Quick reference guide: Primary Care Management of Vitamin D deficiency

WHO TO TEST

- Confirmed osteomalacia, osteoporosis, symptomatic hypocalcaemia
- High risk patient group with suggestive symptoms e.g. suspected osteomalacia or rickets, severe widespread muscle ache, proximal muscle weakness
- All patients prior to starting parental anti-resorptive treatment
- Isolated raised ALP (with normal liver function, including gGT)
- Malabsorption, e.g. post-gastric bypass surgery

DO NOT TEST

- Asymptomatic patients
- Fibromyalgia
- -Non-specific aches and pains (with normal bone chemistry)

MEASURE 25,OH VITAMIN D (nmol/L) ALSO CHECK: Adj Ca²⁺, PO₄, Alk Phos

>50

NO TREATMENT REQUIRED

Advise on safe sun exposure, dietary sources and use of OTC supplements if appropriate e.g. 400 units (10µg) daily. If the person has MSK symptoms (such as muscle pain or weakness) despite adequate serum 25(OH)D levels, consider an alternative diagnosis.

LOAD

HOW TO

TREAT

VITAMIN D

DEFICIENCY

MAINTAIN

- Has a fragility fracture, documented osteoporosis, or high fracture risk. Is prescribed an anti-resorptive drug for bone disease e.g. bisphosphonate
- **Symptomatic** i.e. has symptoms suggestive of vitamin D deficiency
- Is at increased risk of developing vitamin D deficiency in the future:
- With limited sun exposure: Cover up skin for cultural reasons (e.g. Muslim women) OR for health reasons (e.g. skin photosensitivity or a history of skin cancer).
- Spend very little time outdoors (e.g. housebound or institutionalized) OR with dark skin (e.g. African, African-Caribbean, or Asian or Middle-Eastern ethnic origin).
- Prescribed anti-epileptics or oral corticosteroids, or is on long-term treatment with other drugs known to cause vitamin D deficiency, e.g. colestyramine.
- Has a malabsorption disorder (e.g. Crohn's disease) or other condition known to cause vitamin D deficiency, such as chronic kidney disease

NICE CKS Vitamin D deficiency in adults - treatment and prevention. Last revised in Sept 2018 Next planned review by Dec 2021

ASYMPTOMATIC & NO RISK FACTORS

1 OR MORE RISK FACTORS



REAT

Rapid high strength replacement

If about to start treatment with potent antiresorptive agent e.g. zolendronate, denosumab higher vit D3 doses will be required & managed in secondary care^{‡‡}

Child loading doses

0-1m – 2,000 units daily for 12 weeks 1-6m - 3,000 units daily for 8 weeks 6m-12yrs - 6,000 units daily for 8 weeks 12-18yrs - 10,000 units daily for 8 weeks NB: These doses are unlicensed. See APC Formulary for choice of products available

LOADING DOSE **ONLY IF SYMPTOMATIC or < 25*

Adult loading doses (including pregnancy) – Prescribe 300,000 units colecalciferol (vit D3) orally divided over 6-7 weeks

- Colecalciferol 20,000 units/capsules: R_x 2 caps weekly for 7 wks Or Colecalciferol 25,000 units/ml oral sol^a: R_x - 2ml weekly for 6 wks
- Only commence maintenance therapy 4 weeks after completion of loading patient with high strength replacement
- Check adjusted serum calcium after completing the loading regimen in case primary hyperparathyroidism has been unmasked

<u>Vitamin D and Bone Health: A Practical Clinical Guideline for Patient Management</u>

DO NOT USE LOADING DOSE IF: PATIENT IS HYPERCALCAEMIC or ASYMPTOMATIC* - START WITH REGULAR MAINTENANCE DOSE NB: investigate cause of hypercalaemia

‡When NHS maintenance dose allowed: 4 weeks after loading doses** or if HYPERCALCAEMIC or ASYMPTOMATIC with ≥ 1 risk

800 units (20 µg) colecalciferol daily; for average caucasian with intact fat soluble vitamin absorption; other groups may require higher dose e.g. up to 2000 units (50 μg) for some patients. Medicine containing supplementary Ca²⁺ should ONLY be prescribed if dietary Ca2+ intake insufficient or unwilling to increase intake; **Do not initiate Ca²⁺ or if taking supplement DEPRESCRIBE if sufficient Ca²⁺ in diet** Check adjusted serum calcium after commencing maintenance regimen in case primary hyperparathyroidism has been unmasked 🕹

When NHS maintenance prescribing is not supported † Patients should be encouraged

to self-care; advise patients to speak to their local pharmacist or hospital specialist. Pharmacies, health food shops and supermarkets sell various products in various strengths. **EXCEPTIONS** Maintenance vit D₃ for patients with osteoporosis, chronic hypoparathyroidism or prescribed cinalcalcet

Repeat vitamin D₃ testing is generally **NOT** required, but additional tests may be requested by specialist for patients receiving specialist anti-resorptive drug

NB: Treatment for hypoparathyroidism is life-long

†Discontinuation for other patient groups should only be considered if significant changes made to lifestyle; e.g. regular exposure to sunlight, consumption of oily fish or bariatric surgery reversal if answer is NO continue Referrals: eGFR <30ml/min, failure to respond to treatment, doubt about diagnosis, atypical biochemistry, persistent focal bone pain; concurrent hypercalcaemia, investigation of unclear underlying cause

Secondary care requests to test/treat outside of this guidance – discuss rationale with requesting clinician

^{**} NGCCG denosumab DES includes advice on rapid high strength replacement