



PathWay

THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA



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Issue #022

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- Rapid HIV testing roll out should slow down until it's quality assured
- New guidelines for coeliac disease recognise its complexity
- Lung cancer is still a smoking issue
- Pathology helps doctors navigate their way through the causes of infertility

Interesting Facts

31,645

The number of cases of Human Immunodeficiency Virus (HIV) infection diagnosed in Australia by 31 December 2011

Introduction

It's a new year and, in some ways, a new era for the college as it continues to embrace the world of social media. The World Without Pathologists campaign launched last year (<http://worldwithoutpathology.rcpa.edu.au>) was well received, but there's more! To get the latest news from the RCPA simply "like" their new Facebook page www.facebook.com/TheRoyalCollegeOfPathologistsOfAustralasia and follow CEO Dr Debra Graves on Twitter (@DebraJGraves).

While technology is certainly a useful tool, there can be pitfalls, and this edition examines the quality assurance issues around the recently announced rapid testing trial in Victoria using point of care tests (PoCT) for Human Immunodeficiency Virus (HIV). Other stories give snapshots of lung cancer and infertility, while new guidelines for coeliac disease in children recognise its complexity.

And finally, don't forget to check out what's on offer at Pathology Update 2013 from 22-24 February in Melbourne. The full program can be found at www.rcpa.edu.au/Continuing/PathologyUpdate/PathologyUpdate2013.htm.

Rapid HIV testing roll out should slow down until it's quality assured

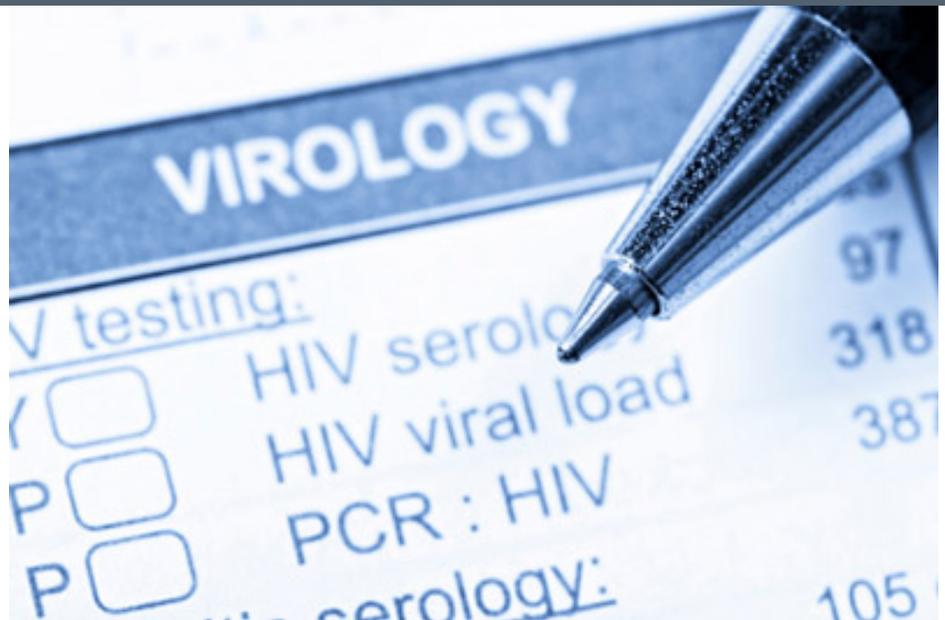
378

The number of diagnoses of newly acquired HIV infection in Australia in 2011

66

The percentage of new HIV diagnoses in Australia which occurred in 2007-2011 among men who have sex with men. During this time, 25% were attributed to heterosexual contact, 3% to injecting drug use, while exposure was undetermined in 7%

Source: The Kirby Institute



It seems the faster something can happen then the better it must be. This may apply to Internet speeds or email versus snail mail, but caution is required when it comes to pathology tests. Faster is only better if the results are reliable, and this is still a grey area for the recently announced rapid testing trial in Victoria using point of care tests (PoCT) for Human Immunodeficiency Virus (HIV)^[1].

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New guidelines for coeliac disease recognise its complexity

A lot can happen over 20 years, especially in medicine, which is why the guidelines^[1] for coeliac disease^[2] (CD) in children were recently reviewed for the first time since 1990. It was time for a review because the perception of the disease has changed, a new auto antigen has been identified and CD-specific antibody tests have improved.



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Lung cancer is still a smoking issue

Lung cancer is the most common cause of cancer deaths in both Australia and New



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Zealand. That's a sobering statistic for a disease that is almost entirely preventable by simply not smoking. Dr Bruce Latham, Anatomical Pathologist at PathWest Laboratory in Perth, says every puff of tobacco delivers hundreds of carcinogenic agents, and it really just depends on which one ends up causing the cancer!



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Pathology helps doctors navigate their way through the causes of infertility

Every birth is a miracle, and after speaking to Dr Lee Price, Endocrinologist and Chemical Pathologist at Sullivan Nicolaides Pathology in Brisbane, it's clear why. There are multiple factors that can lead to infertility in both men and women, including some surprises.



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If Pathologists didn't exist

where would the answers come from?

Pathology is the study of the nature and causes of diseases.

It underpins every aspect of medicine, from diagnosis to monitoring, and is vital for research.



Contents

- Tickleoscopy
- Emutopsy
- Blowopsy
- What do you think? 483-2X
- Help spread the word
- Learn more about pathology

Sterile
Sterile

TKL
20.3 x 8.2 cm

x2



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Without pathologists, any answers found would be questionable to say the least.

Every medical test, a case of trial and error. Exactly the kind of words you don't want to hear when it comes to your health.

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Sterile

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483-2X

EMU
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Sterile
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Coming Soon

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BLW
20.3 x 8.2 cm



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What do you think?

If Pathologists didn't exist, where do you think the answers could come from?



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Sterile

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WYT
20.3 x 8.2 cm

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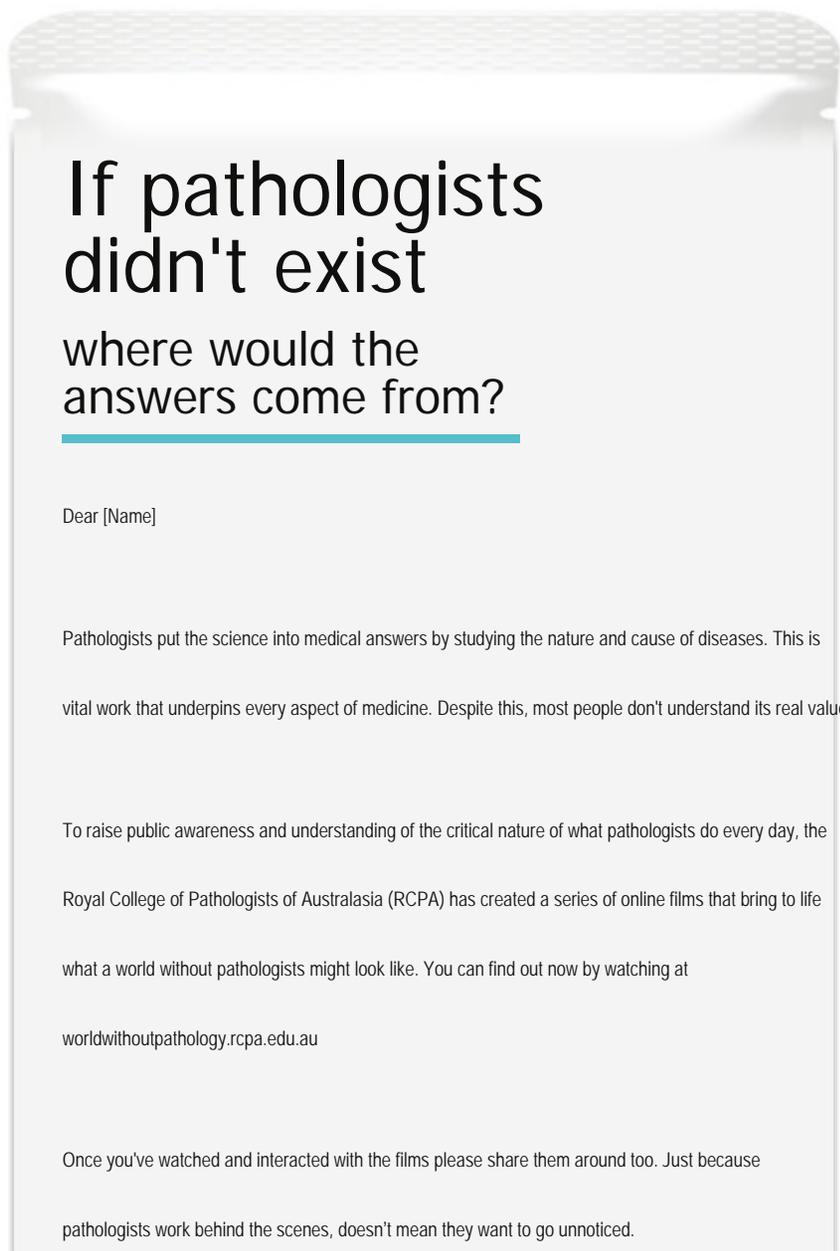


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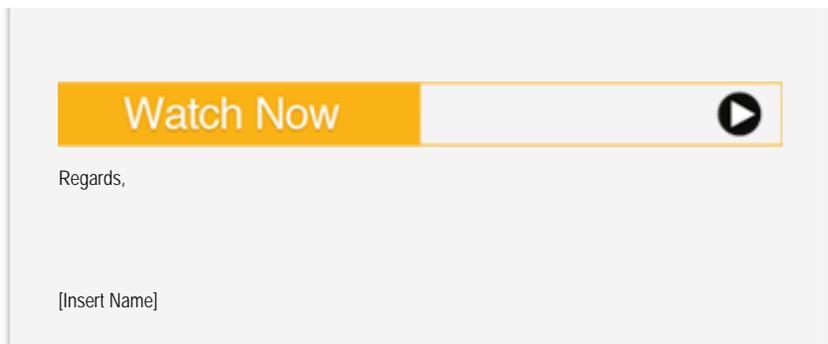
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Pathology Update 2013

Congratulations to the following winners at Pathology Update 2013

Trainee Presentation and Poster Prizes

DS Nelson Trainee Presentation:

Dr Andrew Whyte

Paul Griffin (runner up)

Board of Education Poster Prize:

Dr Gemma Robertson

Genevieve McKew (runner up)

QAP Oral Presentation:

Dr Genevieve McKew

QAP Poster Prize:

Dr Stephen Peyton

Congratulations to the winners of the Roche General Poster Display

Discipline	No	Name	Poster Title

Anatomical	89	Dr JJ Serfontein <i>LabPlus, Auckland City Hospital</i>	Flurescent in situ hybridization as diagnostic adjunct in pancreatobiliary cytology: the Auckland experience
Chemical	118	Dr Susan Kehrer Bond University Queensland	Reducing The Environmental Impact In A Pathology Laboratory
Forensics	127	Dr Claire Ross University of Adelaide	Using Magnetic Resonance Imaging (MRI) for the time course of hemosiderin in bruises
Genetics	131	Dr Dimitar Azmanov University of Western Australia	Exome sequencing in Roma families identifies tandem GRM1 mutations in a novel form of congenital cerebellar ataxia
Haematology	147	Dr Elizabeth Tegg Royal Hobart Hospital	NEUT-X - A useful predictor for film review in undiagnosed Myelodysplastic Syndrome

Immunopathology	150	Dr Aruna Kodituwakku SydPath St Vincent's Hospital Sydney	Correlation of flow cytometric and cytological analysis of Fine Needle Aspirates in the diagnosis of haematological malignancies
Microbiology	153	Dr Paul Griffin Mater Pathology Brisbane	The use of MALDI-TOF MS to investigate an outbreak of VRE

Thank you to Roche and the RCPA QAP for their continued support of these events.



22-24 February 2013

Melbourne Convention Centre

South Wharf - Melbourne

More information on this event coming soon!

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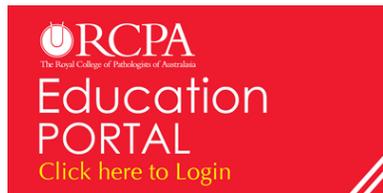
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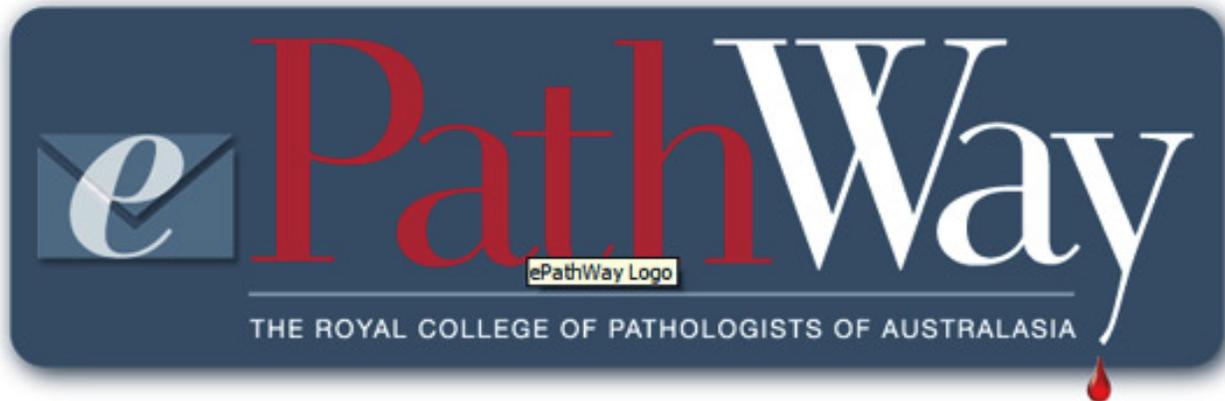
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ISSUE #021

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- Humorous campaign underpins the serious message of a world without pathologists
- The party could be over for revelers who mix drugs and drinking with driving
- Nobel laureate's legacy saves countless lives from

Welcome to the Holiday edition of ePathWay

The Christmas and New Year season is not only a time for festivities and fun, it's also a time for reflection. For example, what would a world without pathology look like? The new social media campaign launched by the College reflects on this question with humour used to deliver a serious message.

We also reflect on the remarkable achievements of Professor Donnell Thomas who pioneered bone marrow transplantation. Donnell died in October this year, but his remarkable legacy will

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Rapid HIV testing roll out should slow down until it's quality assured



It seems the faster something can happen then the better it must be. This may apply to Internet speeds or email versus snail mail, but caution is required when it comes to pathology tests. Faster is only better if the results are reliable, and this is still a grey area for the recently announced rapid testing trial in Victoria using point of care tests (PoCT) for Human Immunodeficiency Virus (HIV)^[1].

Dr Peter Taylor, Chairman of the Microbiology Advisory Committee of the Royal College of Pathologists of Australasia (RCPA), says rapid testing for HIV sounds good in theory, but only if it leads to reduced transmission of HIV by early detection and treatment of people who might otherwise not have been tested.

"Several million HIV tests are performed each year in Australia, and the excitement over the PoCT is in response to a rise in new cases of HIV diagnosed annually from about 800 to just over 1100 over a period of twelve years," explains Dr Taylor. "Nationally there was an 8.2 percent increase in new HIV diagnoses in 2011."

He says about 22% of these were recently acquired infections, and this is the group that is more likely to be missed by PoCT.

"The Government wants to reverse this trend by increasing testing frequency among those at risk from HIV, as well as testing people at risk who have never been tested," explains Dr Taylor.

“One PoCT for HIV has been registered with the Therapeutic Goods Administration (TGA) as a preliminary screening test. How it will be used to reduce HIV transmission and accelerate enrolment of infected individuals into treatment programs is yet to be determined.”

Dr Taylor says a negative test result for someone at high risk of acquiring HIV due to their admitted behavior may mean the test has been performed too early and has not been able to detect the infection.

“There will also be weak positive and false positive^[1] test results, however, all positive reactions – including the strong positive reactions - need subsequent laboratory tests to confirm or exclude a diagnosis of HIV infection. Testing for HIV is a serious business and these tests are not for casual use by untrained individuals,” he cautions.

“While rapid PoCT may appear to be very simple, there are potential pitfalls. Testing must be done in an environment that has well developed quality control and quality assurance (QA)^[2] systems, as well as robust records of the testing process, guaranteed patient confidentiality, documented staff training and retraining, accreditation of the testing facility and accurate test results.”

The RCPA and the National Association of Testing Authorities (NATA) accredit laboratories and testing processes in Australia, and have not assessed the quality processes of the new HIV test to date. Dr Taylor says that although significant advances have occurred in the scientific understanding of HIV and its treatment and prevention, pathology tests still need to be quality assured to protect the people they are designed to help.

“A person may be infected with HIV where tests will not return a positive result. This is because the infected person may not have produced detectable levels of the specific antigens or antibodies that are measured by the test. This window period may last up to three months.”

This window is shorter for laboratory tests because they can detect lower levels of the antigens or antibodies than rapid HIV PoCT. Dr Taylor also points out that rapid HIV PoCT is not a panacea for behavioural change, and testing alone will not prevent transmission of HIV, other viruses and sexually transmitted infections (STI's).

“People at risk of HIV are also at risk of hepatitis B virus (HBV)^[3], hepatitis C virus (HCV)^[3], syphilis^[4] and gonorrhoea^[5]. The PoCT does not cover these infections because they must be tested through a laboratory. The role of PoCT for HIV is yet to be determined, and widespread single disease testing may have adverse impacts on the detection and transmission of other STI's.”

The prevalence of HIV infected people in Australia is among the lowest globally, while the rate of new diagnoses of HIV in New South Wales (NSW) has fallen progressively over the last decade. Dr Taylor says these results are a tribute to past efforts to restrict the spread of HIV infection, including the reliability of, and access to, laboratory testing.

Rapid testing using PoCT for HIV may give a result in 20 minutes or less which has some benefits, including filling the gap when other testing methods are unavailable and the ability to enroll patients in HIV treatment programs without risking losing contact. However, negative results from a laboratory are usually available within 24 hours, while positive results for both PoCT and a laboratory are generally available within a week. This is because a positive result from a PoCT must have a subsequent venous blood sample taken which is sent to a reference laboratory to confirm the result.

The bottom line is that testing will not prevent infection, but it is the first step towards effective treatment. However, professional QA must be a part of this process, otherwise faster is not better, and the result may not be worth the paper it's printed on.

[*] False positive results occur when a person tests positive for a disease or condition they don't have. False negative results occur when a person tests negative for a disease or condition they do have.

[1] HIV is covered in [ePathWay issue #005, July 2011](#)

[2] Quality assurance is covered in [ePathWay issue #015, June 2012](#) and [ePathWay issue #017, August 2012](#)

[3] HBV and HCV are covered in [ePathWay issue #019, October 2012](#)

[4] Syphilis is covered in [ePathWay issue #018, September 2012](#)

[5] [Gonorrhoea is covered in ePathWay issue #004, June 2011](#)

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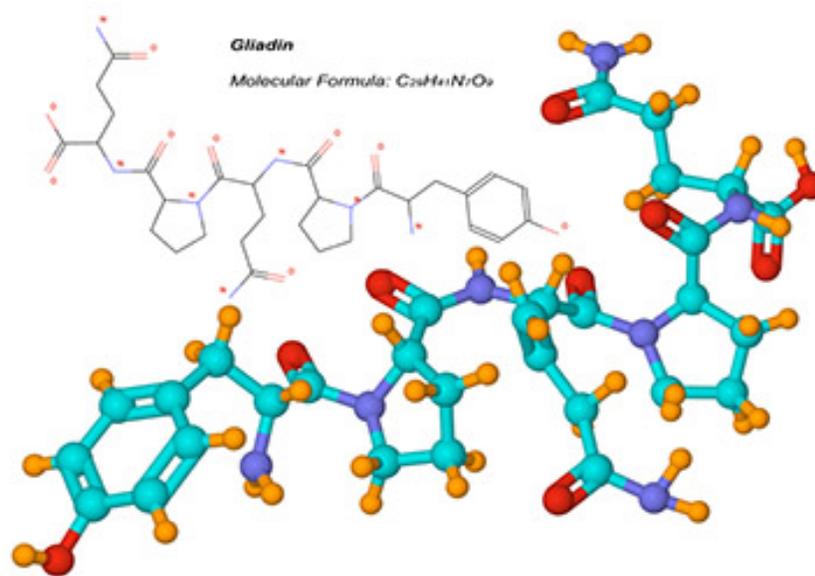
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New guidelines for coeliac disease recognise its complexity



A lot can happen over 20 years, especially in medicine, which is why the guidelines^[1] for coeliac disease^[2] (CD) in children were recently reviewed for the first time since 1990. It was time for a review because the perception of the disease has changed, a new auto antigen has been identified and CD-specific antibody tests have improved.

The new guidelines were developed by the European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHN) and released in 2012. The working group formed for this task noted that since 1990, CD has gone from being an uncommon disease of the intestine to a multi-organ disease with a strong genetic disposition.

Dr Richard Steele, Clinical Immunopathologist at Wellington Hospital in New Zealand, says while no one has fully adopted the guidelines in Australasia, many groups are looking at the best way to adopt them.

“The guidelines basically suggest that if the blood test results are high, and the child has the appropriate genotype for coeliac disease, then they may not need a small bowel biopsy to confirm the diagnosis.”

The blood tests for CD detect antibodies which are produced as part of an inappropriate immune response to gluten (found in

wheat, rye and barley). Other tests may be requested to determine the severity of the disease and the extent of any malnutrition and malabsorption. For example, a full blood count (FBC) may be requested to check for anaemia, while vitamins D, E, B12 and folate may be measured to check for vitamin deficiencies.

The guidelines divide who should be tested into two groups: those with unexplained signs and symptoms, such as chronic or intermittent diarrhoea, weight loss, chronic abdominal pain etc., and those without signs and symptoms (asymptomatic).

The asymptomatic group who should be offered testing include those with an increased risk of CD such as having type 1 diabetes mellitus, Down syndrome, autoimmune thyroid disease, Turner syndrome, Williams syndrome, selective immunoglobulin A (IgA) deficiency, autoimmune liver disease, and those who have first-degree relatives with CD.

The guidelines also outline a simple scoring system for the diagnosis of CD to:

- positively diagnose the disease at the initial assessment and be able to accept a diagnosis made in the past with biopsy
- simplify the diagnosis of CD in patients with obvious findings
- protect against over diagnosis when only nonspecific findings are present.

Dr Steele says using the most appropriate diagnostic tests for CD is important because we are now recognising more subtle forms of the disease.

“Patients may have high levels of antibodies detected in their blood tests and the appropriate genotype, but they may not have changes in their bowel. But, if they remain on gluten they may eventually have those changes at a later stage.”

Dr Steele says approximately one percent of the Australasian population have CD, although studies show that about 10% are on gluten free diets.

“We need to base lifestyle changes on scientific principles of enlightenment. For example, there is now evidence that people without CD may also have gluten intolerance, but they should still be tested.”

The new guidelines may help to simplify the testing and diagnostic process, and will be a welcome addition to the evolving knowledge base for a condition once thought to be an uncommon disease of the intestine.

[1] http://espghan.med.up.pt/position_papers/Guidelines_on_coeliac_disease.pdf

[2] [Coeliac disease is covered in ePathWay issue #004, June 2011](#)

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-  • Help you understand pathology tests

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-  • Anatomical Pathology
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If you know the clinical problems and want to find the pathology test for it, you can find it by either searching or browsing.

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or

Find a Pathology Test by Name

If you know the name of the pathology test, you can search for it; otherwise, you can browse the pathology test listing.

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or

Find a Pathology Decision Support Tool

If you know the name of the Pathology Decision Support Tool (PDST for short), you can search for it; otherwise, you can browse the Pathology Decision Support Tool listing.

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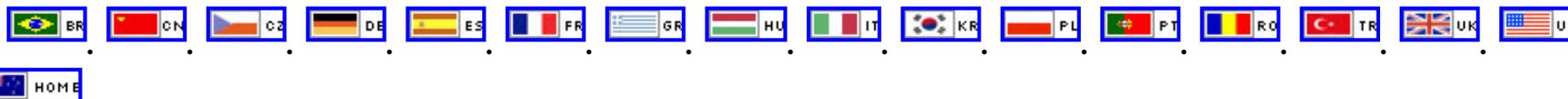
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Welcome to Lab Tests Online Australasia

All you need to know about pathology testing

Pathology tests are essential to modern medicine. They provide the information needed to make diagnoses, screen for illnesses and monitor treatment and medication. We're here to help you understand them with up-to-date information written by practising Australian pathologists and senior laboratory scientists.

Who we are: The website is managed by the Australasian Association of Clinical Biochemists ([AACB](#)) with support from the Royal College of Pathologists of Australasia ([RCPA](#)). It has been funded under the Quality Use of Pathology Program of the Commonwealth Department of Health and Ageing.

See [Features and Services](#) for guidance on how to use this site

Topics in the News

[New Blood Test for Detecting Fetal Abnormalities Available in Australia](#)

March 7, 2013

A non-invasive maternal blood test that can detect certain fetal chromosomal disorders, including Down syndrome, early in pregnancy is gaining attention as a potential new method of prenatal screening.

[Human Genetics Society of Australasia Essay Competition for Australian and New Zealand High School Students.](#)

March 6, 2013

2013 marks the 60th anniversary of the discovery of the double helix of DNA by James Watson and Francis Crick and the 10th anniversary of the first sequencing

of the human genome. To mark this occasion the HGSA has established a competition encouraging Australian and New Zealand high school students to submit an essay and compete for cash prizes and the honour of having the best essay published in the scientific journal Twin Research & Human Genetics.

New guideline for diagnosing diabetes in pregnancy

February 18, 2013

The Australasian Diabetes in Pregnancy Society (ADIPS) had previously set out guidelines for the testing and diagnosis of gestational diabetes mellitus (GDM) in 1991. However, as a result of the accumulation of more evidence about the incidence and effects of diabetes in pregnancy, ADIPS have revised the guidelines to reflect this new information.

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Issue #022

Lung cancer is still a smoking issue



Lung cancer is the most common cause of cancer deaths in both Australia and New Zealand. That's a sobering statistic for a disease that is almost entirely preventable by simply not smoking. Dr Bruce Latham, Anatomical Pathologist at PathWest Laboratory in Perth, says every puff of tobacco delivers hundreds of carcinogenic agents, and it really just depends on which one ends up causing the cancer!

"Lung cancer was unknown in medieval times before tobacco was introduced, so it is a disease almost exclusively related to smoking," he explains. "We all know the story where someone knows someone who developed lung cancer and they had never smoked. Well, let me tell you, that situation is rare. About 90 percent of lung cancer in our community is attributed to smoking."

Lung cancer is the result of cells growing uncontrollably in the lung tissue. The two main types are small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC), which can then be broken down into different sub-types.

Dr Latham says in the past pathologists reported only whether a cancer was SCLC or NSCLC, but the sub-types are now very important due to advances in treatment such as targeted therapy^[1].

"Over the last five to 10 years, new treatments have meant that about 10 to 15 percent of people are eligible for targeted therapy. This means we spend a long time examining a lung tissue biopsy because we need to sub-classify the disease carefully, which might also include some molecular testing."

Diagnosis of lung cancer may involve a bronchoscopy (where a small camera on the end of a flexible tube is used to examine the airways inside the lungs), sputum sample, fine needle aspirate and/or core biopsy. To ensure the best possible outcome via the least invasive technique, the diagnostic method is often discussed at multidisciplinary case conferences^[2].

“There are many major hospitals which have multidisciplinary case conferences where clinicians meet, including the pathologist, radiologist, respiratory physician, thoracic surgeon and oncologist, to discuss new cases in terms of how to investigate them and make the diagnosis. We also discuss the patients after their diagnosis to determine the best treatment.”

While diagnosis and treatment options are expanding, prevention is better than cure. Dr Latham says Australia and New Zealand are leaders in the developed world in terms of taking preventative action against smoking. Both countries have smoke-free laws restricting where people can light up. New South Wales announced a new round of laws in January to further limit both tobacco smoking, and people’s exposure to second-hand smoke, in public places.

The results of these measures may not be known for a while since Dr Latham says there is a 20 to 30 year lag from when a person starts smoking to when they develop lung cancer. For example, he says it was ‘cool’ to smoke in the 1980’s, especially among young girls, and we are only now seeing the effects of that in terms of lung cancer cases. Passive smoking is harder to quantify in terms of how many people develop lung cancer from it, but it is also dangerous.

“If you live in a house with a smoker then you will have a 20 to 30 percent increased risk of developing lung cancer. Smoke that has been breathed out is just as toxic as the smoke that was breathed in.”

That’s another sobering statistic to add to lung cancer’s already grim picture, and reinforces the fact that no matter which way you look at it, lung cancer is still a smoking issue.

[1] Targeted therapy is covered in [ePathWay issue #013, April 2012](#)

[2] Multidisciplinary case conferences is covered in [ePathWay issue #015, June 2012](#)

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PathWay

THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA



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Issue #022

Pathology helps doctors navigate their way through the causes of infertility



Every birth is a miracle, and after speaking to Dr Lee Price, Endocrinologist and Chemical Pathologist at Sullivan Nicolaides Pathology in Brisbane, it's clear why. There are multiple factors that can lead to infertility in both men and women, including some surprises.

"The rising incidence of obesity, the increasing effects of diabetes and stress, mental illnesses such as depression and drug use are affecting overall fertility rates," explains Dr Price. "For example, males who take anabolic steroids might develop testicular atrophy (the testes diminish in size) because the drugs switched off the pituitary and hypothalamus functions in their brain."

The pituitary is a pea-sized gland located at the base of the brain. It regulates the many hormones that control various functions and organs within the body and is often referred to as the body's 'master gland'. The hypothalamus is a small endocrine organ attached to the pituitary gland in the brain. It has a vital role in controlling many bodily functions including the release of hormones from the pituitary gland.

These functions are important because there are a number of hormones which affect fertility. They include oestrogen,

progesterone, testosterone, luteinizing hormone (LH), follicle stimulating hormone (FSH), human chorionic gonadotropin (hCG) and prolactin. All of these hormones can be measured through pathology tests.

While hormones are an important part of the fertility/infertility picture, there are numerous reasons why a person may be infertile, and they're not all hormonal.

Female factors can include genetic causes, cancer and/or its treatment, obesity or anorexia, extreme levels of exercise, ovarian factors such as menopause or polycystic ovarian syndrome, tubal factors such as endometriosis or pelvic inflammatory disease, uterine factors such as fibroids or malformation, cervical factors such as antisperm antibodies and vaginal factors such as vaginal obstruction.

Male factors can include sperm health in terms of quantity, motility and whether they are structurally normal (morphology), hypothalamic problems, primary hypogonadism (when the sex glands produce little or no hormones), problems with transporting sperm, erectile and ejaculation dysfunction, cancer and/or its treatment, obesity and genetic causes.

These lists are by no means complete. The body has so many complex biofeedback mechanisms that causes of infertility are still being uncovered such as the effects of oestrogen-like compounds found in plastics. There is also speculation that vitamin D levels may affect the body's fertility.

"One cause of infertility that amazes many people is obstructive sleep apnoea which is related to obesity," says Dr Price. "It is now an important cause in males of reduced testosterone production and therefore reduced libido and fertility."

The bottom line with infertility is that it's a multifaceted area with often complex causes, many of which can be investigated through pathology.

"Pathology provides a roadmap of where to look next when investigating infertility," explains Dr Price. "For example, a male may start with a semen analysis and progress through to sperm antibodies as the causes of infertility are investigated."

Investigating infertility is also a stressful and uncertain road for many couples. About one in six fail to achieve pregnancy after a year of trying, which is why the relative certainty of pathology test results in terms of knowing if the sperm count is adequate or certain hormone levels are low, can help smooth the road.

That certainty level may increase as the genetic testing landscape becomes better known. In fact, genetic tests may yet account for causes of infertility historically labelled as 'unknown'. This would not only make the roadmap clearer, but also provide a welcome addition to navigating the complexities of infertility for doctors, and provide much-needed answers for infertile couples.

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- RCPA Seeking Nominees for Media Excellence
- Pathologists launch second Stage of Successful Social Media Campaign
- Pathologists Launch First Social Media Campaign to Highlight A Serious Message
- Breast Cancer - Do



About the College

The Royal College of Pathologists of Australasia (RCPA) is responsible for the training and professional development of pathologists and for the promotion of the science and practice of Pathology.

- [What We Do](#)
- [Membership Categories](#)

What is Pathology?

Pathology is the study of the nature and causes of diseases. It underpins every aspect of medicine, from monitoring of chronic diseases, to genetic research, to the diagnosis of every detected cancer in the world.

- [Disciplines of Pathology](#)
- [Pathology in Practice](#)

you know who diagnoses you?

- Jane Dahlstrom - Breast cancer - the person behind the microscope

- RCPA's new factsheets to breakdown the mystery of pathology

- Launch of the iPad RCPA Manual

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- RCPA makes Pathology more accessible with new iPad app

- New oral anticoagulants breed new life to the treatment and prevention of thrombosis

- Study sheds new light on role of UVA

Careers & Training

To become a pathologist the College accepts applications from registered medical practitioners with a minimum of one year's post graduate experience. Pathology training takes a minimum of five years. Training can be undertaken in one of nine disciplines.

- [Initial Registration](#)
- [Curriculum/Training Handbooks](#)
- [Exams](#)
- [Overseas Trained Specialist](#)
- [Job Positions](#)
- [BPS](#)

Useful Links

These links are to Pathology related sites:

- [The RCPA Manual](#) of the Use and Interpretation of Pathology Tests.
- [Australian Medical Council](#)
- [National Association of Testing Authorities](#)
- [Pathology Professionals](#)
- [RCPA Quality Assurance Programs Pty Ltd](#)
- [LabTests Online](#)
- [More links](#)

Publications

The College produces a number of publications, some annually, some more frequently. Please click on the following links:

- [Structured Reporting Cancer Protocols](#)
- A scientific journal entitled [Pathology](#)
- A fortnightly newsletter for Fellows entitled [Pathology Today](#) (Members please log on to access)
- [The latest Annual Report \(PDF\)](#)

causing skin cancer

- Alzheimer's may soon be a distant memory
- Pathology Media awards 2012 winners announced
- Scientists enhance safety and accuracy in new, non-invasive prenatal Down Syndrome test

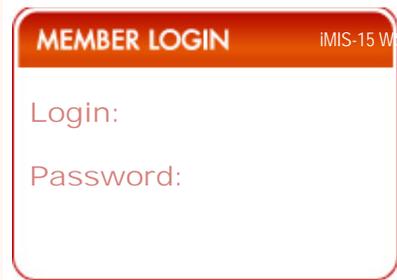
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- General Awards Fellows and Trainees
- Education and Research Awards Fellows and Trainees
- Other Awards

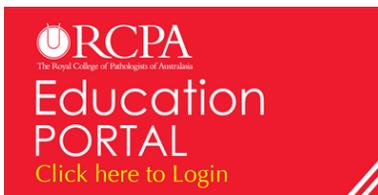


A search box with a dark red header containing the word "SEARCH" in white. Below the header is a white input field. To the right of the input field is a dark red button with the word "SEARCH" in white.



A member login form with a dark red header containing the text "MEMBER LOGIN" and "iMIS-15 W". Below the header are two input fields labeled "Login:" and "Password:".





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The College complies with the AMA Code of Ethics and draws your attention specifically to point 2.1. C under 'Professional Conduct' which states that one should "refrain from making comments which may needlessly damage the reputation of a colleague".

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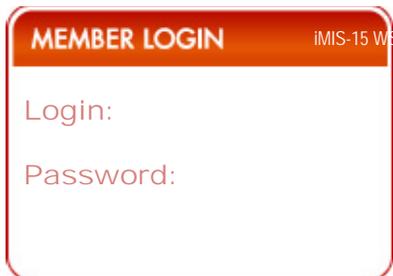
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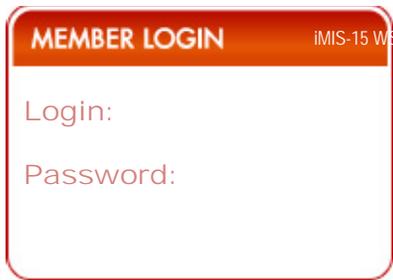
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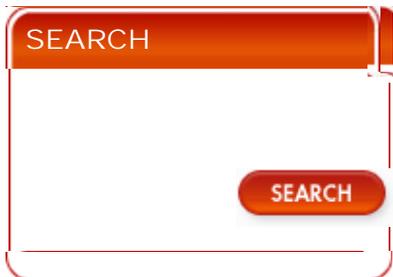
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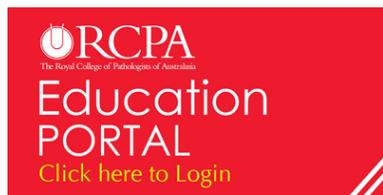
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A rectangular form with a dark orange header bar containing the text "MEMBER LOGIN" and "IMIS-15 WE" on the right. Below the header, the text "Login:" is followed by a text input field, and "Password:" is followed by another text input field.



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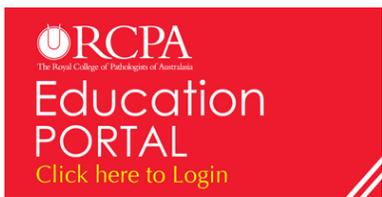
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