A GUIDE TO

deprescribing

CPS CONSULTANT PHARMACY SERVICES

primary health TASMANIA

phn TASMANIA
An Australian Government Initiative

QUICK REFERENCE GUIDE

1	CONSIDER THE PERSON	■ Assess the person's life expectancy and degree of frailty. ■ What are the person's goals and expectations?
2	CONSIDER THE MEDICATIONS	■ What medication is the person taking (including prescription, over-the-counter, vitamins and herbal preparations)? ■ Why are they taking them (including dose, frequency and duration)? ■ Are there any adverse effects or possible interactions (drug-drug or drug-disease)?
3	IDENTIFY POTENTIAL DRUGS TO BE CEASED/ MODIFIED	■ Consider the risks and benefits for individual drugs with particular attention to high-risk drugs and those originally prescribed for disease prevention which may no longer be relevant/needed. ■ Prioritise drugs to establish which could be appropriately deprescribed.
4	PLAN AND INITIATE WITHDRAWAL TRIAL	■ Discuss with and seek consent from person/carer explaining rationale and steps to take if symptoms recur. ■ Develop a withdrawal plan with appropriate tapering of one medication at a time. ■ Inform other health professionals involved of rationale and tapering plan.
5	MONITOR AND SUPPORT	■ Monitor progress with person with consideration of adverse effects or return of symptoms. ■ Review plan with person and ask for feedback. ■ Document result of withdrawal process and move on to next medication if appropriate.

ALLOPURINOL

KEY POINTS

- Allopurinol is effective in reducing uric acid levels and gout recurrence.
- Both uric acid levels and frequency of gout recurrence are reduced for up to 12 months after an initial attack of gout and treatment with allopurinol.
- People who have a history of gout and remain hyperuricaemic, have a higher risk of an acute gout attack.
- The risk of recurrent gout is minimised if serum uric acid is maintained below 0.36mmol/L.
- For a person with renal dysfunction, the dose of allopurinol should be reduced in order to lower the risk of serious adverse effects.
- When precipitating factors associated with gout are improved, treatment with allopurinol becomes unnecessary.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Many of the precipitating factors for gout are avoidable or modifiable.
- Ceasing of allopurinol may be possible in people who have ceased or reduced diuretics, or whose renal function has improved or whose dietary and alcohol intake have improved.

It is unclear:

- if pharmacological management of hyperuricaemia with modification of avoidable factors has an impact on recurrence of gout.
- if people with metabolic syndrome or chronic kidney disease will gain a benefit from reducing elevated uric acid levels.

FACTORS AGAINST DEPRESCRIBING

- Ongoing use of allopurinol is indicated if the person has:
  - recurrent attacks of gout
  - evidence of uric acid nephropathy or urolithiasis
  - presence of tophi.
- Ongoing treatment may be indicated if the person has an underlying condition that may be improved by controlling the hyperuricaemia.

STRATEGY

- Determine key aspects of the person's gout history:
  - presence of factors that contributed to gout attack
  - if the attack was less than or greater than 12 months previously
  - current uric acid level
  - dose of allopurinol
- For a more detailed strategy, see algorithm in *A Guide to Deprescribing Allopurinol* fact sheet.

ANTIHYPERTENSIVES

KEY POINTS

- Lowering blood pressure reduces risk of a range of long-term consequences; this benefit is still evident in the elderly.
- More aggressive control of blood pressure in the elderly may be equivalent in benefit to less aggressive control of hypertension.
- Low blood pressure may be associated with increased morbidity and mortality in the elderly.
- People being treated for hypertension are more likely to fall if they have proven postural hypotension.
- Adverse effects of many antihypertensive agents are more common in the elderly.
- Withdrawal of antihypertensives should be gradual.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Lifestyle modification can achieve significant benefit. In people where lifestyle modifications are possible, these changes can support the reduction or cessation of antihypertensives.
- The benefits of treating hypertension in people over 85yo are unclear; treatment should be reassessed in light of prognosis, comorbidities and quality of life.
- People who are frail and have a high-risk of falls are more likely to fall as a result of antihypertensive treatment and may not derive the same benefit of treatment as non-frail elderly. Reduction or cessation of antihypertensives should be considered in these people.

FACTORS AGAINST DEPRESCRIBING

- An antihypertensive effect may have other benefits in people with other comorbidities and they may be prescribed more specifically for these other purposes. Beta blockers for heart failure, atrial fibrillation or ischaemic heart disease, ACE inhibitors for heart failure or renal protection and prazosin for prostatic symptoms are examples of where cessation of these agents may worsen the underlying condition.

STRATEGY

- Many people are receiving multiple agents that lower blood pressure. Reduction and cessation strategies should focus on one agent at a time.
- Reduction or cessation of antihypertensive agents should be considered:
  - in frail elderly and/or immobile people
  - in people with a high falls risk
  - in people with confirmed postural hypotension (>20mmHg fall in systolic on standing, and/or >10mmHg fall in diastolic on standing).
- Withdrawal effects may be wide ranging, depending on the specific class of agent and any other conditions being treated.
- It is recommended that most antihypertensives should be tapered at approximately 25% every month over 3-4 months.

ANTIPLATELET AGENTS

KEY POINTS

- Antiplatelet agents are effective in preventing recurrence of cardiovascular events in people with previous cardiovascular events.
- For primary prevention, the ARR for aspirin is significantly lower. In people with one or two risk factors for cardiovascular disease, the ARR is of the order of 0.2-0.4%. In healthier people, the NNT for aspirin primary prevention approaches 2000 for one year.
- Risk of GI and other extracranial bleeding increases with age and other factors such as previous GI bleeding and ulceration, concurrent medications, smoking and alcohol use.
- The risk of major bleeding with dual antiplatelet agents is more than twice that of either agent alone.
- Recurrent minor bleeding can have a significant impact on quality of life.

FACTORS IN FAVOUR OF DEPRESCRIBING

Low cardiovascular event risk

- An individual assessment needs to be conducted as there are no cardiovascular risk calculators that cater for people older than 75 years.
- This assessment should consider:
  - co-existing risk factors
  - person's prognosis
  - potential impact of a cardiovascular event.

Presence of suspected adverse effect

- Significant signs of excess effect of aspirin that impact on quality of life, (e.g. recurrent minor bleeding interfering with daily activities.)
- Covert gastrointestinal bleeding can contribute to anaemia. Anaemia in a person taking aspirin should trigger a review of the ongoing risk vs benefit of antiplatelet therapy.

FACTORS AGAINST DEPRESCRIBING

- People who are well and functionally independent and have a five or more year life expectancy may derive ongoing benefit from the use of antiplatelet agents.

STRATEGY

- People with a high-risk of gastrointestinal bleeding (e.g. elderly, taking other GI bleed inducing agents such as NSAIDs, SSRIs and corticosteroids, alcohol users, smokers) should be considered for cessation of antiplatelet agents.
- People with a low cardiovascular event risk should be considered for cessation of antiplatelet agents.
- People receiving dual antiplatelet agents should have one of these ceased within 12 months of the acute event. For people where bleeding risk is higher, earlier cessation may be appropriate.
- People with troublesome adverse effects associated with antiplatelet agents should be reassessed for the ongoing risk vs benefit of the antiplatelet agent.
- People with a limited prognosis should be considered for cessation of antiplatelet agents.
- Antiplatelet agents can usually be stopped without the need for tapering.

ANTIPSYCHOTICS

KEY POINTS

- Antipsychotics are effective in approximately one in five dementia patients for short-term management of significant agitation, aggression and psychosis.
- Antipsychotics are less effective for some types of behavioural problems, for example, wandering, calling out, urinating in inappropriate places and hypersexuality.
- Non-pharmacologic therapy is equally or more effective than antipsychotics in many people with BPSD.
- Antipsychotics may precipitate adverse effects, some of which mimic behavioural and psychological symptoms of dementia.
- Serious adverse effects of antipsychotic agents include falls, increased mortality and increased risk of strokes.
- Some people are more sensitive to the adverse effects of antipsychotic agents, such as those with Parkinson's Disease, Lewy Body Dementia or cardiac damage.
- Most people on long-term antipsychotics for BPSD can have their antipsychotics ceased, often with an improvement in symptoms.

FACTORS IN FAVOUR OF DEPRESCRIBING

- People with adverse effects are likely to benefit from dose reduction or cessation.
- Some people have higher risk of adverse effects. See *A Guide to Deprescribing Antipsychotics* fact sheet for more detail.
- People whose dementia has progressed and behavioural problems have lessened or ceased are less likely to relapse into behaviours if antipsychotics are ceased.

FACTORS AGAINST DEPRESCRIBING

- People with more severe BPSD may develop worse behaviour if dose reduction or cessation is attempted.
- People with a pre-dementia history of psychosis or other psychiatric disorder may worsen their underlying psychiatric condition by reducing or ceasing antipsychotics.

STRATEGY

- People with dementia whose behavioural symptoms are unchanged or improving over weeks or months may benefit from a trial reduction.
- People who no longer have troublesome BPSD may benefit from a trial reduction.
- People who have been symptom or behaviour-free for three months or more should be considered for a trial reduction.
- Cessation should be gradual, particularly if use has been long-term.
- The Dementia Behaviour Management Advisory Service has developed a BPSD Guide, which is available as a phone or device application.

BENZODIAZEPINES

KEY POINTS

- Treating 13 people with benzodiazepines for insomnia will improve sleep quality in one, while 2 in 13 will have an adverse effect.
- Non-pharmacological methods for insomnia are often as effective as benzodiazepines.
- Regarded by clinical practice guidelines as only a short-term therapeutic option for anxiety.
- Discontinuation may result in short-term changes to sleep architecture.
- Deprescribing of long-term benzodiazepines for insomnia may take at least 6-8 weeks.
- Some people develop withdrawal symptoms and require more gradual dose reduction.
- Providing people with information regarding the risks of benzodiazepines in a structured format increases the success rate for deprescribing.

FACTORS IN FAVOUR OF DEPRESCRIBING

- People who are aware of dependence on benzodiazepines may be amenable to a weaning regimen.
- Informing people of the potential harm of benzodiazepine use increases the likelihood of long-term discontinuation.

FACTORS AGAINST DEPRESCRIBING

- Short term benzodiazepine use may be appropriate for people with a self-limiting stressor.
- People receiving benzodiazepines for other significant indications (muscle spasm) may require continuation of the agents.

STRATEGY

- Any people taking benzodiazepines who have overt adverse effects (daytime sedation, cognitive impairment, falls or dependence) may benefit from dose reduction and/or cessation. A 20-25% reduction every week or two is usually well tolerated.
- Many people taking long-term benzodiazepines will gain benefits from cessation even though they do not have overt adverse effects.
- A tapering strategy should be always be used but the duration and amount of tapering is variable.
- If people develop significant intolerant withdrawal or discontinuation symptoms, return to the previous tapering step for a longer period of time.

BISPHOSPHONATES

KEY POINTS

- Oral bisphosphonates are moderately effective in the prevention of secondary fractures with one fracture avoided for every 40-90 people treated for 1-3 years.
- Many people who have had 5 years of continuous treatment with an oral bisphosphonate will have ongoing benefit for a further 5 years after cessation of the bisphosphonate.
- Where ongoing treatment for osteoporosis is required, options other than bisphosphonates may be safer.

FACTORS IN FAVOUR OF DEPRESCRIBING

Low risk of falls/immobility

- If people have a low risk of falls, there may no longer be ongoing benefit to fracture risk reduction. Indeed if the reduced falls risk is due to prolonged immobility, even the requirement to sit upright to administer the oral bisphosphonate may be sufficient reason to reconsider the therapy.

No previous vertebral fractures and 5 years or more of treatment

- In people with only non-vertebral fractures, there seems to be little ongoing benefit of bisphosphonates in the 5 years after an initial 5 years of treatment, particularly if their T score is above -2.5 at the end of the first 5 years.

FACTORS AGAINST DEPRESCRIBING

- High fracture risk (low T score, high falls risk, steroids etc.)
- People with a higher risk of fractures such as those with a very low T score (-2.5 or below) may have ongoing fracture risk reduction benefit from treatment with a bisphosphonate or another antiresorption agent.

STRATEGY

- People with a history of osteoporosis who have had 5 years of bisphosphonate treatment and whose risk of fracture is now low should have their bisphosphonate ceased for 5 years.
- A plan for regular (e.g. biennial) monitoring of bone mineral density may be of benefit to monitor for any decline.
- Cessation can be abrupt; no discontinuation syndromes have been described.

CHOLINESTERASE INHIBITORS

KEY POINTS

- Efficacy of cholinesterase inhibitors is modest.
- It is unclear whether improvements shown in trials using objective scoring systems would translate into changes for a person's daily care and supervision requirements.
- Individualised decisions should be made rather than being based on single factors such as MMSE score.
- People who have major changes in their life circumstances should have their cholinesterase inhibitor use reviewed.
- People who have serious side-effects consistent with use of cholinesterase inhibitors should trial cessation of the agent.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Side-effects that impact on quality of life and clinical symptoms should prompt a review of the ongoing need for the agent.
- People who have had a trial of therapy (as per the PBS) and have not demonstrated a clinically meaningful response should be considered for discontinuation.

FACTORS AGAINST DEPRESCRIBING

- People who demonstrate ongoing, meaningful clinical benefit should continue on the medication with ongoing monitoring.
- Community-dwelling people who have adequate functional capacity and support, may continue to derive benefit.
- People who clearly clinically deteriorate after cessation may benefit from reintroduction.

STRATEGY

- Assess after 6-month initial trial (aim to achieve maximum dose for 4 months).
- If minimal or no benefit, proceed to taper and cease.
- Problematic side-effects may require dose reduction or formulation change.
- Reassess and recommence treatment if there is deterioration in symptoms unrelated to disease progression.
- Assess ongoing care requirements.

GLAUCOMA EYE DROPS

KEY POINTS

- Glaucoma treatment is considered lifelong.
- The treating ophthalmologist should be included in the process of considering deprescribing of glaucoma treatment.
- People who have mild glaucoma or ocular hypertension would be at minimal risk in the short to medium term if they cease their medications.
- For a person who is asymptomatic, it would be some time before they would experience symptomatic vision loss without treatment, unless the pressure is very high.
- People who have advanced glaucoma may lose vision if they cease their medications.
- If people have symptomatic vision loss, this would indicate that the glaucoma is advanced and medications should be continued.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Glaucoma medications should be continued where a person continues to:
  - be able to read
  - use their vision to perform tasks that improve their quality of life
  - be able to articulate visual symptoms
  - attend for ophthalmic investigations and examinations.
- In RACFs, it may be difficult to monitor a person's glaucoma.

FACTORS AGAINST DEPRESCRIBING

- Advanced disc cupping as documented by ophthalmologist.
- Advanced visual field loss.
- Visual field defect involving the central part of the vision in one or both eyes.
- Loss of vision in one eye from glaucoma already.
- Known very high pre-treatment IOP.

STRATEGY

- Consider discontinuation in people who have significant difficulty with medication administration.
- Review of glaucoma medications should be considered when the person has limited life expectancy.
- The IOP would go up soon after stopping the drops; the impact that would have on the person's vision depends on how advanced the glaucoma is.

NSAIDs

KEY POINTS

- The use of a COX-2 selective agent with low-dose aspirin increases the gastrointestinal bleeding risk to a level higher than non-selective NSAIDs alone and similar to non-selective NSAIDs with low-dose aspirin.
- The use of a PPI with a non-selective NSAID reduces the risk of GI bleeding to a rate similar to that of celecoxib without a PPI.
- In the studies available, the risk of cardiovascular adverse events with NSAIDs is lowest with naproxen, while the risk of gastrointestinal adverse effects is lowest with celecoxib.

FACTORS IN FAVOUR OF DEPRESCRIBING

- It may be reasonable to reduce the dose or cease agents when symptoms have been under control and stable for some time. Maximising other medications with a less severe side-effect profile (especially paracetamol) and utilisation of non-pharmacological options should be considered in all people as a way of minimising NSAID dose and duration.
- Localised arthritic pain often responds well to topical NSAID therapy or intra-articular steroid injections, both of which have less systemic adverse effects than oral NSAIDs.
- All NSAIDs should be avoided for people at high-risk of gastrointestinal adverse effects (particularly with past peptic ulcer disease) if possible. Where use is imperative, the lowest dose that achieves symptom control should be used for the shortest period possible.

FACTORS AGAINST DEPRESCRIBING

- NSAIDs can be an effective analgesic and anti-inflammatory. Short-term treatment for acute inflammatory processes may be beneficial with minimal risk. People with chronic inflammatory conditions (e.g. rheumatoid arthritis) may require long-term therapy and ongoing monitoring to minimise adverse effects.

STRATEGY

- Dose reduction or cessation may be considered for all people taking NSAIDs whose symptoms are under control and are relatively stable.
- Some people may find intermittent use of NSAIDs as effective as continuous use.
- Maximise non-pharmacological treatments for example, heat packs, massage, exercise, physiotherapy.
- Maximise the use of alternative analgesics such as paracetamol or topical NSAIDs.
- Estimation of cardiac and gastrointestinal bleeding risk for individual people may guide the selection of the most appropriate NSAID and dose, with or without PPIs. See *A Guide to Deprescribing NSAIDs* fact sheet for a table of options.
- Cessation should be considered in people who develop gastrointestinal side-effects or anaemia. Elderly people may present with subtle symptoms such as unexplained loss of weight, anorexia, etc.

OPIOIDS

KEY POINTS

- Opioids are not indicated for long-term management of chronic non-cancer pain.
- People with chronic non-cancer pain should have their opioid use assessed.
- Multidisciplinary pain management programs utilising psychology, exercise and functional-based outcomes result in better QOL and pain management than opioids.
- Tolerance to opioids develops with long-term use.
- Long-term opioid use is associated with serious adverse hormonal and psychological effects, and increased mortality.
- Concurrent benzodiazepine use increases risk of death from opioid overdose.
- Education is essential to successfully taper opioids.
- An app to assist in opioid conversion prepared by the ANZCA – is available online: Opioid Calculator FPM ANZCA.
- Consumer resources are available from the Hunter Integrated Pain Service www.hnehealth.nsw.gov.au/pain/.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Opioid use is decreasing in management of chronic pain. Multidisciplinary pain management programs result in better quality of life. People taking long-term opioid therapy for non-cancer chronic pain should be considered for dose reduction and/or cessation.
- The following factors may be an indication for opioid dose tapering or cessation:
  - unmanageable adverse effects
  - stable or decreased level of pain
  - evidence of misuse, illegal or unsafe behaviours.
- Education will benefit those with a desire to discontinue their opioid use.

FACTORS AGAINST DEPRESCRIBING

- Opioid use may be suitable for serious acute pain e.g. fractures.
- Opioid therapy can usually be ceased within one week.
- In complex cases, opioids should be weaned off within 90 days, at most.

STRATEGY

- Deprescribing or tapering of opioids is more likely to be successful when the person is aware of the issues with long-term opioid use.
- Consumer resources are available to assist with management of chronic pain. An Australian resource is available through the Hunter Integrated Pain Service at www.hnehealth.nsw.gov.au/pain/.
- People with chronic non-cancer pain taking long-term oral morphine milligram equivalent of:
  - 120mg or more daily should be considered for opioid deprescribing. This will include dose reduction and appropriate education / information.
  - 50mg or more daily should also be considered for opioid tapering, depending on individual circumstances.
- People taking opioids for chronic non-cancer pain should be closely monitored.
- Those with stable pain control should be considered for dose reduction or cessation of opioids.

PROTON PUMP INHIBITORS

KEY POINTS

- Short term use of PPIs for acid-mediated gastrointestinal conditions is effective and safe.
- PPIs are very widely used so adverse effects that occur less frequently may still be observed in normal clinical practice.
- Recurrence of GORD symptoms after cessation of PPIs is rare.
- Consider stopping PPIs after 4-8 weeks if symptom resolution evident.
- Intermittent treatment may be effective.
- When PPIs are ceased, assess for recurrence regularly.
- Ensure PPIs are only initiated with clear indication and for the shortest possible time.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Modification of lifestyle factors will improve GORD symptoms or allow reduction or cessation of PPIs.
- Consider cessation of PPIs with loss of symptoms. Recurrence of GORD symptoms after cessation of PPIs is rare.
- Review use of PPIs if potentially ulcerogenic medications are ceased.
- Non-erosive oesophagitis or those with no specific acid-related diagnosis may benefit from intermittent rather than continuous dose PPIs.

FACTORS AGAINST DEPRESCRIBING

- Antiplatelets, anticoagulants, NSAIDs, corticosteroids may increase the risk of GI bleeding.
- People who have not had a previous bleed but have a high-risk of GI bleeding, may benefit from low-dose prophylactic PPIs. These include people taking:
  - taking long term non selective non-steroidal anti-inflammatory agents
  - taking dual antiplatelet therapy
  - taking anticoagulants.
- Established oesophagitis or acid-mediated oesophageal damage may require long-term treatment on specialist advice.
- Ongoing GORD symptoms may require long-term treatment.

STRATEGY

- Many people are taking PPIs without clear indications.
- Determining a history of GI bleeding, endoscopy and NSAID use, and any previous symptoms may assist with the appropriateness of deprescribing
- After an initial course of 4-8 weeks with symptom resolution consider ceasing PPIs.
- Attempt to reduce/cease PPIs every 2-4 weeks.
- When PPIs are ceased, monitor regularly for recurrence of symptoms.
- See *A Guide to Deprescribing Proton Pump Inhibitors* fact sheet for a deprescribing algorithm.

STATINS

KEY POINTS

- Statins are effective for secondary prevention of cerebral and cardiac events, although no specific studies exist for people over the age of 80 years. NNT for secondary prevention are in the 20-40 range for 5 years of treatment.
- Statins are considerably less effective for primary prevention of cardiac and cerebral events with numbers NNT of the order of 70-130.
- Adverse effects are related to dose (and levels) and are more frequent in people with interacting drugs or people taking higher doses.
- The majority of the reduction of LDL seen with all available statins is achieved at the minimum dose.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Short estimated life expectancy - a recent trial in people with life limiting illness suggested that cessation was safe and improved quality of life.
- Poor overall functional status.
- Low cardiovascular event risk - people with a higher cardiovascular risk have a greater absolute benefit from statins.
- Suspected adverse effect - adverse effects may be unrecognised and a trial cessation may clarify if non-specific muscular pains, issues with cognition or lethargy are related to statins.

FACTORS AGAINST DEPRESCRIBING

- People who are well, functionally independent and have a life expectancy of more than five years, may benefit from the use of statins.
- People who have a very high-risk of recurrent events.

STRATEGY

- Minimise adverse effects by using the minimum dose of the statin.
- Trial cessation should be considered in people who have :
  - reduced life expectancy
  - low-risk of cardiovascular events
  - possible adverse effects.
- In people with a limited prognosis, statins should be stopped.
- Statins can usually be stopped without the need for tapering.

SULPHONYLUREAS

KEY POINTS

- The natural history of type 2 diabetes includes gradual loss of beta cell function.
- Sulphonylureas are insulin secretagogues, requiring beta cell function in order to stimulate insulin secretion.
- Sulphonylurea failure at six years after commencement is approximately 40%.
- Dose reduction without an increase in blood sugar levels usually confirms lack of efficacy.
- Intensity of diabetes management should be reduced in frail elderly people.

FACTORS IN FAVOUR OF DEPRESCRIBING

- Long duration of therapy with sulphonylureas is associated with a reduction in efficacy, most likely due to beta cell failure. In people achieving an appropriate target HbA1c after long-term use (>10 years) it is likely that the impact of the sulphonylurea is minimal and dose reduction or cessation may be possible.
- In elderly or frail people, where the intensity of diabetic management can be reduced, reduction of any antidiabetic therapy (especially insulin or sulphonylureas which predispose to hypoglycaemia) may be appropriate.

FACTORS AGAINST DEPRESCRIBING

- In people where intensive treatment of diabetes is still likely to have a long-term benefit, ongoing management (which may include sulphonylureas) is appropriate.

STRATEGY

- People who have been taking sulphonylureas for more than 10 years are likely to have limited effectiveness of the agent. If diabetes management goals are satisfactory, dose reduction (with appropriate monitoring to ensure lack of effect) with a view to cessation would be reasonable.
- In people taking sulphonylureas, who's HbA1c is below 6% (42mmol/mol) cessation, followed by appropriate monitoring would be appropriate.
- People who have hypoglycaemia associated with their sulphonylurea should have the agent ceased.

VITAMIN D AND CALCIUM

KEY POINTS

- The combination of vitamin D and calcium is minimally effective for non-vertebral fracture reduction.
  - one fewer hip fracture per 1000 older adults per year in low-risk people
  - nine fewer hip fractures per 1000 older adults in high-risk people (e.g. institutionalised, elderly, postmenopausal women).
- The combination of vitamin D plus calcium reduces falls more effectively than either calcium alone or placebo.
- People taking calcium supplements (without vitamin D) are unlikely to obtain benefit for bone health unless dietary calcium intake is very low.
- There is debate about whether calcium supplementation increases the risk of myocardial infarction; if there is an effect it is likely to be small.
- Vitamin D and calcium supplementation optimises the efficacy of other osteoporosis prevention strategies such as bisphosphonates, denosumab and raloxifene.
- Currently, there is no evidence for the benefit of vitamin D supplementation alone for any health outcome.

FACTORS IN FAVOUR OF DEPRESCRIBING

- It remains unclear whether a low vitamin D level alone is sufficient cause to undertake replacement and then supplementation of vitamin D. It seems clear that very low vitamin D is associated with significant bone metabolic changes and in such cases appropriate replacement and supplementation may be required.
- People with a low-risk of falls are unlikely to achieve a significant benefit in terms of reduction of fall frequency from vitamin D and calcium supplementation.

FACTORS AGAINST DEPRESCRIBING

- Severe vitamin D deficiency may contribute to osteomalacia and calcium/vitamin D supplementation was a component of the majority of studies of osteoporosis treatment regimens (e.g. bisphosphonates, raloxifene, denusomab). If people are receiving active osteoporosis treatment, then calcium and vitamin D supplementation is likely to be required.

STRATEGY

- People who have a low risk of falls (especially those that are immobile) are unlikely to obtain significant benefit in terms of falls risk or fracture risk from vitamin D and calcium supplementation and cessation should be considered.
- Postmenopausal people taking calcium (without vitamin D) who have an adequate dietary intake of calcium should be considered for calcium cessation.
- People taking vitamin D (without calcium) to prevent fractures or falls should be considered for either the addition of calcium to their regimen, or cessation of the vitamin D if their fracture/falls risk is low.
- People taking vitamin D (without calcium) for indications other than fracture or falls risk reduction should be considered for cessation.

MAY 2016

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