Bones, Joints, CVD risk assessment

Quiz Feedback

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Contents

Bones, Joints and CVD Quiz

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Select as many options as required

1. Assessment of bone mineral density by DEXA scan is:

- ☐ The gold standard for diagnosing osteoporosis
- ☐ Indicated for all postmenopausal women
- ☐ Required for all people who have had an osteoporotic fracture
- ☐ Reported as a T score when compared to the young adult mean
- ☐ Required before treatment with a bisphosphonate can commence

2. Risk factors for generalised osteoporosis include:

- ☐ Crohn's disease
- ☐ Thyrotoxicosis
- ☐ Use of regular inhaled corticosteroids
- ☐ Diabetes
- ☐ Māori ethnicity

3. Core therapies for osteoarthritis include:

- ☐ Rest for reducing pain induced movement
- ☐ Weight reduction (if overweight)
- ☐ Using shock absorbing shoes
- ☐ Learning psychological strategies for coping
- ☐ Acupuncture

4. Recommended pharmacological treatments for osteoarthritis include:

- ☐ Topical NSAIDs
- ☐ Capsaicin cream
- ☐ Heat rub e.g. Deep Heat
- ☐ Oral NSAIDs
- ☐ Codeine

5. Disease modifying anti-rheumatic drugs (DMARDs):

- ☐ Should be initiated as soon as possible after diagnosis of rheumatoid arthritis
- ☐ Should not be tried unless all other pharmacological treatment has failed
- ☐ Should never be used in combination with each other
- ☐ Have an onset of action between two to six months
- ☐ Can be associated with blood dyscrasias

6. By what age should cardiovascular risk assessment begin for a European woman with no risk factors?

- ☐ 35 years
- ☐ 45 years
- ☐ 55 years

7. For the woman above, what risk factors would indicate performing cardiovascular risk assessment earlier?

- ☐ Sedentary lifestyle
- ☐ Drinking >14 units alcohol per week
- ☐ Smoking
- ☐ Truncal obesity

8. What is the best approach for undertaking cardiovascular risk assessments?

- ☐ Scheduling a formal cardiovascular risk assessment with high risk patients
- ☐ Opportunistic risk assessment with eligible patients
- ☐ Building a picture over time by collecting details of risk factors over several consultations
- ☐ Only undertaking cardiovascular risk assessments when requested by patients

9. Which of the following statements about communicating cardiovascular risk are true?

- ☐ Understanding risk can be confusing for many people
- ☐ Crowd diagrams are the most powerful tool for communicating risk
- ☐ Analogies should be tailored to situations familiar to the patient
- ☐ At the first consultation it is best to outline all the changes a patient should make

10. Which of the following statements are true?

- ☐ Māori and Pacific men aged over 35 are at increased risk of CVD
- ☐ Māori and Pacific rates of assessment for CVD are low compared with European New Zealanders
- ☐ Māori and Pacific people are less motivated to make lifestyle changes
- ☐ Whānau can play an important role in healthcare decisions

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This CME quiz can also be completed online at **www.bpac.org.nz**

Quiz as it appeared in BPJ 17 (October 2008).

Quiz feedback: **Bones, Joints, CVD risk assessment**

Bones and Joints – Expert commentary by Dr Rebecca Grainger

Osteoporosis

GP panel

The GP panel felt that the BPJ article on osteoporosis provided some clarification of the indications for DEXA scan and how to identify patients at risk of an osteoporotic fracture. An area of particular interest was the use of calcium. The panel were surprised at the amount of calcium containing food that would need to be consumed for an adequate intake. In the past, calcium supplementation was routinely prescribed for many older people but now GPs are more cautious due to potential interactions and adverse cardiovascular effects. The panel would like to know who should receive calcium supplementation, what interactions are important (i.e. what drug/food combinations should be avoided) and whether it is necessary for calcium to be prescribed with alendronate.

The panel were interested to note that that the vitamin D content in Fosamax Plus is inadequate for treating or preventing deficiency in high risk groups. They would like to know if all people at risk of deficiency should be given regular vitamin D supplementation? One GP panel member suggested that all older people should be given vitamin D at the same time as their annual flu injection to combat low vitamin D levels in winter.*

* It was recently announced that vitamin D supplements will be offered to all people in residential care, in a joint initiative between ACC, District Health Boards and Primary Health Organisations. The programme has already commenced in some areas and will be rolled out nationally in 2009.

Expert comment

Total calcium intake of 1 g per day should be recommended for all patients taking bisphosphonates for osteoporosis or Paget's disease, due to the theoretical risk of mild hypocalcaemia. For most patients this is in the form of calcium supplements. However, recent data from the Auckland Calcium study showed calcium supplementation was associated with an increased rate of myocardial infarction in elderly women and other recent studies have also observed this trend. Therefore daily 1 g calcium supplements should be avoided in people over the age of 70 years and those with known coronary heart disease. An alternative in the over 70 age group is a 500 mg calcium supplement and increased dietary calcium to ensure total calcium intake of 1 g daily. Calcium supplements can continue to be used in younger women without coronary heart disease who wish to optimise bone health with supplemental calcium.

Calcium supplements can decrease the absorbance of fluroquinone and tetracycline antibiotics, thyroxine and phenytoin. These agents should be taken one to two hours before or four hours after calcium supplements. Calcium supplements can potentially decrease levels of digoxin or increase risk of digoxin toxicity via hypercalcaemia. Thiazide diuretics can increase the risk of hypercalcaemia and hypercalciuria. Monitoring of electrolytes in patients taking digoxin and thiazide diuretics should include serum calcium. Calcium reduces absorbance of bisphosphonates so these agents should never be taken at the same time.

There are some theoretical food interactions affecting dietary calcium absorption but these are unlikely to be of practical concern. Phytic acid and oxalic acid found in plants can reduce calcium absorption from the food which contains the acids, not other foods in the meal. Caffeine has a small effect on calcium absorption and can temporarily increase calcium excretion. The calcium deficit generated by one cup of brewed coffee is estimated to be 2–3 mg, which is easily offset by other sources of dietary calcium. Alcohol can potentially inhibit calcium absorption directly and indirectly by decreasing liver conversion of vitamin D to its active form. The amount of alcohol that has a measurable impact on

calcium balance is unknown. It seems that minimising intake of caffeine containing beverages and alcohol may be prudent advice for people interested in optimising calcium intake!

Vitamin D supplementation can be given to all individuals at risk of deficiency, without need for Vitamin D testing. The Vitamin D recommendation remains Cal D forte once daily for 10 days and then once monthly thereafter. This subject has been discussed in detail at: www.bpac.org.nz/resources/campaign/b_h_v/vitd_poem.asp

1

Assessment of bone mineral density by DEXA scan is:	You	Your Peers	GP Panel
☐ The gold standard for diagnosing osteoporosis		96%	•
☐ Indicated for all postmenopausal women		4%	
☐ Required for all people who have had an osteoporotic fracture		13%	
☐ Reported as a T score when compared to the young adult mean		85%	•
☐ Required before treatment with a bisphosphonate can commence		9%	

GP panel

Indications for the use of DEXA scan have evolved over time. The panel were pleased to see a clear message that not everyone requires a DEXA scan before starting a bisphosphonate. The electronic approval process for alendronate treatment works very well and saves time.

The article in BPJ listed the most common osteoporotic fracture sites as the spine, hip and wrist, however the panel would like to know if fractures at other sites can be classified as a fragility fractures.

The panel were also interested in whether there is any evidence of benefit for the use of hip protectors. How are they best used? How often are they used? Do they reduce the incidence of fracture? It was felt that many women would not choose to wear this device and that it may be more useful in controlled circumstances such as in residential care.

Expert comment

A fragility fracture is one that occurs with mechanical forces that would not ordinarily cause a fracture in a healthy young adult. Since osteoporosis is a systemic disease, fractures at other sites could be considered fragility fractures by this definition. Other sites might include humerus, ankle, pelvis and tibia. A fragility fracture at any site increases risk of subsequent fracture.

Hip protectors are undergarments with padding over the trochanters, which disperse the impact of a fall. A recent Cochrane review of hip protectors found a marginally statistically significant reduction in hip fracture incidence with hip protector use in individuals in residential care but no decrease in community dwelling populations. Although safe and non-invasive, non-compliance over the long term limits the practical use of hip protectors.

2

Risk factors for generalised osteoporosis include:	You	Your Peers	GP Panel
☐ Crohn's disease		85%	•
☐ Thyrotoxicosis		94%	•
☐ Use of regular inhaled corticosteroids		24%	
☐ Diabetes		67%	•
☐ Māori ethnicity		5%	

GP panel

The panel expressed surprise that around one quarter of respondents thought that use of inhaled corticosteroids was a risk factor for osteoporosis. It was thought that perhaps this was confused with the risk of using of oral steroids. Just over two thirds of GPs correctly identified that diabetes was a risk factor for osteoporosis. This is something that is not well known and the panel would like more clarification on why diabetes is a risk factor and whether this is both type 1 and type 2 diabetes.

Some panel members have used the FRAX online risk calculator for osteoporotic fracture and have found it to be very useful, especially as it incorporates the weighting of several risk factors. It is interesting to discover that for some patients, their risk is actually lower than what is perceived.

FRAX – WHO Fracture Risk Assessment tool: www.shef.ac.uk/FRAX

Expert comment

There is data that higher cumulative doses of inhaled corticosteroids are associated with loss in bone mineral density. Bone mineral density and osteoporosis prevention should be considered for patients who have reached a cumulative inhaled steroid dose of 5000 mg, e.g. dose > 1 mg/d (beclomethasone 250 mg two puffs twice per day) for > 14 years or cumulative equivalent.

There is increased risk of osteoporotic fracture for women with both type 1 and type 2 diabetes. Women with type 1 diabetes are at risk of low bone mineral density, which is often worse with longer duration of diabetes. Type 2 diabetes is often associated with higher body mass, usually protective against loss of bone mineral density, however microvascular disease affecting bone quality may contribute to the observed higher fracture rate in type 2 diabetes. People with diabetes are also at increased risk of falls due to peripheral and autonomic neuropathy, visual impairment from retinopathy or cataracts and hypoglycaemia.

Osteoarthritis

3

Core therapies for osteoarthritis include:	You	Your Peers	GP Panel
☐ Rest for reducing pain induced movement		7%	
☐ Weight reduction (if overweight)		98%	•
☐ Using shock absorbing shoes		69%	•
☐ Learning psychological strategies for coping		67%	•
☐ Acupuncture		4%	

GP panel

The panel commented that many GPs may perceive that weight reduction and pharmacological treatment are core therapies for osteoarthritis and all other treatments are secondary. Although self management strategies for coping were recognised by the panel as being very important, in practice this is an area that is often neglected in a consultation due to lack of time and resources. However there is evidence that providing patient centred care and empowering the patient with self management support improves patient well being and does not increase (or reduce) overall resource use.

It was well recognised that there is no consistent evidence of effectiveness for alternative therapy such as acupuncture. However the panel noted that the vast majority of people with osteoarthritis are using supplements or alternative remedies. It is interesting that the evidence for glucosamine is not as promising as first thought, although people still seem to be using this product. If patients wish to use alternative products, GPs should advise that they are used within guidelines, at recommended doses and discontinued if no benefit is seen within one to three months. The panel commented that patients may gain much more benefit from putting this money towards purchasing a good pair of shoes or a gym membership!

Expert comment

Although doctors may not have the time or training to assist their patients in self management strategies, there are community based organisations that can provide this support. Arthritis New Zealand has excellent information and resources for patients, provides support through arthritis educators and runs self-management courses in the community. More information can be found at: www.arthritis.org.nz

When patients ask me about complementary products, I suggest they use a weekly symptom diary to assess efficacy. I recommend they keep the diary for one month before and three months after starting an agent, perhaps rating on one to ten their symptoms and making a few notes about how they feel. Then after the three month trial, review the diary, take account of the cost of the agent and decide if the benefits justify continuing use.

4

Recommended pharmacological treatments for osteoarthritis include:	You	Your Peers	GP Panel
☐ Topical NSAIDs		89%	•
☐ Capsaicin cream		92%	•
☐ Heat rub e.g. Deep Heat		23%	
☐ Oral NSAIDs		93%	•
☐ Codeine		79%	•

GP panel

In practice, the panel agreed that most patients with osteoarthritis would be started on paracetamol for pain relief, rather than a topical cream. There is sometimes a reluctance to use opioids for older people with osteoarthritis but if NSAIDs are contraindicated, this can be a good option. The panel commented that low dose morphine is preferable to either codeine or tramadol as it seems to offer good pain relief for osteoarthritis and is less constipating.

Capsaicin cream is prescribed rarely due to the cost to the patient. There is no evidence that heat rubs such as deep heat are effective for pain relief, therefore they are not recommended.

Many patients with osteoarthritis avoid eating particular foods such as acidy tomatoes. The panel wonders if there is any basis to the claim that these foods exacerbate symptoms.

Expert comment

There is no good data to support the claim that certain foods exacerbate symptoms of osteoarthritis. The most important interaction between diet and osteoarthritis is that increased weight is a risk factor for onset and more rapid progression of osteoarthritis. Patients should follow standard nutritional guidelines to maintain a healthy body weight and if certain foods exacerbate their symptoms, avoid them!

Rheumatoid arthritis

5

Disease modifying anti-rheumatic drugs (DMARDs):	You	Your Peers	GP Panel
☐ Should be initiated as soon as possible after diagnosis of rheumatoid arthritis		95%	•
☐ Should not be tried unless all other pharmacological treatment has failed		2%	
☐ Should never be used in combination with each other		3%	
☐ Have an onset of action between two to six months		84%	•
☐ Can be associated with blood dyscrasias		92%	•

GP panel

Almost all GPs understood that DMARDs should be initiated as soon as possible for people with rheumatoid arthritis. The panel felt that the DMARD monitoring table in the BPJ article was extremely useful as GPs have few patients that are using these drugs and it is good to have this information on hand when needed as it is not something that is easily remembered. The panel however were unfamiliar with two of the tests mentioned and would like more information about these – 6-TGN and 6-MMP.

When managing a patient with rheumatoid arthritis, it was agreed that it is of great importance to have clear communication between the GP and rheumatologist and establish who will take responsibility for monitoring and acting on results. Often GPs may be unclear about this.

Expert comment

6-TGN (6-thioguanine nucleotides) and 6-MMP (6-methylmercaptopurine) are metabolites of azathioprine required for clinical effects (efficacy and toxicity). The metabolism of azathioprine is complex and patients have highly variable 6-TGN and 6-MMP concentrations for a given dose of azathioprine. Algorithms for optimization of azathioprine dosing in inflammatory bowel disease using 6-TGN and 6-MMP levels have been developed but these are not yet available for rheumatic diseases. Measurement of 6-TGN and 6-MMP may assist dosing adjustment in patients who have had a good therapeutic response to azathioprine but develop haematological toxicity. These tests should be ordered after discussion with the treating specialist rheumatologist.

Cardiovascular risk assessment – Expert commentary by Dr Michael Crooke

6

By what age should cardiovascular risk assessment begin for a European woman with no risk factors?	You	Your Peers	GP Panel
☐ 35 years		<1%	
☐ 45 years		6%	
☐ 55 years		93%	•

GP panel

The panel had no particular comment on this question. It appears that the target age group for CVD screening is well understood.

Expert comment

This age for cardiovascular risk assessment is still the recommendation of the latest update from the New Zealand Guidelines Group (2009).

7

For the woman above, what risk factors would indicate performing cardiovascular risk assessment earlier?	You	Your Peers	GP Panel
☐ Sedentary lifestyle		25%	
☐ Drinking >14 units alcohol per week		31%	
☐ Smoking		98%	•
☐ Truncal obesity		91%	•

GP panel

The panel were surprised that more people did not select alcohol as being a risk factor, however it was agreed that this would probably not be a risk factor on its own. They wondered if alcohol itself can cause ischaemic heart disease or whether the effect is in combination with other risk factors.

The panel suggest that waist circumference has a stronger correlation with risk than BMI. The usefulness of BMI is confounded by muscular body types and fat distribution. They would like clarification of what waist measurement in males and females indicates risk.

Expert comment

Some studies have confirmed that both waist circumference and BMI are indicators of CVD risk but that when adjusted for BMI, waist circumference is a stronger predictor than BMI alone. In other studies the extra strength of waist circumference has been in predicting diabetes with no benefit over BMI in predicting CVD. Waist to hip ratio may be a more powerful indicator of obesity associated CVD risk than any other single measure of obesity. It is true that BMI may be confounded in some individuals but there are considerable practical difficulties in accurately measuring waist circumference in a standardised manner in routine practice. The New Zealand guidelines continue to indicate that BMI ≥ 30 or waist circumference ≥100 cm (men) or ≥90 cm (women) should be considered as risk factors. These figures apply mainly to those of European descent.

Alcohol is not a risk factor for ischaemic heart disease. There is a dose related association with hypertension. Some studies indicate that moderate alcohol consumption decreases both risk of CVD events and overall cardiovascular mortality but much of the data is confounded. Heavier drinking, in excess of 14–18 drinks per week in women, is associated with increased mortality from other causes and there are similar data for men who take more than three to four drinks daily. The balance of risks and benefits of even light to moderate alcohol consumption are difficult to assess as there is no long term trial data and observational data has serious limitations.

8

What is the best approach for undertaking cardiovascular risk assessments?	You	Your Peers	GP Panel
☐ Scheduling a formal cardiovascular risk assessment with high risk patients		86%	•
☐ Opportunistic risk assessment with eligible patients		83%	•
☐ Building a picture over time by collecting details of risk factors over several consultations		39%	•
☐ Only undertaking cardiovascular risk assessments when requested by patients		0%	

GP panel

The panel felt that this question should have asked "what is YOUR best approach to cardiovascular risk assessment" as the first three answers can all be successful. The panel agreed that they did not tend to follow one particular type of approach and it was dependent on the individual patient. In general, CVD screening tends to be undertaken formally by nurses or informally by doctors. The panel wonders if there is evidence to support increased benefit in terms of CVD outcome, with formal organised clinics devoted to screening.

Often patients themselves will ask for CVD screening to be performed. In particular, patients realise that cholesterol levels are important and request regular testing, but tend not to make any changes to reduce their level in between tests. The panel feels that in many cases too many lipid assessments are done on some and too few, if any, on others. Doctors may not need to increase their rate of lipid testing, just target tests better.

Expert comment

Most guidelines recommend opportunistic screening at a certain age as the minimum requirements but scheduling formal assessments with high risk patients should be a high yield activity. Building a picture over time may be very valuable, especially in younger patients who may have obvious risk factors but who will not have very high current absolute risk. Using the concept of risk trajectory may be very useful in such individuals, as outlined in the second edition of the New Zealand Cardiovascular Guidelines Handbook (2009), now available online at www.nzgg.org.nz

I am not aware of any data that proves the value of formal clinics devoted to screening, and such a study would be very difficult to complete.

9

Which of the following statements about communicating cardiovascular risk are true?	You	Your Peers	GP Panel
☐ Understanding risk can be confusing for many people		91%	•
☐ Crowd diagrams are the most powerful tool for communicating risk		15%	
☐ Analogies should be tailored to situations familiar to the patient		94%	•
☐ At the first consultation it is best to outline all the changes a patient should make		7%	

GP panel

The panel felt that the correct answers to this question were common sense – communication should be tailored to the individual patient in front of you. Some panel members use an online risk calculator and manipulate the variables to show people how their risk will change, however other panel members commented that bringing this up on the computer screen can be time consuming. Visual tools are not used frequently unless they are directly on hand. Pamphlets can be given out to patients to explain about their risk, but often this is after they have understood and accepted that they need to make change. The typical approach is simply to talk to the patient and explain their risk.

There was concern among the panel members that calculating a five year risk was not useful, especially if the patient was younger or if they had risk factors which meant that a five year projection was too late.

Asking patients what they would tell their families about what the doctor or nurse had just explained to them was an excellent practice tip.

Expert comment

There is little to add here. Both the peer group and the panel recognise the confusion that patients can have about risk and GPs are best placed to handle this on an individual basis. It may be valuable to reassure some patients (without deemphasising the need to maintain a healthy lifestyle) that they are not at the high absolute risk that they may have thought from information in popular magazines and public advertisements from drug companies that emphasises relative risk. My experience is that people understand absolute risk quite well when it is explained and the concept helps them to make appropriate choices. Risk trajectory for younger patients has already been mentioned.

10

Which of the following statements are true?	You	Your Peers	GP Panel
☐ Māori and Pacific men aged over 35 are at increased risk of CVD		97%	•
☐ Māori and Pacific rates of assessment for CVD are low compared with European New Zealanders		62%	
☐ Māori and Pacific people are less motivated to make lifestyle changes		22%	
☐ Whānau can play an important role in healthcare decisions		97%	•

GP panel

There seems to be some uncertainty about whether Māori and Pacific rates of CVD assessment are lower compared to other New Zealanders. The panel also expressed surprise that 22% of GPs thought that Māori and Pacific people are less motivated to make change. Often it is a case of finding the right motivating factor or addressing cultural or deprivation related barriers that may make it more difficult to make changes.

Expert comment

There is a wealth of data showing ethnic and socioeconomic disparities in the prevalence of cardiovascular disease in New Zealand and this is recognised in the recommendation to begin screening 10 years earlier in Māori and Pacific peoples. There seems to be no hard data on rates of assessment for risk in different ethnic groups but there is evidence that this earlier time of assessment is not being fully achieved.

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