check

Independent learning program for GPs

Unit 501 December 2013

Integrative therapies

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The five domains of general practice

- Communication skills and the patient-doctor relationship
- Applied professional knowledge and skills
- Population health and the context of general practice
- Professional and ethical role
- Organisational and legal dimensions

RACGP

Recent estimates suggest Australians spend over $4 billion per year on complementary medicines and visit complementary therapy practitioners almost to the same extent as GPs.[1] Many Australians regard natural therapies as safe,[2,3] but around half of those using complementary medicines do not tell their GP.[1–3]

Analysis of the Australian National Health Survey database (2004–05) suggests that 24% of adults with a chronic illness use complementary medicine/therapy in isolation or in combination with pharmaceutical drugs.[4] A survey published in 2012 investigating 2915 people with type 2 diabetes and cardiovascular disease, indicated 43% had used complementary/alternative products or therapists in the previous 12 months,[5] while another survey reported 87% of Australians aged 50 years and over had taken one or more products in the previous 24 hours.[6]

A 2008 research report indicates that around 90% of GPs had recommended one or more complementary therapy in the previous 12 months, yet only 38% said they were confident discussing complementary therapies.[7] Approximately half of surveyed GPs 'always' or 'often' ask questions about the use of complementary therapies when taking a medication history.[7]

There are significant challenges in appraising complementary therapies[8] and not all products have good quality evidence to support their use. While GPs are divided on the ethics of prescribing complementary therapies, many promote their use in conjunction with orthodox medicine.[9,10] It is therefore important that GPs have an understanding of the evidence base supporting the safety and efficacy of commonly used therapies.

This unit of *check* examines a range of commonly used complementary medicines and therapies for the management of menopausal symptoms, back and knee pain, reflux and type 2 diabetes.

Learning objectives

At the completion of this unit, participants will be able to:

- outline appropriate examinations and investigations for a mid-life woman presenting with symptoms of the menopause
- describe the evidence for the efficacy of acupuncture in low pain back
- prepare a checklist of possible investigations that could be considered for someone presenting with reflux
- suggest complementary medicines that may be of value in the management of people with type 2 diabetes
- describe how herbal medicine products are regulated in Australia.

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GUIDE TO ABBREVIATIONS AND ACRONYMS IN THIS UNIT OF *CHECK*

AHPRA	Australian Health Practitioner Regulation Agency	FODMAP	Fermentable oligosaccharides, disaccharides, monosaccharides and polyols	PPIs	Proton pump inhibitors
AIMA	Australasian Integrative Medicine Association	FSH	Follicle stimulating hormone	RACGP	Royal Australasian College of General Practitioners
ANPA	Australian Naturopathic Practitioners Association	GERD	Gastroesophageal reflux disease	SIBO	Small intestinal bacterial overgrowth
ANTA	Australian Natural Therapies Association	GPMP/TCA	General Practice Management Plan/Team Care Arrangements	SNAP	Quit smoking, better nutrition, moderate alcohol, more physical activity
ARONAH	Australian Register of Naturopaths and Herbalists	H pylori	Helicobacter pylori	TCAs	Tricyclic antidepressants
ARTG	Australian Register of Therapeutic Goods	HbA1c	Glycated haemoglobin	TDS	Three times a day
ATMS	Australian Traditional Medicines Association	HDL-C	High density lipoprotein cholesterol	TG	Triglycerides
AUSDRISK	The Australian type 2 diabetes risk assessment tool	HRT	Hormone replacement therapy	TGA	Therapeutic Goods Administration
BMI	Body mass index	LBP	Low back pain	tTg-IgA	tissue transglutaminase-immunnoglobulin A
CT	Computed tomography	LDL-C	Low density lipoprotein cholesterol		
		NHAA	National Herbalists Association of Australia		
		NSAIDs	Non-steroidal anti-inflammatory drugs		

CASE 1

MARY PRESENTS WITH HOT FLUSHES

Mary, a new patient, is 52 years old and presents with a 2-month history of hot flushes. They are increasingly bothersome at night and she often wakes up throughout the night due to overheating. The hot flushes also occur during the day but she is able to deal with them by going outside to cool down. She has learnt to layer her clothing so she can quickly remove a layer to cool down. The lack of sleep makes her feel tired and irritable at times. Apart from hot flushes and interrupted sleep, she has no other presenting symptoms. Mary does not take any regular prescribed or over the counter medications and has no allergies.

QUESTION 1

What questions would you ask Mary?

FURTHER INFORMATION

Mary has no significant past history and is generally well. Her periods became irregular 18 months ago and her last period was 14 months ago. There are no other current stressors in her life. She sleeps well when not affected by hot flushes. She is a non-smoker and drinks 2–3 standard glasses of wine per day. She lives with her husband and works part time as a primary school teacher. Her father died 5 years ago from a stroke. Her mother, who has dyslipidaemia and high blood pressure, is 76 years old and is living at home with support.

QUESTION 2

What examinations, if any, would you undertake?

QUESTION 3

What investigations, if any, would you perform?

QUESTION 4

What is the most likely cause of Mary's presenting problems?

QUESTION 5

How would you manage Mary?

FURTHER INFORMATION

Mary returns for her follow-up appointment a month later. She reports no change in either the frequency or severity of her hot flushes, even though she has made lifestyle changes. She has reduced her use of alcohol to no more than one drink a few times per week and she takes a 30-minute walk with her husband most nights of the week after dinner.

You attempt to engage Mary in a discussion about the risk and benefits of hormone replacement therapy (HRT) and other prescription products for management of menopausal symptoms, should her symptoms get worse. Mary indicates a strong preference to manage her symptoms without prescription medication.

QUESTION 6

What advice would you give about over-the-counter medications?

QUESTION 7

Would you suggest any complementary therapies for Mary?

CASE 1 ANSWERS

ANSWER 1

As Mary is a new patient, a comprehensive medical history and a history of the presenting complaints should be taken. You should discuss the following:

- History of presenting complaint – explore the hot flushes fully, taking into account the frequency and severity. Identify Mary's perception as to the cause of the hot flushes. Exclude other causes of hot flushes and night sweats.[1] Ensure no significant weight loss has occurred in recent times. Exclude other causes to suggest further assessment of a secondary cause of amenorrhoea. Ensure there has been no abnormal vaginal bleeding or other bleeding that may need further assessment.
- Past medical history.
- Family medical history.
- Social history – most women at this age have issues with elderly parents and/or children which can add to stress and exacerbate sleep disturbance.
- Lifestyle – enquire about alcohol use, physical activity, smoking and nutrition. The SNAP framework might be useful.[2]
- Psychological history – including current stressors.
- Sexual history – explore what Mary has been using for contraception and her understanding of the ongoing need for this. You may also wish to enquire about vaginal dryness at this stage.
- Other menopausal symptoms – even though Mary has not reported any other symptoms it is important to ask specifically about uro-genital symptoms, other vasomotor symptoms, musculoskeletal and general symptoms, such as dry skin and headaches. Enquire about any integrative therapies used for symptom relief.
- Preventive risk assessments – assess risk of cardiovascular disease, diabetes using AUSDRISK,[3] fracture risk factors associated with osteoporosis and risk factors for skin cancer as a general preventive opportunity.

It is important to ensure that appropriate questions are asked to facilitate a risk assessment about potential treatment options that might be considered. For example, is there a personal or family history of cancer or thrombophilia?[4]

ANSWER 2

Examination should cover features related to menopause and preventive health more generally:

- blood pressure
- signs of anaemia
- body mass index (BMI) and waist circumference
- breast check
- skin cancer examination
- thyroid examination
- abdominal examination
- vaginal examination
- mental state examination
- urinalysis for protein.

ANSWER 3

The cause of the hot flushes can be readily ascertained from the history. Menopause can be diagnosed once periods have ceased for more than 12 months.[5] If the diagnosis is in doubt (such as a patient in perimenopause, a patient <45 years old or a patient who has undergone a hysterectomy) a serum follicle stimulating hormone (FSH) and oestradiol are diagnostic.[6] In Mary's case, therefore, investigations to confirm menopause are not necessary.

Investigations with a focus on preventive health are important. Postmenopausal women have an increased cardiovascular risk. Given Mary's family history, it would be important to assess all cardiovascular risk factors. The following investigations would be recommended for Mary at this time:[2]

- Pap test
- fasting lipids
- mammography
- bone mineral density (***note:*** Mary is at increased risk of osteoporosis due to her alcohol intake)
- fasting blood sugar level
- absolute cardiovascular risk[7]
- colorectal cancer screening with faecal occult blood testing.

ANSWER 4

The most likely diagnosis is vasomotor symptoms associated with menopause. The differential diagnosis includes depression, anaemia and thyroid dysfunction.[1]

In Australian women, menopause occurs between the ages of 48 and 55 years, with an average age of 51–52 years. Twenty per cent of women have no symptoms, 60% have mild symptoms and 20% have severe symptoms.[5] Contraception is required until there have been no natural periods for 1 year; however, in patients under 50 years of age the recommendation is for 2 years.[5]

ANSWER 5

Mary's management should focus on education regarding the menopause and modification of lifestyle factors, taking into account her personal preferences and wishes regarding the use of hormonal therapies if these are deemed necessary.

Exploration of what Mary currently understands regarding menopause, and her attitudes and beliefs about menopause and its treatment, are important first steps. Working from her baseline knowledge, Mary can be educated about menopause and its management.

Discussion of how you will collaboratively manage her symptoms is then required, focusing on lifestyle modification. Alcohol can trigger

hot flushes and reductions in alcohol may improve symptoms.[8] Given Mary is currently drinking above the recommended alcohol guidelines, she should be counselled on her alcohol use for both her general health and to manage her hot flushes. Increased BMI is also considered a risk factor for hot flushes.[9] Ensuring Mary has a BMI in the normal range and is engaging in regular physical activity is important for her long-term wellbeing.

Providing written information and useful evidence-based websites about the menopausal transition is also important.

Finally, a follow-up appointment to review Mary's ongoing management plan should be arranged.

ANSWER 6

Over-the-counter medications are in widespread use in Australia.[10] Current evidence, including systematic reviews, does not conclusively support the use of over-the-counter complementary therapies (including phytoestrogens, black cohosh, hops, vitamin E, evening primrose oil, ginseng, wild yam, gingko or dong quai) for menopausal symptoms.[8, 11, 12, 13,14] It is worth noting there are variations in the quality and extracts of herbs, which may explain the mixed findings reported in trials. These variations may also explain why some women benefit from herbs such as black cohosh and St John's wort, while others do not.

It is important to highlight to Mary that many over-the-counter products available for management of menopausal symptoms lack good quality efficacy and safety data[12] and may carry risks. For example, the use of black cohosh has been implicated in liver failure.[15,16]

ANSWER 7

There is evidence from a systematic review for the benefit of relaxation therapies for symptom improvement in menopause,[16] although higher level evidence is needed to demonstrate definitive symptom improvement. Given the relative potential benefit with minimal side effects and risks, relaxation therapies could be recommended for menopausal women wanting symptom management. Trials of yoga and acupuncture reveal mixed results.[11, 17, 18]

RESOURCES FOR PATIENTS

- The Jean Hailes Foundation: www.jeanhailes.org.au

RESOURCES FOR DOCTORS

- The Jean Hailes Foundation: www.jeanhailes.org.au
- Australasian Menopause Society: www.menopause.org.au

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CASE 2

JOE PRESENTS WITH BACK PAIN

Joe, a 35-year-old married carpenter, presents with a 10-day history of severe low back pain (LBP). He is quite distressed, slightly pale and has difficulty standing upright. You observe him getting up from the waiting room chair slowly, bent forward and holding himself carefully in fear of pain and muscle spasm. He is with his family who are distressed at his situation.

Joe had been carrying window frames, which pulled down on one side. This is the likely cause of his pain. You examine him and his neurological examination is normal, there are no features suggestive of serious pathology and he is otherwise well. Joe thought he might have a 'bulging disc' although this is not supported by a normal CT scan faxed from the emergency department last night. He was given non-steroidal anti-inflammatory drugs (NSAIDS) and tramadol, which 'helped him sleep'. He came to you because he was not improving.

QUESTION 1

What is your provisional diagnosis?

QUESTION 2

What is the role of imaging in LBP?

QUESTION 3

What is the role of analgesia in LBP management?

FURTHER INFORMATION

Joe is not keen to continue with his analgesic medications. His father had a gastrointestinal bleed while on long-term NSAID therapy and he is concerned about tramadol's addiction potential. He is interested in non-drug approaches to LBP and asks your views on acupuncture. Joe notes that another doctor in your practice, Dr Smith, offers acupuncture for pain management.

QUESTION 4

What non-pharmacological treatments would you recommend?

QUESTION 5

Is there any scientific evidence for acupuncture in general and for use in managing LBP?

FURTHER INFORMATION

You discuss the benefits of total daily doses of paracetamol with Joe and refer him to your colleague for acupuncture. Dr Smith informs you that back pain can be assessed easily with a 'hands on' medical acupuncture examination. Soft tissue oedema, tenderness and muscle tension are simple and easy road maps in acupuncture, and are just as important as the history, particularly in chronic injuries. In Joe's case, medical acupuncture examination revealed the absence of skin and soft tissue sensitivity, which are present in chronic pain syndromes and fibromyalgia. The tight muscles in spasm were easily evident on palpation. In acute back pain and other injuries, acupuncture points also become tender in recognisable patterns. In this patient these are present in the low back and segmentally down the lower limbs, as well as in the hand, ear and scalp that relate to LBP. They guide treatment.

CASE 2 ANSWERS

ANSWER 1

This appears to be an uncomplicated acute LBP case with increased muscle spasm on one side due to carrying an object in an awkward position. It is probably a muscle strain with continuing muscle spasm. In the absence of additional symptoms, serious causes of back pain, such as cancer, vertebral infection, cauda equine syndrome and/or vertebral fracture, can be excluded. The presence of recent weight loss, recent infection and/or fever should raise suspicion for more serious underlying pathology.[1, 2]

ANSWER 2

Although Joe had a CT performed at the emergency department, imaging and pathology tests are not routinely recommended in non-specific back pain of less than 6 weeks duration. Findings rarely correlate with pain levels and do not assist with establishing a diagnosis.[1– 3]

ANSWER 3

Simple analgesia using paracetamol and/or NSAIDs is recommended as first-line pharmacotherapy for LBP. [2, 4] Total daily doses of paracetamol are often preferred to NSAIDs as first line, given the adverse event profile of NSAIDs.[1,3] A 'step-up approach' to analgesia is recommended, incorporating paracetamol, which may assist to reduce the doses of other agents such as NSAIDs and stronger analgesics.[2, 3] Depending on the response achieved with simple analgesia, addition of a short-term opioid (tramadol, oxycodone) could be considered.

Decisions about the use of analgesia in LBP should take into account patient preferences, potential adverse drug events and drug interactions, if patients are taking other medications.

Joe appears to have muscle strain with continuing muscle spasm, which is not likely to be a primary problem associated with inflammation. It is unlikely that NSAIDs will make a long-term difference to this problem[5] and continued use may carry unintended risks.

There is conflicting evidence regarding the use of muscle relaxants, such as diazepam, in both acute and persistent LBP.[2, 4]

ANSWER 4

Patients with LBP should be advised to avoid bed rest as it is not recommended.[2, 4] Patients should be encouraged to remain active, as this has been shown to improve outcomes such as time to recovery and time off work.[1–3]

While evidence for some non-pharmacological approaches is inconclusive, limited or lacking,[4] the following could be discussed:

- use of heat or cold packs, for example a wheat pack, cold pack or hot water bottle[3]

- structured exercise programs[1, 2] may be effective in decreasing recurrences of back pain
- massage, yoga, spinal manipulative therapy[1, 2, 6]
- acupuncture.[2, 5]

ANSWER 5

Acupuncture reduces pain, improves movement, has long-term effects, is cost effective and is extremely safe in medical hands.[7] Level 1 evidence was reported for acupuncture in a 2012 meta-analysis, which reported a significant overall effectiveness ($p<0.01$) for acupuncture in over 17,000 patients, including those with LBP, compared with non-acupuncture treatment.[8] Be aware that many systematic reviews, including Cochrane, erroneously include trials with needle 'placebo' treatments that render these reviews unscientific.[9]

Therapeutic Guidelines Rheumatology 2010 suggests that 10 sessions of acupuncture over 12 weeks or less, may provide small improvements in pain and function in persistent back pain.[2]

While a 2009 systematic review and meta-analysis reported that acupuncture using laser therapy is very effective in acute and chronic musculoskeletal conditions,[10] Australian guidelines do not support a role for laser therapy in acute or subacute LBP.[2]

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CASE 3

LOUISE PRESENTS WITH ONGOING REFLUX

Louise, 34 years of age, has had ongoing reflux for the past 6 months. She was prescribed omeprazole 40 mg which helped slightly, however, she still complains of reflux every second day. She has trialled other proton pump inhibitors (PPIs) with no effect.

Louise is otherwise well. She takes no other regular medications and has no known drug allergies. Over the last 3 months, she has developed daily abdominal bloating and discomfort, excess burping and flatulence, and post-prandial fullness which has not been helped by omeprazole. She has become prone to constipation and her energy levels have decreased significantly.

As an infant, Louise suffered with frequent bouts of colic and infantile eczema. She was breast fed until 9 months and became more settled when her formula was changed to a goats milk based formula. As a child, she missed a significant amount of schooling, secondary to recurrent tonsillitis/otitis media and abdominal pain, for which no cause was found.

QUESTION 1

What are possible causes for Louise's ongoing reflux?

QUESTION 2

What investigations would you consider?

FURTHER INFORMATION

You have ordered appropriate pathology and other investigations, including an endoscopy, all of which showed no significant abnormalities. Although Louise's full blood count was within normal ranges, you note that her ferritin and vitamin B12 levels are at the lower end of normal: ferritin 18 µg/L (15–165 µg/L); vitamin B12 180 pmol/L (>180 pmol/L).

QUESTION 3

What further history would you like to elicit to explain why her iron and vitamin B12 levels are at the lower end of normal?

QUESTION 4

How would you manage Louise's ongoing reflux in view of her current results? Why?

QUESTION 5

Why is taking a detailed childhood history important in this instance?

QUESTION 6

Are there any other dietary modifications that could be considered in order to improve Louise's symptoms?

CASE 3 ANSWERS

ANSWER 1

Possible causes of Louise's reflux include:

- *Helicobacter pylori* (*H pylori*)
- food intolerances
- structural abnormalities
- sub-acute bowel obstruction
- gastrointestinal malignancy
- intestinal dysbiosis.

There are many possible causes for the presence of ongoing reflux in Louise, the majority of which are listed above. A differential diagnosis should consider both functional and structural causes of reflux. *H pylori* is a Gram-negative spiral-shaped bacterium, specifically colonising the gastric epithelium of humans. It causes one of the most common infections worldwide, affecting about half of the world's population.[1,2] Structural causes include hiatus hernia, gastric/duodenal ulceration, subacute bowel obstruction and malignancy.[3, 4]

Food intolerances may be a complaint among patients with functional gastrointestinal disorders, including those with irritable bowel syndrome, functional dyspepsia and gastroesophageal reflux disease (GERD). Food intolerances, or sensitivities, are reactions to foods that are not due to immunological mechanisms. Lactose intolerance can mimic symptoms of functional gastrointestinal disorders or coexist with them.[5] Although there are anecdotal reports that probiotics improve reflux, a better knowledge of the mechanisms through which changes in microbiota composition (dysbiosis) promote disease states is still needed to improve our understanding of the causal relationship between the gut microbiota and disease.[6]

ANSWER 2

The following investigations could be considered:

- *H pylori* breath test
- *H pylori* serology
- coeliac testing
- pathology tests regarding energy levels (full blood count, iron, vitamin B12; also consider thyroid tests given Louise's constipation and low energy)
- haemoccult
- breath hydrogen and methane testing (fructose, lactulose, sorbitol, glucose and lactose)
- endoscopy.

As always, a thorough history and detailed clinical examination are essential and can be used in guiding the selection of subsequent diagnostic tests.[3]

H pylori must always be excluded when a patient presents with symptoms of reflux.[1–3] An *H pylori* breath test could be considered; however as Louise is already on PPIs, in order to minimise false negative results, the PPIs should be ceased for at least one week and preferably two weeks before testing.[7] *H pylori* serology could also be considered as this does not require cessation of PPIs prior to testing. [7, 8]

While blood tests are often used to screen for coeliac disease, the gold standard for diagnosis is a small bowel biopsy. Although controversial and not 100% accurate, another pathology test worth considering is tissue transglutaminase-immunoglobulin A (tTg-IgA) antibodies to exclude coeliac disease, as several studies have shown an increased prevalence of reflux with coeliac disease.[9–11]

As Louise has also presented with symptoms of tiredness, other pathology tests, including a full blood count, ferritin and vitamin B12 level may be helpful.[12–14] An individual may still be iron deficient even if they are not anaemic.[15, 16] Furthermore, as she is complaining of constipation (change in bowel habit) as well as increasing lethargy, thyroid function tests and a haemoccult should be considered.[17] Hypothyroidism affects approximately 4–10% of women, the incidence increasing with age. [18, 19]

Once the above have been considered, further comprehensive tests, including breath tests for fructose, lactulose and lactose may be ordered. These short-chain carbohydrates can cause symptoms of bloating, pain and altered bowel habit in functional gut disorders. [20]

To exclude structural gut disorders and serious pathology, consider referral to a gastroenterologist for endoscopy.

ANSWER 3

Questions regarding the following additional areas could be asked:

- diet (is she a vegetarian, vegan, etc.)
- family history of pernicious anaemia
- other bowel disease (eg. Crohn's disease, ulcerative colitis, Coeliac disease).

Four primary reasons may explain underlying nutrient deficiencies:

- not eating enough food containing these nutrients in the diet
- malabsorption of these foods
- higher requirements of certain nutrients due to specific conditions or stages of life
- loss of nutrients through particular body processes such as diarrhoea or drug/nutrient interactions.

A comprehensive history detailing the specifics of Louise's diet is very important. Iron and vitamin B12 are found primarily in animal products, in particular red meat. Therefore, it is useful to know if Louise is a vegetarian.[20] It is also important to elicit a family history to exclude pernicious anaemia.[21, 22] Other bowel diseases such as coeliac, ulcerative colitis and Crohn's disease may also result in vitamin B12 and iron deficiency.[23–27]

Current data suggest that PPIs are safe for long-term use; however, safety beyond 20 years has not been investigated. While guidelines suggest that PPIs do not have clinically significant effects on dietary nutrient absorption, decreased vitamin B12 absorption has been reported as an infrequent adverse effect associated with long-term use of PPIs,[28, 29] and a 2013 review reported that long-term use of PPIs was associated with iron and vitamin B12 deficiency.[28]

ANSWER 4

The following management options could be considered:

- a trial of probiotics (given the recurrent courses of antibiotics)
- a trial of digestive enzymes
- a trial of a dairy-free diet for 1 month
- a trial without omeprazole (perhaps PPIs not necessary once underlying aetiology of reflux is managed).

A recent review [30] suggests that a trial of tricyclic antidepressants (TCAs) should be considered for 'functional dyspepsia' if PPIs fail. Note, TCAs are not indicated for this use.

Probiotics and digestive enzymes have been used for the treatment of functional gastrointestinal symptoms, although current evidence for their efficacy is still limited.[31–33] It is proposed that probiotics may profoundly affect the brain-gut interactions ('microbiome-gut-brain axis') and help attenuate the development of functional gastrointestinal disorders.[34]

As mentioned previously, lactose intolerance can mimic symptoms of functional gastrointestinal disorders or coexist with them. A 1-month trial of a dairy-free (cow's milk) diet may be conducted and assessed for any improvement in symptoms.[5]

Lastly, if not trialled already, exclusion of common irritants such as spicy foods, alcohol and caffeine could be tried. Advice to avoid overeating/big meals, increase chewing time, relax before meals, avoid rushing meals or eating too close to bedtime could be provided.

If symptoms improve, reduced dosage or perhaps cessation of PPIs could be subsequently trialled as there is mounting evidence that long-term use of these drugs is associated with serious adverse effects.[28, 29]

ANSWER 5

There are several clues from Louise's childhood that can help with the current differential diagnosis and management. Lactose intolerance was diagnosed as the cause of infantile colic as Louise's symptoms settled when her formula was changed from cow's milk to goat's milk. [35, 36] It should be noted that cow milk allergy affects 2–3% of children and is the most prevalent food allergy in infancy.[37] Cow's milk allergy is immunologically mediated, in contrast to cow's milk intolerance, which is non-immunological in origin. The most common cause of cow's milk intolerance is lactase deficiency, which is mostly acquired during late childhood or adulthood.[38, 39] Associations have also been made with cow's milk intolerance/allergy, infantile eczema and vague abdominal discomfort.[40]

A comprehensive childhood history can therefore provide valuable clues as to the underlying causes of disease symptoms in adulthood.

ANSWER 6

Depending on the outcomes of the investigations and management strategies used to manage Louise's reflux and other gastric symptoms, the FODMAP diet might be considered.

The FODMAP diet restricts potentially poorly absorbed, fermentable short-chain carbohydrates, which can be responsible for functional gastrointestinal symptoms as well as the exacerbation of symptoms of inflammatory bowel disease.[41–43]

Potential triggers include fructose, lactose, sorbitol, mannitol and the oligosaccharides fructans and galacto-oligosaccharides. Poor intestinal absorption of these carbohydrates causes gastrointestinal upset through their osmotic effect and fermentation by intestinal microbiota. [44, 45] The primary short-chain carbohydrates tested for in hydrogen breath testing are fructose, lactose and lactulose. Glucose breath testing can also be tested, particularly if small intestinal bacterial overgrowth (SIBO) is suspected.[20] Assistance from a specialist dietician or nutritionist is strongly advised for dietary modification if breath testing suggests a FODMAP diet may be warranted in addition to a possible referral to an allergist.

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CASE 4

INTEGRATIVE CARE OF TYPE 2 DIABETES

Judy is new to your practice. She is 52 years old and has had diabetes for 7 years. She has no known cardiovascular disease. Judy weighs 93 kg and is 170 cm tall. Her BMI is 32.2 kg/m^2. Her current medications include metformin XR 1 g taken twice daily (2 g total daily dose), gliclazide 120 g daily taken in the morning and perindopril 10 mg daily.

QUESTION 1

Judy has come in with a copy of her most recent blood tests (*Table 1)* and would like to discuss a few things with you. What can Judy do to assist her diabetes without changing her medications?

Table 1. Judy's blood results

Parameter	Judy	Reference range[1–3]
HbA1c	7.9% (63 mmol/mol)	≤7.0% (≤53 mmol/mol)*
Total cholesterol	5.2 mmol/L	<4.0 mmol/L
Triglycerides (TG)	2.4 mmol/L	<2.0 mmol/L
High density lipoprotein (HDL-C)	1.1 mmol/l	≥1.0 mmol/L
Low density lipoprotein (LDL-C)	3.2 mmol/L	<2.0 mmol/L

*While a general HbA1c target of ≤7% (≤53 mmol/mol) is recommended, current guidelines recommend individualising HbA1c targets based on patient features.[1,2]

FURTHER INFORMATION

Judy wants to lose weight and has heard of different diets for diabetes including a high-protein, low-carbohydrate diet used by her neighbour Joan to lose weight. She is motivated to engage in this approach with a local dietician.

QUESTION 2

What dietary advice would you give Judy?

QUESTION 3

What advice would you give Judy about physical activity?

FURTHER INFORMATION

Judy's lipid levels are not within target. However, she has refused to take statin medication and wants to take fish oils instead.

QUESTION 4

What advice can you give her about lipid levels and fish oils in people with diabetes?

FURTHER INFORMATION

Judy has read that chromium and cinnamon may help her diabetes and would like to discuss their use with you.

QUESTION 5

What advice would you give her about cinnamon and chromium use in diabetes?

FURTHER INFORMATION

Judy states she has some numbness in her toes. On examination, there are signs of a classical symmetrical peripheral neuropathy. Her dorsalis pedis pulses remain intact.

QUESTION 6

Judy wants to know if there are any 'natural therapies' that may assist her numbness. What would you advise her?

CASE 4 ANSWERS

ANSWER 1

There is strong evidence that assisting people with type 2 diabetes to lose weight and to undertake lifestyle modifications should be actively encouraged, not just at diagnosis, but throughout the course of the illness and certainly before escalation of medical therapies. On the basis of her motivation to seek a change, Judy is a good candidate to proceed with goal-oriented lifestyle planning, as she states she is ready.

ANSWER 2

Dietary advice should be tailored to each patient's dietary preferences and cultural settings. Recent findings confirm that structured meals and meal replacements help people to achieve greater weight loss.[4, 5] Recent publications reviewing different diets, for example high protein, Paleolithic, low carbohydrate, low fat, low glycaemic index or Mediterranean diets,[6–10] suggest that these diets reduce HbA1c in short-term studies. Current evidence suggests that the 'style' of eating with concepts of variety and balance is less important than achieving overall calorie reduction.[5, 6, 8] A low glycaemic index diet appears to have specific ability to achieve better glycaemic effect without increasing hypoglycaemia in type 2 diabetes.[9]

Dietary interventions for weight loss should be calculated to produce a 600 kcal/day (2500 Kilojoule) energy deficit.[11] Sustained weight reduction of approximately 5 kg is associated with a reduction in HbA1c of approximately 0.5–1%.[11] In adults with a BMI <35 kg/m^2 or with prediabetes or hypertension, weight loss of at least 2–3 kg achieved with lifestyle interventions may result in a clinically meaningful reduction in systolic blood pressure.[11]

ANSWER 3

You explain to Judy that a structured exercise program, with support from a dietician and an exercise specialist, would be ideal for her, as people with diabetes achieve better outcomes on supported programs.[12] Physical activity combined with calorie restriction improves parameters of well being and prevention of major morbidity, and embeds longer term weight maintenance.[13,14] The health benefits from increased activity include improved quality of life, enhanced fitness, reduction in the use of diabetes-related medications, blood pressure measures and cholesterol-lowering medications.[4]

A minimum of 30 minutes of moderate intensity exercise most days, and preferably every day, is recommended.[3] Moderate exercise has been shown to improve mortality, and cardiovascular and cancer risks.[15] To achieve weight loss through physical activity alone, substantial increases in daily activity are needed, aiming for at least 60 minutes of moderate-intensity physical activity (such as brisk walking) every day. This activity can be accumulated over several separate bouts within a daily framework.[16] Activities that

the participant can do in their own home or work environment (such as walking or cycling to work) are more likely to be maintained, especially if family is also involved, than out-of-home activities, such as after-school programs or gym work, which can be more easily missed when inconvenient.[5]

Given the intensive nature of the program being suggested, you review her feet and advise her to include her podiatrist in the program so that her feet and choice of shoes are looked after, and you provide her with a referral. You tell her that if she develops any unexpected chest pain, unusual breathlessness or odd palpitations that she must stop exercising and seek medical advice.

ANSWER 4

You explain that the fish oils she refers to are essentially omega-3 fatty acids, which are present in fish such as salmon, sardines and tuna. Taking fish oils as a supplement rather than in food has not definitively been shown to have an advantage in the primary prevention of cardiac disease.[17]

Omega-3 fatty acid supplementation has been shown to lower triglycerides.[18] However, in primary prevention of cardiovascular disease, apart from encouraging increased intake of omega-3 fatty acids through dietary sources, there is still no firm evidence that any level of supplementation will improve a person's cardiovascular risk profile, or lower total cholesterol or LDL-C and impact on overall mortality.[18, 19–22] In fact, taking some fish oil supplements has been shown to raise LDL-C in patients with diabetes, which may possibly be harmful.[17, 23, 24] In secondary prevention, in the presence of comorbidity and poor diet, supplementation may have a role.[17] Lastly, you also explain that fish oils do not alter glucose control.[17]

You advise that if she increased her intake of oat bran containing beta glucan she may achieve a 5–10% reduction in her total cholesterol, as increasing beta glucan by 3 g a day has been shown to reduce total cholesterol by 5–10%.[25]

At this point you explain to her that her risks of cardiac disease can be calculated with a risk calculator and explain that the number generated shows the possibility of a cardiac event in the next 5 years. Using the cardiovascular risk calculator recommended for use in Australia (www.cvd.check.org.au), Judy's 5-year absolute cardiovascular risk is assessed as being 'low' (5–9%).[3]

You explain to Judy that she has a 91–95% chance of not developing heart disease over the next 5 years but this risk is higher than you would like.

In encouraging her lifestyle program, you explain that you will keep monitoring her risk to see if there is a positive change within the next 6 months. If the need arises, you encourage her to be open to considering medications that might assist her to achieve her overall goals. You explain to her that of all the risks, cholesterol and blood pressure are the most important to control, followed by glucose control, in that order, in order to prevent coronary events (fatal and non-fatal myocardial infarct and sudden death) and stroke.[26]

ANSWER 5

It has been suggested that cinnamon may reduce blood sugar levels and be a useful adjunct therapy in diabetes. It is postulated that this may occur by increasing insulin action or stimulating cellular glucose metabolism.[27] Two recent reviews report conflicting evidence regarding the efficacy of cinnamon. A 2012 Cochrane review of cinnamon in people with type 1 and type 2 diabetes (10 trials; 577 patients) found no statistically significant difference in cinnamon's effect on glycaemic control over placebo and concluded that there was insufficient evidence to recommend use of cinnamon in people with diabetes.[28] However, a more recent meta-analysis[29] published in Nov 2013 considered the Cochrane review and more recent data. The researchers found that cinnamon did not affect HbA1c levels, but did statistically decrease fasting plasma glucose, total cholesterol and LDL-C and increased HDL-C.[29]

Chromium is an essential trace element. It is believed to be involved in carbohydrate, lipid and protein metabolism, and is thought to potentiate the actions of insulin.[30] As with many over-the-counter supplements, analysis of the use of chromium supplementation in type 2 diabetes is confounded by poor quality studies. A 2007 systematic review of 41 studies in people with and without diabetes indicated that chromium significantly improved glycaemia in people with diabetes.[31] A 2013 meta-analysis of seven randomised controlled trials reported that while chromium lowered fasting blood sugar levels, HbA1c levels were unaffected and chromium had no effect on lipids and BMI.[32] Better designed prospective trials to elucidate chromium's effect(s) in the setting of diabetes are required before chromium supplementation can be recommended.

You advise Judy that there is not enough evidence to support the use of cinnamon or chromium in the management of type 2 diabetes and advise her to focus on her new health and lifestyle program.

ANSWER 6

Examination is important to exclude large vessel causes of diabetic foot disease and to identify microvascular disease such as peripheral vascular disease and neuropathy. You explain that her numbness may be a result of her longer standing diabetes and emphasise the need for podiatry assessment and review.

You note Judy has been on metformin for some years, so you arrange a vitamin B12 blood investigation and arrange a follow-up appointment. Clinical and biochemical vitamin B12 deficiency is highly prevalent among patients with types 1 and 2 diabetes mellitus.[33] It is especially prevalent in high-dose metformin users, even in those at highest risk (≥10 years of therapy), or in those with potential manifestations of vitamin B(12) deficiency (neuropathy).[34–37]

Current guidelines support vitamin B12 supplementation in people with peripheral neuropathy.[38] There is also accumulating evidence that intravenous lipoic acid may have additive and additional benefits with methylcobalamin in the management of neuropathy.[39,40] Methylcobalamin is a form of vitamin B12. It differs from cyanocobalamin in that the cyanide is replaced by a methyl group.

FEEDBACK

Judy is motivated to commence a lifestyle program that needs coordinated and supportive care. Giving supportive and accurate advice will assist her focus on the most important aspects of her goals and support her wish to trial more 'natural' approaches. Team-based care using allied health professionals has been shown to improve outcomes in people with type 2 diabetes.[12]

Weight management, however complex, has many myths associated with it and it is worth reading the Casazza et al article[5] before advising patients. Combining approaches using the best evidence will assist Judy, and at times this may span pharmacotherapeutic approaches (which have many guidelines[3] to assist practitioners and is not the focus of this case study) and lifestyle as an integrative model of care. Table 2 outlines current guideline-based goals or targets for people with type 2 diabetes.

Table 2. Current goals in type 2 diabetes

Parameter	Recommendations
Blood pressure[3]	≤130/80 mmHg
Glycaemic goals[1,2]	HbA1c <7% (53 mmol/mol) as a general goal and for a person requiring any anti-diabetic agents other than metformin or insulin without cardiovascular disease the goal may be reduced to ≤6.5% (48 mmol/mol)
Lipid goals[3]	Total cholesterol <4.0 mmol/L HDL-C ≥1.0 mmol/L LDL-C <2.0 mmol/ TG <2.0 mmol/L
Weight goals[3]	Ideal weight should be BMI <25 kg/m^2 and waist circumference <94 cm in men (<90 cm in Asian men) or <80 cm in women (including Asian women)

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CASE 5

JOHN PRESENTS WITH BACK AND KNEE PAIN

John, a 50-year-old farmer, presents to your rural general practice. He complained several months ago of chronic low back pain and bilateral knee pain. He denies any previous significant injuries. He says his pain is from a life of heavy lifting and shearing. The pain is worse after activity and at the end of the work day. When bad, the pain limits his activities of daily living and often reduces his productivity on the farm. There are no red flag findings on further history.

John is slightly overweight (BMI of 28 kg/m^2) and has mild hypertension (145/92). Physical examination shows generalised reduced range of motion of the lumbar spine with some tenderness on palpation over the lateral processes of L3–L5. There are no neurological findings in the lower limbs, bilateral crepitation on flexion/extension of the knees; his McMurray's test is negative and his gait is normal.

Lower back imaging a year ago shows mild degenerative disc changes and facet joint arthropathy, especially at L4 and L5/S1. There is slight generalised disc bulging at L3 and L4 but no compression of the exiting nerve roots. Bilateral knee X-rays show degenerative changes and some joint narrowing and osteophyte formation.

John's general practice management plan/team care arrangements (GPMP/TCA) included referral to a physiotherapist and a chiropractor, which was of little benefit. Acupuncture helped for a few days but he cannot regularly drive 50 km for acupuncture treatment.

Friends have suggested herbal medicines might be beneficial. He is not keen on taking stronger pain medication and asks if you can recommend any effective herbal products to help his pain.

QUESTION 1

What is the RACGP recommended approach to communication with patients about the use of complementary medicines or therapeutic techniques?

FURTHER INFORMATION

Recent blood test results reveal a slightly raised total cholesterol of 6.1 mmol/L with an LDL-C of 4.3 mmol/L. Inflammatory markers are within normal limits and fasting glucose is 5.5 mmol/L.

Current medications include ramipril 2.5 mg mane, artovastatin 10 mg nocte, long-acting paracetamol TDS, glucosamine 1500 mg daily and 5 ml of high strength fish oil daily. He has been taking long-acting paracetamol for years and states that it does nothing for his pain. Occasionally he takes a prescription paracetamol/codeine preparation when the pain is bad. He has tried tramadol but doesn't react well to it. He tries to avoid use of NSAIDs as he has been told that they may worsen his blood pressure and give him an ulcer, but occasionally he takes meloxicam in the morning.

QUESTION 2

Which herbal medicines could be used in the treatment of mechanical/degenerative joint pain?

FURTHER INFORMATION

After discussing the use of herbal medicinal products John is keen to give them a go. Family members obtain products from overseas as they are cheaper and a wider range is available than in the local pharmacies or health food shops. He doesn't think the pharmacy in town keeps many herbal products. John asks about the safety of herbal products given that he is already using several medications.

QUESTION 3

How are herbal medicine products regulated in Australia?

QUESTION 4

What is the state of regulation/registration for herbal medicine practitioners in Australia? Which major associations represent them?

CASE 5 ANSWERS

ANSWER 1

'Communication skills and the doctor–patient relationship' is the first domain of general practice outlined by the RACGP. The 2011 RACGP curriculum statement describes the following objectives within this domain:

- communicate effectively with patients about integrative medicine, including taking a non-judgmental history about the use of complementary medicines and self-care issues, while responding to a patient's context in terms of history, culture, gender, race, spirituality and personal choices
- assist patients to make decisions about their philosophy of health care and what treatment modality is best for them
- be able to refuse unreasonable requests and set limits for patients
- effectively communicate some integrative medicine skills, for example, relaxation techniques.[1]

ANSWER 2

An exhaustive review of the literature for all herbal medicines that might have a role in the treatment of pain associated with degenerative joint disease is beyond the scope of this module. Instead key herbal therapeutic interventions that contemporary herbalists may utilise, are briefly outlined in *Table 1*. Further information is provided in the 'Resources for doctors' section.

As with any therapy, patient suitability, contraindications and potential herb–drug interactions should be considered before prescribing.

Table 1. Commonly used herbal products for treatment of pain associated with degenerative joint disease

Herbal product	Details
Curcuma longa (turmeric)	root and rhizome of turmeric is used medicinally traditionally used as an anti-inflammatory agent as the curcuminoid (curcumin) is a dual inhibitor of arachidonic acid metabolism [2]
Boswellia serata (boswellia)	medical part is the dried oleo-gum resin standardised for boswellic acids has been used traditionally in Ayurvedic medicine as an anti-inflammatory agent for rheumatic disorders[2]
Harpagophytum procumbens (devil's claw)	used in traditional South African medicine little is known about traditional indications more recently used for rheumatic and arthritic conditions[2]
Salix alba (white willow bark)	traditionally used as an anti-inflammatory agent for rheumatism and gout plant is known to contain salicylic acid[3]

ANSWER 3

Herbal medicines are regulated by the Therapeutic Goods Administration (TGA) under the Therapeutic Goods Act 1989. There is a two-tier system where low-risk medicines, which includes most herbal medicines, are listed with the TGA and display an AUST L number. Listed herbal products are assessed for quality and safety but not efficacy in the pre-market period. Sponsors of listed herbal products are required to hold substantiation of any therapeutic claims that are made. Most of the evidence is based on traditional usage; however there is a growing trend towards use of scientific evidence as more becomes available. Sponsors are only allowed to claim indications for health maintenance and health enhancement or certain indications for non-serious, self-limiting conditions with a listed medication.[4]

Higher risk medicines or those wanting to make higher-level claims, are registered with the TGA and display an AUST R number. These products are evaluated for quality, safety and efficacy before marketing. There are only a few herbal medicine products with an AUST R listing. Examples include an extract of the root of *Pelargonium sidoides* that has a Cochrane review supporting some evidence for use in acute bronchitis and acute sinusitis, especially in children,[5] St John's wort extract of hypericum for depression and Iberogast for irritable bowel syndrome. A full list of registered AUSTR CM products are available on the TGA http://www.tga.gov.au/industry/cm-basics-regulation-evaluation.htm.

It is important to note that it is illegal for any practitioner to supply any product for therapeutic purposes that is not included on the Australian Register of Therapeutic Goods (ARTG) and therefore does not contain an AUST L or AUST R number. A searchable function for the ARTG is available at www.ebs.tga.gov.au/

ANSWER 4

Currently there is no official government regulation around the practice of herbal medicine in Australia. Herbal medicine practitioners are not registered under the Australian Health Practitioner Regulation Agency (AHPRA).

The Australian Register of Naturopaths and Herbalists (ARONAH) has recently been established in an attempt to provide a self-regulatory model of registration and to provide minimum standards of education and practice for naturopathy and herbal medicine in Australia (see www.aronah.org). There are numerous associations in Australia that represent herbal medicine and naturopathic medicine practitioners. Some have strict entry criteria and require members to adhere to a code of ethics and meet continuing professional education requirements. In this way they act as a quasi-registration system. See 'Resources for doctors' for names of key associations.

FEEDBACK

John thanks you for your time. He has decided to try herbal medicines. He understands this is not an area that you are overly familiar with and asks if you could recommend a herbal medicine practitioner or a website for further information. You refer John to the sources below and advise him to always discuss his use of herbal medicines with you.

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RESOURCES FOR DOCTORS

The following are some of the key Australian texts and resources available to GPs to improve knowledge of herbal medicine prescribing. This is by no means intended to be an exhaustive list and focuses only on those texts with western herbal medicine content especially relevant to the Australian context.

Texts and journal articles

- Madhu K, Chanda K, Saji MJ. Safety and efficacy of Curcuma longa extract in the treatment of painful knee osteoarthritis: a randomized placebo-controlled trial. Inflammopharmacology 2013;21:129–36.
- Chopra A, Saluja M, Tillu G, et al. Ayurvedic medicine offers a good alternative to glucosamine and celecoxib in the treatment of symptomatic knee osteoarthritis: a randomized, double-blind, controlled equivalence drug trial. Rheumatology 2013;52(8):1408–17.
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- Kotsirilos V, Vitetta L, Sali A. A Guide To Evidence Based Integrative and Complementary Medicine. Melbourne: Churchill Livingstone; 2011.
- Phelps K, Hassed C. General Practice – An Integrated Approach. Melbourne: Churchill Livingstone; 2010.
- Sarris J, Wardle J. Clinical Naturopathy – An evidence-based guide to practice. Sydney: Elsevier; 2010.

Peer-reviewed Australian journals

- Advances in Integrative Medicine Journal – www.elsevier.com/journals/advances-in-integrative-medicine/2212-9626
- Australian College of Nutritional and Environmental Medicine Journal – www.acnem.org/modules/mastop_publish/?tac=19
- Australian Family Physician – www.racgp.org.au/publications/afp/
- Australian Journal of Herbal Medicine – hwww.nhaa.org.au/publications/australian-journal-of-herbal-medicine

Research sites

- The Cochrane library – www.thecochranelibrary.com/view/0/index.html
- Australian Research Centre in Complementary and Integrative Medicine – www.health.uts.edu.au/arccim
- Primary Health Care Research and Information Service – www.phcris.org.au
- Network of researchers in the public health of complementary and alternative medicine – www.norphcam.org
- National Institute of Complementary Medicine – www.nicm.edu.au
- The Australasian Integrative Medicine Association (AIMA) – www.aima.net.au

Herbal medicine and naturopathic medicine practitioners associations

- National Herbalists Association of Australia (NHAA) – The oldest association (formed in 1920) in Australia representing herbal and naturopathic medicine practitioners. Visit www.nhaa.org.au
- Australian Traditional Medicine Society (ATMS) – Founded in 1984 ATMS represents a wide range of herbal, naturopathic and practitioners of other natural medicine modalities. Visit www.atms.com.au
- Australian Naturopathic Practitioners Association (ANPA) – Established in 1975, ANPA predominantly represents practitioners of naturopathy in Australia. Visit www.anpa.asn.au
- Australian Natural Therapists Association (ANTA) – Founded in 1955, ANTA represents a wide range of natural therapy practitioners in Australia. Visit www.australiannaturaltherapistsassociation.com.au

Integrative therapies

In order to qualify for 6 Category 2 points for the QI&CPD activity associated with this unit:

- read and complete the unit of *check* in hard copy or online at the *gplearning* website at www.gplearning.com.au, and
- log onto the *gplearning* website at www.gplearning.com.au and answer the following 10 multiple choice questions (MCQs) online, and
- complete the online evaluation.

If you are not an RACGP member, please contact the *gplearning* helpdesk on 1800 284 789 to register in the first instance. You will be provided with a username and password that will enable you access to the test.

The expected time to complete this activity is 3 hours.

Do not send answers to the MCQs into the *check* office. This activity can only be completed online at www.gplearning.com.au.

If you have any queries or technical issues accessing the test online, please contact the *gplearning* helpdesk on 1800 284 789.

FOR A FULL LIST OF ABBREVIATIONS AND ACRONYMS USED IN THESE QUESTIONS PLEASE GO TO PAGE 4

FOR EACH QUESTION BELOW SELECT ONE OPTION ONLY.

QUESTION 1

Janet, 51 years of age, presents with mild-to-moderate hot flushes, sleep disturbance and occasional night sweats. She is still menstruating. You discuss the risk and benefits of HRT and Janet indicates that she is not keen to use HRT, unless her symptoms get much worse. She asks whether a popular preparation of black cohosh, which does not contain any phytoestrogens, might be useful for her. Which of the following statements is the most correct?

A. Janet should be encouraged to undertake a trial of black cohosh as there are some data in support of its efficacy.

B. A product with phytoestrogens should be recommended.

C. Black cohosh should not be recommended as guidelines do not support the use of over-the-counter complementary therapies for management of menopausal symptoms.

D. Evening primrose oil should be recommended as Janet is still menstruating.

E. Bio-identical hormones, which mimic the effects of conventional HRT, should be recommended.

QUESTION 2

Which of the following statements regarding the management of mid-life women presenting with signs and symptoms of the menopause is INCORRECT?

A. A consultation at mid-life regarding menopause could be used opportunistically to discuss general wellbeing and preventive care.

B. Provision of written information and referral to evidenced-based websites should ideally be incorporated into a consultation.

C. Appropriate risk assessments for midlife women include assessing the risk of diabetes using AUSDRISK, assessing fracture risk associated with osteoporosis, assessing risk factors for skin cancer and calculation of absolute cardiovascular risk.

D. Discussions about contraception are not that relevant for women of menopausal age.

E. Alcohol is thought to be a trigger for hot flushes.

QUESTION 3

Which of the following statements about acupuncture in the setting of low back pain is NOT true?

A. Acupuncture may reduce pain.

B. Acupuncture may improve movement.

C. Acupuncture is safe in medical hands.

D. Acupuncture may be performed using needles or laser therapy.

E. There is no evidence that acupuncture works.

QUESTION 4

Susan, 41 years of age, has a long-standing history of low back pain. She has several episodes each year, each lasting around 6 weeks. She does not mind taking long-acting paracetamol to manage her pain, but dislikes using NSAIDs as they upset her stomach. She would like to discuss non-pharmacological management options with you. Which of the following would you NOT recommend?

A. Bed rest

B. Acupuncture

C. A structured exercise program (preferably involving a physiotherapist)

D. Massage

E. Use of heat or cold packs.

QUESTION 5

Which of the following is NOT true regarding *H pylori* testing in people using PPI therapy?

A. PPIs should be ceased prior to undergoing an *H pylori* breath test to minimise false negative results.

B. PPI therapy should be ceased for at least 1 week and preferably 2 weeks in people undergoing *H pylori* serology testing.

C. PPI therapy should be ceased for at least 1 week and preferably 2 weeks in people having an *H pylori* breath test.

D. PPI therapy does not need to be ceased in people undergoing *H pylori* serology testing.

E. *H pylori* should always be excluded in people with symptoms of reflux.

QUESTION 6

Which of the statements below regarding the FODMAP diet is NOT true?

A. The FODMAP diet may be useful in people with inflammatory bowel disease and food allergies.

B. The FODMAP diet restricts potentially poorly absorbed, fermentable short-chain carbohydrates.

C. The FODMAP diet restricts consumption of foods containing certain carbohydrates such as fructose, lactose, sorbitol, mannitol and others.

D. Poor intestinal absorption of carbohydrates causes gastrointestinal upset through their osmotic effect and fermentation by intestinal microbiota.

E. If breath testing suggests that a FODMAP diet is appropriate, assistance from FODMAP experts (eg. a nutritionist or specialist dietician) is strongly recommend.

QUESTION 7

Lifestyle modification has a key role in the long-term management of people with and without with type 2 diabetes. Which of the following statements about diet is NOT true?

A. Dietary advice should be tailored to the patient's dietary preferences and cultural settings.

B. Recent short-term studies suggest that any diet will reduce HbA1c levels.

C. Dietary interventions for weight loss should aim to produce a 600 kcal/day (2500 kilojoule) deficit.

D. A sustained weight loss of around 5 kg is associated with a reduction HbA1c of 0.5–1.0%.

E. Weight loss of around 5 kg or more is required to produce meaningful blood pressure reductions.

QUESTION 8

Elspeth, 56 years of age, was diagnosed with type 2 diabetes earlier this year. Metformin 500 mg twice daily was prescribed 2 weeks ago. She takes 10 mg daily of ramipril to manage her blood pressure, which is within target today. She weighs 78 kg and is 160 cm tall (BMI is 30.5 kg/m^2). Her total cholesterol is slightly elevated but her other lipids are within range. Her calculated cardiovascular risk score is low. She claims that she has a healthy diet but perhaps eats too much 'good food'. She plays tennis once a week but does no other exercise. Which of the following statements is INCORRECT?

A. As Elspeth's BMI is in the obese range she should be advised to try to lose at least 3–5 kg, which may benefit her blood sugar levels and/or her blood pressure.

B. Structured meals and meal replacement products may help her weight loss efforts.

C. Cinnamon sprinkled on foods may reduce HbA1c levels and should be recommended.

D. Fish oil supplementation is unlikely to be of benefit for Elspeth.

E. Elspeth should be provided with advice about the benefits of (more) regular physical activity.

QUESTION 9

Which of the following has NOT been investigated in people with type 2 diabetes?

A. Cinnamon

B. Chromium

C. Fish oils

D. The FODMAP diet

E. Vitamin B12.

QUESTION 10

Which of the following statements regarding the regulation of herbal medicines in Australia is NOT true?

A. Herbal medicines are regulated by the TGA under a two-tier system.

B. Higher risk products are evaluated for quality, safety and efficacy before marketing.

C. Low risk products display an AUST L number, while higher risk products display an AUST R number.

D. Herbal practitioners can supply products for therapeutic purposes which are not listed on the ARTG.

E. Not all commercially available preparations of herbal products have scientific evidence to support safety and efficacy claims.