

## Calcium and vitamin D (coleciferol) preparations for adults at risk of osteoporosis

Document control	
<b>Version</b>	1.0
<b>Produced by</b>	North East London Pharmacy and Medicines Optimisation Team
<b>Approved by</b>	North East London Formulary and Pathways Group (FPG)
<b>Date approved</b>	05/12/2023
<b>Ratified by</b>	North East London Integrated Medicines Optimisation and Prescribing Group (IMOC)
<b>Date ratified</b>	19/12/2023
<b>Review date</b>	19/12/2025

### Background

#### **Reducing fracture risk:**

Supplemental calcium is not required for most patients, but calcium may be indicated in those at risk of osteoporosis/ osteoporosis fracture (e.g. postmenopausal women), vegans, those on bisphosphonate therapy and previous fragility fracture (See Nice CKS for further information on risk factors).

Lifestyle measures should be provided to patients to improve bone health and include increasing the level of physical activity and taking regular exercise, stopping smoking, eating balance diet, drinking within recommended alcohol limit, reducing the risk of falls and ensuring adequate dietary calcium intake and vitamin D status. It is recommended that a daily calcium intake of between 700mg and 1200mg should be advised, if possible achieved through dietary intake.

A simple dietary calcium intake calculator is available at;

[CGEM Calcium Calculator \(ed.ac.uk\)](https://www.ed.ac.uk/cgem/calcium-calculator)

#### **If calcium intake is inadequate (<700mg per day) <sup>2</sup>:**

- Prescribe 10 micrograms (400 units) of vitamin D with at least 1000mg of calcium daily.
- Prescribe 20 micrograms (800 units) of vitamin D with at least 1000mg of calcium daily for elderly people who are housebound or living in a nursing home.

Whilst the Scientific Advisory Committee on Nutrition (SACN) recommends a reference nutrient intake (RNI) of 400 units daily of vitamin D for adults of all ages, in the context of osteoporosis higher levels, from 800 units up to 2,000 units daily may be appropriate.

Vitamin D alone is ineffective in reducing fracture risk but when combined with calcium supplements results in a small reduction in hip and nonvertebral fractures, and possibly also in vertebral fractures. Supplementation with calcium and vitamin D is often advocated as an adjunct to other treatments for osteoporosis, as the clinical trials of these agents were performed in patients who were calcium and vitamin D replete. In postmenopausal women and older men receiving bone protective therapy for osteoporosis, it is recommended that calcium supplementation should also be given if the dietary intake is below 700mg per day, and vitamin D supplementation with 800 units per day of colecalciferol considered in those at risk of/with evidence for vitamin

D insufficiency. It is important for those patients taking bone protective therapy for osteoporosis to be vitamin D replete, and calcium intake preferably from dietary sources. Calcium (combined with vitamin D) supplementation should be targeted to those whose dietary intake is below 700mg per day and who are at risk of osteoporosis and/or fragility fracture, such as older adults who are housebound or living in residential or nursing care, and those with intestinal malabsorption e.g. due to chronic inflammatory bowel disease, or following bariatric surgery.

Vitamin D supplementation with 800 units per day of colecalciferol should be considered in those at risk of/with evidence for vitamin D insufficiency. In housebound patients with previous fall and fragility fracture, and where calcium intake is inadequate, calcium and vitamin D in combined supplementation should be considered.

See NICE CKS Osteoporosis - prevention of fragility fractures, for further information

<https://cks.nice.org.uk/topics/osteoporosis-prevention-of-fragility-fractures/management/management/>

**Rationale:**

- To achieve efficiency savings from initiating and switching patients to cost-effective calcium carbonate and vitamin D combination products.
- Reducing patient pill burden by initiating and switching patients to recommended once daily cost-effective calcium and vitamin D combination products, where appropriate.
- Reducing medicines waste by improving compliance through use of once daily calcium and vitamin D combination products, where appropriate.

**Cautions/contraindications:**

- Where patients are prescribed a sub-therapeutic dose, check the medical records for a rationale.
- It is recommended that all patients on sub-optimal doses are switched to a once daily preparation even though this may appear as a higher cost.
- Avoid prescribing calcium and vitamin D preparations to people with renal stone disease, hypervitaminosis D, hyperparathyroidism, severe chronic kidney disease (CKD) stage 4 or 5.
- Prescribe calcium and vitamin D preparations with caution to patients with renal failure (creatinine clearance of less than 30mL/minute). Dosage adjustment may be necessary.
- Once daily calcium carbonate and vitamin D should **not** be used in patients with severe renal impairment.
- Caution in pregnancy as high doses of colecalciferol are teratogenic in animals but therapeutic doses unlikely to be harmful. Refer to product SPC before prescribing.
- Be cautious when prescribing to breast feeding woman because calcium and vitamin D pass into breast milk. This should be taken into consideration when giving additional vitamin D to the child.
- Patients should be advised to report any changes in symptoms or adverse effects from the new brand.

## NEL Recommended Calcium and Vitamin D combination products

Table 1: NEL ICB recommended cost-effective calcium and vitamin D combination products						
Product	Generic name	Dose	Dietary requirements	Allergy Suitability:	Price (£)	
<b>FIRST LINE PRODUCT CHOICE</b>						
Calci-D chewable tablets	Calcium carbonate Colecalciferol	2.5g (1000mg) 1000 unit (25mcg)	One tablet once a day	Suitable for vegetarians	<b>Suitable</b> - for patients allergic to peanut, soya or soya bean.	£2.50 /28 tablets
TheiCal D3 chewable tablets	Calcium carbonate Colecalciferol	2.5g (1000mg) 880 unit (22mcg)	One tablet once a day	Suitable for Vegetarian	<b>Suitable</b> - for patients allergic to peanut, soya or soya bean.	£2.95 /30 tablets
Accrete D3 chewable tablets	Calcium carbonate Colecalciferol	2.5g (1000mg) 880 unit (22mcg)	One tablet once a day	Suitable for vegetarians	<b>Suitable</b> - for patients allergic to peanut, soya or soya bean.	£2.95 /30 tablets
Evacal D3 chewable tablets	Calcium carbonate Colecalciferol	1.5g (600mg) 400 unit (10mcg)	One tablet <b>twice</b> a day	Suitable for vegetarians	<b>NOT suitable</b> - for patients allergic to peanut or soya	£2.75 /56 tablets
<b>SECOND LINE PRODUCT CHOICE</b>						
Accrete D3 film coated tablet	Calcium carbonate Colecalciferol	1.5g (600mg) 400 unit (10mcg)	One tablet <b>twice</b> a day	<b>Unsuitable</b> for Vegetarians (contains gelatine)	<b>NOT suitable</b> - for patients allergic to peanut or soya	£2.95 /60 tablets
Adcal-D3 Caplets	Calcium carbonate Colecalciferol	750mg 200 unit (5mcg)	<b>Two</b> tablets <b>twice</b> a day	Suitable for vegetarians	<b>Suitable</b> - for patients allergic to peanut, soya or soya bean	£3.54 /112 tablets
ColeKal-D3 Dissolve effervescent tablets	Calcium carbonate Colecalciferol	1.5g (600mg) 400 unit (10mcg)	One tablet <b>twice</b> a day	Suitable for vegetarians	<b>Suitable</b> - for patients allergic to Peanut, Soya, yeast and gluten.	£4.97 /56 tablets
Cacit D3 effervescent granules sachets  <i>This should only be prescribed for use in an enteral feeding tube</i>	Calcium carbonate Colecalciferol	1.25g (500mg) 440 unit (11mcg)	One sachet <b>twice</b> a day	<b>Unsuitable</b> for vegetarians (contains gelatine).	<b>NOT suitable</b> - for patients allergic to peanut or soya	£4.06 /30 sachets

**References:**

The National Osteoporosis Guideline Group: *Clinical guideline for the prevention and treatment of osteoporosis*, Oct 2021 <https://www.sheffield.ac.uk/NOGG/NOGG%20Guideline%202017.pdf> (Accessed 25 July 2023)

British National Formulary (2023): *Colecalciferol with Calcium Carbonate*: <https://bnf.nice.org.uk/drugs/colecalciferol-with-calcium-carbonate/> (Accessed 25 July 2023)

Drug Tariff (July 2023): <https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff> (Accessed 25 July 2023)

Electronic Medicines Compendium (2022): *Accrete D3 One a Day 1000 mg / 880 IU Chewable Tablets* <https://www.medicines.org.uk/emc/product/8506> (Accessed 25 July 2023)

Electronic Medicines Compendium (July 2022) *TheiCal-D3 1000mg/880 IU chewable tablets* <https://www.medicines.org.uk/emc/product/3334> (Accessed 25 July 2023)

The Association of UK Dietitians. *Calcium: Food fact sheet* <https://www.bda.uk.com/resource/calcium.html> (Accessed 25 July 2023)

National Institute for Health and Care Excellence (2023): *Osteoporosis – prevention of fragility fractures* <https://cks.nice.org.uk/topics/osteoporosis-prevention-of-fragility-fractures/>

Specialist Pharmacy Service (6 July 2021): *Choosing a Calcium and Vitamin D preparation for Vegetarian or Vegan*. <https://www.sps.nhs.uk/articles/choosing-a-calcium-and-vitamin-d-preparation-for-vegetarians-or-vegans/> (Accessed 25 July 2023)