E-cigarettes can cause chronic diseases

Vitamin D to prevent fractures

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A double-blind, randomised study of 24 weeks treatment with 50 mg vildaglaptin twice daily (n=143) or placebo (n=130) as add-on to metformin (2.1g mean daily dose) in patients with T2DM. Baseline HbA1c was 8.4% and 8.3%, respectively.

Vildaglaptin does not cause weight gain in combination with metformin.

Incidence of hypoglycaemia is similar to placebo (0.7% vs 0.8%).

Overall incidence of adverse events is comparable with placebo when vildaglaptin is added to metformin (63.5% vs 65.0%, respectively).

* Between-treatment difference (vildaglaptin-placebo) in adjusted mean change in HbA1c.


Galvus® Abbot

Prescribing Information

Note: Before prescribing, please consult full prescribing information. Presentation: Tablets 50 mg. Indications: Galvus® is indicated in the treatment of type 2 diabetes mellitus in adults for oral diabetes mellitus therapy in combination with metformin or patients with insufficient glycemic control despite maximal tolerated dose of monotherapy with metformin, in combination with a sulfonylurea in patients with insufficient glycemic control despite maximal tolerated dose of a sulfonylurea and for whom metformin is inappropriate due to contraindications or intolerance.

Contraindications: Hypersensitivity to vildaglaptin or any of the excipients. Precautions: Pregnancy: Galvus® should not be used in pregnancy. Lactation: Galvus® should not be used by breastfeeding mothers. Interactions: Vildaglaptin has a low potential for drug interactions with other oral antidiabetics (glibenclamide, pioglitazone, metformin), vildaglaptin, digoxin, ramipril, simvastatin, rosvastatin. Adverse Reactions: Rare cases of angioedema, rash cases of hypoglycemia (including hypotension). Combination with metformin: common: headache, nausea, dizziness; combination with a sulfonylurea: common: headache, nausea, dizziness, asthenia. Combination with a thiazolidinedione: common: weight increase, edema peripheral, uncommon: headache.

Galvus® Met Novartis Corporation (Malaysia) Sdn Bhd (2004)

Level 15, CRSC 3, Tower A, Jalan 19/1, 46300 Petaling Jaya,
Selangor Darul Ehsan, Malaysia. Tel: 03-7948 1888 Fax: 03-7948 1818

1 Galvus Met 2.5 mg/500 mg hydrochloride fixed combination: 50 mg/500 mg, 100 mg/1000 mg tablets. Doses based on the patient’s current dose of metformin. Galvus Met may be initiated at either 50 mg/500 mg or 100 mg/1000 mg tablet strengths twice daily, one tablet in the morning and the other in the evening. The recommended daily dose is 100 mg vildaglaptin plus 2000 mg metformin hydrochloride. Patients receiving vildaglaptin and metformin from separate tablets may be switched to Galvus Met containing the same doses of each component. Doses higher than 100 mg of vildaglaptin are not recommended. Contraindications: Known hypersensitivity to vildaglaptin or metformin hydrochloride or to any of the excipients. Precautions: Pregnancy: Galvus Met should not be used in pregnancy unless the potential benefits justify the potential risk to the fetus. Lactation: Not recommended to breastfeed mothers. Interactions: Vildaglaptin has a low potential for drug interactions with other oral antidiabetics (glibenclamide, pioglitazone, metformin), vildaglaptin, digoxin, ramipril, simvastatin, rosvastatin. Adverse Reactions: Rare cases of hypoglycemia (including hypotension). Combination with metformin: common: headache, nausea, dizziness; combination with a sulfonylurea: common: headache, nausea, dizziness, asthenia. Combination with a thiazolidinedione: common: weight increase, edema peripheral, uncommon: headache. For full prescribing information, please contact:

For all questions, please contact:

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Novartis Corporation (Malaysia) Sdn Bhd (2004)

Level 15, CRSC 3, Tower A, Jalan 19/1, 46300 Petaling Jaya,
Selangor Darul Ehsan, Malaysia. Tel: 03-7948 1888 Fax: 03-7948 1818
E-cigarettes can cause chronic diseases

By Leonard Yap

The Ministry of Health (MOH) does not recognize the e-cigarette as a method to reduce smoking, and does not encourage the public to use it based on technical advice by WHO and results of studies that demonstrate the danger of liquid nicotine.

“Thus, MOH also does not recognize the use of e-cigarettes even under the supervision of health professionals,” said Eisah A. Rahman, Senior Director of Pharmaceutical Services, MOH.

The safety of the e-cigarette has not been established by WHO and users may face the same risks as other cigarette smokers when they use e-cigarettes that contain liquid nicotine, Dato’ Eisah said.

High doses of nicotine can lead to heart and pulmonary diseases. Furthermore, it can also promote the growth of cancer cells. Pregnant women who consume nicotine may risk giving birth to abnormal babies.

The safety of liquid nicotine in e-cigarettes is unreliable as studies show that the concentration of nicotine is not consistent and that liquid nicotine contains nitrosamine, which can cause cancer.

MOH controls e-cigarettes, especially those with liquid nicotine, under the provisions of the Poisons Act 1952 and Control of Drugs and Cosmetic Regulations 1984 under the Sale of Drugs Act 1952. This applies to both sellers and distributors.

Upon conviction, sellers may be fined not more than RM3,000 or imprisonment of not more than one year, or both, under the Poisons Act 1952.

Nicotine is controlled under the Poisons Act 1952. It is only exempted in cigarette and tobacco products. The sale of nicotine products is only through licensed pharmacists or registered medical practitioners. Any other person who sells liquid nicotine commits an offence and, upon conviction, may be fined not more than RM3,000 or jailed not more than one year, or both, under the Poisons Act 1952.

The distribution and sale of e-cigarette liquid nicotine needs the approval of the National Pharmaceutical and Control Bureau.

As yet, MOH has not controlled liquid nicotine and e-cigarette at points of distribution and sale. However, MOH’s Pharmacy Enforcement Division controls the import of liquid nicotine for e-cigarettes into the country. It has conducted seizures at entry points in several states including Selangor, Johor, Penang and Sarawak, Dato’ Eisah said.
Mouth ulcers: Gently does it

Mouth ulcers are painful and irritating, and most people experience them at some point in their lives. While they are easily treated and often clear up on their own, they can sometimes be an indication of a more serious underlying condition.

Mouth ulcers are breaks in the moist inside surfaces of the mouth – the mucosal membrane. They are usually small, but can, in severe cases, be up to several cm across.

According to an article on website everybody.co.nz, reviewed by Norman Firth, a senior lecturer and oral pathologist at Otago University’s Department of Oral Diagnostic and Surgical Sciences, one of the most common mouth ulcers is the aphthous ulcer.

Removing the source of damage to the mucosal membrane is the best way to avoid ulcers. This includes getting damaged teeth or ill-fitting dentures fixed, using a soft toothbrush and replacing it regularly, and avoiding certain foods, particularly acidic drinks, and spicy, hard or sharp foods which may aggravate an ulcer.

Treatments include paracetamol, warm salt water mouthwashes and antimicrobial mouthwashes. Some people also swear by Marmite or Vegemite, possibly for their high levels of B vitamins.

Pharmacists can advise people on local anesthetic treatments such as mouthwashes, sprays, gels or ointment, some of which are not suitable for children.
It can occur:
• after a minor injury, such as accidentally biting the tongue or a knock with a toothbrush
• at times of stress
• after eating certain foods
• with hormonal changes, for example, at a particular time in a woman’s menstrual cycle
• as a result of nutrient deficiencies, such as vitamin B12, iron or folic acid.

Chlorhexidine is an antiseptic which is said to be highly effective. It comes in the form of mouthwashes, gels and sprays, and can be used daily.

Acyclovir can be used if the ulcer is caused by a herpes virus and pharmacy-only corticosteroids can also be useful.

Very painful ulcers can be treated with stronger pain relief. Frequently recurring and very painful ulcers may indicate a nutrient deficiency or underlying disorder such as celiac disease or Crohn’s disease.

An ulcer which does not heal after three weeks and has an unusual appearance should be checked by a doctor. Rarely, it may be a sign of mouth cancer.
Never too early to prevent bone fractures

By Leonard Yap

Taking preventive measures early in life is the best insurance against bone fractures, says an expert.

“Studies have shown that maternal nutrition has a significant role in the bone health of a child,” said Ambrish Mithal, co-chairman of the regional advisory council and a board member of the International Osteoporosis Federation (IOF).

“[Nutrition in] pregnancy is an area that needs attention. There is also a lot of data on infants born with really low calcium and vitamin D levels in many parts of the world. It is clearly important to ensure first that not only mothers get enough calcium and vitamin D; it is equally important to ensure that infants are supplemented with vitamin D, which is not a common practice,” Dr Ambrish said. (Am J Clin Nutr 2005;82(2):477-82, Osteoporos Int 2007;18(3):375-83)

“There is a lot of data on adolescents with vitamin D levels lower than 10 ng and parathyroid hormone (PTH) levels of 80 or 90. Supplementation seems to correct these [problems] … and if you follow them up after a year you probably get improvements in bone density,” he said.

“You need to adopt these measures across the population. Banking on good bone health starts in utero and age is no bar. It is not an old man or woman’s disease. In adults, adopting a healthy lifestyle will go a long way and nutrition will play a big role in recovery from fractures,” he said.

According to the 2009 IOF Asian audit on bone health, Asia is witnessing a rapid growth in its aging population, but osteoporosis had received relatively little attention. Hip fracture rates have increased by two- to three-fold in most Asian countries during the past 30 years. Lack of quality epidemiologic data, widespread vitamin D deficiency, low dietary calcium intake, and uneven access to diagnostic and therapeutic facilities are some of the major challenges faced in this region. (Curr Osteoporos Rep 2012;10(4):245-7)

It recommended that there is an urgent need to promote research, spread awareness and build national health programs to provide education on osteoporosis to doctors, and lobby to include osteoporosis in the undergraduate medical curriculum. In addition, governments should treat bone health as a priority.

Dr Ambrish was speaking at the 3rd Asia-Pacific Osteoporosis Meeting in Kuala Lumpur.

Bone health should always be a priority
Toughbooks for a tough profession

By Pank Jit Sin

A range of laptop computers called Toughbooks, created by Panasonic, are able to withstand extreme situations across specific industries.

One of the many models launched recently was the CF-C2, a Toughbook particularly suited for those in the healthcare setting. Those in the pharmaceutical and healthcare fields will find their CF-C2 semi-rugged mobile convertible tablet PC a boon for their work. Doctors and nurses going on their rounds can carry the detachable tablet top. The tablets are fully touch screen and once docked to the base, function exactly like a desktop.

Satoshi Mizobata, director of Toughbook Asia Pacific Group, Panasonic Systems Communications Asia Pacific, said the CF-C2 “one of the most durable and flexible business convertible PCs in the market.”

“With its desktop-like performance, coupled with high-class connectivity, long-time operation and advanced mobility technologies, this device is the perfect work companion for field professionals or mobile workers in the healthcare, aviation and automotive industries.”

The first Toughbooks were launched in 1996 to cater to personnel in the defense and emergency services. In time, its durability and reliability caught on, and the Toughbook is now employed in various sectors, including automotive and aviation; defense and military; public sector and emergency services; pharmaceutical and healthcare; and forestry, among others.

Like its name suggests, the CF-C2 Toughbook was designed to withstand knocks and scrapes. In fact, it can survive drops of up to 76 cm, and has a water-resistant keyboard and touchpad. The latter feature allows for regular disinfection and cleaning of stains from the computer to prevent cross-infection between healthcare professionals and patients.

Those who use regular laptops know the hassle of looking for a power-point when on the move. The Toughbook can function for 11 hours on a fully charged battery, and this can be extended to 14 hours with add-ons. Another feature which makes the CF-C2 suited for those working in the outdoors is the bridging battery, which allows a one-minute lapse from the time the battery is taken out before total shutdown occurs. This one-minute standby power supply allows sufficient time for the user to change to another battery pack.

Another unique feature of the CF-C2 is its high-definition screen, which has in-plane switching (IPS) technology to allow for extra wide viewing angles. The screen is constructed from strengthened glass and provides high-contrast ratio.
For severe sore throat

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Vitamin D to prevent fractures

Most fractures occur in the elderly and the global incidence of fractures is expected to increase considerably in the next few decades. Meta-analyses of trials of vitamin D to prevent fractures have given varying results. A pooled analysis of individual participant data from 11 trials aimed to assess the dose of oral vitamin D necessary to prevent fractures.

The trials included 31,022 people (mean age 76, 91 percent women) with 1,111 first hip fractures and 3,770 nonvertebral fractures. Overall, subjects assigned to vitamin D had a nonsignificant 10 percent reduction in risk of hip fracture compared with controls. There was a nonsignificant 7 percent reduction in risk of nonvertebral fractures. Only in the highest quartile of actual vitamin D intake (median intake 800 IU daily, range 792–1000 IU) were there significant reductions in risk of hip fracture (by 30 percent) and any nonvertebral fracture (by 14 percent). Subgroups defined by age group, type of dwelling, baseline 25-hydroxyvitamin D level, and additional calcium intake benefited similarly at the highest vitamin D intake level.

Among people aged 65 or older, highdoses of oral vitamin D (800 IU a day or more) were effective in preventing hip fracture or any nonvertebral fracture. Possible toxicity was not addressed in this analysis.


Osteoporosis prevention should start early

By Pank Jit Sin

Bone mineral density (BMD) peaks during adolescence, hence this is the best time to accumulate calcium. Discussing various studies on bone health and its associated factors, Nikhil Tandon, of the department of endocrinology and metabolism, All India Institute of Medical Sciences, New Delhi, said peak BMD at certain important sites is achieved by the end of the second decade of life.

“Eighty percent of peak bone mass is achieved from birth to adolescence. The annual increase in BMD and volumetric BMD is most marked in females at time of menarche
and in teenage males,” said Prof Nikhil.

Physically active people have significantly higher mineralization rates compared to their sedentary counterparts, he said. Calcium is the most touted nutrient for healthy bones. Prof Nikhil said most cross-sectional studies have identified a positive correlation between dietary calcium and childhood BMD.

Looking at intervention studies utilizing exercise, calcium, vitamin D and other fortified foods, he said the effects are very apparent, especially in populations which were previously undernourished. Unfortunately, these benefits are not always sustained once intervention is stopped. Outcomes of intervention studies often depend on the baseline characteristics.

“If you look at the outcome of the same studies on a population in developed countries with adequate macro nutrition, then the likelihood of such a study bringing benefits is going to be very low.” Conversely, the same intervention studies using the same macronutrients such as calcium and vitamin D carried out in a developing country with poorer nutritional status would yield more pronounced benefits.

Hypertension: Home BP monitoring is best

By Leonard Yap

The best way to ensure an accurate diagnosis of hypertension is to perform home monitoring of blood pressure (BP), says an expert.

Patient BP self-monitoring is the way to go when it comes to ensuring better diagnosis, said Azhari Rosman, a consultant cardiologist at the National Heart Institute, Kuala Lumpur. Patients typically go to the clinic with elevated BP readings: this is commonly known as ‘white-coat hypertension.’

Home BP sets have become very affordable and are reliable and accurate enough to keep tabs on a patient’s BP, Dato’ Dr Azhari said. However, the accuracy of these BP sets does deteriorate over time and they may need to be recalibrated. He recommended the use of BP sets that measure BP from the upper arm, and advised against devices that take readings from the wrist.
Patients should be made aware that BP tends to vary quite significantly throughout the day, by about 10 mmHg systolic and 5 mmHg diastolic, he said. BP tends to increase toward the early hours of morning to about 10am, and gradually decrease throughout the day. This should be taken into account when taking BP measurements. Typically, the best time for a patient to come to the clinic is earlier in the morning before BP tapers off, he said. (Lancet 2010;375(9718):895-905)

Dato’ Dr Azhari recommended that patients keep a log of BP measurements and present it to their doctor when they go to the clinic. This will help with patient management and diagnosis of hypertension. He also recommended that measurements be made after the patient has sat down and relaxed for at least five minutes, and measurements be made three times consecutively at one minute intervals for a more accurate BP picture.

At the initial assessment of BP, patients should maintain measurement records of up to seven days. Measurements should be made early in the morning before taking any medications and in the evening before dinner. Patients with normal BP should have measurements of below 130 mmHg systolic and 85 mmHg diastolic during the waking hours when measuring BP at home, he added.

Dato’ Dr Azhari was speaking at a public forum on home BP monitoring at the Malaysian Society of Hypertension’s 10th Annual Scientific Meeting in Kuala Lumpur.

__Lucky number eight for pharmaceutical company__

By Malvinderjit Kaur Dhillon

It was a double joy for the global pharmaceutical company, InQpharm, when it recently ushered in the Year of the Snake in conjunction with its eighth year anniversary.

The company celebrated the Lunar New Year festivities as well as marked the eighth year of the regional firm setting up its headquarters in Kuala Lumpur with a luncheon.

“We are happy that we have been here in Malaysia for the past eight years and hope to continue this positive growth with the support from our employees,” said Carin Beumer, InQpharm’s Chief Financial Officer.

“Malaysia is widely known for her cultural diversities, and as an organization that celebrates diversity worldwide, InQpharm respects all cultures in Malaysia and actively embraces important cultural celebrations,” Ms Beumer concluded.

The 8th anniversary is of significant importance as the number eight signifies prosperity in Chinese culture.
A lion dance was performed and staff were also treated to ang pow (money packets) from the founders.

InQpharm is largely involved in the discovery, research and development, and validation and commercialization of unique natural compounds with therapeutic properties for the human and animal health markets.

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**Local Events**

**Pharmacy Enforcement Conference**
23/4 to 25/4; Penang
**Info** : Mr. Mazlan Ismail
**Tel** : (03) 7841 3200
**E-mail**: mazlan@moh.gov.my

**National Regulatory Conference 2013**
7/5 to 9/5; Kuala Lumpur
**Info** : Ms. Rachel Thong
**Tel** : (03) 7801 8480
**E-mail**: rachelthong@bpfk.gov.my

**Workshop on Antimicrobial Resistance: Promoting Antibiotic Stewardship**
June; Kuala Lumpur
**Info** : Mrs. Noraini Mohamad / Mrs. Siti Hir Huraizah MdTahir
**Tel** : (03) 7841 3200 / (06) 2822 344
**E-mail**: norainimohd@moh.gov.my / sitihir@mlk.moh.gov.my

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**International Events**

**DIA India 6th Regulatory Conference**
5/4 to 6/4; India
[www.diahome.org/India6thregulatory](http://www.diahome.org/India6thregulatory)

**Clinical Pharmacy Congress 2013**
26/4 to 27/4; London
[www.pharmacycongress.co.uk/](http://www.pharmacycongress.co.uk/)

**International Pharmaceutical Federation (FIP) World Congress 2013**
31/8 to 5/9; Dublin
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- Nina W

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I’ve got a pain in the...

Painkillers are now widely available and many people are confident about self-medicating. After all, a painkiller is just a painkiller, isn’t it? Pharmacy Today New Zealand looks at the dangers when customers don’t know exactly what they’re taking and the pharmacist’s role in helping treat the right condition with the right medication.

It’s a problem – a big problem

Consumers often don’t know what’s in an analgesic, and end up with an overdose because they’ve taken a number of medicines containing the same active ingredient, says New Zealand Pharmaceutical Society’s chief pharmacist advisor Euan Galloway.

There is also a risk of people taking the incorrect painkiller for a particular pain or taking different types of painkillers at the same time.

The message to be reinforced to customers is that they should use analgesics as prescribed by the doctor or as recommended by the pharmacist, Mr Galloway said.

And if people are self-medicating, they should check with the pharmacist that the pain relief is right for them and their condition.

In South Africa, research has shown that doctors are so aware of consumers’ indiscriminate use of painkillers that one-in-four will prescribe a lower dosage than necessary. This means a patient’s pain is not properly managed, which may result in the patient increasing the own dosage or taking additional OTC painkillers – and this is a vicious cycle.

Mr Galloway said the main concern for pa-
Patients is to be aware of what is actually in the products.

“Pain is a common complaint and pharmacy staff receive constant requests for pain-relief products.”

Pharmacy staff should advise patients to be wary when selecting products for self-medication and ask about the pain before selling a product – even if a customer asks for the product by name. This will ensure appropriate use and matching the best product to the pain. For example, a woman may have taken paracetamol for period pain, unaware that an NSAID may give greater relief.

Types of pain

**Headache and migraine**

Headache symptoms may vary from a severe unilateral stabbing pain to a generalized ache or pain with no specific focus. Most headaches will resolve themselves with or without treatment, but relief can be achieved with the use of OTC analgesics. However, be careful that the customer does not overuse analgesics (more than 15 times a month), and that the duplication of paracetamol-containing products is avoided (present in combination cold/flu and sinus products.) Headache accompanying sinus problems may respond to decongestants, corticosteroid sprays or antihistamines.

Migraines are usually a severe, throbbing, unilateral pain, and most patients also experience nausea. Other symptoms include visual disturbances, tiredness, weakness, difficulty seeing or speaking and a tingling in the face, arm or leg.

Migraines can last from four hours to two or three days. Customers should be advised to take analgesics or sumatriptan, with or without antiemetics, at the first sign of an attack.

**Useful questions:**

- Where is the pain? Frontal, at the back of the head (tension), unilateral, within the eye, behind the eye or at the temple?
- What is the pain like? Sudden, like a blow to the head, throbbing or pounding, or constant and nagging?
- Is this headache different from previous headaches?
- Has the customer had a head injury in the past one to three months? Was there loss of consciousness?
- Are there any neurological symptoms?
- Has the customer taken anything for it – how did it work?

**Period pain**

Also referred to as dysmenorrhea, period pain affects many menstruating women. The pain can range from mild to severe. Treatment is usually in the form of OTC analgesics, but stronger analgesics or other medications can be prescribed by a doctor to provide relief for women with recurring, disabling period pain.

If pain continues after the first two days of the period, the customer should see a doctor. Applying heat to the lower abdomen over clothing may also provide some relief.

**Dental pain**

This type of pain is usually due to corrosion of tooth enamel by acid-producing bacteria which exposes nerve endings. Severe, continuous pain accompanied by swelling may indicate an abscess.
Customers should visit their dentist as a cavity needs attending to. Oral hygiene, such as the use of dental floss, interdental brushes and mouthwashes, can promote healthy teeth and prevent decay.

Clove oil can be recommended as a natural analgesic when applied to the affected cavity with a cotton wool swab to prevent irritation to the surrounding gums.

However, customers should be warned clove oil can be fatal if swallowed.

Pain is a common complaint and pharmacy staff receive constant requests for pain-relief products. Staff can keep up-to-date by referring to healthcare handbooks or by taking first-aid courses.

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**Number of migraine causes ‘mind-boggling’**

*Migraines are common and debilitating, yet both cause and cure remain elusive.*

Migraines are one of the most common and debilitating of illnesses, yet there is no definitive explanation as to their cause – or their cure.

When migraine sufferers notice that strange, flickering impairment of vision, they know they are inescapably being drawn into hours – or even days – of pain and nausea.

Some people might suffer from migraines for a few months or years. For others it will be a lifelong struggle with acute illness.

Jon Simcock, medical advisor for the Neurological Foundation of New Zealand, is unequivocal about the impact migraines can have on the latter group. “Their lives are destroyed by it,” said Dr Simcock.

Migraines are not the same as ordinary headaches. The word migraine derives from the Greek hemikranaia (‘pain on one side of the head’). The pain is pulsating, lasting from two to 72 hours, and associated with symptoms which may include nausea, vomiting, photophobia (increased sensitivity to light) and phonophobia (increased sensitivity to sound). Many people experience an aura; a transient visual, sensory, language or motor disturbance, which signals that the headache...
is coming.

Thousands of years ago people used trepanation, drilling of holes into the skull, to release the ‘evil spirits’ causing migraines. Trepanation was still being used as a treatment for migraines in the 17th century.

Other treatment options include:
- Anti-inflammatory and medication to control vomiting
- Codeine (Dr Simcock advises against pethidine to avoid dependency)
- Triptans, such as sumatriptan and zolmitriptan
- Pizotifen or pizotyline – a preventive medication used to reduce the frequency of migraines
- Anti-epilepsy medication, such as topiramate, has been used by some sufferers.

Migraines are common. Around 18% of women and 12% of men in New Zealand have suffered from them. Their severity ranges from a mild headache to a crippling pain, with “all shades in between,” said Dr Simcock.

The number of potential migraine ‘triggers’ is, quite literally, mind-boggling.

“Lifestyle is one,” said Dr Simcock. “When you have too much to do and not enough time to do it, it’s stress of a particular sort. But different anxieties tend to give different types of headache. A tension headache isn’t equal to a migraine.”

Different triggers cause migraines in different people. “There is a huge range of different sorts of things,” said Dr Simcock. “It’s clearly a brain process. We know the process going on: it’s a wave of excitation of the nerve cells. But just how on earth do those triggers bring it on?”

The treatments available are also varied. For some migraine sufferers, all they can do is take a painkiller and lie in a darkened room until the attack passes.

Other triggers include the following:
- Foods, such as chocolate, dairy, citrus, MSG and alcohol – “Some hangovers may actually be migraines,” said Dr Simcock
- Physiological changes and menstrual cycles
- Over-exercise
- Blows to the head and other trauma such as heading a football
- Changes in temperature, weather and climate
- Glare and flickering light.

Less conventional treatments have been tried with varying degrees of success, including a hand-held device which uses electromagnetic energy to interrupt migraines.

Surgery on the muscles around the eyebrow region has been found to relieve pressure on nerves and alleviate migraine attacks.

Botox has even been employed to relax the muscles in a similar way.

Dr Simcock is wary of these methods, which he said have been successful in only “a few people.”

But, he added, there is an “enormous” amount of research going on worldwide to try to find a cure for migraine, which is one of the most costly neurological disorders in the world, mainly in terms of lost work days, according to research published in the Journal of Headache and Pain (2008;9(3):139-146).

The cost in EU countries alone is estimated to be around €27 billion a year.
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¹ The American Arthritis Foundation recommends that "when a drug has been studied with good results, find out which brand was used in the study."
² Calculation is based on the Malaysia Pharmaceutical Audit, released by the IMS on the Glucosamine category Jan – Dec 2011.
³ Similar to Arthritis 1999 Oct 43(10):109A-13
4 Sachet 1500mg

Rottapharm | MADAUS
The use of short-term painkillers in patients with long-term pain is not logical, says a New Zealand anesthesiologist.

“If somebody has persistent pain for many years, it is illogical to use short-term medications that will only last two to four hours. More appropriate medication would be the one with 12–24 hour efficacy, either intrinsic to the drug or by technology in its delivery,” said Frances Beswick.

“Many pharmacists and GPs continue to focus solely on the use of medication for pain, overlooking the advice on self-management ...”

A former president of the New Zealand Pain Society, Dr Beswick believes there is a lack of appreciation on the part of prescribers, pharmacists and patients of the difference between a slow-release or long-acting preparation and an immediate-release drug.

“Tramadol and oxycodone IR and CR are two of the most frequent that I see being muddled,” said Dr Beswick.

She said the best advice GPs and pharmacists can give for persistent pain is to “take medications by the clock” rather than “PRN.” (Pro re nata is Latin for ‘when necessary’)

PRN can be misinterpreted either as never or, alternatively, waiting for the pain to build up so high that no one medication can relieve the cascade of inflammatory chemicals released.

In such cases, Dr Beswick said, the resulting Pavlovian conditioning may also mean the body learns to expect pain under certain conditions – PRN is better saved for a flare-up.

She said the principle that if a little of a medication hasn’t worked, then just pushing the dose up in the hope that it will work is inappropriate.

Many pharmacists and GPs, said Dr Beswick, continue to focus solely on the use of medication for pain, overlooking the advice on self-management, including comfort care, postural correction, hot and cold packs, movement, activity, exercise, relaxation and other psychological techniques.

“While medications may help in the short-term to get an increase in activity and function, they are not suitable for exclusive, long-term use,” said Dr Beswick.

“Chronic pain is complex, involving a multitude of different neurotransmitters and neural pathways, which can be modified by behavior and mood as well as medication, so we cannot expect good results with only one drug.”
Tension or stress headaches are the most common type of headaches, with most people suffering them at some point in their lives, according to New Zealand health-care provider Bupa.

They’re twice as common in women as men, and can last from half-an-hour to a week, Bupa said in its online fact sheet (Bupa.co.nz).

The symptoms of tension headaches include mild-to-moderate pain on both sides of the head, and a feeling of tightening or pressing as though a band is constricting around the head.

There can also be a feeling of muscle tenderness around the head and neck.

The pain isn’t pulsating and isn’t usually accompanied by nausea, but there can be light sensitivity.

Most people just slog on through these headaches.

Many factors can cause tension headaches, including stress, poor posture and lack of exercise.

People with a close family member suffering from chronic headaches (suffering more than 15 days a month) are also more likely to experience them.

Simple analgesics such as paracetamol are generally an effective treatment with very few adverse effects. (Am Fam Physician 2002;66(5):797-805)

NSAIDs tend to last longer than paracetamol, with ibuprofen being the gentlest on the stomach.

However, NSAIDs are unsuitable for people with certain other medical conditions, such as kidney disease and asthma.

Pharmacists should advise people to stop taking them if they develop stomach upsets or increased bruising or bleeding.

Codeine can be used in combination with aspirin, paracetamol and ibuprofen, but pharmacists should warn customers of its addictive qualities which can, in turn, lead to medication-overuse headaches.

Codeine shouldn’t be used more than three days in a row.

Up to two-in-100 people get medication-overuse headaches, with women five times more likely to get them than men, said Bupa.

Combining analgesics with caffeine, either from a pharmacist or in coffee, can also relieve headaches.

The antihistamine doxylamine can help if the headaches are causing sleeplessness, but customers need to be warned not to drive, operate machinery or drink alcohol.

Non-medical advice can also be given. The Healthcare Handbook suggests keeping a diary to help identify and avoid headache triggers.

Topical peppermint oil may also help, as well as rest, water, regular exercise, a healthy diet and relaxation exercises.

Bupa also suggested cognitive behavioral therapy, physiotherapy and acupuncture as alternative measures.
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Feeling pain? Try Brazilian mint tea

Brazilian mint has been found to treat pain as effectively as a synthetic drug, British researchers report.

Traditional healers in Brazil have long used the herb – Hyptis crenata – to treat health problems, including headaches and stomach pain, but this study, published in the journal Acta Horticulturae, is the first to scientifically prove the herb’s pain-relieving properties.

The study, conducted at Newcastle University, showed Brazilian mint tea was as effective at relieving pain in mice as a synthetic aspirin-style drug called indomethacin.

Lead researcher Graciela Rocha said her team has scientifically proven the plant works as well as some synthetic pain-relief drugs. “The next step is to find out how and why the plant works.”

The researchers will soon launch clinical trials to assess Brazilian mint’s pain-relief properties in humans.
Back and neck pain comes at a cost

Back and neck disorders are the leading causes of chronic pain in New Zealand. Along with arthritis, they affect huge numbers of people and cost the country dearly in Accident Compensation Commission (ACC) pay-outs and lost productivity.

Brigitte Gertoberens, of the Auckland Regional Pain Service, said one-in-five people experience back or neck pain in their lifetime.

Ross Drake, president of the New Zealand Pain Society, said back injury is “the number one leading cause of pain,” while ACC senior media advisor Glenn Donovan noted that from January to June 2012, back and spine injuries were the most commonly ACC-covered injury, with neck injuries in seventh place.

Mr Donovan said the ACC tries to encourage people to report injuries early and address their back and neck pain issues in the workplace.

“Remember, it’s often not the result of a serious medical condition, but can still be distressing and potentially disabling. Most back and neck pain gets better quickly.”

Workers need to be supported and encouraged to “self-manage” the recurrence of back and neck pain, said Mr Donovan.

“Have some basic strategies, including pain relief, gradual mobilization, workplace support and monitoring.”

Regular exercise can have a preventative effect on back pain, Mr Donovan added.

Ms Gertoberens agreed that exercise is crucial. “Unspecific musculoskeletal pains are often caused by muscle tension due to stress, lack of exercise, unhealthy lifestyles, computer-based work stations and leisure activities,” she said. “They often also occur with depression and anxiety.”

She described it as “some sort of civilization illness” and human evolution might be partly to blame.

“Neck and shoulder pain occurs also as a consequence of the human race developing

The figures tell the story:

- In the year ending June 2012, there were more than 288,000 active ACC claims for back and spine injuries, costing more than NZ$316 million.
- By far the main cause of injuries was lifting, carrying or straining the back.
- Neck injuries accounted for more than 110,000 claims costing more than NZ$165 million. The vast majority of these were soft tissue injuries, mainly caused by lifting or straining.
- Other causes of back and neck injuries included slipping and skidding, loss of balance, twisting movements, being pushed or pulled, and being struck by an animal or person.
an upright posture with a change in weight-bearing parts and areas of the spine where most of the movements happen. After specific disease has been excluded, the best treatment is getting into an exercise routine and a healthier lifestyle.”

Many neck and back problems are not caused by a specific disease, but Ms Gertoberens said if the issue does not resolve itself in a few weeks, sufferers should see their GP.

“Medication can be helpful for acute stages, but should not be used as a permanent treatment for these types of pain,” she added.

Pharmacy products for neck and back pain include anti-inflammatories and gels containing diclofenac, but Ms Gertoberens advised caution.

“Anti-inflammatories and muscle relaxants could be helpful for unspecific pains, but these drugs, especially NSAIDs, should be given under strict control as they can have significant side effects. NSAIDs are often used by people without any concerns or knowledge about potential risks like gastrointestinal side effects and kidney damage.”

“Psychological strategies” can also be effective in treating pain, Ms Gertoberens added. “Relaxation is often very helpful to reduce stress levels and muscle tension.”

More than pills for pain

Aches, pains, sprains and strains can be treated with appropriate medicines, but sometimes the best cures are rest, massage and some of the following products.

Aches and pains
Only minor aches and pains, where there is no evidence of soft tissue injury, should be treated with heat therapy. The pharmacy’s range of rubefacients or counter-irritants (heat rubs) can be recommended for such treatment. Pharmacy staff should also advise customers to warm up properly before exercise – warm muscles mean there is less risk of straining a muscle or spraining a joint.

Neoprene sports supports can be recommended for aching muscles or stiff joints. However, for serious injuries, these supports should only be used after 72 hours (following...
the use of the RICE regimen below).

**Sprains and strains**
Strained ligaments, torn muscles and inflamed tendon sheaths are accompanied by redness, pain and swelling. Heat and massage should not be recommended for such injuries. Instead, pharmacy staff should recommend the RICE regimen to begin the healing process.

**Strapping tape**
Use strapping tape to treat and prevent injuries during exercise. Foam padding can be used directly on the skin under the tape to give extra protection, support and comfort.

Elastic adhesive bandages offer extra compression and support for wrists, ankles, knees and elbow. If worn after an injury, the elastic support acts as an extra layer of muscle, reducing pressure on the actual muscle.

**R** Rest the injured area to prevent further damage.
**I** Ice – Apply crushed ice in a damp towel (or use a cold pack) within minutes of an injury, then every two to three hours following for about 10 to 15 minutes.
**C** Compression – Use a strong bandage to control the accumulation of fluid and apply enough pressure to control bleeding and swelling.
**E** Elevation – Keep the affected area raised to further control swelling.

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**Many painkillers lack evidence, according to Cochrane Review**

Codeine has performed relatively poorly in a major literature review looking at painkillers, especially those used for postoperative pain. The Cochrane Review data covered around 45,000 patients in 350 studies.

Andrew Moore, of Oxford University’s Pain Research Unit, commenting on the review, said the results for pain relief varied considerably between painkillers.

More than 70% of patients with moderate-to-severe acute pain who took a single dose achieved good pain relief from 120 mg etoricoxib, or a combination of 500 mg paracetamol plus 200 mg ibuprofen.

Only 35% of patients taking 1,000 mg of aspirin or 600 mg of paracetamol benefited. The worst performer was codeine, with only 14% experiencing significant pain relief.

“Pain relief doesn’t have to be a mystery. There is a body of reliable evidence about how well 46 different drug/dose combinations work against acute pain, but the review also shows there are many examples of drugs for which there is insufficient evidence, and the drugs in question should probably not be used to treat acute pain,” said Dr Moore in a media release.

Interestingly, no drug was found to produce high levels of pain relief in all patients. If a painkiller doesn’t appear to be working, doctors should recommend an alternative, he said.
When a child is in pain

All babies and children will experience pain at some time or other, and this can be very distressing for parents. In this respect, pharmacy staff can play an important role in providing advice and reassurance to worried parents.

In babies, pain is often associated with teething. However, Allison Jamieson, clinical advisor for the Plunket Society of New Zealand, said not all children will experience pain during teething.

“Teething is a normal part of development and affects all babies differently. Parents need to remember that teething is not an illness. If the baby has a fever and is in pain, there is probably an underlying illness that requires treatment.”

Fever occurs to fight infection, said Ms. Jamieson, and teething isn’t an infection.

Assessing pain
Assessing pain in babies and children is difficult as they cannot tell you what is wrong or where it hurts, or how severe the pain is. Parents need to observe their child’s behavior and watch for other symptoms.

Some symptoms include fever, lethargy, refraining from drinking, eating, urinating frequently or an unusual or high pitched cry.

If a child is miserable and lethargic, medical attention is required, said Ms. Jamieson. Similarly, if a baby cries continually, it is best to visit a doctor.

“If a child is generally happy, able to play, eat, drink and urinate properly, but is experiencing some pain, it makes sense to monitor them at home.”

Pharmacist’s role
The pharmacist can play a part in helping parents cope with a child in pain, said Ms. Jamieson.

“The pharmacist can obviously provide advice on what medication to use and how to use it, but there are other things a pharmacist can also advise on.”

Children frequently experience pain along with fever, so checking for a high temperature is essential. The pharmacist can run through the various thermometers available for checking a baby or child’s temperature.

“Place the thermometer under the child’s arm for best results,” said Ms. Jamieson.

Treatment
Paracetamol and ibuprofen are the two most common medicines for treating children’s pain and fever. Aspirin should not be used until 16 years of age because of the associated risk of Reye’s syndrome.*

Paracetamol is usually the first choice of treatment for children with pain or fever, but, due to its easy accessibility, there is a danger of overdose.
The recommended dose of paracetamol for children and adolescents is 15 mg/kg four-hourly up to a maximum of 60 mg/kg/day (for seven to 12 years, maximum 2 g/day).

Paracetamol can be used in babies from one month of age. Ibuprofen has the advantage of being longer acting than paracetamol, with doses lasting for six to eight hours. The recommended dose in children is 5-10mg/kg three or four times a day. Children as young as three months can take ibuprofen.

Pharmacists should warn parents that ibuprofen can exacerbate asthma in some individuals.

*A very rare condition that causes serious liver and brain damage.
Almost all recorded cases of Reye’s syndrome have occurred in children. The cause of Reye’s syndrome is unknown, but there is evidence to suggest that two factors may contribute to children developing the condition – previous viral infection and exposure to aspirin.

Pharmacists can offer temporary relief from tooth pain

Anyone who has had significant tooth pain will appreciate what a miserable experience it is.

The pain before treatment is bad enough. A tooth extraction can be even worse. And for the unlucky patients who develop a ‘dry socket’ after extraction – when the healing blood clot doesn’t form properly and the bone in the socket becomes exposed – life can become almost unbearable for days or weeks.

At such times, tooth pain is a 24/7 ordeal. There is no escaping it for long and the loss of sleep it causes just exacerbates its debilitating impact.

Normal painkillers may dull the ache for a short time, but they quickly lose their effectiveness with more serious symptoms.

If a dry socket becomes infected, there is often no option but to return to the dentist, where a medicated dressing can be inserted into the socket. The relief can be quick and effective.

However, pharmacists are sometimes the first port of call for people suffering from tooth pain.

A New Zealand pharmacy owner, Neville Cameron, said the nearest dentist for his patients is 50 km away.

“We don’t have a dentist, so usually people who have got problems have to come to us
or see a doctor. The problem is, the range of products available to relieve tooth pain has decreased over the years.”

It used to be standard practice for pharmacists to stock such products as gutta percha, said Mr Cameron.

This latex rubber product was commonly used as a temporary dental filling.

“Now it’s just a case of giving people pain-killers or oil of cloves.”

Patients definitely require the strongest pain relief on the shelves, Mr Cameron said. “Toothache is a repulsive thing.”

Peter Menzies, of Peter Menzies Pharmacy in the Auckland suburb of Howick, also sees many patients seeking relief from tooth pain.

“A lot of them in my area are smart enough to go to the dentist,” Mr Menzies said. “But there are many who would probably be more inclined to put it off because of economics. There are some areas of Auckland where it [dental treatment] will be last on the list because of the cost.”

He knows of people who have lost a filling and have delayed going to the dentist for weeks.

“That leads to other issues. It’s part of your health and part of your wellbeing. We can only advise them to use an oral hygiene preparation that guards against infection and, if it’s a throbbing issue, paracetamol or ibuprofen.”

Pharmacists will often be called on for urgent help and advice when people suffer tooth problems during holidays, said Mr Menzies.

“Holiday time is the classic – Christmas dinner and something has fallen out or you’re eating a toffee and something is ruptured or cracked. It can be an ongoing problem which causes infection and drains your immunity.”

Pain management: The alternatives

By Leonard Yap

Imagine waking up with a throbbing pain in the back, or a bad headache that has nothing to do with alcohol. This is the reality that many wake up to every morning, day in and day out. So what are some ways to make the pain go away, or at least make life a bit more bearable?
What is pain?
It is important to first understand what pain is. Pain is a natural response to damaging stimuli, such as bumping into a wall, getting scalded by hot water or from overdoing a gym session.

Pain can actually be a good thing, though most of us would disagree, because it is the body’s way of telling you that there is a problem. There are various abnormalities of the nervous system that cause people to be incapable of feeling pain, even when they are experiencing these damaging stimuli like touching a hot stove. These anomalies can be extremely dangerous because patients can suffer nasty injuries without realizing it.

Some types of pain
There are many types of pain, and understanding which type of pain patients may have is key to its management.

• Nociceptive pain is caused by the stimulation of peripheral nerve fibers that respond only to stimuli approaching or exceeding harmful intensity, and may be classified according to the mode of noxious stimulation, the most common categories being thermal (heat or cold), mechanical (i.e. crushing, tearing) and chemical (e.g. chilli in the eyes).

• Neuropathic pain is caused by damage or disease affecting any part of the nervous system involved in bodily feeling. Peripheral neuropathic pain is often described as burning, tingling, electrical, stabbing or pins and needles.

• Phantom pain is pain felt in a part of the body that has been lost or from which the brain no longer receives signals.

Phantom limb pain is a common experience in amputees. Some amputees experience continuous pain that varies in intensity. It is often described as shooting, crushing, burning or cramping. If the pain is continuous for a long period, parts of the intact body may become sensitized, and touching it evokes pain in the phantom limb.

• Psychogenic pain, also called psychalgia or somatoform pain, is caused, increased or prolonged by mental, emotional or behavioral factors. Unexplained headache, back and stomach pain are sometimes diagnosed as psychogenic pain.

Managing pain
Pain can overwhelm the sufferer to the point where he or she finds life not worth living. Managing pain is as much an art as it is a science. Medications are typically the first-line of pain management.

Medications vary for the different types of pain involved, and deciding on what medications and the correct dosage should be discussed with a doctor. People with hypertension and diabetes, in particular, should discuss their medication regimen to prevent contraindications or unwanted side effects.

Typically, milder forms of pain may be relieved by OTC medications such as paracetamol or NSAIDs like aspirin and naproxen. Topical pain relievers can be applied to the skin to relieve sore muscles and arthritis.

If OTC drugs do not provide relief, stronger medications may be required such as muscle relaxants, anti-anxiety drugs, antidepressants, COX-2 inhibitors or a short course of stronger
painkillers such as codeine, fentanyl or hydrocodone. Steroid injections at the site of a joint problem can also reduce swelling and inflammation.

**Alternative therapies**

Sometimes, drugs just don’t work. Alternative therapies may help the mind’s ability to affect the functions and symptoms of the body. These treatments include relaxation techniques, meditation, guided imagery, biofeedback and hypnosis.

“...with the various treatments available, pain should no longer hold them back”

Acupuncture is used to decrease pain by increasing the release of endorphins, chemicals that block pain. The stimulation of pressure points triggers the affected nerve to send a message to the central nervous system to release endorphins, which block pain messages from reaching the brain.

A more modern twist to acupuncture is a technique called microcurrent therapy, which employs ultra-low electric current, to the tune of a millionth of an ampere, to stimulate cell regeneration and metabolism. To put it into perspective, a 1.5-volt AAA battery provides 900 milliamperes of current, or a thousandth of an ampere. This therapy has been used extensively in sports medicine to speed up the recovery process for injured athletes.

Microcurrent has been around since the early 90s, with various enhancements. The therapy is believed to work on a cellular level, increasing energy production, removal of waste and improved metabolism within the cell. Some evidence has pointed to the effects of microcurrent, which appear to reduce tissue inflammation. In doing so, the healing can progress at a significantly faster pace. One of the more visible effects of microcurrent therapy is pain relief.

A new form of microcurrent therapy recently made available in Malaysia is known as the frequency-specific microcurrent therapy.

The device measures the electrical impedance or resistance of the affected tissue to gauge whether it is in a state of inflammation or degeneration, Patrick Walitschek, chief executive of BCR Therapie Germany, the patent holder of the microcurrent device, told Pharmacy Today.

In addition to microcurrent, the device also utilizes specific frequencies of light that can affect healing at a cellular level, said Bernd Walitschek, creator of the device. The blue- and red-spectrum light frequencies have shown good promise in stimulating healing and have been widely used in the treatment of severe acne.

Using this information, the device, known as the Clinic-Master, adjusts the necessary electrical frequency and current to customize the treatment for the particular patient. In cases of pain that is not relieved with medications, it may be because the tissue affected is not able to expel waste material or bring in necessary nutrients. This therapy improves the metabolism of cells and improves energy utilization, providing pain relief to the patient, said Rudiger Schellenberg, medical director of BCR Therapie.

At the end of the day, pain may throw a wrench in plans and take away some of the joys of life, but it should never take over your patients’ life. Pain can be managed, and with the various treatments available, pain should no longer hold them back.
Breakfast feeds hunger for education

It is said that an army marches on its stomach. The same description could be applied to children, who require a regular intake of nutritious food to enable them to grow, play and learn.

There has been plenty of research carried out into the high number of children in New Zealand who don’t eat properly.

Stories of children turning up at school without having breakfast and without adequate food to get them through the day are common, and many organizations around the country are working to ensure kids’ health and education is not jeopardized by poor nutrition.

The Child Poverty Action Group put out a report last year titled Hunger for Learning: Nutritional Barriers to Children’s Education, the preface of which states: “Too many New Zealand children start their day without an adequate breakfast. The lack of food at the start of the day affects them at school and is a major barrier to their learning and social progress and development. Their lives are made worse as a result of starting the day without breakfast and this has consequences for their peers and teachers each day.”

Healthy eating message too easily forgotten

One of the key figures in childhood nutrition research is associate professor of pediatrics at Auckland University, Cameron Grant. He believes the message about healthy eating is getting through, although it can be easily forgotten at busy times.

“For example, to eat healthily in the morning requires enough time to prepare and eat food at home before everyone has to leave the house for school or work,” said Dr Grant.

“Also, it is easy to forget that we need to eat for the nutritional value of food, particularly when food advertising focuses on the convenience or the color or the taste or the social benefits of being seen to eat a particular food or beverage.”

The correlation between nutrition, learning and behavioral issues is well known. For example, iron deficiency can decrease a child’s ability to learn and also has adverse effects on infant behavior.

“This results in the interactions of parents with infants being of lower quality, so the opportunities for the infant to learn are also reduced,” said Dr Grant.

“There is concern that iron deficiency dur-
ing infancy can have adverse effects on learning that persist even after the iron deficiency is corrected.”

As anyone who has skipped lunch knows, hunger itself can make any form of concentration difficult and impacts on the ability to learn. Children need all of the following in terms of nutrition and health, Dr Grant said:

- a diet that is balanced and nutritious
- a variety of foods from each of the four major food groups each day
- enough food for activity, growth and to maintain a healthy body size
- foods, snacks and drinks that are low in fat, especially saturated fat, and low in sugar and salt
- plenty of water during the day
- reduced or low-fat milk every day
- meals with family or extended family as often as possible
- to be physically active

Supplements may be needed for certain children

Dr Grant is concerned at the amount of ‘junk’ food and energy drinks children consume, and said it is sometimes necessary to use supplements to improve a child’s general nutrition.

His definition of a supplement is “a mineral or vitamin, or a combination of one or more of both, in a concentrated form which is taken as a medicine or a tablet rather than as a component of whole foods”.

Iron deficiency is one problem which can be corrected by the use of supplements.

“Iron supplements are sometimes necessary for children under two years old, especially those born prematurely or are of low birth weight and then grow rapidly,” Dr Grant said.

“The lack of food at the start of the day affects them at school and is a major barrier to their learning and social progress and development. Their lives are made worse as a result of starting the day without breakfast and this has consequences for their peers and teachers each day

This, he said, can also include children who drink cow’s milk every day, but no formula milk and eat fruit only as a snack, rather than with their main meal. First weaning foods may also lack iron.

“While some home-made first weaning foods are excellent sources of iron, some are not.”

Teenage girls are another group for whom iron supplementation is sometimes necessary. “Iron deficiency is 10 times more common in girls than boys of high school age,” said Dr Grant.

“Among girls, iron deficiency is two to three times more common in Maori, Pacific and Asian girls than it is in European girls.”

Vitamin D deficiency is also prevalent in New Zealand and supplements are sometimes needed, especially in winter and spring. Again, Pacific and Maori children are more prone to it than European children.
Basic routines are best for acne-prone skin

Preventing acne and treating oily and acne-prone skin is all about getting back to basics when it comes to products and face-washing routines, a New Zealand pharmacist says.

When people have issues with acne, it is important for pharmacists to enquire about the routine they follow for taking care of the face, said Rodney Staines.

“It is also important for people to review their eating habits because a poor diet can cause breakouts.”

It is amazing what some people will skip, even forgetting that washing the face regularly helps prevent acne, Mr Staines said.

There is no magic-bullet for treating acne: it is a matter of spending time with people to work out where the deficiencies are and where to recommend they do something differently, he said.

Pharmacists can suggest an antiseptic product for people who already have acne to try and reduce scarring.

New Zealand dermatologist Louise Reiche agreed that the key to preventing and treating acne is about keeping face routines simple and choosing the right products for oily skin.

Sometimes, people use too many cosmetics in an attempt to hide their skin, but this can cause or worsen acne, said Dr Reiche.

Replacing a complicated routine of using cleanser, toner and moisturizer with a gentle skin cleanser and washing off with just water can be beneficial.

This will help people who have oily and sensitive skin, said Dr Reiche.

Many cleansers are quite greasy and some moisturizers can block the pores, so a water-based cleanser is often a better choice. Pharmacists can direct people with greasy skin to non-greasy skincare products and cosmetics for oily skin.

It is also important for people to review their eating habits because a poor diet can cause breakouts, said Dr Reiche.

A low glycemic index diet is better for acne-prone skin because sugar-high foods stimulate insulin production. This, in turn, stimulates acne production.
There is little evidence that cough and cold preparations can reduce the symptoms or duration of the common cold in children.

Furthermore, most cough and cold preparations contain medicines not recommended for use in children aged below six years. As parents begin to accept that these medicines may not be appropriate or effective for their child, other treatments will be sought, according to a July 2010 article in Best Practice.

There are, however, other treatments a pharmacist can recommend. Paracetamol should be a first-line treatment for pain and fever associated with cough and cold. Ibuprofen can help treat headaches, earaches, muscle and joint pain, and can be used as an alternative to paracetamol.

Saline drops or sprays are effective for clearing nasal congestion in young children and infants, and honey can soothe sore throats.

Administer honey directly on a teaspoon, or as a warm honey and lemon drink. Don’t recommend lozenges – these are a choking hazard – and honey shouldn’t be given to babies under the age of one year as it is associated with infant botulism.

“We recommend honey be tested for cough in children aged over one year, given that cough and cold preparations do not seem to be effective in this age group,” said Rebecca Harris, editor of Best Practice.

Menthol and eucalyptus oils can be added to warm water to create a vapor to relieve congestion and ease breathing. However, parents should be advised not to use boiling water due to the risk of scalding, and should store aromatic oils out of reach of children.

Aromatic decongestant rubs can be used in children over the age of three months to provide comfort. However, there is no evidence these products have any clinically significant effect on cough and cold symptoms.

Ivy leaf extract syrups are used throughout Europe for the treatment of cough and cold, and these are gaining popularity elsewhere. A review of randomised trials testing the efficacy of ivy leaf extract in children with bronchial asthma showed these preparations have some effect on improving respiratory function.

As a rule, complementary medicines are not recommended for children. Echinacea, garlic and vitamin C are commonly used to prevent and treat cough and cold; however, these products are not recommended in children based on their lack of proven benefit, the article ‘Do cough and cold preparations work in children?’ in Best Practice said.

Instead, simple analgesia such as paracetamol or ibuprofen, saline spray for nasal congestion, honey to provide comfort, and plenty of rest and adequate fluid intake should be recommended.

“Our general advice is that if there is no evidence of harm and the treatment is affordable, then it may be trialed, but most complementary medicines are not backed by evidence of clinical effectiveness,” said Ms Harris.
Managing erectile dysfunction

By Dr Hasniza Zaman Huri B. Pharm, M. Clin Pharm, PhD
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Definition
Erectile dysfunction (ED), previously and less precisely called impotence, is the most common sexual problem in men. ED is defined as the “inability to achieve or maintain an erection sufficient for satisfactory sexual performance.” A minimum period of three months of such inability is required to establish a definite diagnosis of ED, with the exception of known cases of trauma or surgically induced ED. ED should be distinguished from other kinds of sexual dysfunctions such as loss of libido, premature ejaculation or anorgasmia, although some patients might also experience a combination of these disorders. ED causes a significant impact on the quality of life, self-esteem, and mental wellbeing of men as well as on their interpersonal relationships.

Prevalence
The worldwide prevalence of ED is predicted to be at 322 million men by 2025, a rise of 170 million men for the 30-year period from 1995, when it was at 152 million men. The Massachusetts Male Aging Study found that 52% of men aged 40 to 70 years had a certain degree of ED. Similarly, a Canadian survey in a primary care setting reported that the overall prevalence of ED was 49.4% in men aged 40 to 88 years. In Malaysia, a population-based survey on men aged 40 and above revealed that up to 70% of the population had some degree of ED, of whom 45.9% had moderate-to-severe ED; this result was comparable to other Western and Asian population studies. A recent study found that the prevalence of ED was 69.5% among men who visited urban public primary care clinics in Malaysia.

Causes
ED can be classified according to the etiology of the disorder or severity of the symptoms (i.e. mild, moderate or severe). The etiology classification is more widely used and it is further classified into organic and psychological causes. Organic origins of ED include vascular, neurological, hormonal and drug factors, whereas psychogenic origins are usu-
ally a result of central nervous system inhibition in the erectile mechanism in the absence of obvious physical injury\(^1\). Certain medications (usually those used to treat chronic illnesses) can cause sexual inability. Drugs that may cause medication-induced ED are beta-blockers, diuretics, anticholinergics, tricyclic antidepressants, anticonvulsants, antipsychotics, anti-Parkinsonism agents and certain hormonal drugs\(^{14-15}\). Psychogenic factors are the most common causes for intermittent ED in young men, but often secondary to organic causes in older patients\(^{16}\). While 80% of ED is of organic origin, many men also suffer ED of mixed organic and psychogenic origins\(^{17}\).

**Risk factors**

The prevalence of ED increases with age and this has been demonstrated by many studies\(^2,6,11,12\). However, it is not an inevitable consequence of aging. Studies have shown that ED is associated with medical illness or comorbidities such as diabetes mellitus, atherosclerosis, hypertension, and cardiovascular disease\(^{1,9,10,11}\) as well as lower urinary tract symptoms\(^{6,11,12}\). Lifestyle-related factors such as obesity, smoking, sedentary lifestyle, and emotional and stress-related problems can also increase the risk of ED\(^2,4,6,12,18\). In contrast, ED can enhance the risk of developing coronary artery disease, especially in younger men\(^{19}\).

**Treatment**

Despite the high prevalence of the disorder, many men do not seek treatment until the symptoms become unbearable\(^1,12\). This is probably due to shame, embarrassment, fear or the general perception of sexual dysfunction as a consequence of ‘normal aging’ and not as ‘severe’ as other medical conditions\(^{21}\). A lack of awareness of available treatment options is probably another reason for not seeking treatment\(^5\). The management of ED can be divided into psychotherapy, pharmacotherapy, and mechanical and surgical therapy. Psychotherapy, also known as behavioral therapy, can be used alone or as an adjunct to other treatment modalities. Pharmacotherapy includes the use of oral phosphodiesterase-5 (PDE5) inhibitors, sublingual apomorphine, intracavernosal vasoactive drug injection and

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**Table 1: Risk factors for erectile dysfunction\(^{20}\)**

- Advancing age
- Cardiovascular disease
- Cigarette smoking
- Diabetes mellitus
- History of pelvic irradiation or surgery, including radical prostatectomy
- Hormonal disorders (e.g., hypogonadism, hypothyroidism, hyperprolactinemia)
- Hypercholesterolemia
- Hypertension
- Illicit drug use (e.g., cocaine, methamphetamine)
- Medications (e.g., antihistamines, benzodiazepines, selective serotonin-reuptake inhibitors)
- Neurologic conditions (e.g., Alzheimer’s disease, multiple sclerosis, Parkinson’s disease, paraplegia, quadriplegia, stroke)
- Obesity
- Peyronie’s disease
- Psychological conditions (e.g., anxiety, depression, guilt, history of sexual abuse, marital or relationship problems, stress)
- Sedentary lifestyle
- Venous leakage
intraurethral suppositories. The mechanical route, involving the use of vacuum constriction devices, is another non-invasive management technique for ED. Surgical options, including implantation of prosthetic devices or vascular surgeries, are generally invasive. Since the presence of diabetes, hypertension and heart disease can increase the risk of developing ED, optimal management of these diseases and lifestyle modification may be useful in preventing and managing ED. The preferred first-line treatments are lifestyle modifications or alterations in pharmacotherapy for other conditions (that cause ED), oral PDE5 inhibitors, and testosterone supplementation (only for ED patients with hypogonadism). Second-line therapies include intracavernosal or intraurethral alprostadil and vacuum pump devices. Penile prosthesis is usually the last treatment option when the first- and second-line therapies have failed.

1. Psychotherapy
Psychotherapy or behavioral therapy such as sexual counseling and education helps in relieving anxiety and depression and hence in improving sexual function. It is normally the treatment of choice when psychogenic ED is suspected or in the absence of obvious organic cause. Also, it can be used as adjunct therapy for the treatment of organic ED. The integration of psychotherapy with other treatment modalities helps to increase the effectiveness of the overall treatment.

2. Pharmacotherapy
   i. PDE5 inhibitors
PDE5 inhibitors were the first oral pharmacotherapy agents discovered for ED and remain the first-line treatment for ED regardless of the etiology. The three PDE5 inhibitors currently available on the Malaysian market are sildenafil, tadalafil and vardenafil. They are potent, competitive and reversible inhibitors of PDE5. They inhibit PDE5 and, thus, enhance the effect of nitric oxide (NO), which is responsible for degrading cyclic guanosine monophosphate (cGMP) in the corpus cavernosum. As a result, the level of cGMP increases leading to increased smooth muscle relaxation and inflow of blood to the corpus cavernosum. Sildenafil, the first PDE5 inhibitor, was introduced in 1998, and has a wide spectrum of efficacy in many ED patients regardless of etiology, severity or age, and has a good safety profile. All three PDE5 inhibitors are relatively similar in their effectiveness and the clinical data available do not prove the superiority of one agent over another. However, their pharmacokinetic profiles such as onset of action, dosing and duration of therapeutic effect are different due to the variations in their molecular structures. Tadalafil has a longer half-life and duration of action than sildenafil and vardenafil. These drugs undergo hepatic metabolism, which is primarily mediated by cytochrome P450 enzymes. Thus, dosage reduction is necessary in patients with mild-to-moderate liver impairment. Patients with severe liver impairment should avoid using this group of drugs.

Evidence has shown drug-drug interactions between the PDE5 inhibitors and CYP3A4 inhibitors such as erythromycin, clarithromycin, ketoconazole, itraconazole and grapefruit juice. Concomitant use of these two groups of drugs can enhance both the pharmacological and adverse effects of PDE5 inhibitors and, hence, is not recommended. Also, these drugs interact with nitrates and are contraindicated in men with ED who are also receiving nitrates for the treatment of ischemic heart disease. They should be used with caution in patients who are also receiving beta-blockers concurrently, for example, patients with benign prostatic hyperplasia. The adverse effects of PDE5 inhibitors are related to peripheral vasodilation.
and include headache, flushing, nasal congestion and dyspepsia. Visual changes can occur with the use of sildenafil and vardenafil, but not tadalafil. This is because sildenafil and vardenafil have some similarity in their molecular structure and possess some cross-reactivity with PDE6, which is responsible for visual changes.

A selective PDE5 inhibitor called udenafil has been recently developed. A recent randomized, double-blind, placebo-controlled trial in Korea demonstrated that once-daily dosing with udenafil 50 mg or 75 mg significantly improved erectile function as compared to placebo. Also, a meta-analysis of five randomized controlled trials concluded that udenafil is an effective and well-tolerated drug for ED, with the common adverse effects of flushing and headache. The results suggested that it might be a promising treatment option in the future.

**ii. Sublingual apomorphine**

Apomorphine is a centrally acting dopamine receptor-2 agonist that is administered sub-lingually. It acts by stimulating the hypothalamic dopaminergic pathways that control the erection of the penis. A study by Dula et al. (2000) demonstrated that sublingual apomorphine was more effective than placebo in treating ED and was associated with tolerable side effects. However, as shown in a number of studies, sublingual apomorphine is less effective and less preferred by patients when compared to oral sildenafil.

**iii. Androgen-replacement therapy**

The use of androgen-replacement therapy is effective in patients with testicular failure (hypogonadism) and is useful in patients with a low level of testosterone. However, it is inappropriate and can be harmful when used in eugonadal patients, especially in those with unrecognized prostate cancer because it can increase the risk of prostatic hyperplasia or prostate cancer. Androgen-replacement therapy such as testosterone enanthate or cyproterone can be administered to ED patients intramuscularly. The oral and transdermal formulations of testosterone for the treatment of ED have also been shown to be equal and more effective, respectively, than intramuscular formulations, according to a meta-analysis. On the other hand, bromocriptine, an anti-Parkinsonism agent, is indicated for men with hyperprolactinemia and works by decreasing the prolactin level, leading to improved sexual function.

**iv. Intracavernosal injection therapy**

Vasoactive drugs that relax the penile smooth muscles and blood vessels such as papaverine, phentolamine and prostaglandin E1 (alprostadil) are used alone or in combination for the treatment of ED. Intracavernosal injection therapy was the most common treatment option for ED before the approval of sildenafil in 1998. Self-injecting alprostadil into the corpora of the penis helps in relaxing the cavernous and arterial smooth muscle, thus facilitating penile erection. It is important to educate patients on the self-injection technique and the possible side effects. The initial dose should be administered by the patient under the supervision of a healthcare provider to avoid improper injection or treatment failure. The injection should not be done more than once within a 24-hour period. The common side effects include priapism (defined as prolonged erection lasting for more than four hours and seen more often with papaverine), pain, hypotension, penile corporal fibrosis, hematoma and ecchymosis, which often lead to a high discontinuation rate. Discontinuation can also be attributed to the consequent lack of spontaneity in sexual relations, resulting in a general loss of interest. Therefore, it
should be used with caution in patients with severe psychiatric disease, poor manual dexterity, or poor vision, those who cannot tolerate transient hypotension, and those receiving anticoagulant therapy³.

v. Intraurethral suppositories
Alprostadil, a synthetic vasodilator identical to PGE1, is also available in suppository form and can be administered transurethrally for the treatment of ED. This treatment option is suitable for men for whom oral pharmacotherapy has not been successful, for whom oral pharmacotherapy is contraindicated, or who have suffered adverse effects from oral pharmacotherapy⁴. Although shown to have greater efficacy than placebo and well tolerated in a randomized controlled trial³⁶, the postmarketing studies of this suppository did not produce satisfactory results for efficacy and the responses generally lacked consistency³⁷,³⁸. When comparing transurethral to intracavernosal alprostadil, the latter was superior in terms of efficacy and safety³⁹-⁴⁰. Despite this, studies have shown that transurethral alprostadil is easier to use, less invasive, more attractive and better accepted by patients compared to intracavernosal alprostadil⁴⁰. Additionally, the combination of alprostadil suppositories with oral PDE5 inhibitors or penile constrictive devices showed a higher efficacy²².

The administration of the first dose of this suppository should also be supervised by healthcare providers, as it poses a risk of syncope or hypotension³. The adverse effects associated with it include pain, burning sensation and discomfort in the penis, chest pain, dizziness, hypotension and syncope³⁶,³⁷.

vi. Topical alprostadil cream
According to two multicentre, randomized, double-blind, parallel-group studies by Padma-Nathan and Yeager (2006)⁴¹, a topical cream of alprostadil showed a small, but significant, improvement in efficacy and patient satisfaction when compared to placebo. It was considered as safe and well tolerated. The adverse events reported were mild, mainly local manifestations such as a burning sensation, pain and erythema of the penis⁴¹. The overall clinical effectiveness of this form of delivery of alprostadil is yet to be investigated.

vii. Melanocortin receptor agonists
The role of melanocortin receptor agonists in treating ED was discovered after the systemic administration of alpha melanocyte stimulating-hormone (alpha-MSH) and adrenocorticotropic hormone (ACTH) in rodent models showed penile erection⁴². A double-blind, placebo-controlled crossover study by Wessells et al. (2000)⁴³ found that Melanotan II, a synthetic analogue of alpha-MSH, was a potent initiator of penile erection in the absence of sexual stimulation and that it could increase sexual desire in patients with ED. The reported side effects were nausea, yawning and stretching⁴³.

PT-141 is a cyclic heptapeptide melanocortin analogue and is administered intranasally to treat ED. It is ineffective orally. The results of two double-blind, placebo-controlled studies showed that PT-141 caused significant erectile responses in healthy men and patients with mild-to-moderate ED. Also, it was tolerable and the adverse effects were minimal⁴⁴,⁴⁵.

3. Vacuum constrictive devices
Mechanical devices such as vacuum constrictive devices are non-invasive, low-cost, easily available, over-the-counter tools for managing ED²²,³⁴. They are suitable for men who refuse pharmacological therapy or for whom it is contraindicated.

However, several drawbacks associated with the use of the devices such as general
discomfort and lack of spontaneity in sexual relations, as well as complaints that they are cumbersome, difficult to use, and impair ejaculation, render them a less preferred choice for patients. The adverse effects associated with the devices are penile pain, numbness of the penis, bruising and delayed ejaculation. Even so, they have a lower incidence of adverse effects when compared to intracavernosal injection therapy.

4. Surgical therapy
Vascular surgery for ED patients aims to increase arterial inflow and decrease vascular outflow. Venous ligation has been demonstrated to be effective in patients with venous leakage, whereas arterial revascularization or microvascular arterial bypass has limited use clinically and is usually used in patients with congenital or traumatic vascular abnormality or insufficiency.

Penile prosthesis is frequently regarded as the last resort for ED as it is highly invasive and irreversible. Yet, it gives a ‘long-term solution’ to patients and is relatively efficacious; hence, it is suitable for patients with failure, contraindication or refusal of all the other treatment modalities. Three forms of therapy are available, namely, semi-rigid, malleable and inflatable. The effectiveness and acceptability among the three procedures are different. The associated complications are mechanical failure, infection and erosion, which may lead to the need for repeat surgery. Certain groups of men may be at an increased risk of developing prosthesis-associated infection, such as those with urinary tract infections, diabetes or spinal cord injuries.

5. Pharmacotherapy for other conditions or lifestyle modification
For patients with medication-induced ED, the situation can be improved by making changes to the pharmacotherapy, for example, by substituting another drug that is less likely to cause ED. Lifestyle modifications such as exercise, smoking cessation, weight loss and low-fat diets play an important role in managing ED, as the presence of cardiovascular risk factors are often predictors of ED.

6. Other therapies
The American Urological Association guidelines do not recommend the use of trazodone, yohimbine or other herbal therapies in treating ED, as there is insufficient evidence for their efficacy and safety. Prior to the introduction of sildenafil, oral yohimbine used to be one of the initial treatments for ED. It is an alkaloid derived from the bark of the yohimbine tree with alpha2-adrenoreceptor inhibitory effects. As there was no evidence of its efficacy and safety from more recent clinical trials, its use has declined.

Role of pharmacists
Several patient and medication-related problems in patients with ED could be serious and require the attention of healthcare providers. In an Asian country like Malaysia, many patients are embarrassed and reluctant to seek treatment for their sexual problems or are unaware of the treatment options.

For those who receive treatment, some might not receive sufficient instruction for administration or education on correct drug use from healthcare providers. Besides, it is not uncommon to encounter cases of treatment failure with oral drugs such as sildenafil. Hatzichristou et al. (2005) found that the high failure rate with sildenafil treatment was associated with inappropriate drug use, such as not using the highest recommended dose, use of sildenafil after a meal, just before sexual activity, or without sexual stimulation, and use of the maximum dose despite contraindications.

Pharmacists play an important role in help-
ing physicians to decide and select the most appropriate treatment option for ED patients. They also play an important role in educating patients regarding the various treatment options. Dosage adjustment is particularly important in patients with treatment failure in order to achieve an excellent drug response. Pharmacists should also provide adequate counseling to patients, help them to regain their self-esteem and confidence, and educate them on the proper way of administrating the drugs, on possible side effects, and on methods to overcome the side effects.
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PP17931/12/2013(033147) ISSN 1170-1927