie Camperdown NSW (FRCPA)
- Emeritus Professor Bruce Albert Warren Coogee NSW. (FRCPA)

- The Queen's Service Order (QSO)
  - Dr Martin David Sage, Christchurch, New Zealand

RCPA past President, Associate Professor Paul McKenzie, of Royal Prince Alfred Hospital and the University of Sydney, was this year recognised with Medal of the Order of Australia in the General Division for his services to medicine, in particular to anatomical pathology. We spoke to him about what this means to the pathology profession.

A/Professor Paul McKenzie says,

“It’s very important that pathology, and indeed anatomical pathology, receives enhanced public recognition. Pathologists and anatomical pathologists are very important to patient care and to providing the diagnoses for patients. Despite this, one of the challenges that we’ve always encountered is that we often don’t get face to face contact with patients. As a result, they may not realise the important work that we do for them or understand our role in determining the direction of their treatment, particularly in serious illness such as cancer.”

“Having a number of pathologists recognised in this year’s honours list is a very good outcome in terms of promoting the discipline of pathology to the general public.”

Professor Anthony Gill, Surgical Pathologist at University of Sydney, was also honoured in this year’s list, and was named a Member of the Order of Australia (AM) for his significant service to medical research in the field of surgical pathology as an academic, author, adviser, and mentor.

Professor Gill holds research positions at The Garvan Institute of Medical Research, where he chairs the Australian Pancreatic Cancer Genome Initiative (APGI), and at the University of Sydney, where he is Professor of Surgical Pathology. In addition, he is a Senior Staff Specialist at Royal North Shore Hospital.

Professor Anthony Gill says,

“Whilst, personally, I am absolutely thrilled to be recognised in these awards, it really is recognition to several teams of researchers of which I am only a small part. I think the role of pathology and its crucial importance in the diagnosis and treatment of many diseases, especially cancer, is under recognised in the community. So it’s nice for the profession to be recognised in this way.”

“We talk a lot in medical research about translation into practice. That is, moving laboratory based experiments into clinical care and I think that pathology really is the interface between medical research and delivery into clinical care for a lot of advances in medical understanding.”

Current RCPA President, Doctor Bruce Latham said:

“Pathology underpins the majority of diagnoses in modern medicine. In many ways, medicine is pathology. Despite this, much of the practice of pathology is unrecognised or under-recognised by the public and by our clinical peers. It is, therefore, heartening to see this group of RCPA fellows being recognised for lifelong dedication to both diagnostic pathology and also to passing on their knowledge to future generations of pathologists.”

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