

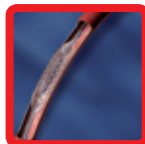
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Indication: Treatment of moderate to severe active rheumatoid arthritis (RA) in adult patients. Actemra[®] can be used alone or in combination with methotrexate (MTX) and/or other disease-modifying anti-rheumatic drugs (DMARDs)

Dosage and Administration: The recommended dose for adult patients is 8mg/kg given once every four weeks as an IV infusion. Actemra[®] can be used alone or in combination with MTX and/or other DMARDs. Actemra[®] should be diluted to 100 mL by a healthcare professional with sterile 0.9% w/v sodium chloride solution using aseptic technique. Actemra[®] is recommended for IV infusion over 1 hour **Dosage Modification:** In accordance to liver enzyme abnormalities, low neutrophil count (ANC) and low platelet count (please refer to package insert) **Contraindications:** Hypersensitivity to Actemra[®] and any component of this product **Warnings and Precautions:** **Infections:** Actemra[®] treatment should not be initiated in patients with active infections. Administration of Actemra[®] should be interrupted if a patient develops a serious infection until the infection is controlled. Healthcare professionals should exercise caution when considering the use of Actemra[®] in patients with a history of recurring infection or with underlying conditions (e.g. diverticulitis, diabetes) which may predispose patients to infections **Complications of diverticulitis:** Events of diverticular perforation as complications of diverticulitis have been reported. Actemra[®] should be used with caution in patients with previous history of intestinal ulceration or diverticulitis. Patients presenting with symptoms potentially indicative of complicated diverticulitis, such as abdominal pain, should be evaluated promptly for early identification of gastrointestinal perforation **Tuberculosis:** As recommended for other biologic therapies in rheumatoid arthritis, patients should be screened for latent tuberculosis infection prior to starting Actemra[®] therapy. Patients with latent tuberculosis should be treated with standard antimycobacterial therapy before initiating Actemra[®] **Vaccinations:** Live and live attenuated vaccines should not be given concurrently with Actemra[®] as clinical safety has not been established. No data are available on the secondary transmission of infection from persons receiving live vaccines to patients receiving Actemra[®] **Hypersensitivity Reactions:** Serious hypersensitivity reactions have been reported in association with infusion of Actemra[®]. Appropriate treatment should be available for immediate use in the event of an anaphylactic reaction during administration of Actemra[®] **Active Hepatic Disease and Hepatic Impairment:** Treatment with Actemra[®] particularly when administered concomitantly with methotrexate, may be associated with elevations in hepatic transaminases. Therefore caution should be exercised when considering treatment of patients with active hepatic disease or hepatic impairment **Use in Pregnancy and Lactation:** There is no adequate data on the use of Actemra[®] in pregnant women. Actemra[®] should not be used during pregnancy unless clearly indicated by medical need. It is unknown whether Actemra[®] is excreted in human breast milk. A decision on whether to continue/discontinue breast-feeding or to continue/discontinue therapy with Actemra[®] should be made taking into account the benefit of breast-feeding to the child and the benefit of Actemra[®] therapy to the woman **Drug Interactions:** Population pharmacokinetic analyses did not detect any effect of MTX, non-steroidal anti-inflammatory drugs or corticosteroids on Actemra[®] clearance. Actemra[®] has not been studied in combination with other biological DMARDs. When starting or stopping therapy with Actemra[®], patients taking medicinal products which are individually dose-adjusted and are metabolized via CYP450 3A4, 1A2, or 2C9 should be monitored. **Undesirable Effects:** Upper respiratory tract infections, gastrointestinal perforation, infusion reactions, haematology abnormalities, liver enzyme elevations and elevations in lipid levels

Storage: Store between 2°C - 8°C. Do not freeze and protect from light **Packs:** Vials 80mg/4ml, Vials 400mg/20ml

Full details on composition, indication, dosage, contraindications, precautions, drug interactions, special instructions for use, handling and disposal and side effects are available upon request.

(MYActemra1010/CDS4.0)

Reference: 1. Actemra, Malaysia Prescribing Information



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Diabetes and its hidden toll



A novel high-sensitivity blood marker test has revealed that chronic hyperglycemia may play a role in myocardial injury independent of its effects on the development of atherosclerosis.

Rajesh Kumar

Chronic hyperglycemia can damage the heart beyond its effects on the development of clinical atherosclerotic coronary disease.

This was a key finding of a US study which examined the association between different levels of HbA1c, a marker for diabetes, and cardiac troponin T (cTnT), a blood marker for myocardial injury, in 9,661 patients without clinically evident coronary heart disease or heart failure. [*J Am Coll Cardiol* 2012;59:484-489]

Using a novel high-sensitivity (hs) cTnT assay, the researchers found that higher baseline values of HbA1c were associated with increasingly higher levels of cTnT

($P < 0.001$ for the trend). After adjusting for traditional risk factors, patients with HbA1c levels in the ranges of 5.7 to 6.4 percent and ≥ 6.5 percent were 1.26 (95% CI: 1.01 to 1.56) and 1.97 (95% CI: 1.44 to 2.70) more likely to have elevated cTnT levels compared with those with HbA1c levels < 5.7 percent, respectively.

Compared with patients with HbA1c 5.7 percent, hs-cTnT values were 25 percent higher in persons with HbA1c 5.7 percent to 6.4 percent and 70 percent higher among participants with HbA1c levels ≥ 6.5 percent. In fully adjusted models, every 1-percentage point higher HbA1c value was associated with a 0.7 ng/L higher value of hs-cTnT (95% CI: 0.5 to 1.0; $P < 0.001$).

“Our results suggest that chronically elevated glucose levels may contribute to heart damage,” said senior author Dr. Elizabeth Selvin, associate professor in the department of epidemiology at Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, US.

disease,” said Selvin’s colleague Mr. Jonathan Rubin, an internal medicine fellow at the school and the lead study author. “Mainly, glucose might not only be related to increased atherosclerosis, but potentially elevated glucose levels may directly damage cardiac muscle.”

“ Our study hints at other potential pathways by which diabetes and elevated glucose are associated with heart disease

The levels of cTnT detected were about one-tenth of those usually found in patients diagnosed with a heart attack. This suggests that hyperglycemia may be related to cardiac damage independent of atherosclerosis. The relationship was present at HbA1c levels even below the threshold used to diagnose diabetes.

“Our study hints at other potential pathways by which diabetes and elevated glucose are associated with heart

When asked about the findings’ relevance for Asian populations, Selvin said there is no reason to believe the relationship would be any different in Asians.

“The hs-cTnT test is not yet approved for clinical use, but may be in the future. These data help in our understanding of the clinical implications of this novel hs test for cardiac troponin and suggest that hyperglycemia may contribute directly to myocardial damage,” she said. **MI**

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Hypertension and the role of government in stemming the tide

Excerpted from the keynote address by Director-General of Health, Dato' Sri Dr. Hasan Abdul Rahman at the 9th Annual Scientific Meeting of the Malaysian Society of Hypertension, 10 February, Kuala Lumpur.

Hypertension is the leading risk factor for cardiovascular disease, which includes stroke and heart disease, and contributes to 17.5 million premature deaths worldwide annually.

Scientific research has shown that 54 percent of stroke and 47 percent of coronary heart disease are attributable to hypertension. [*Lancet* 2008;371:1513]

The rising epidemic of non-communicable diseases (NCD) is a global problem. In September 2011, world leaders convened at the UN in New York, US, and unanimously adopted a UN Political Declaration on the Prevention and Control of NCD. This was only the second time a health issue was discussed at the highest global forum, the first being HIV/AIDS in 2001.

Malaysia is not spared from the rising epidemic of NCD and its risk factors, including hypertension. An analysis conducted using the Third National Health and Morbidity Survey 2006 data has shown that 60 percent of Malaysians above 30 have at least one cardiovascular risk factor, 33 percent have two risk factors and 14 percent have three or more risk factors.

Hypertension remains the number one risk factor, with a prevalence rate of 43 percent in adults above 30 years, followed by central obesity at 37 percent; hypercholesterolemia at 24 percent; and hyperglycemia 15 percent. We are very familiar with the figures, but for the last 20 years

the situation remains unchanged.

The results of the latest population survey, the 2011 National Health and Morbidity Survey on NCD, which was revealed by the Health Minister in December last year, found that the prevalence of NCD risk factors in Malaysia continues to rise.

What is even more worrying is that the population that remains undiagnosed continues to increase. Only a third of Malaysians suffering hypertension are diagnosed and receive adequate treatment.

If we look at current literature examining the factors that influence the achievement of treatment targets, you can group them into three main categories:

- the healthcare providers.
- patient expectation.
- the health system or the delivery of care.

However, attention is concentrated on the first and last categories because these factors are directly under our control, therefore they are easier to modify. Patient-related factors are sometimes dismissed because they are more difficult to modify and thought to be beyond our control.

I would like to challenge all of you here today: if it is not our responsibility as healthcare providers to modify patient-related factors and attitudes, then whose responsibility is it? We can't rely on the hope that our patients will change their

attitudes and suddenly become compliant to treatment.

I firmly believe that the appropriate management of NCD is beyond prescribing the best and latest medicines. Even then we can never be assured that patients are compliant in taking their medications. Of course, during our clinical consultations we do conduct patient education. However, one-way communication in educating patients on what they should or should not do may not be the best approach in changing patient behavior.

We have to move beyond our business-as-usual way of delivering health education to our patients. In developed countries, there is already a shift from patient education to patient empowerment. As a developing country, we have to move forward as well.

We need to develop a better approach to empower our patients to change their behaviour. This is, however, not easy to develop as a lot of factors influence behavior, including ethnicity and socio-cultural factors. Subsequent work must be done to adapt this model to work in each of your districts and community environments.

In addition, this is not just about quantity, but more importantly, it is about quality. We need healthcare providers who are not only competent technically with the necessary knowledge and skill, but also creative and innovative.

Prevention of NCD goes beyond the health sector, both public and private. The factors influencing our behavior relating to healthy living fall under the responsibility of many ministries and sectors other than health. Therefore, to be effective in prevention of NCD we need to engage not only the healthcare sector and the public, but

other governmental agencies and other private sectors outside the health sector.

Under the National Strategic Plan for NCD 2011-2015, several initiatives have been undertaken under Strategy 7 (policy and regulatory interventions). To improve students' health, the Ministry of Education implemented on 18 January 2012, new healthy eating guidelines in schools, which consist of three components:

- Measurement of student's body mass index (BMI) twice a year and reporting the results to their parents. Students found to be obese or overweight will be referred to the nearest health facility.
- Healthy menus in school canteens.
- Restraint of calorie content of food sold in school canteens.

The Ministry of Health (MOH) is also currently in discussion with the department of local government to standardize the provisions of the sale of unhealthy food and drink outside school perimeters. The working paper is awaiting presentation to the National Local Government Council, which is chaired by the Deputy Prime Minister.

Following the National Food Safety and Nutrition Council meeting on 8 December last year, the MOH was given the mandate to develop guidelines to control the marketing of food and beverage to children in Malaysia by 2020. This was further reiterated by the Health Minister during a dialog with the food and beverage industry on 16 December. During this meeting, the industry made several commitments to increase the production and promotion of healthy food choices, including those with reduced salt and sugar.

In October last year, I promoted the idea for Malaysians to have an anti-obesity

law by the year 2020. The exact details of this proposal are still being developed by the Disease Control Division of the MOH. The implementation of this law will be developed in stages, looking at different stages of life ie, from childhood to adolescence to adulthood. In principle, such a law will not be discriminative against those who are obese, but ensure

that Malaysians value their health and become a strong motivator towards a healthy lifestyle.

Lastly, the MOH is in the process of formalizing the salt-reduction strategy. A technical working group has been formed and in line with UN's Political Declaration on NCD, I hope that this initiative can be completed before the end of the year. **MI**

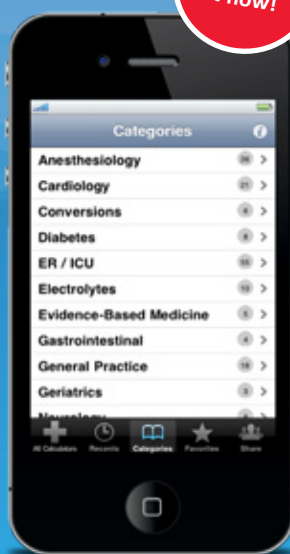
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Sedentary women at higher risk of T2DM

Sitting for long periods everyday increases the risk of developing type 2 diabetes mellitus (T2DM) in women, but not in men, a new UK study shows.

Researchers from the University of Leicester's departments of health sciences and cardiovascular sciences assessed 505 men and women aged 49 to 69 on the amount of time they spent sitting during the course of a week.

They found that the women who spent the longest time sitting had higher levels of fasting insulin, C-reactive protein, leptin and interleukin-6, all of which are early metabolic defects that are precursors of T2DM. [*Am J Prev Med* 2012;42(1):1-7]

However, the study could not pinpoint why there was a gender difference, although it was suggested that women might snack more often than men during sedentary behavior, or because men tend to take part in more



robust activities when they do get up and about.

"This study provides important new evidence ... and that this effect is seen regardless of how much exercise is undertaken. This suggests that women who meet the national recommendations of 30 minutes of exercise a day may still be compromising their health if they are seated for the rest of the day," said lead author Dr. Thomas Yates. **MI**

Yoga may ease stress-related conditions

Yoga may be effective in treating patients with stress-related psychological and medical conditions like depression, anxiety, hypertension and heart disease, say US researchers.

Their theory could be used to develop specific mind-body practices for the prevention and treatment of these conditions in conjunction with standard treatments. [*Med Hypotheses* 2012 Feb 24. Epub ahead of print]

It is believed that stress causes an imbalance in the autonomic nervous system ie, parasympathetic under-activity

and sympathetic over-activity, as well as under-activity of the inhibitory neurotransmitter, gamma amino-butyric acid (GABA). Low GABA activity occurs in anxiety disorders, post-traumatic stress disorder, depression, epilepsy and chronic pain.

According to the researchers, their hypothesis could explain why yoga via vagal nerve stimulation (VNS) corrects underactivity of the parasympathetic nervous system and GABA, and works to decrease both seizure frequency in epilepsy and the symptoms of depression. **MI**

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Important Notice:

The Ministry of Health Malaysia¹ and the World Health Organisation (WHO)² have recommended that pregnant women and new mothers be informed of the benefits and superiority of breast-feeding – in particular the fact that it provides the best nutrition and protection from illness for babies. Breastfed infants have a healthy intestinal microbiota and reduced risk of infections and diarrhoea. Mothers should be given guidance on the preparation for, and maintenance of, breast-feeding, with special emphasis on the importance of a well-balanced diet both during pregnancy and after delivery. To stimulate better lactation, baby should be put to the breast within the first hour after birth. Working mothers can breast-feed before leaving home in the morning and again when they return home in the evening. While at work, babies may be fed with breast milk, which has been expressed and stored hygienically. Unnecessary introduction of bottle-feeding or other foods and drinks should be discouraged since it will have a negative effect on breast-feeding. Similarly, mothers should be warned of the difficulty of reversing a decision not to breast-feed. Before advising a mother to use an infant formula, she should be advised of the social and financial implications of her decision: for example, if a baby is exclusively bottle-fed, more than one can (400g) per week will be needed, so the family circumstances and costs should be kept in mind. Mothers should be reminded that breast milk is not only the best, but also the most economical food for babies. If a decision to use an infant formula is taken, it is important to give instructions on correct preparation methods, emphasizing that unboiled water, unboiled bottles or incorrect dilution can all lead to illness. The source of the infant formula product is of cow's milk origin.

Refer to:

1. Code of Ethics for the Marketing of Infant Foods and Related Products, 4th edition, Ministry of Health Malaysia, August 2008.
2. International Code of Marketing of Breast Milk Substitutes, adopted by the World Health Assembly in Resolution WHA 34.22, May 1981.

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1. Gronlund MM, Lehtonen OP, Eerola E, Kero P. *J Pediatr Gastroenterol Nutr* 1999; 28: 19-25.
2. Penders J, Thijs C, Vink C *et al. Pediatrics* 2006; 118: 511-21.
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7. Langhendries JP, Detry J, Van Hees J *et al. J Pediatr Gastroenterol Nutr* 1995; 21: 177-81.
8. Mohan R, Koebnick C, Schildt J *et al. J Clin Microbiol* 2006; 44(11): 4025-4031.
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individuals have come together in Malaysia to support the initiatives of CEVHAP.

Rosmawati said CEVHAP has identified World Hepatitis Day on 28 July as an important part of its mission and activities. "An officially sanctioned World Hepatitis Day is a powerful way of raising awareness of viral hepatitis – a disease that is still largely neglected in this country."

Last year, the first official WHO World Hepatitis Day was marked with a nationwide campaign involving 26 centers, including 13 MOH hospitals, three private medical centers, three universities, the Kuala Lumpur Performing Arts Centre (KLPAC), the National Visual Arts Gallery and Kuala Lumpur City Council. The main objective of raising public awareness was

met, with nearly 5,000 hepatitis B and C screening tests performed.

Rosmawati added: "Through the active presence of World Hepatitis Day last year, the relevant specialists at 19 participating hospitals dealing with viral hepatitis have built partnerships and collaborations to coordinate actions on viral hepatitis." Since then, a few MOH specialists and herself have engaged policy-makers and proposed a national strategy for viral hepatitis.

The key points of this strategy are to enhance public and primary care physicians' awareness of viral hepatitis; improve prevention and diagnosis, including screening high-risk groups; and improve access to treatment. **MI**

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Deadly J-curve in hypertension management

Malvinderjit Kaur Dhillon

Mortality associated with lower diastolic blood pressure, giving rise to the J-curve phenomenon, is attributed to coronary heart disease, says an expert. [*J Am Coll Cardiol* 2009;54:1827-34]

The J-curve hypothesis, which only applies to diastolic blood pressure, raises the concern that there is a critical value where diastolic blood pressure reduction in hypertensive patients might no longer be beneficial and could increase the risk of cardiovascular death. [*Hypertension* 2007;50:172-80]

“Based on the INVEST [International Verapamil SR-Trandolapril Study] study, J-curve mortality is higher in patients with MI [myocardial infarction] compared to patients with stroke as diastolic blood pressure is lowered,” said Associate Professor Chee Kok Han, a consultant cardiologist at the University Malaya Medical Centre (UMMC). [*J Am Coll Cardiol* 2009;54:1827-34]

“Looking at patients who have undergone coronary intervention, be it angioplasty or bypass surgery, versus patients who have not undergone angioplasty or bypass surgery, the J-curve effect is more obvious in patients who did not receive treatment for their coronary artery disease. [*J Am Coll Cardiol* 2009;54:1827-34] This tells us that the J-curve phenomenon has something to do with their underlying coronary artery disease and that J-curve mortality is due to coronary artery disease,” he said.


According to Chee, the critical value,



also known as the J point, has changed over the past few years. In 1991, the beneficial therapeutic threshold point was 85 mmHg. [*JAMA* 1991;265:489-95] In 2005, the J point was reduced to 70 mmHg and in 2011, it dropped to 65 mmHg. [*Hypertension* 2005;45(5):907-13, *J Am Coll Cardiol* 2011;57:2037-114]

“However, these [J points] are based on retrospective studies as there is no prospective study looking at where exactly is the J point. We only have one mega-study that investigates whether the J point exists – the HOT [Hypertension Optimal Treatment] study. The lowest diastolic blood pressure achieved was 86.5 mmHg, but this was not low enough to tell us where the J point is,” he said. [*Lancet* 1998;351:1775]

While urging clinicians to treat patients with systolic hypertension, Chee urged caution in patients with marked diastolic hypertension. This especially applies to the elderly (age >65 years) with underlying coronary artery disease.

Chee was speaking at the 9th Annual Scientific Meeting of the Malaysian Society of Hypertension in Kuala Lumpur. 

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Reference:

1. H. Pabst et al. Efficacy & Tolerability of Escin / Diethylamine salicylate combination gels in patients with blunt injuries of the extremities. *Int J Sports Med* 2001, Vol.22: 430-436.

2. D. Wetzel et al. Escin / Diethylammonium salicylate / heparin combination gels for the topical treatment of acute impact injuries: a randomised, double blind, placebo controlled, multicentre study. *Br J Sports Med* 2002, Vol.36: 183-188.

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A better REMEDEE for heart attacks

Pank Jit Sin

Patients implanted with a new combination stent have non-inferior restenosis rates compared with those given a drug-eluting stent (DES), shows a US study.

The REMEDEE* study results were revealed at the Transcatheter Cardiovascular Therapeutics (TCT2011) 23rd Annual Scientific Symposium in San Francisco, California.

Dr. Yap Yee Guan, a consultant cardiologist, said REMEDEE was carried out to establish non-inferiority of a combination stent (bio-engineered plus drug-eluting, otherwise known as dual-therapy stents or DTS) to a paclitaxel-eluting stent. Its primary endpoint was angiographic 9-month in-stent late lumen loss, while the secondary endpoints included all-cause and cardiac mortality; and stent thrombosis. REMEDEE showed that DTS reduced in-stent restenosis rates by 43 percent compared to DES. Yap was speaking at a press workshop on percutaneous coronary interventions.

Yap also showed optical coherence tomography (OCT) comparison between groups of patients (9 months post-procedure) utilizing bare metal stents (BMS), DES, bio-engineered stents (BES) and DTS showed that DTS provided the best outcomes.

OCT images of patients implanted with BMS 9 months after the procedure showed thick scar tissue development as a result of excessive cell proliferation, which usually leads to comparatively higher chances of restenosis. After the same amount of time, OCT of DES showed uncovered struts and



exhibited the presence of thrombus – possibly leading to increased risk of thrombosis. With BES, full stent coverage could be seen, with a corresponding reduction in the risk of thrombosis. DTS pushed the results even further, with arteries experiencing full stent coverage (leading to a reduced risk of thrombosis) and heterogeneous coverage with minimal hyperplasia.


Malaysia is one of the countries involved in the REMEDEE multicenter study, together with Hong Kong, Australia, Belgium, Brazil, Germany, the Netherlands and Singapore. Out of 183 subjects in total, the two centers in Malaysia enrolled 30.

“In the REMEDEE trial, it was shown there were differences between DTS and DES in terms of stent restenosis rates. However, it was not statistically significant. A single-center analysis on the patients we enrolled is not available, hence I am unable to provide a scientific number [on the restenosis

rates],” Professor Sim Hui Kian, visiting senior consultant cardiologist, department of cardiology, Sarawak General Hospital Heart Centre, told *Medical Tribune*. Sim is one of the investigators involved in the Malaysian arm of the study.

He added that based on his observations, there were differences in in-stent restenosis with DTS compared with DES. “The DTS has the potential to address the current shortfalls in DES and BES. I believe DTS is suitable for all patients, and with the upcoming OCT trial results, it has the potential to give physicians the freedom to shorten dual antiplatelet therapy when necessary.”

When asked of his opinion on the different stents ie, DES and BES compared with

DTS, Sim said: “I believe DTS has a better healing profile compared to DES, yet it maintains a comparable or better restenosis rate. When compared with BMS, I believe DTS has a better restenosis rate and a similar or better healing profile. However, the final healing profile data awaits confirmation from the upcoming OCT trials.” Sim also hoped further local trials on DTS will be performed. 

**REMEDEE: Prospective, Randomized Study to Evaluate the Safety and Effectiveness of an Abluminal Sirolimus Coated Bio-engineered Stent Compared with a TAXUS® Liberté® Stent Control Arm for Treatment of Stenotic Lesions in Native Coronary Arteries.*

Survey: COPD affects younger population

Saras Ramiya

A recent international survey has found that chronic obstructive pulmonary disease (COPD) has a significant impact on the younger age group.

The study, COPD Uncovered, revealed the consequences of COPD in patients aged 45 to 67 from six countries. In a sub-analysis of the cross-sectional survey involving Germany, US, UK, Brazil, China and Turkey (n=2426), researchers found that COPD not only reduces work productivity and income, it also diminishes the quality of life in the economically active 45 to 65 age group. [*BMC Public Health* 2011;11:612]

“About 80 percent of participants reported that they could no longer maintain the lifestyle they had before disease onset because of loss of income. A quarter

said they were unable to care for their children as usual, and one fifth felt they were a burden to their family and friends,” said Professor Roslina Abdul Manap, head of the Respiratory Unit at Universiti Kebangsaan Malaysia Medical Centre, and president of the Malaysian Thoracic Society (MTS).

In addition, about half of the participants reported that their cough was embarrassing, 41 percent said they were unable to plan for the future, and 37 percent said their household income had decreased because of their condition.

“In this study, the mean retirement age for the participants was 54 years, whereas the [typical] retirement age is at least 60, so that means there is a loss of productive years, which in a population and over time will impact on the country’s GDP [gross domestic product],” she added.



Roslina said that patients aged above 40, who smoke and have a cough, should be screened for COPD. (Table 1) Early screening and treatment can prevent further lung damage in COPD patients. [*Am J Respir Crit Care Med* 2002;166(5):675-9, *JAMA* 1994;272(19):1497-505]

With regard to lifestyle changes, patients should be advised to stop smoking and to consider nicotine replacement therapies. They should also be instructed on effective breathing and coughing methods to expel phlegm, eat a balanced diet and adjust their daily activities. They should also be encouraged to continue regular bronchodilator use, said Roslina.

MTS has produced the second edition of its clinical practice guidelines on COPD, which was launched in 2010 and focuses on early diagnosis, intervention, improving patients' health and managing acute exacerbations. [Malaysian COPD CPG 2nd Edition Available at: www.mts.org.my/index.asp Accessed on 16 March]

Roslina was speaking at a media briefing in conjunction with the launch of a bronchodilator, indacaterol maleate, the only once-daily long-acting beta-2 agonist. **MTI**

Table 1: A questionnaire to screen for COPD.

Do you cough several times on most days?
Do you bring up phlegm or mucus on most days?

Do you get out of breath more easily than others your age?

Are you older than 40 years?

Are you a current smoker or ex-smoker?

Note: If patients answer 'yes' to three or more questions, they may have COPD and should be screened with a spirometry.

Source: Malaysian COPD CPG 2nd Edition (Available at: www.mts.org.my/index.asp Accessed on 16 March).

Asian pneumonia patients have high antibiotic resistance

Leonard Yap

There is a high prevalence of antibiotic resistance among pneumonia patients in Asia, says an expert.

Part of the reason for this resistance is the overuse of antibiotics, particularly in children, said Dr. Ralf Rene Reinert, senior director of scientific affairs and vaccines for Pfizer, at a press conference in Kuala Lumpur.

There is a need to be more careful with dispensing antibiotics, particularly in cases of the common influenza. To make things worse, there is little development in producing new antibiotics for the ever-evolving bacterium, he added.

The global emergence of antibiotic-resistant *Streptococcus pneumoniae* has been discussed widely and been a cause for clinical concern since the 1980s. [*J Antimicrob Chemother* 2004;50(Topic T1):1-5]

Infection with *S. pneumoniae* is among the most common causes of community-acquired respiratory tract infections, including pneumonia, otitis media and sinusitis, in addition to being the leading cause of meningitis and bacteremia. [*J Antimicrob Chemother* 2002;50(Suppl. S1):25-37]

Data on pneumococcal resistance from Asian countries at the end of the 1990s were particularly alarming. International surveillance studies conducted from 1996 to 1997 and from 1998 to 1999 in 11 Asian countries by the Asian Network for Surveillance of Resistant Pathogens (ANSORP) documented very high prevalence rates of penicillin and erythromycin resistance among *S. pneumoniae* clinical isolates and


nasal carriage isolates. [*Antimicrob Agents Chemother* 2004;48(6):2101-7]

A study found a rapid increase in penicillin resistance in two metropolitan Chinese cities and in Malaysia. The overall rates of penicillin resistance in Beijing and Shanghai were about 10 percent from 1996 to 1999, but increased to 43 percent from 2000 to 2001. The same trend was noted among isolates from Malaysia. [*Antimicrob Agents Chemother* 2004;48(6):2101-7]

According to UK's Health Protection Agency (HPA) and British Infection Association:

- A dose and duration of antibiotics treatment for adults is usually suggested, but may need modification for age, weight and renal function. In severe or recurrent cases, consider a larger dose or longer course.
- Lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
- Prescribe an antibiotic only when there is likely to be a clear clinical benefit.
- Consider a no, or delayed, antibiotic strategy for acute self-limiting upper respiratory tract infections.
- Limit prescribing over the telephone to exceptional cases.
- Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics when narrow spectrum antibiotics remain effective.
- Avoid widespread use of topical antibiotics.

Note: This guidance is based on the best available evidence but professional judgment should be used and patients should be involved in the decision.

[Management of Infection Guidance for Primary Care. www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1279888711402 Accessed on 16 March] 



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Singapore MOH to increase hospital beds



More ICU beds will help meet the needs of the critically ill.

Elvira Manzano

The Ministry of Health (MOH) of Singapore has announced that it will increase the number of high dependency (HD) and intensive care unit (ICU) beds for the critically ill. This is on top of plans to increase the overall number of hospital beds in public hospitals.

Speaking in Parliament, Minister for Health Gan Kim Yong said the move is in response to the growing number of hospital admissions every year.

“We recognize that the demand for such facilities would increase as our population ages, with increasing prevalence of chronic diseases coupled with advances in medical treatment that enable treatment of increasingly more complex cases.”

However, he cautioned that “we need to use these facilities appropriately and

ensure right siting, so that only patients who need HD and ICU beds are warded in such facilities.” Other less serious patients may be cared for in nursing homes, in community hospitals or at home.

Over the years, the MOH has built up HD and intensive care capacities to meet the needs of critically ill patients. As of December 2011, HD and ICU beds constituted 9.4 percent of hospital beds in service.

Gan said the occupancy rate for HD beds up to the third-quarter of last year was 60 percent while that for ICU was 73 percent. Bed occupancy rates for HDs and ICUs vary across different hospitals and time periods.

He added that healthcare institutions are also looking at other ways to improve the use of hospital space by reducing the length of hospital stays, converting administrative space into medical facilities and making the discharge process more effective. **MI**

New specialist center for colorectal diseases in Singapore

Rajesh Kumar

Four Singapore surgeons have come together to establish the Novena Colorectal Centre (NCC) in partnership with Fortis Healthcare.

The group practice of Drs. Francis Seow-Choen, Ho Kok Sun, Lim Jit Fong and Koh Poh Koon will provide integrated colorectal care along with super specialty expertise in minimally invasive treatments, robotic surgery, genetic testing and pelvic floor disorders.

NCC is a precursor to the country's first specialty hospital dedicated to colorectal diseases, coming up at Adam Road later this year. It recently hosted Drs. Piercarlo Meinero and Pier Paolo Dal Monte, the Italian inventor and pioneer respectively of the novel video-assisted anal fistula treatment (VAAFT) technique, to lead the first workshop on VAAFT in Singapore.

VAAFT allows surgeons to view the fistula from the inside so that it can be eradicated under direct vision using fistuloscope. It can also help prevent the high incidence of bowel control impairment after traditional surgical approaches as well as minimize skin wounds around the anus, which require an extended healing period.

"The advantages of this technique are that it can be performed as day surgery, and there are no surgical wounds on the buttocks or in the perianal region," said Meinero, chief of colorectal surgery at Santa Margherita Ligure Hospital in Italy.

Dal Monte said that in Italy the



fistuloscope is now routinely used for diagnosis and would eventually become a gold standard, with the surgical component indicated for complicated cases.

More than 1,000 patients worldwide have undergone the operation, a majority of them in Italy and India, with a success rate of about 70 to 80 percent.

"We learnt VAAFT because we think it can really add value to patient care in this region ... it provides a very particular type of complex patient with a very effective solution," said Dr. Lim Jit Fong.

NCC is yet to decide on the exact cost of the technique to patients, but the surgeons said the technique is not indicated for everyone.

Green light for Health Ambassador training academy

Elvira Manzano

Singapore's Health Promotion Board (HPB), in partnership with the National University of Singapore's Saw Swee Hock School of Public Health, will set up a Health Promotion Academy for Health Ambassadors to enhance their knowledge in health promotion and disease prevention.

"By setting up a Health Promotion Academy, our Health Ambassadors will have access to even more rigorous training and development opportunities. This means they will be even more confident and effective in their roles as peer mentors, sharing healthy living messages with families and friends, and raising the level of health literacy across Singapore," said Mr. Ang Hak Seng, HPB chief executive.

He said the academy will serve as a center of excellence for health literacy, developing programs and curricula for training of Health Ambassadors and will be managed by the HPB.

Present at the signing of the memorandum of agreement was Minister of State for Health Dr. Amy Khor, who was appointed Chief Health Ambassador. She was stepping forth to encourage more Singaporeans to become Health Ambassadors. Joining her at the event were 1,000 Health Ambassadors.


"The ambassador is the new volunteer. Beyond participating in altruistic activities for the good of others, he or she is a role model and a change agent. Not only do HPB's Health Ambassadors volunteer at various outreach events, they walk the talk of healthy living and inspire those they care



about to do the same. I am honored to be in their company," Khor said.

Health Ambassadors include doctors, nurses and dentists who want to give back to their communities by volunteering their services at various outreach activities. Others are ordinary residents who are trained to conduct simple health-related activities such as body mass index (BMI) measurement and blood pressure monitoring, give health tips and information, and act as a feedback channel for health policies and programs.

The training curriculum for Health Ambassadors comprises a 12-hour basic module. After completion of the module, they can take intermediate and advance modules on physical activity, nutrition, cancer and functional screenings, among others, to be better equipped for their role as health promoters.

Launched in October 2011, the Health Ambassador Network was designed as a nationwide social movement to disseminate HPB's health message to the community and encourage Singaporeans to become advocates of healthy living. Now, there are 2,000 Health Ambassadors who are either recruiters, coordinators, mentors, facilitators or trainers. The HPB targets to have as many as 10,000 Health Ambassadors by 2015. 



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Overweight, obese at higher risk of disc degeneration

Rajesh Kumar

Overweight or obese adults are significantly more likely to have disc degeneration than those with a normal body mass index (BMI), a large Chinese study has found.

Previous research has linked higher BMI to low back pain. Researchers led by Drs. Dino Samartzis and Kenneth Cheung at the University of Hong Kong went a step further by investigating the association between elevated BMI and presence, extent and severity of lumbar spine disc degeneration in adults. [*Arthritis Rheum* 2012 Jan 27. DOI: 10.1002/art.33462]

A total of 2,599 adults (1,040 men and 1,559 women, mean age 42 years) were recruited from Southern China between 2001 and 2009, and their radiographic and clinical assessments and spinal magnetic resonance imaging (MRI) were taken. The subjects were from diverse social and economic backgrounds and were recruited regardless of whether they had low back pain or not.

Mean BMI was significantly higher in subjects with disc degeneration (mean=23.3 kg/m²) compared to those without (mean=21.7 kg/m²) ($P<0.001$). A significant increase in the number of degenerated levels ($P<0.001$), global severity of disc degeneration ($P<0.001$), and end-stage disc degeneration with disc space narrowing ($P<0.001$) was noted with elevated BMI and was more pronounced in obese individuals.

“Our research confirms that with elevated BMI there is a significant increase in the extent and global severity of disc

degeneration. In fact, end-stage disc degeneration with narrowing of the disc space was more pronounced in obese individuals,” said Dr. Samartzis.

Practice implications

Physicians should become more familiar with various risk factors associated with disc changes, and screening and follow-up of the spine in obese individuals can help prevent future back-related problems, he added.

The findings should also motivate overweight or obese patients even further to have a more active lifestyle, eat healthier and lose weight, said Samartzis.

When asked about the poor affordability and accessibility of MRI, Cheung said the modality is a very useful tool to diagnose the cause of back pain.

“If the patient is not in pain, then screening and identifying early disc degeneration does not add value to the overall management. Of foremost importance is a healthy lifestyle with regular exercise, careful weight control and avoid smoking,” he said.

The authors also noted that disc degeneration is a complex process involving structural and chemical changes of the disc. They recommended that future studies that investigate risk factors for disc degeneration should take into account the impact of overweight and obesity on the disease.

“Deeper understanding of how elevated BMI contributes to disc degeneration and low back pain could aid in the development of novel interventions that can improve quality of life for those with these disabling conditions,” said Cheung.

Asian experts urge early detection of CKD in high-risk groups

Christina Lau

Opinion-leading nephrologists from 14 Asian countries and regions are calling for early detection of chronic kidney disease (CKD), especially in high-risk groups.

Their guidelines, published recently in the journal *Nephrology*, will be adopted by national societies of nephrology in Asia and Australasia to enhance local early detection programs. [*Nephrology* 2011;16:633-41]

"We recommend regular CKD screening for individuals with diabetes, hypertension, a family history of CKD, a history of acute kidney injury, those receiving potentially nephrotoxic drugs, herbs or substances or taking indigenous medicine, and those older than 65 years," said Professor Philip Li, of the Division of Nephrology, Chinese University of Hong Kong (CUHK), who chairs the guideline development group. "The screening test can be performed by family physicians."

To screen for CKD, the guidelines recommend spot urine sample for protein analysis with the standard urine dipstick test, the dipstick test for red blood cells, or an estimate of glomerular filtration rate based on serum creatinine concentration. Confirmation by a repeat test or urine microscopy is needed, respectively, if either of the first two tests is positive.

"If CKD is detected, patients should be referred to primary care physicians experienced in managing kidney disease for follow up," said Li. "A management protocol should be provided to the primary care



Professor Philip Li and Dr. Chow Kai-Ming.

physicians. Further referral to nephrologists will be based on the protocol together with clinical judgment of the primary care physicians who assess the severity of CKD and the likelihood of progression."

The guidelines were developed in view of the prevalence of CKD and the rising trend of end-stage renal disease (ESRD) in Asia. "At present, 12 to 17.5 percent of Asians suffer from different stages of CKD," said Dr. Kai-Ming Chow, of the department of medicine and therapeutics, CUHK, who is secretary of the guideline development group. "Hypertension is a risk factor of CKD affecting about 20 percent of Asians, but less than half of hypertensive Asians are aware of the problem."

In Hong Kong, the situation is also worrying as the number of ESRD patients requiring renal replacement therapy (RRT) has increased 1.64-fold from 2000 to 2010. According to data from the


Hospital Authority's Hong Kong Renal Registry, a total of 7,372 patients were on RRT in 2010 (4,130 on dialysis and 3,242 on kidney transplant).

"Diabetes is the major cause of ESRD in Hong Kong, accounting for 46.2 percent of incident cases in 2009. This is followed by glomerulonephritis and hypertension, which accounted for 20.2 and 9.7 percent of cases, respectively," Li reported. [Hospital Authority, Hong Kong Renal Registry]

Even in asymptomatic individuals, an earlier study showed that 33.2 percent of those aged above 60 had blood pressure or urine abnormalities, including microscopic hematuria, proteinuria or

glycosuria. The corresponding figures for those aged 20 to 40 and 41 to 60 were 9.7 and 24 percent, respectively. [*Kidney Int Suppl* 2005;(94):S36-S40]

As late nephrology referral is associated with significantly increased all-cause and cardiovascular mortality in patients receiving peritoneal dialysis [*Perit Dial Int* 2008;28:371-6], the group advocates programs for early detection of CKD to prevent its worsening and progression.

"Urine testing is inexpensive and feasible in primary care settings," stressed Li. "Nephrologists should work closely with family physicians on early detection and treatment of CKD." 

Public warned against killer sex pills

Elvira Manzano

Singapore health authorities have again alerted the public on the use and sale of illegal sexual enhancement products island-wide.


"People should stop buying and taking these harmful products. Go and see a doctor to get proper medicines," said Associate Prof. Chan Cheng Leng, director of the vigilance division, Health Sciences Authority (HSA). "The health hazards associated with illegal health products are very real and serious."

The warning comes in the wake of reports that four men, who are believed to have taken such illegal products, were hospitalized last month due to excessively low blood sugar levels. Two of them were unconscious when rushed to the hospital, while the other two were confused and weak. The patients,

aged between 30 and 78, are now in stable condition.

Authorities were not able to identify the exact products they consumed, but believed these contained excessive amounts of glibenclamide, an antidiabetic drug of the sulfonylurea class.

The drug has been frequently used as an adulterant in illegal sexual enhancement health products. In the past, pills like 'Power 1 Walnut', 'Singapore Power 1', fake Cialis® and 'Santi Bovine Penis Erecting' were found to contain glibenclamide, which led to seizures, coma and death among patients.

The HSA also called on the public to remain vigilant and not to fall prey to vendors and peddlers selling these illegal products. Health professionals were also advised to report any adverse events that might be related to the use of illegal health products. 

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Hong Kong HA to provide interferon for multiple sclerosis patients

Christina Lau

Interferon will be provided to patients with multiple sclerosis (MS) as a Special Drug under the Hong Kong Hospital Authority's (HA) expanded Drug Formulary with effect from 1 April.

While patient eligibility criteria are yet to be announced, a concern group is urging the HA to adopt internationally recognized criteria so that all patients suitable for the treatment can benefit.

Interferon has been self-financed by MS patients managed in the public sector unless they fulfill the stringent requirements for financial assistance under the Samaritan Fund. Starting in April, the HA will provide interferon treatment to eligible patients at a very low cost. About 90 patients will benefit, according to an HA estimate.

"The HA has yet to announce the criteria for patient eligibility. Based on the internationally recognized McDonald Criteria 2010 and the indications for drug use, nearly 170 MS patients in Hong Kong are suitable for interferon treatment," said Ms. Jintana Sae Sow, chairperson of the Multiple Sclerosis Concern Group, at a press conference.

She stressed that the HA's criteria should be consistent with those recognized internationally and take into account the fluctuating course of MS, so that patients in remission can be considered for interferon treatment.

"The criteria should not be more stringent than current requirements of the Samaritan Fund, for which very few MS patients are eligible," she said. "In addition to the strict

financial assessment, patients are required to pass a test of aided walking of 100 meters. Patients with preserved cognition and upper-arm mobility are excluded."

In a recent survey conducted by the Concern Group, 42 percent of 82 MS patients said they had to leave their families and live alone, or give up their jobs or property to apply for fund assistance.

Among interferon-treated patients, 75 percent said they had to bear full or partial cost of the drug, while 29 percent said they would not be able to afford the treatment after 3 years.

Furthermore, 33 percent of the patients had reduced interferon use on their own because of financial considerations. "This may impair disease control in terms of progression and relapse," said Dr. Chen-Ya Huang, president of the Hong Kong Brain Foundation, a member of the Concern Group.

For those not treated with interferon, 38 percent indicated that follow-up consultations were unnecessary, suggesting that some patients might have been lost to follow up and the number of MS patients is underestimated.

"Interferon has been shown to slow MS progression to disability by about 3 years," said Professor Vivian Lee, of the School of Pharmacy, Chinese University of Hong Kong, a member of the Concern Group. [*Mult Scler* 2009;15:1286-94] "The treatment is highly cost-effective. By providing 170 MS patients with interferon therapy, it is estimated the HA could save more than HKD 200 million in 3 years."

Probiotics improve outcomes for brain injury patients

Naomi Rodrig

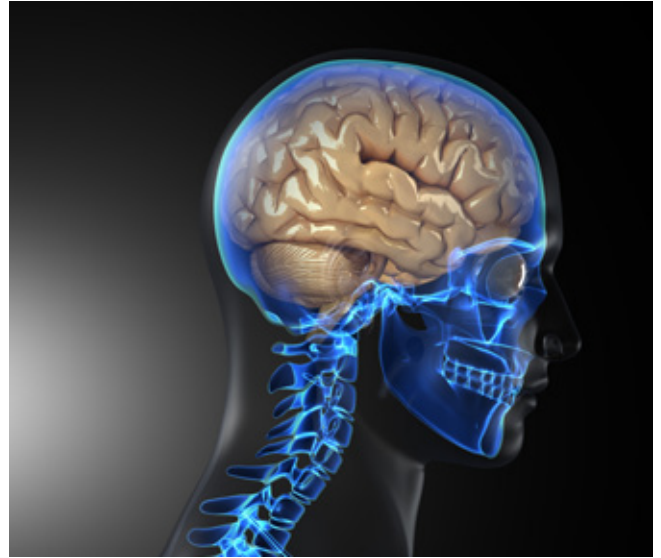
New research from China published in the open access online journal *Critical Care* shows that adding probiotics to nutrients supplied via feeding tube to intensive care unit (ICU) patients reduces the number of infections and the amount of time patients spend in intensive care.

Researchers at the North Sichuan Medical College and Hospital conducted a pilot trial of 52 patients who had suffered traumatic brain injuries, and were being treated in the ICU. The patients were randomized to receive either usual treatment and nutrition or nutrition supplemented with probiotics.

“Traumatic brain injury is associated with a profound suppression of the patient’s ability to fight infection. At the same time, the patient also often suffers hyperinflammation due to the brain releasing glucocorticoids in response to the injury,” said Professor Jing-Ci Zhu, of the Third Military Medical University School of Nursing in China, one of the study authors.

Suppression of the immune system can be measured by an alteration of helper T-cells (Th) from Th1, which stimulate the action of macrophages to fight infection, to Th2. Th2 cells recruit B-cells, which in turn are involved in antibody production. This switch from Th1 to Th2 leaves patients vulnerable to infections, including ventilator-associated pneumonia and sepsis.

The investigators monitored the Th1/Th2 switch by measuring levels of the Th1-associated signaling molecules (cytokines) IL-12 and interferon gamma (IFN γ).



No differences were found between the two groups of patients when they began the trial, and throughout the study all the patients had lower levels of IL-12 and IFN γ than uninjured healthy controls. However, by day 15, the patients who received the probiotics had significantly higher levels of both IL-12 and IFN γ than the control patients. They also showed a decrease in the Th2-associated factors IL-4 and IL-10.

“Probiotic treatment appeared to swing the Th1/Th2 balance back towards normality and, in our study, had beneficial effects. Possibly due to the small size of our study, there was no significant difference in the number of infections between the groups (nine for the probiotic group, 16 for the control patients). However, probiotic therapy reduced the number of infections occurring after 7 days, reduced the number of different antibiotics needed to treat infections, and shortened the length of time the patients were required to stay in ICU,” reported Zhu.

Study identifies epilepsy markers in Chinese

Christina Lau

Variants in a gene encoding a cytoskeletal protein may increase the risk of epilepsy in Chinese people by up to 60 percent, according to a joint study by the Chinese University of Hong Kong (CUHK) and the University of Hong Kong (HKU).

Being the first genome-wide association study on genetic markers for epilepsy, the findings may have important clinical implications for screening patients with brain insults who are at risk of developing epilepsy, and for development of new therapies.

“Brain insults are the major cause of epilepsy, accounting for 40 percent of cases. Depending on the severity of insult, 5 to 30 percent of people may develop epilepsy afterwards,” said Dr. Patrick Kwan, of the Division of Neurology, CUHK. “The fact that the same brain insult leads to epilepsy in some people but not others suggests that genetic differences may affect susceptibility to the condition.”

The genome-wide association study included 1,087 Chinese epilepsy patients and 3,444 controls. Stage 1 of the study involved genome-wide scanning in 504 patients and 2,947 controls, whereas stage 2 was a replication study in another 583 patients and 497 controls. Patients were recruited from the CUHK Epilepsy Genetics Research Network, a database including 1,800 patients from five Hospital Authority clusters. [*Hum Mol Genet* 2011, e-pub 9 Dec]

“We found sequence variants in eight genes that differed in frequency between



Genetic differences may affect susceptibility to epilepsy following a brain injury.

cases and controls,” reported Professor Pak-Chung Sham, of the department of psychiatry, HKU.

Among these, the frequency difference for the rs2292096 [G] variant on 1q32.1 in the *CAMSAP1L1* gene reached genome-wide statistical significance.


“The *CAMSAP1L1* gene encodes a cytoskeletal protein, which may affect neurite growth and, hence, the risk of epilepsy. The genetic variant we identified is present in 65 percent of Hong Kong Chinese, and increases the risk of epilepsy by approximately 60 percent,” explained Sham.

A potential clinical application could involve genetic screening of patients with brain insults to identify those at high risk of developing epilepsy. “Individuals with these genetic markers may be observed closely and treated promptly if they

develop epilepsy. They may also receive interventions to prevent epilepsy after brain insults,” said Kwan. “Our finding also helps scientists better understand how brain insults result in epilepsy, which may lead to new therapies for the condition.”

The team is now conducting further research on the function of several genes identified in the study, including *CAMSAP1L1* and *ERBB4*. “We’re studying their normal function, and the effect on cells when more or less of the proteins they encode are expressed,” said Dr. Larry Baum, of CUHK’s School of Pharmacy. “We’re also studying

the effect of those genetic variants in brain samples.”

Once the functions of proteins encoded by those genes are known, Baum said it would be possible to design drugs targeting those proteins or the relevant pathways. “When the brain doesn’t repair itself correctly after an insult, there may be a ‘short circuit’ of electrical signal causing over-activation,” he told *Medical Tribune*. “While current epilepsy drugs suppress that short circuit, new drugs could prevent the short circuit from forming in the first place by preventing improper repair of the brain insult.” 

Training healthcare workers for the future

Naomi Rodrig

The Chinese University of Hong Kong will launch two undergraduate programs to address future needs in public healthcare provision, focusing on the aging population and health promotion through an active lifestyle.


The undergraduate program in gerontology – the first of its kind in Hong Kong – is designed in response to population aging and the associated shortage in health and social services personnel. “It will equip graduates with knowledge and skills in planning, delivering and coordinating elderly care services in a wide variety of health and social elderly-care settings,” said Professor Diana Lee, director of CUHK’s Nethersole School of Nursing. “Practicum community care, rehabilitative care and residential care will also be provided to enable transfer of theoretical knowledge of gerontology

into practice.”

The second program is in exercise science and health education, targeting students seeking a career in sport, exercise and allied health sciences.

The exercise science component explores the complex nature of human movement and examines how the body reacts to acute and chronic physical activity pursuits, such as general fitness regimes, lifestyle physical activities and professional sport.

“The health education component evaluates the efficacy of a variety of prescribed physical activities, as well as theories and strategies for health promotion,” explained Professor Amy Ha, chairperson of the Department of Sports Science and Physical Education.

Both programs will be launched in the 2012/13 academic year, offering 2-year, full-time studies designed for associate degree or diploma holders. 

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Rebuilding healthcare in Sichuan

Christina Lau

Hong Kong's efforts to rebuild health-care facilities in Sichuan have borne fruit 3 years after the province was hit by a massive earthquake in 2008.

The work includes 35 medical projects under the HK\$1,675 billion trust fund established by the Hong Kong government following the earthquake, which destroyed highways and medical facilities.

The first completed project is reconstruction of the inpatient block of the Mental Health Care Hospital in Meishan, the only mental care center in Renshou County serving a population of 1.62 million in 60 towns and villages. Opening in January 2011 after 16 months of construction, the new inpatient block is equipped to provide a wider range of services such as music therapy, play therapy and stress management for mental patients, as well as psychological help for distressed earthquake victims. Staff received training from Hong Kong experts. Reconstruction of the rest of the hospital, funded by the Sichuan side, is slated for completion by 2012.

Another large Hong Kong-funded medical project is the Sichuan-Hong Kong Rehabilitation Center located in the Sichuan-Hong Kong Rehabilitation Technology Complex, Sichuan Provincial People's Hospital, Chengdu. To be completed in mid-2012, the center will provide physiotherapy, occupational therapy, clinical psychology, and prosthetic and orthotic services.

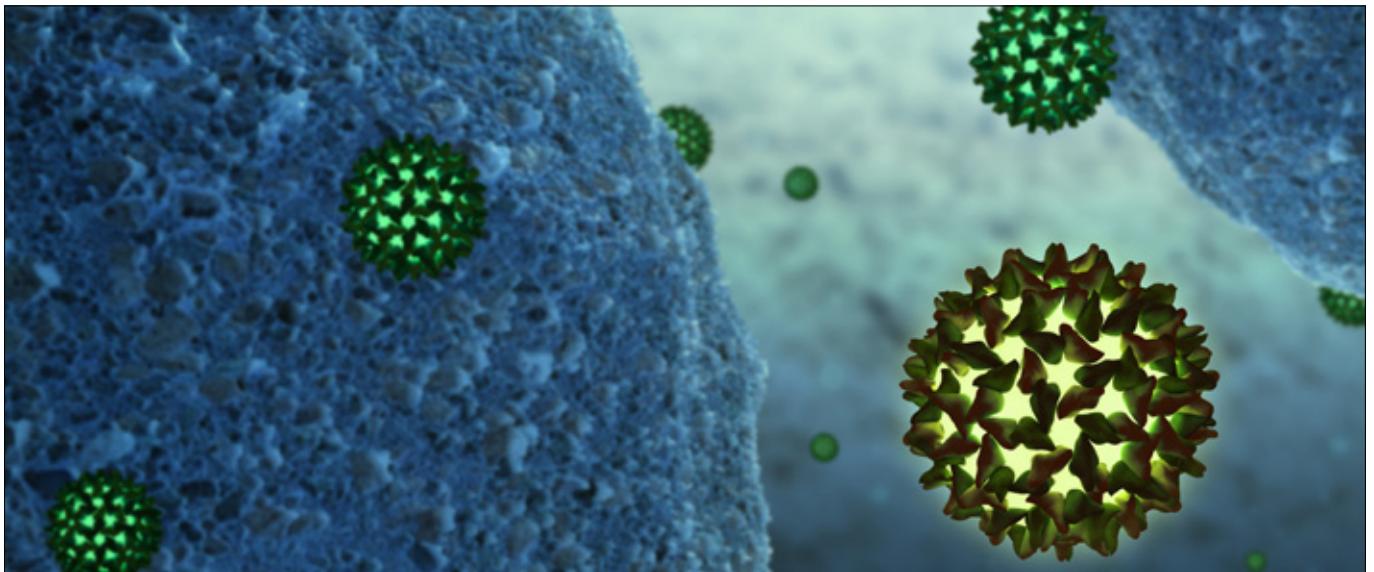
To help patients in rural areas who



have difficulty traveling to cities for medical consultation or treatment, the telemedicine network system of Sichuan University's West China Hospital was rebuilt and expanded, with the goal of covering 286 medical institutions in 139 quake-hit areas. In addition to providing long distance consultation for those patients, the system also enables institutions connected to the network to access and transmit medical records in real time around the clock through an Internet and video system.

Furthermore, remote training is provided to healthcare workers of network institutions in the form of real-time, interactive seminars and courses. As of mid-July 2011, 180 medical institutions were using the remote training service, with more than 70,000 healthcare workers having conducted exchanges and studies through the network. III

Occult hep B common in cryptogenic HCC



Christina Lau

More than 70 percent of patients with unidentifiable causes of hepatocellular carcinoma (HCC) actually have occult hepatitis B infection, according to a recent study by the department of medicine of the University of Hong Kong (HKU).

In those patients, hepatitis B virus (HBV) DNA was more often detected in non-tumorous than in tumorous tissues. [*Hepatology* 2011;54(3):829-36]

"In Hong Kong, chronic hepatitis B infection is the most common cause of HCC, accounting for 75 to 80 percent of the cases," said Professor Ching-Lung Lai at a press conference.

"About 5 percent of HCC cases are cryptogenic, or without an apparently identifiable cause."

In the study, the researchers recruited 61 HCC patients (33 cryptogenic, 28 with identifiable causes) aged 16 to 82, and obtained tumorous and adjacent non-tumorous liver tissues to look for HBV DNA by nested PCR.

"HBV DNA was detected in 73 percent [n=24] of patients with cryptogenic HCC," reported Professor Man-Fung Yuen. "In those patients, antibodies to the hepatitis B core antigen [anti-HBc] and surface antigen [anti-HBs] were detected in the serum of 75 and 58 percent, respectively."

Occult hepatitis B infection was also common in patients with alcohol-related HCC, as shown in 56 percent (n=5) of the group in the study.

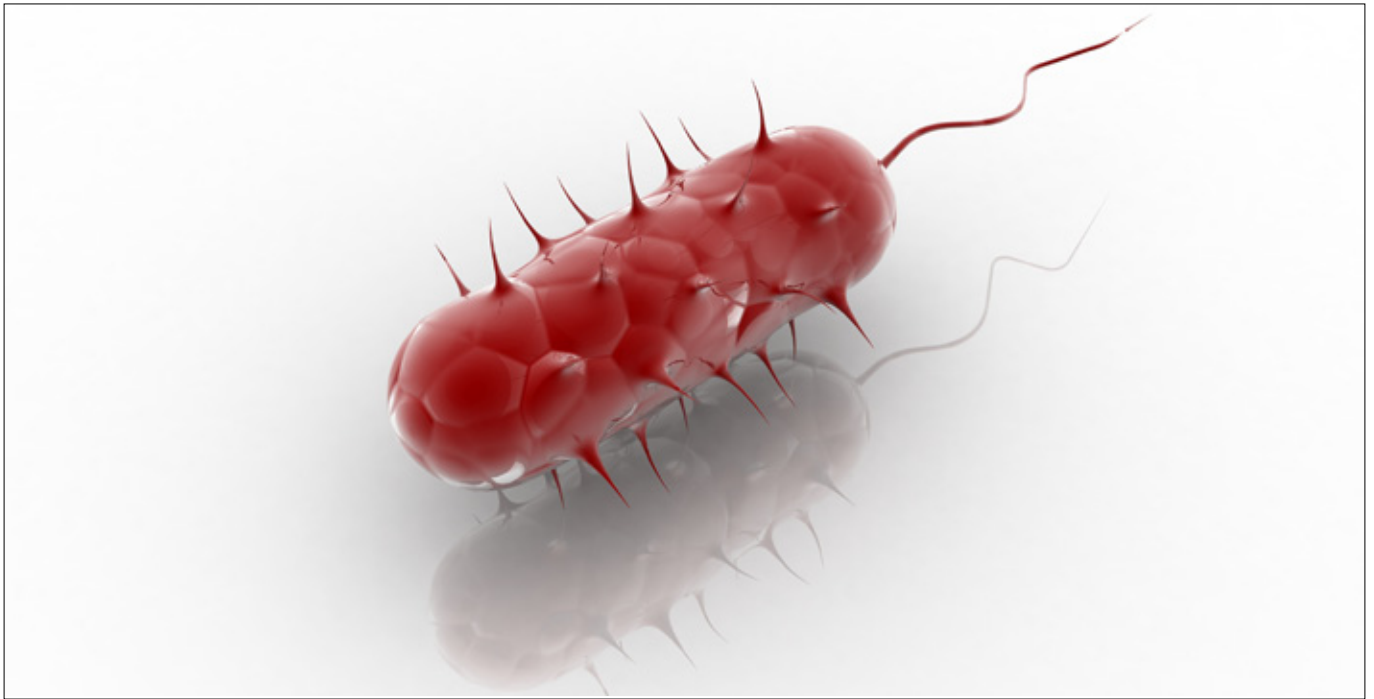
Sixty percent of those patients were positive for anti-HBc, while 80 percent were positive for anti-HBs.

Importantly, HBV was more commonly detected in non-tumorous than in tumorous parts of the liver.

Thus, the researchers suggest an anti-HBc test for HCC patients suspected to have occult hepatitis B infection, as tumor samples for lab tests are difficult to obtain.

For HCC patients confirmed to have occult hepatitis B infection, they suggest that all family members should be tested for hepatitis B as a preventive measure. **MI**

New drug target for *H. pylori*



Christina Lau


Scientists in Hong Kong have uncovered a new drug target for *Helicobacter pylori*, the only bacterium known to thrive in the human stomach that has become increasingly resistant to antibiotics in recent years.

In their study, researchers at the Center for Protein Science and Crystallography, School of Life Sciences, Chinese University of Hong Kong, uncovered a molecular complex formed by three proteins which keeps *H. pylori* alive in the acidic environment of the human stomach. Importantly, disrupting the formation of this complex had a detrimental effect on the bacterium's survival. [*J Biol Chem*, Epub 19 Oct 2011]

H. pylori produces urease to break down urea, which results in release of ammonia to neutralize gastric acid. Unlike most other enzymes, urease does not work immediately after being produced by

H. pylori. Insertion of two nickel ions is required to activate the enzyme.

"We studied the four urease accessory proteins that help activate urease, namely UreE, UreF, UreG and UreH," said Professor Kam-Bo Wong, who led the study. "Using X-ray crystallography, we were able to visualize how UreF, UreG and UreH hook up collectively to form a molecular complex that delivers nickel ions to urease. Once the nickel ions are in place, breakdown of urea into ammonia will start immediately to neutralize gastric acid."

Moreover, disrupting the formation of the UreF/UreG/UreH complex was shown to inhibit urease activation. "Thus, new drug targeting this complex may be a novel and viable strategy to eradicate *H. pylori*," Wong suggested. "We are now working on the design of drugs that inhibit the assembly of this complex." 

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Distraction and placebo potent pain-relievers

Elvira Manzano

Combining distraction techniques with a placebo cream was more effective at reducing thermal pain than distraction methods alone, a study has found.

“The reductions were additive, suggesting that the executive demands of the working memory task did not interfere with placebo analgesia,” said the researchers, from Columbia University, New York, US.

Taken together, these data suggest that placebo does not depend on active redirection of attention and that expectancy and distraction can be combined to maximize pain relief.

“The most important finding for clinicians is that distraction and placebo can be combined with no loss of efficacy,” said Mr. Jason Buhle, who was conducting the research as part of his doctoral dissertation at Columbia University, New York, US. “Distraction and placebo don’t interfere with each other.”

On a larger perspective, it implies that there are multiple routes to pain modulation which can be engaged without the use of drugs.

In the study, 33 individuals attached to a heating device on their forearms reported less pain when they performed a difficult mental test as pain was being delivered. Pain was further reduced when they were given the distracting test and a placebo cream at the same time. [*Psychol Sci* 2012 Jan 18; Epub ahead of print]

In the distraction test, participants were given a series of letters and were asked to recall if each letter mentioned had been

listed earlier. In another experiment, they were asked to apply cream on their skin and told it was pain reliever. Another group applied the same cream but was told it was a regular cream.

Buhle said one benefit of using both placebo and distraction is that the combination is more powerful than either alone. Although their study did not directly address other possible benefits, since the two techniques appear to rely on different mechanisms, he said it is likely that they will show different efficacy under different contexts. “For example, placebo may be more useful in longer lasting pain situations, like chronic pain. Distraction may be more useful when pain is brief, such as during wound care.”

Placebos reduce pain by inducing a psychological response or an expectation of relief on the part of the recipient. Its use however has been controversial as patients are somewhat deceived into taking a “medication” that has no proven therapeutic effect. Critics say such a deceit can undermine the essential trust between patients and physicians. Once patients learn they are taking placebos, the perceived benefits also tend to dissipate. Studies have also shown that placebo interventions have no important clinical effects in general, but could influence patient-reported outcomes, particularly in pain.

Meanwhile, distraction techniques such as storytelling, reading, playing games and blowing are particularly useful at alleviating pain in children. While the present study did not compare the efficacy of different distraction techniques, the literature

suggests there might be significant differences among them.

Buhle said the most effective distraction seems to occur when executive attention and working memory resources are maximally absorbed in an unrelated task. "Something active, like a video game, would generally work better than something passive, like a movie."

He explained that the task should be difficult enough to be challenging, but not so difficult that the patient gives up. Motivation also comes into play. "We motivated participants by the promise of

bonus money for good performance, but making the task fun (like a video game) would likely work better in a clinical context. Distraction must also be constant,"

Buhle said even a very difficult task won't work if frequent lulls occur during which only minimum processing is needed. "It only takes a moment to process pain, and pain might grab one's attention in these lulls, reducing the efficacy of the distraction task."

While confident with their results, he said his team is currently doing a follow-up study. MT

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Walking canes reduce knee pain

Radha Chitale

Walking canes helped reduce pain and improved function in adults with knee osteoarthritis, according to a study that researchers said was the first to examine the benefits of this common gait-assistance device.

Average pain scores between patients who used a cane every day and patients who used no gait-assistance devices after 2 months was 3.84 and 5.95, respectively, on a 10-point visual analog scale ($P<0.001$). [*Ann Rheum Dis* 2012;71:172–179]

Pain among cane users fell compared to baseline (average score 5.63). Pain scores remained consistent for those who did not use canes.

“Patients with knee osteoarthritis generally shift their weight nearly completely to the medial compartment during gait,” said researchers from Universidade Federal de Sao Paulo in Brazil. “Therefore, decreasing the load on the medial compartment should be one of the treatment objectives for such patients.”

Sixty-four patients with knee osteoarthritis were randomized to use a measured-to-fit wooden T-handled cane every day or no walking device for 60 days.

Patients maintained usual treatment for knee osteoarthritis and were evaluated at baseline, 30 days and 60 days for pain, function, general health, energy expenditure, cane use and pain medication use.

The treatment group was also given a 5-minute tutorial by a physiotherapist on optimal cane use. They were instructed to hold the cane contralateral to the

most affected knee, what angle to hold the leg and arm and positioning the cane while standing.

Previous studies have shown that contralateral cane use reduces the load and force on the knee and lets the knee and cane arm move together for a normal gait pattern.

A 6-minute walking test showed that cane users increased the distance they walked from 396 meters at baseline to 404 meters after 2 months ($P<0.001$).

The control group improved from 396 meters at baseline to 406 meters after 2 months ($P=0.96$).

The researchers did not find significant differences between functional improvement with cane use, though cane users tended towards functional improvement.

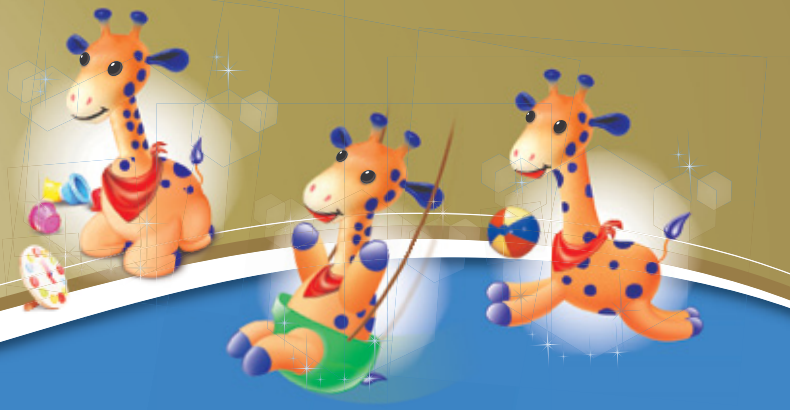
Cane users experienced more energy expenditure at baseline but this decreased over time. Cane users also took fewer pain medications after 2 months compared to the control group ($P<0.001$) and reported decreased pain following the walking test after 30 and 60 days.

“This probably demonstrates adaptation to cane use, by reducing the weight load on the affected joint during gait, thereby reducing pain...,” the researchers said.

The results are limited by the short follow up time, particularly given that patients use canes for the rest of their lives, and by not being widely extrapolated to other populations of patients with knee problems or those with different degrees of osteoarthritic severity, though the researchers said a cane could benefit them too.

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 - Medium-chain triglycerides (MCT)

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The key nutrient mix :

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However, if mothers decide to supplement with an infant formula or not to breastfeed at all, they should seek advice from their health professionals before starting the use of infant formula. Mothers should be professionally instructed on the importance of infant feeding methods, including the cost of infant formula and the health hazards of

inappropriate foods or feeding methods. Working mothers should also be encouraged to continue breastfeeding even after they resume their full time jobs. Mothers who are unable to breastfeed should seek professional advice. It is important to warn mothers of the difficulty of reversing a decision not to breastfeed.

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Accelerated infant growth linked to asthma

Elvira Manzano

Rapid growth during the first few months of life is associated with an increased risk of asthma symptoms in preschool children, research suggests.

In a prospective Dutch cohort study, no link was found between fetal growth and asthma symptoms. However, in children with normal fetal growth, accelerated weight gain between birth and 3 months of life was associated with an increased risk of asthma symptoms such as wheezing (OR 1.44, 95% CI 1.22 to 1.70), shortness of breath (OR 1.32, 95% CI 1.12 to 1.56), dry cough (OR 1.16, 95% CI 1.01 to 1.34) and persistent phlegm (OR 1.30, 95% CI 1.07 to 1.58). [*Am J Resp Crit Care Med* 2012; DOI: 10.1164/rccm.201107-12660C]

“This suggests that the relationship between infant weight gain and asthma symptoms is not due to the accelerated growth of fetal-growth restricted infants only,” said study author Dr. Liesbeth Duijts, from the Erasmus Medical Center in Rotterdam, Netherlands. “While the mechanisms underlying this relationship are unclear, accelerated weight gain in early life might adversely affect lung growth and might be associated with adverse changes in the immune system.”

Duijts and colleagues examined data from the population-based Generation R study involving 5,125 children and followed them from fetal stage until they were age 4.

While there was an inverse association between birth weight and asthma



Accelerated weight gain in early life might adversely affect lung growth.

symptoms, the association was not significant after adjusting for gestational age. Compared with term birth, preterm birth was positively associated with risks of wheezing ($P < 0.001$), shortness of breath ($P < 0.001$) and persistent phlegm ($P < 0.05$).

The study had a few strengths including its design, large population and adjustment for potential confounders. Its limitations however included possible errors in fetal size measurement and self-report of asthma symptoms.

“Accelerated growth in early infancy, not fetal growth, increases the risk of childhood asthma,” the authors concluded. However, they added, there is a need for more studies to replicate their findings and to explore the mechanisms that contribute to the effects of growth acceleration in infancy on respiratory health.

“The effects of infant growth patterns on asthma phenotypes in later life should also be examined,” they said.

High-dose antivirals don't prevent HSV-2 transmission

Radha Chitale

Anti-viral drugs do not prevent viral shedding – and thus infection transmission – in patients infected with herpes simplex 2 virus (HSV-2) even in high doses.

Three complementary studies on patients infected with HSV-2 controlled with medication showed that short bursts of viral reactivation and shedding occur subclinically. [*Lancet* Jan 2012. Epub before print]

“The discrepancy between potent suppression of clinical symptoms and failure of antiviral agents to fully prevent HSV transmission is not well understood,” said researchers from the University of Washington in Seattle, Washington, US.

“Infection with HSV-2 is a global epidemic and significantly increases the risk of HIV-1 acquisition.”

A total of 113 HSV-2-seropositive, HIV-seronegative adult patients included in the three trials had been randomized to receive either no medication or standard 400 mg aciclovir twice daily ($N=32$), standard 500 mg valaciclovir daily or high-dose 800 mg aciclovir three times daily ($N=31$), or standard valaciclovir or high-dose 1 g valaciclovir three times daily ($N=50$).

The patients collected genital swabs four times daily over a 4- to 7-week study period, a 1-week washout period and a second crossover study period for a within-person shedding rate comparison.

Across the trials, 5.4 percent of a total collected 23,605 swabs tested HSV-2 positive. Respectively, shedding frequency was 18.1 versus 1.2 percent among patients taking no medication or standard acyclovir, 4.5 versus

4.2 percent among patients taking standard valaciclovir or high-dose acyclovir, and 5.8 versus 3.3 percent among patients taking standard valaciclovir or high-dose valaciclovir.

These bursts of reactivity lasted between a median of 7 to 10 hours for any sort of treatment and 13 hours for no treatment.

The number of episodes per person-year did not differ significantly between patients on therapy in each test group (22.6 versus 20.2 for standard valaciclovir versus high-dose acyclovir, $P=0.54$; 14.9 versus 16.5 for standard valaciclovir versus high-dose valaciclovir, $P=0.034$) but were more frequent in patients not taking medication (28.7 versus 10 for no medication versus standard acyclovir, $P=0.001$).

“Intensive genital secretion collection shows that HSV shedding episodes are three-times more frequent than was previously realized,” the researchers said.

New antiherpetic drug development could help counteract bursts of shedding. But according to experts from the University of Montpellier in France in an accompanying comment, to be deployed on a large enough scale, such treatments would have to have good coverage and long-term adherence in order to substantially prevent transmission.

This ambitious goal is “unlikely to be met” due to the scale of infection – about 20 percent of the general population – and low clinical need for symptomatic therapy in most patients.

Given the high prevalence of HSV-2, these findings “should encourage patients to use condoms and adopt safe sex practices, especially since an increase of the treatment dose would not further reduce the risk of transmission,” they said.

Flu vaccination reduces COPD deaths in elderly


Rajesh Kumar

Mandatory preventive vaccination against seasonal influenza can reduce the mortality rate of chronic obstructive pulmonary disease (COPD) among those aged 65 and above during influenza outbreaks, according to a Japanese study.

The vaccination coverage among the elderly saw a rapid increase in Japan after the country's government amended the preventive vaccination law in November 2001 to specify all adults aged 65 and above as the target population for influenza vaccinations. [*Eur J Public Health* 2011; DOI: 10.1093/eurpub/ckr172]

The researchers analyzed national data on the number of monthly COPD deaths from 1995 to 2009 by gender and age to evaluate how the amendment had affected the nationwide COPD mortality rate in this age group.

Statistically significant reductions in COPD mortality rates in the months of January (RR 0.84; 95% CI 0.81–0.88), February (RR 0.85; 95% CI 0.81–0.89) and March (RR 0.92; 95% CI 0.88–0.96) were observed after amendments to the law.

However, in those aged below 65 years, no significant changes in the COPD mortality rate were found in any month following the amendments. 



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Vitamin A may reduce melanoma risk

Malvinderjit Kaur Dhillon

Consuming high-dose vitamin A supplements may prevent the onset of melanoma, according to a panel of US experts.

The VITamins and Lifestyle (VITAL) cohort study, which involved 69,635 men and women, found that high-dose (41,200 mg per day) supplemental retinol was associated with reduced melanoma risk, specifically among women.

The observed protective effect seems specific to retinol as higher dietary consumption of vitamin A and intake of carotenoids did not reduce melanoma risk. [*J Invest Dermatol* Mar 1. doi:10.1038/jid.2012.21]

However, a group of experts from Australia expressed their doubts over the study's findings.

Professor Graham Mann, a professor of medicine at the University of Sydney, told the Australian Science Media Centre: "The main limitation is that they did not assess sun exposure, which is the major risk factor for melanoma."

"Women who take vitamin supplements may well be better at sun protection, and this could account for the reduced number of melanomas, as the authors acknowledge. The authors don't say whether or not vitamin use overall was associated with reduced risk of melanoma for these women."

He also said that although the study was large, the number of melanoma cases was small. Three or four more additional cases of melanoma would have erased the differential effect of vitamin A on melanoma between the genders, and that the result may be attributed to chance.



Sun protection and self-examination is key in preventing melanoma.

"The lack of any apparent effect in men, where melanoma was more common and the numbers more robust, tends to suggest this," he said. [American Cancer Society www.cancer.org/Cancer/SkinCancer-Melanoma/DetailedGuide/melanoma-skin-cancer-key-statistics Accessed on 15 March]

"The study also suggests that a high daily intake of retinol is required to effect a reduction in melanoma risk for sun exposed sites in women only. However, vitamin A fetal toxicity is a particular concern and, therefore, routine vitamin A supplementation of the female population without contraceptive advice cannot be recommended and may have unacceptable contingent risks of fetal injury," said Dr. Andrew Miller, a clinical senior lecturer in dermatology at the Australian National University in Canberra.

"The dosage required exceeds the recommended daily intake; in the absence of confirmatory evidence I would have difficulty recommending such high doses without adequate monitoring for signs of toxicity."

Instead, Andrew recommends practising diligent sun protection and self-examination in keeping melanoma at bay, especially in high-risk families.

Physical activity lowers CV risk, better in moderation?

Elvira Manzano

Mild-to-moderate levels of exercise may be more beneficial than strenuous exercise when it comes to preventing heart attack in the long term, according to a recent study.

Researchers analyzed data from INTERHEART – a long-running case-control study on heart attacks involving 24,000 patients from 52 countries in Asia, Europe, the Middle East, Africa, Australia and North and South America – and found that only mild-to-moderate physical activity at work was protective against MI. [*Eur Heart J* 2012; DOI:10.1093/eurheartj/ehr432]

However, all levels of intensity of exercise during leisure time reduced the risk of heart attack. The odds of acute MI were lower with mild exercise (OR 0.87) and moderate to strenuous exercise (OR 0.76). The risk was even lower in patients who exercised 30 minutes or less a week. Surprisingly, no further risk reduction was seen in patients who exercised more than 60 minutes a week.

“Given previous reports indicating a dose-response protective effect of exercise duration, this result was somewhat unexpected,” said lead author Dr. Claes Held from Uppsala Clinical Research Center, in Uppsala, Sweden.

For occupational activity, both light and moderate activities were associated with decreased odds of acute MI compared with being sedentary (ORs 0.78 and 0.89, respectively). However, heavy physical labor (OR 1.02) did not lower the risk of

heart attack.

Held and colleagues included in the study 10,043 individuals who had an MI and 14,217 controls. Compared to controls, individuals who had an acute MI were more likely to be sedentary during leisure time and at work ($P < 0.001$ for both). Sedentary lifestyle was associated with greater risk of MI after adjusting for age, sex, country level income, smoking, alcohol, education, hypertension, diabetes and other factors.

Interestingly, people who owned a car and a television were at greater risk of MI than those who had none of these machines ($P = 0.054$). While Held acknowledged that a TV and a car increase physical inactivity, he said a prospective trial is needed to validate their study.

The authors said their findings highlight the protective effect of physical activity across all country income levels in addition to the known benefits of modifying traditional risk factors.

“It’s an interesting finding that goes with the theme... Daily moderate physical activity should be encouraged for both men and women of all ages as a protective act against cardiovascular disease,” the authors said. “Walking and bicycling is recommended as a method to promote physical activity.”

They attributed the increase in sedentary lifestyle to increasing urbanization, mechanization at work, motorized transportation, easy access to activity-limiting devices (cars, escalators, elevators) and appliances (TV, computers), which all promote sedentary behavior.

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Low Back Pain: Current Concepts



Dr. Eugene Wong

Consultant Spine & Orthopedic Surgeon
Kuala Lumpur

Low back pain (LBP) is a common and challenging health problem in primary care. There is a point prevalence of 15 to 30 percent and a lifetime prevalence of between 50 and 85 percent. [*Spine (Phila Pa 1976)* 2001;26(22):2504-13; discussion 2513-4]

Nonspecific low back pain (NSLBP) comprises approximately 85 percent of all back pain diagnoses and affects 80 percent of adults. It is associated with enormous expense in terms of healthcare expenditures, and work- and disability-related losses. Mean direct and indirect costs for LBP care are twice as high for patients with

chronic LBP when compared with acute LBP. The severity of LBP (high disability and moderate-to-severe limitations in daily living) and depression are the two most important predictors of costs.

Currently, there is a shift in the clinical model of LBP from a biomedical 'injury' to a multifactorial biopsychosocial pain syndrome which erupts periodically over the course of a lifetime of an individual.

The consensus of clinical guidelines suggests that acute NSLBP patients should be reassured of a good prognosis, educated in self-care, remain active and use



Advise patients to stay active and avoid bed rest.

over-the-counter medications as a first line of symptom control.

Many patients with low back pain have at least one red-flag sign. Red-flag signs have a poor test specificity. Thus, the evaluation

of LBP should take into account the whole clinical presentation of the patient. The key is to have a high index of suspicion in high-risk patients or when more than one red flag is present. **(Table 1)**

Table 1: Red flags

Cancer

- Age >50 or <17.
- History.
- Unexplained weight loss of >10 kg within 6 months.
- Failure to improve with therapy.
- Pain persists for more than 6 weeks.
- Pain at rest or at night.

Infection

- Severe pain.
- Persistent fever.
- History of intravenous drug abuse.
- Recent bacterial infection.
- Urinary tract infection or pyelonephritis.
- Pneumonia.
- Wound (eg, decubitus ulcer) in spine region.
- Immunocompromised state.
- Systemic corticosteroids.
- Organ transplant.
- Diabetes mellitus.
- Human Immunodeficiency Virus (HIV).
- Pain at rest.

Cauda Equina Syndrome

- Urinary incontinence or retention.
- Saddle anesthesia.
- Anal sphincter tone decreased or fecal incontinence.
- Bilateral lower extremity weakness or numbness.

- Progressive neurologic deficit.
- Major motor weakness.
- Major sensory deficit.

Significant herniated nucleus pulposus

- Major muscle weakness (strength 3 of 5 or less).
- Foot drop.

Vertebral fracture

- Prolonged use of corticosteroids.
- Age greater than 70 years.
- History of osteoporosis.
- Mild trauma over age 50 (or with osteoporosis).
- Recent significant trauma at any age.

Abdominal Aortic Aneurysm

- Abdominal pulsating mass.
- Atherosclerotic vascular disease.
- Pain at rest or nocturnal pain.

Gastrointestinal/ Genitourinary

- Abdominal tenderness.
- Rebound tenderness.
- Diarrhea/constipation.
- Anuria, oliguria, polyuria.
- Abnormal menses, dyspareunia.

General (weak test specificity)

- Vertebral tenderness.
- Limited spine range of motion.

Table 2: Recommendations for diagnosis of LBP

- History taking and physical examination to exclude red flags.
- Diagnostic triage (nonspecific LBP, radicular syndrome, specific pathologic change).
- Physical examination for neurologic screening.
- Radiographs not useful for nonspecific LBP.
- Consider psychosocial factors if there is no improvement.

Table 3: Recommendations for treatment of LBP**Acute or Subacute Pain**

- Reassure patients (favorable prognosis).
- Advise to stay active.
- Prescribe medication if necessary – paracetamol, nonsteroidal anti-inflammatory agents, muscle relaxants or opioids.
- Discourage bed rest.
- Do not advise back-specific exercises.

Chronic Pain

- Refer for exercise therapy.

Table 4: Yellow Flags**Psychiatric disorders**

- Anxious, depressed, social withdrawal.
- Misconception of danger of back disorders.
- Somatization; poor sleep because of back pain.

Socioeconomic issues

- Occupation related (heavy lifting, unsociable working hours, high mental workload, prolonged time off work, dissatisfaction with work, lack of work support, problems with claims or compensation, and no economic gain from resuming work).
- Economic/ social hardships (eg, death in the family, divorce or loss of income).

Behavior

- Inappropriate or limited belief of improvement or ability to work.
- Expectation that passive treatment (physical agents, extended bed rest) is better than active participation (exercise, walking, working).
- High fear-avoidance behavior scale score.
- High kinesiophobia scale score.

Miscellaneous

- Confusion about diagnosis and prognosis.
- Misunderstandings about the cause of pain.
- Negative experience with previous intervention for back pain.

Table 5: Aims of a cognitive behavioral approach

- Combat demoralization by assisting patients to change their view of their pain from overwhelming to manageable.
- Assist patients to reconceptualize themselves as active, resourceful and competent.
- Help patients in coping strategies and techniques to help them adapt and respond to pain and the resultant problems.
- Teach patients how to anticipate problems proactively and generate solutions.
- Attribute successful outcomes to their own efforts.

Diagnostic and therapeutic management of LBP vary tremendously among GPs. A recommended approach to diagnosis and treatment is provided in **Tables 2** and **3**. An ideal approach in managing LBP patients should be multidisciplinary and inter-professional. GPs could focus on pain management through medication, red-flag screening, encouragement to stay active and reassurance. Physical therapy could focus on pain management, general exercise and encouragement to stay active. Occupational therapy could focus on disability prognosis, yellow-flags management (**Table 4**) and return to activity parameters.

Patients with yellow flag signs require cognitive behavioral therapy, the aim of which is to change patients' thoughts and beliefs about their pain. Adequate information and good communication between the primary care physician and patient is a prerequisite for a successful psychosocial intervention, but this will not guarantee a change in the way patients behave and how they deal with their pain problem. The key to treatment success is that patients become active processors of information, and not passive reactors. Patients should be active collaborators when changing misconceived thoughts and behaviors (**Table 5**). [*Spine (Phila Pa*

1976) 2008;33(1):81-9]

A high proportion of patients recover from acute back pain. Reductions in pain and disability have to be more than 50 percent to be consistent with recovery from LBP. [*Spine (Phila Pa 1976)* 2011;36(26):2316-23]

When should LBP cases be referred to a spine surgeon? Indications would include patients with no response after 6 weeks of conservative treatment, patients with radicular syndrome, presence of nerve root tension signs, suspicion of a pathologic change, cauda equina syndrome and MRI showing disc protrusion or prolapse.

To rationalize the approach of LBP and to take account of emerging scientific evidence, clinical guidelines on the management of LBP have been issued in various countries. This brings us to the question: is a need for such a guideline to address the issue of LBP in the local population?

LBP can be managed successfully in the primary care setting through a program of activity modification, reassurance, short-term symptom control and alteration of inappropriate beliefs about the correlation between back pain and impairment. Multiple evidence-based guidelines exist, but a fundamental concern is the current lack of knowledge on the best ways to change the behavior of clinicians

Helicobacter pylori Eradication Failure: What's Next?

In the recent Asia Pacific *Helicobacter pylori* Meeting 2012 held in Kuala Lumpur, Professor Fock from Singapore delivered a lecture on how to treat patients who have failed *H pylori* eradication.



Professor Fock Kwong Ming
Faculty of Medicine
National University of Singapore
Senior Consultant Gastroenterologist
Department of Medicine
Changi General Hospital
Singapore

There are several reasons as to why first-line therapy in the eradication of *H pylori* may fail. These include the increased prevalence of antibiotic-resistant strains of *H pylori*, problems with compliance and the rapid metabolism of proton pump inhibitors (PPIs) by CYP2C19.¹

First-line Therapy

In the eradication of *H pylori*, clarithromycin (Clari) resistance is one of the major causes of failure.¹ In first-line triple therapies, PPI + Clari + imidazole and PPI + Clari + amoxicillin (Amox), Clari resistance resulted in a 35% and 66% reduction of eradication rates (ER) respectively. With quadruple therapy, ACMP (Amox, Clari, metronidazole (Met) and PPI) and CMBP (Clari, Met, bismuth (Bis) and PPI), there was an efficacy of 95% and 13% reduction of ER respectively.²

Met resistance has also affected the efficacy of eradication treatments. Triple therapies of PPI, Clari, and Met had a reduction of 30% in efficacy in the presence of Met resistance. This is also true for treatments with PPI, Amox and Met (18% reduction in efficacy).³ In quadruple therapies, Met resistance resulted in a 14% reduction in ER for Met + tetracycline (Tet) + Bis + PPI treatments. When CMBP is used, there is an efficacy of 94%. If the strains are sensitive to Clari and Met, the efficacy increases to 97%.

Second-line Therapy

When first-line therapy fails, there are studies showing that eradication rates are better with "tailored therapy" after a susceptibility test is done. The Maastricht III Consensus Report also recommends culture and sensitivity testing after two failed treatments.^{1,4} The Asia Pacific Consensus recommends:⁵

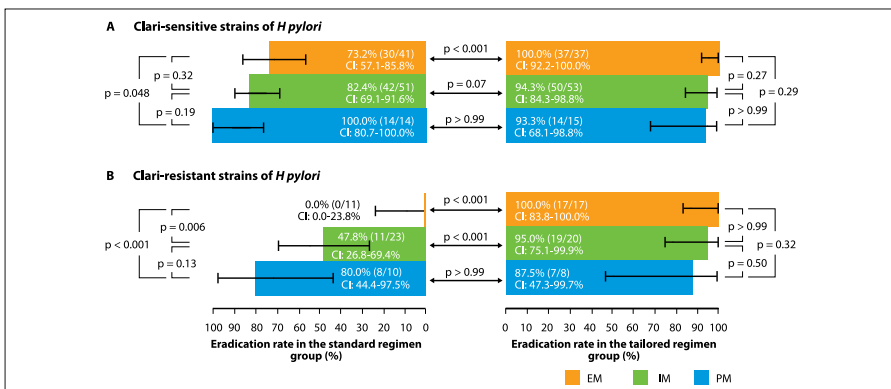
- Standard triple therapy that has not been used previously.
- Bis-based quadruple therapy – Provides an ER of 90–98%.
- Levofloxacin-based triple therapy – Composed of levofloxacin, Amox and PPI with an efficacy of 80%.
- Rifabutin-based triple therapy.

Third-line Rescue Therapy

The Maastricht III Consensus Report recommends that a bacterial culture with antimicrobial sensitivity tests be done to select suitable antibiotics for third-line regimens. Therapy will then be tailored according to the results. Among the third-line regimens available are levofloxacin-based (66% ER) and rifabutin-based rescue regimens (44–90% ER).⁴

Probiotics may also be added as a supplement in eradication therapy. It has been found that although probiotics do not eradicate *H pylori* directly, it decreases the density of colonization rate and adverse effects caused by gastric inflammation.⁵

Figure 1: *H pylori* eradication rates with standard and tailored regimens based on CYP2C19 genotype status in first-line therapy.⁶



Role of CYP2C19 in *H pylori* Eradication

According to the Second Asia-Pacific Consensus Guidelines for *H pylori*, CYP2C19 polymorphisms may affect the ER in PPI-based triple therapy. There are three CYP2C19 polymorphisms, extensive metabolizers (EM), heterozygous EM (IM), and poor metabolizers (PM). These affect the rates of drug metabolism and thus, the pharmacological effect of the PPI.⁷

When dealing with CYP2C19, it is beneficial to the patient to have the treatment tailored according to genotype. Both *H pylori* and CYP2C19 genotyping should be done to determine the correct antibiotics and PPI for treatment. This will help achieve better ER (Figure 1) and compliance.

In a single center randomized study, the impact of CYP2C19 polymorphism on quadruple therapy was studied. The treatments involved were:⁸

- Esomeprazole, Bis, Tet and Met (EBTM)
- Rabeprazole, Bis, Tet and Met (RBTM)

The results (Table 1) indicated that the ER of rabeprazole was statistically higher than esomeprazole on a per protocol analysis but not on an intention to treat analysis. The adverse events between the two PPIs were statistically comparable.⁶

Table 1: Outcome of EBTM and RBTM rescue therapy

	EBTM	RBTM	p value
ER			
Intention-to-treat (ITT)	70/96 (72.9%)	74/94 (78.7%)	0.5430
Per-protocol (PPA)	70/93 (75.3%)	74/87 (85.1%)	0.0401
Compliance	92/93 (98.9%)	84/87 (96.6%)	0.1545
Adverse events	56/93 (60.2%)	45/87 (51.7%)	0.2190

In a large-scale, double-blind, dose-finding study done by Kuwayama et al, an eradication rate of 88% and 96% was achieved through treatment with rabeprazole, Clari and Amox for EM and PM respectively. The ER with rabeprazole is higher

than other PPIs. This is because rabeprazole raises gastric pH to the neutral range, the optimal range for antibiotic drugs, resulting in an increase in antibacterial activity.⁸

Summary

In ensuring the success of *H pylori* eradication, it is crucial to take into account patient compliance, antibiotic resistance and CYP2C19 genotype. Determining the genotype of both *H pylori* and CYP2C19 will allow for better eradication by tailoring the treatment accordingly. Rabeprazole is a good option as part of first-line PPI-based triple therapy against Clari-resistant strains, even in EM patients.

Case Study

A 46 year old man with symptoms of GERD was found to be *H pylori* positive with no family history of gastric cancer. At endoscopy, there was grade A GERD and mild antral gastritis. Prior treatments were as follows:

1. Omeprazole, amoxicillin, and clarithromycin (OAC) for 7 days
 - Positive carbon urea breath test (CUBT)
2. Omeprazole, metronidazole, and clarithromycin (OMC) for 7 days
 - Positive CUBT
3. Omeprazole, bismuth, metronidazole, tetracycline (OBMT) for another 7 days
 - Positive CUBT

Method of treatment:

CYP2C19 and *H pylori* genotyping was done and treatment was tailored to the results. The patient was given a PPI-based triple therapy (PPI, Amox and rifabutin). Rifabutin was chosen as it would not cause cross-resistance with clarithromycin and metronidazole. The treatment was given for 10 days and probiotics were provided as supplements. The patient recovered and *H pylori* was successfully eradicated.

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MAYAN RUINS

– REMNANTS OF A LOST CIVILIZATION

Yen Yen Yip recounts walking among ancient Mayan monuments, lasting reminders of one of the world's greatest lost civilizations.

The Mayans introduced chocolate, corn and squash to the world. They also developed the mathematical concept of zero and were experts in astronomy without the aid of telescopes. Their civilization, established around 1800 BC, influenced life in present day Mexico, Honduras, Guatemala and Northern El Salvador, but started to decline during 8th and 9th centuries.

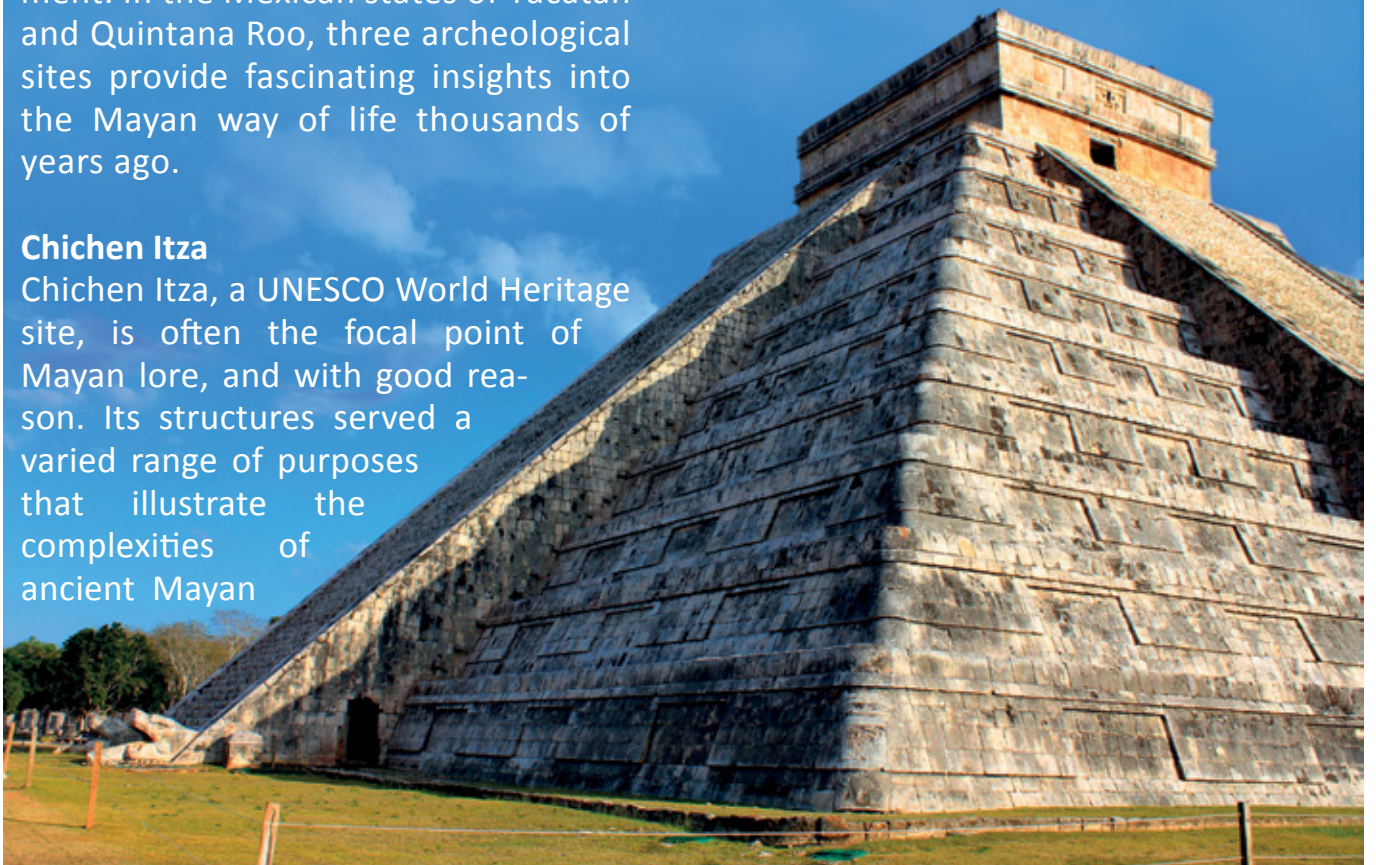
The monuments of the ancient Mayans remain today as testaments to their advanced state of development. In the Mexican states of Yucatan and Quintana Roo, three archeological sites provide fascinating insights into the Mayan way of life thousands of years ago.

Chichen Itza

Chichen Itza, a UNESCO World Heritage site, is often the focal point of Mayan lore, and with good reason. Its structures served a varied range of purposes that illustrate the complexities of ancient Mayan

culture, rituals and practices. At the height of its prominence from AD 900 to 1050, Chichen Itza was the centre of economic, religious and cultural activities – a regional capital for north and central Yucatan.

The crown of the monuments in Chichen Itza is El Castillo (The Castle) – an imposing, square-based pyramid that showcases Mayan knowledge of mathematics, astronomy and architecture. About 30m high, it was built integrating



MAYAN RUINS

— REMNANTS OF A LOST CIVILIZATION

elements of the Mayan calendar: each stairway had 91 steps, which when multiplied by four sides, plus the top platform, gave 365 (the number of days in the solar year). Each side of the pyramid had 18 terraces flanking the stairways (18 being the number of months in a Mayan religious calendar), which featured a total of 52 panels (52 being the number of years it takes to converge the religious and solar calendars). Every year during the spring and fall equinox, the rays of a setting sun align the shadows on the northern stairway to form a gleaming diamond-backed rattlesnake slithering down the pyramid.

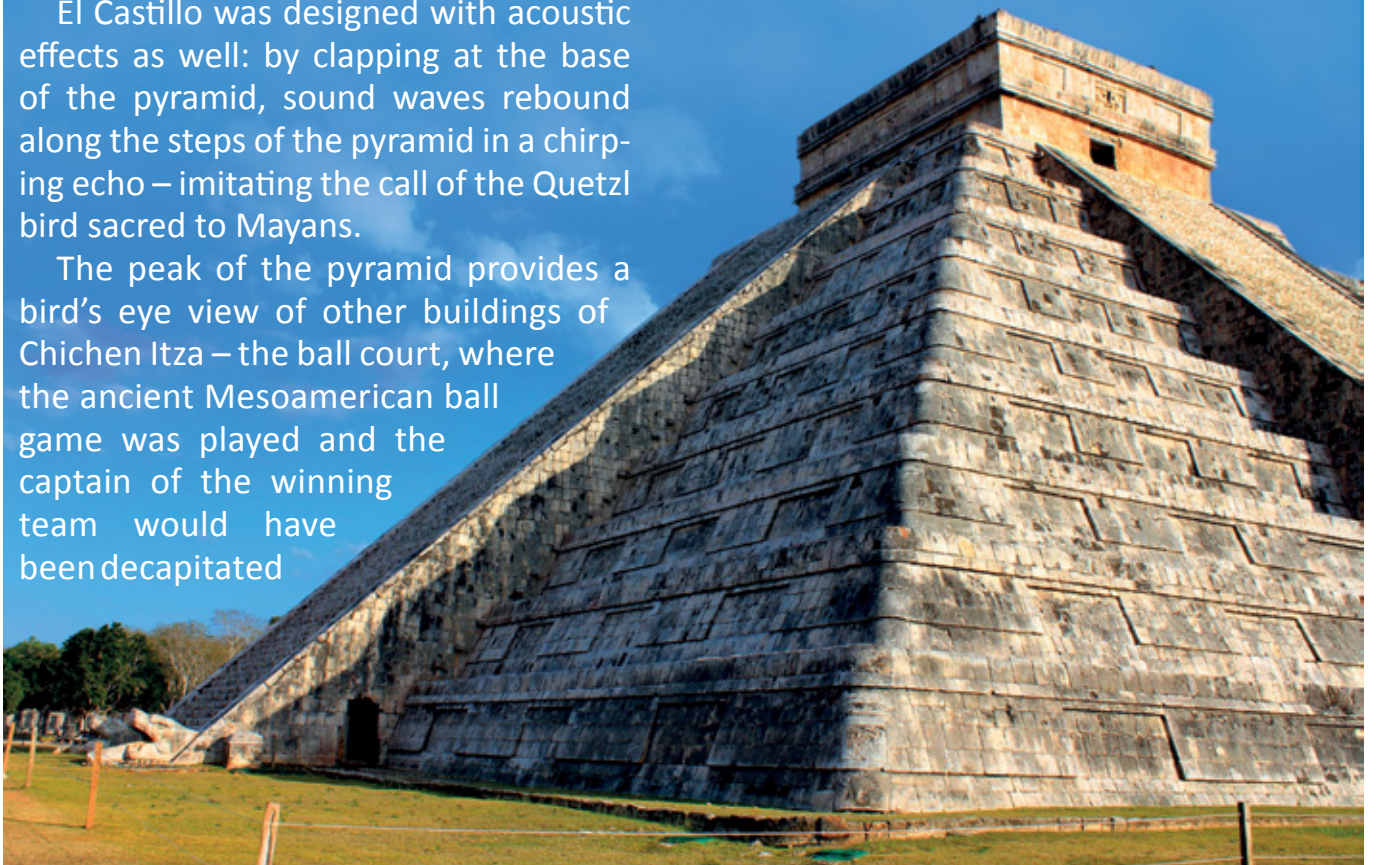
El Castillo was designed with acoustic effects as well: by clapping at the base of the pyramid, sound waves rebound along the steps of the pyramid in a chirping echo – imitating the call of the Quetzl bird sacred to Mayans.

The peak of the pyramid provides a bird's eye view of other buildings of Chichen Itza – the ball court, where the ancient Mesoamerican ball game was played and the captain of the winning team would have been decapitated

in an honor sacrifice; the Temple of the Warriors, where hundreds of square and round columns were built to distinguish the achievements of generals and warriors; and the Wall of Skulls, where it was believed that the heads of sacrificial victims were placed.

Tulum

Nestled on 12-meter-high cliffs, the coastal ruins of Tulum are impassive and enduring against the glittering azure Caribbean waves. Iguanas stretch out on its ancient sun-baked craggy stone blocks,



MAYAN RUINS

— REMNANTS OF A LOST CIVILIZATION

their beady lizard eyes peering out of leathered brown faces. Palm fronds sway to winds blowing in from the seas while the camera lenses of countless tourists click away in an excited rhythm.

Tulum was first mentioned in 1518, when a contingent of Spanish conquistadors following the coast of the Yucatan peninsula spotted the city and compared its grandeur to that of Seville in Spain. It is believed that the Spanish also introduced Old World diseases that eventually wiped out the city; the site was abandoned by the end of the 16th century.

Modern day archeological investigations determined that Tulum flourished between the 13th and 15th centuries. Artifacts that were excavated suggested that the city served as an important confluence point for land and maritime trade routes, where merchants bought and sold flint and ceramics, copper rattles and rings, and obsidian — products that originated from a range of cities from Central Mexico to Central America.

Religion was an important facet of Mayan life. Among the

various deities, the Descending God was a figure distinct to Tulum. Worshipped for his association to the setting sun and the planet Venus, the Descending God is always depicted upside down above the doorways of Tulum structures. His feet and legs, spread open in a U shape, point upwards, and his hands are clasped together with his head diving downwards. At Tulum, the Temple of the Descending God is another testament to Mayan expertise in architecture and astronomy. During the winter and summer solstices, a porthole in the



MAYAN RUINS

– REMNANTS OF A LOST CIVILIZATION

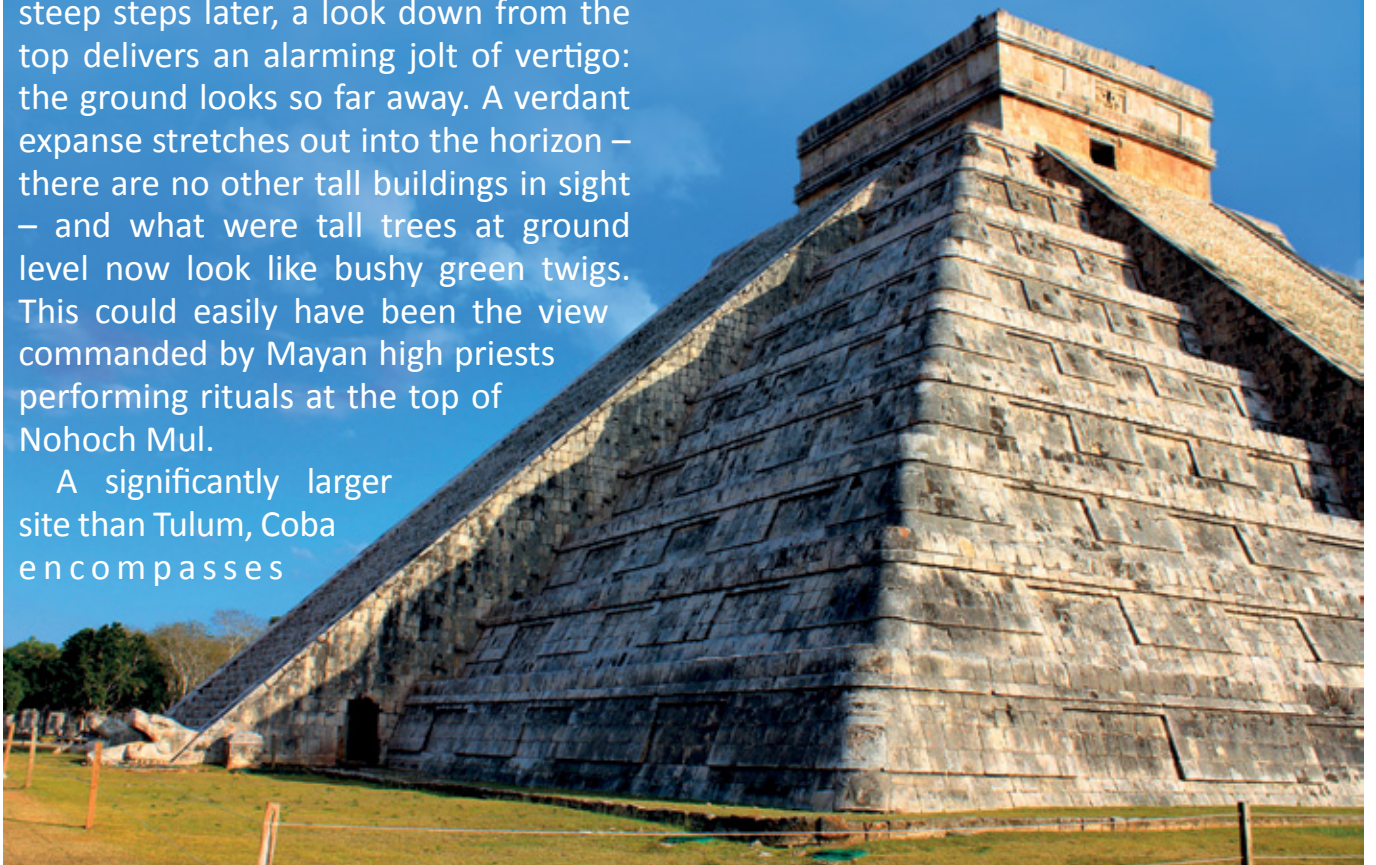
oceanfront wall of the temple allows the dawn light to shine through and hit the corners of other structures close by in a starburst effect.

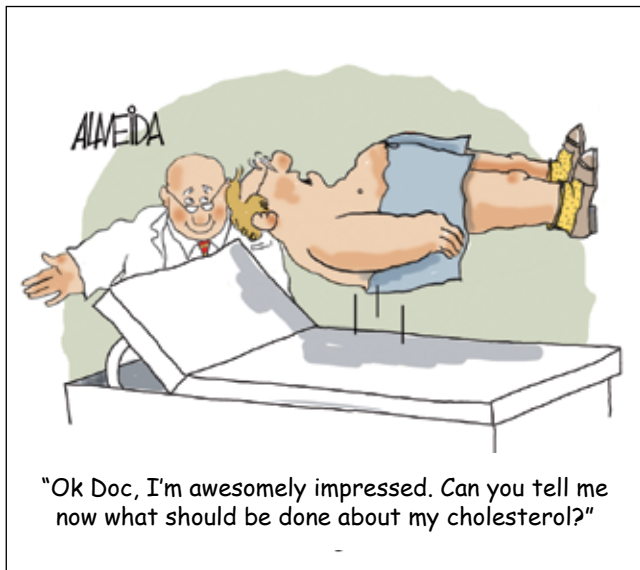
Coba

About 45 km from Tulum lies another Mayan site – Coba. Its highlight is the temple pyramid of Nohoch Mul. At 42 meters tall, Nohoch Mul rears up like an island above the green canopy of the encroaching jungle. Tourists clamber to the peak of the pyramid on all fours like insects, stabilizing their bodies with their hands grasping for handholds as their feet balance on the lower steps. 120 steep steps later, a look down from the top delivers an alarming jolt of vertigo: the ground looks so far away. A verdant expanse stretches out into the horizon – there are no other tall buildings in sight – and what were tall trees at ground level now look like bushy green twigs. This could easily have been the view commanded by Mayan high priests performing rituals at the top of Nohoch Mul.

A significantly larger site than Tulum, Coba encompasses

an area of 80 km². It had trade relations with the coastal city, though its size suggests that Coba likely rivaled Chichen Itza in social and political status. Coba is estimated to have held about 50,000 inhabitants at its height. Despite its present day remoteness in an area overgrown with jungle, Coba must once have been a prosperous trade center that maintained contact with other Mayan cities through road works called *sacbe*. Some of these ancient highways reached the Caribbean coast, and the longest traveled 100 km to the precincts of another city, Yaxuna. **MT**





MALAYSIAN EVENTS

April

**Nutrition and Dietetics Professional
Competency Symposium****6/4 to 7/4; Kuala Lumpur**

Info : Ms Grace Chong

Tel : (03) 2162 0566

Fax : (03) 2161 6560

Email : ndpcs@console.com.my

**19th Annual Congress of the Perinatal
Society of Malaysia****12/4 to 15/4; Petaling Jaya**

Info : Secretariat

Tel : (03) 2615 5555 / 2615 6889

Fax : (03) 2694 8187

Email : perinatalocietymalaysia@
yahoo.com

www.perinatal-malaysia.org

**Annual Scientific Meeting of the
Malaysian Society of Anaesthesiologists
& College of Anaesthesiologists,
AMM 2012****19/4 to 22/4; Kuantan**

Info : Secretariat

Tel : (03) 4023 4700 / 4025 4700

Fax : (03) 4023 8100

Email : secretariat@msa.asm.org.my
www.msa.asm.org.my**6th General Assembly of Asia
Pacific Organization for Cancer
Prevention (APOCP 2012)****26/4 to 29/4; Kuching**

Info : Professor Yip Cheng Har

Tel : (03) 7949 2440

Fax : (03) 7958 6360

Email : yipch@um.edu.my/ yipch@
ummc.edu.my
www.apocp.net**9th Malaysian Conference and
Exhibition on Anti-Aging, Aesthetic,
and Regenerative Medicine & 2nd
International Congress on Anti-Aging,
Aesthetic, and Regenerative Medicine
27/4 to 29/4; Kuala Lumpur**

Info : Secretariat

Tel : (03) 4041 0092 / 4041 6336

Fax : (03) 4042 6970 / 4042 7919

Email : info@saamm.com

www.saaamm.org

**14th Johor Mental Health Convention
27/4 to 28/4; Johor Bahru**

Info : Pn. Noor Ratna /

Ms. Ng Yuen kwan

Tel : (07) 237 3333 Ext. 400 /

(07) 237 3333 Ext. 410

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Email : ohormentalhealth2012@gmail.
com

www.psychiatry-malaysia.org

**WFAS 2012 Malaysia:
Acupuncture, Orthopedic,
Cancer and Education Symposium****30/4 to 2/5; Kuching**

Info : Professor Liao Chunhua

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Email : chliao@msu.edu.my

www.msu.edu.my

MALAYSIAN EVENTS

May

**Private Medical Practitioners'
Association of Selangor and Kuala
Lumpur 52nd AGM & Annual
Scientific Meeting****5/5 to 6/5; Kuala Lumpur**

Info : Secretariat

Tel : (03) 4023 4700 / 4025 4700

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www.pmpaskl.org**15th Malaysian Society
of Transplantation Scientific
Meeting 2012****17/5 to 19/5; Kuching**

Info : Rohayah Hamzah

Tel : (03) 4024 1522

Fax : (03) 4022 6882

Email : mst@acrm.org.my

www.mst.org.my/main.html**South East Asia International
Team Implantology Annual
Section Meeting 2012****23/5 to 24/5; Kuching**

Info : Dr. Lee Soon Boon

Tel : (03) 2095 1532 / 2095 / 1495

Fax : (03) 2094 4670

Email : drleesoonboon@gmail.com

www.iti.org**Malaysian Endocrine & Metabolic
Society Annual Congress (MAC 2012)****24/5 to 27/5; Kota Bharu**

Info : Secretariat

Tel : (03) 7948 1888

Fax : (03) 7948 1812

Email : MAC2012kb@gmail.com

**AGM/Annual Scientific Meeting
of the College of Surgeons,
Academy of Medicine of Malaysia****25/5 to 27/5; Kuantan**

Info : Secretariat

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4025 4700

Fax : (03) 4023 8100

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www.acadmed.org.my

June

**Royal College of Obstetricians
and Gynaecologists (RCOG)****10th International Scientific
Meeting 2012****5/6 to 8/6; Kuching**

Info : Dr. Gunasegaran Rajan

Tel : (03) 6201 3009

Fax : (03) 6201 7009

Email : ogsm@myjaring.net

www.rcog2012.com**4th National Early Childhood
Intervention Conference****7/6 to 9/6; Sibü**

Info : Dr. Toh Teck Hock

Tel : (084) 217 912

Fax : (084) 213 902

Email : necic2012@gmail.com

<http://agapesibu.org/necic2012/>

MALAYSIAN EVENTS

**4th Parenteral & Enteral Nutrition
Society of Malaysia (PENSMA) 2012****14/6 to 16/6; Penang**

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4025 3700

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Email : secretariat@pensma.org
www.PENSMA.org

Fax : (03) 4023 8100

Email : secretariat@mts.org.my
www.mts.org.my**42nd Malaysian Orthopaedic Association
Annual General Meeting & Annual
Scientific Meeting****14/6 to 18/6; Kuantan**

Info : Secretariat

Tel : (016) 203 6018

Fax : (03) 6207 6795

Email : moa2012@bloomcomm.com
www.moa-home.com**1st Asia Pacific Conference on Clinical
Epidemiology and
Evidence Based Medicine****6/7 to 8/7; Kuala Lumpur**

Info : Ms. Devi Peramalah

Tel : (03) 7967 3793/ 7967 3797

Fax : (03) 7967 4975

Email : apceebm1@ummc.edu.my
www.apceebm.um.edu.my**Annual Scientific Meeting of the Malay-
sian Society of Gastroenterology and
Hepatology (GUT 2012)****29/6 to 1/7; Malacca**

Info : Secretariat

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Fax : (03) 4023 8100

Email : secretariat@msggh.org.my
www.msggh.org.my**13th MSR-SSR Workshop in
Rheumatology 2012****6/7 to 8/7; Penang**

Info : Secretariat

Email : secretariat@msr.my
www.msr.org.my**16th Malaysia Family Medicine Scientific
Conference****13/7 to 15/7; Malacca**

Info : Dr. Junaidah Abd Rahman

Tel : (06) 3842533

www.conference2012.fms-malaysia.org

**46th Malaysia-Singapore
Congress of Medicine****13/7 to 15/7; Kuala Lumpur**

Info : Secretariat

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Email : acadmed@po.jaring.my

July**Malaysian Thoracic Society
Annual Congress 2012****6/7 to 8/7; Kuching**

Info : Secretariat

Tel : (03) 4023 4700 / 4025 4700

INTERNATIONAL EVENTS

April**World Congress of Cardiology (WCC)****Scientific Sessions****18/4 to 21/4; Dubai, UAE**

Info : Secretariat

Email : wcc2012reg@mci-group.comwww.worldcardiocongress.org**24th European Congress of Ultrasound in
Medicine and Biology****22/4 to 24/4; Madrid, Spain**

Info : Secretariat

Email : info@euroson2012.comwww.euroson2012.com**III NWAC World Anesthesia Convention
(NWAC 2012)****24/4 to 28/4; Istanbul, Turkey**

Info : Secretariat

Email : nwac@kenes.comwww.nwac.org**May****American Thoracic Society (ATS)****International Conference 2012****18/5 to 23/5; San Francisco,
California, US**

Info : Secretariat

Email : atsinfo@thoracic.org<http://conference.thoracic.org/2012/>**19th WONCA Asia Pacific Regional
Conference****24/5 to 27/5; Jeju Island, S. Korea**

Info : Secretariat

Email : admin@woncaap2012.orgwww.woncaap2012.org**June****2012 Annual Meeting of American
Society of Clinical Oncology (ASCO)****1/6 to 5/6; Chicago, Illinois, US**

Info : Secretariat

Email : ascoregistration@jspargo.com<http://chicago2012.asco.org/>**10th International Conference of the
Asian Clinical Oncology Society****13/6 to 15/6; Seoul, South Korea**

Info : Secretariat

Email : office@acos2012.org / scientific@acos2012.orgwww.acos2012.org**15th International Congress on Infectious
Diseases (ICID)****13/6 to 16/6; Bangkok, Thailand**

Info : Secretariat

Email : info@isid.orgwww.isid.org/icid/**6th International Nasopharyngeal
Carcinoma Symposium****20/6 to 22/6; Istanbul, Turkey**

Info : Secretariat

Email : npc2013@eaorganizasyon.com.trwww.npc2013.org

INTERNATIONAL EVENTS

August

**European Society of Cardiology Congress
25/8 to 29/8; Munich, Germany**

Info : Secretariat

<http://www.escardio.org/congresses/esc-2012/Pages/welcome.aspx>

October

**15th Biennial Meeting of the European
Society for Immunodeficiencies (ESID
2012)**

3/10 to 6/10; Florence, Italy

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