

## Calcium and vitamin D for adults at risk of osteoporosis

### Background:

Supplemental calcium is not required for most patients, but calcium may be indicated in those at risk of osteoporosis (e.g. postmenopausal women), vegans, and those on bisphosphonate therapy. It is recommended that a daily calcium intake of between 700 and 1200 mg should be advised, if possible achieved through dietary intake

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/384775/familyfood-methodrni-11dec14.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/384775/familyfood-methodrni-11dec14.pdf) A simple dietary calcium intake calculator is available at <http://www.cgem.ed.ac.uk/research/rheumatological/calcium-calculator><sup>1</sup>

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<sup>1</sup>. 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<sup>1</sup>. 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 700 mg/day, and vitamin D supplementation with 800 IU/day of colecalciferol considered in those at risk of/with evidence for vitamin D insufficiency<sup>1</sup>.

### If calcium intake is inadequate<sup>2</sup>:

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

### BHR CCGs' recommended calcium and vitamin D products

Product* <sup>1</sup>	Generic name* <sup>1</sup>	Optimal Dose	30 day Price* <sup>5,6</sup> (£)
<b>Calci-D chewable tablets</b>	<b>Calcium carbonate 2.5g (1000mg) / Colecalciferol 1,000unit (25mcg) chewable tablets</b>	<b>1OD</b>	<b>£2.25</b>
TheiCal D3 chewable tablets	Calcium carbonate 2.5g (1000mg) / Colecalciferol 880iu (22mcg) chewable tablets	1OD	£2.95
Accrete D3 One a Day chewable tablets	Calcium carbonate 2.5g (1000mg) / Colecalciferol 880iu (22mcg) chewable tablets	1OD	£2.95
Calfovit D3 oral powder sachets* <sup>2</sup>	Calcium phosphate 3.1g (1200 mg) / Colecalciferol 800iu (20mcg)	1OD	£4.32
Cacit D3 effervescent granules sachets* <sup>3</sup>	Calcium carbonate 1.25g (500mg) / Colecalciferol 440iu (11mcg)	1BD	£8.12
Adcal-D3 750mg/200 IU Caplets* <sup>4</sup>	Calcium carbonate 750mg (300mg) / Colecalciferol 200iu (5mcg)	2BD	£2.95

\*<sup>1</sup> Please prescribe by brand

\*<sup>2</sup> Calfovit are only advised if the patient is unable to chew the tablets

\*<sup>3</sup> Cacit D3 should only be prescribed for use in an enteral feeding tube<sup>3</sup>

\*<sup>4</sup> Caplets should only be prescribed for patients unable to chew the tablets or unable to tolerate the sachets

## Rationale

- To achieve efficiency savings from switching patients over to once daily calcium carbonate/ colecalciferol.
- To reduce pill burden on patients taking twice daily calcium and vit D products by switching to once daily items
- Reducing waste medicines by improving compliance through use of once daily calcium and vit D

## Caution

- Caution in pregnancy as high doses of colecalciferol are teratogenic in animals but therapeutic doses unlikely to be harmful. During pregnancy the daily intake should not exceed 1,500 mg of calcium and 600 I.U. of vitamin D3. Therefore, the daily dose must not exceed half a tablet<sup>7</sup>. Caution in breastfeeding<sup>4</sup>
- Once daily calcium carbonate/ colecalciferol should **not** be used in patients with severe renal impairment

## Please be aware that sub-therapeutic doses do not appear as cost effective switches

- 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, therapeutic preparation even though this may appear as a higher cost

## References

1. NOGG 2017: Clinical guideline for the prevention and treatment of osteoporosis <https://www.sheffield.ac.uk/NOGG/NOGG%20Guideline%202017.pdf>
2. CKS <https://cks.nice.org.uk/osteoporosis-prevention-of-fragility-fractures#!scenario:1>
3. Handbook of Drug Administration via Enteral feeding tubes 2<sup>nd</sup> edition. Rebecca White and Vicky Bradnam. p133 Calcium salts with vitamin D
4. BNF colecalciferol <https://bnf.nice.org.uk/drug/colecalciferol.html#breastfeeding>
5. Drug Tariff May 2018 <https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff>
6. DM+d May 2018 <https://apps.nhsbsa.nhs.uk/DMDBrowser/DMDBrowser.do>
7. theiCal-D3 SPC <https://www.medicines.org.uk/emc/product/3334NICE>  
Bisphosphonates <https://www.nice.org.uk/guidance/ta464/chapter/1-Recommendations>
8. Calfovit D3 oral powder sachets SPC <https://www.medicines.org.uk/emc/product/292>
9. Accredate SPC <https://www.medicines.org.uk/emc/product/8506>
10. Calci-D SPC <https://www.medicines.org.uk/emc/product/2039>
11. NICE Osteoporosis <https://pathways.nice.org.uk/pathways/osteoporosis#content=view-node%3Anodes-preventing-fragility-fractures>