

POSITION STATEMENT

Vitamin D for the Treatment, Maintenance following Treatment and Prophylaxis of Deficiency and Insufficiency States

Recommendations:

The prescribing of high-dose vitamin D (colecalfiferol or ergocalciferol) as a short-course treatment, for the correction of deficiency and insufficiency in high-risk, symptomatic patients is recommended only following confirmation by vitamin D assay (**Green**).

The prescribing of Vitamin D for prophylaxis or maintenance following treatment of deficiency and insufficiency for symptomatic individuals that are at high or normal risk of vitamin D deficiency is **not recommended (BLACK)**.

Asymptomatic patients that are at high or normal risk of vitamin D deficiency should be advised to: increase their exposure to sunlight, increase the intake of food groups that are high in Vitamin D or purchase vitamin D supplements over the counter (OTC). The prescribing of Vitamin D and Vitamin D testing are **not recommended (BLACK)**.

SCOPE

This position statement covers all single-ingredient preparations of vitamin D for the management of deficiency and insufficiency states. This document is **not intended to provide full guidance for the use of vitamin D**. Please refer to Vit D guidelines.

EXCLUSIONS

This position statement is not intended to affect the management of patients with osteoporosis or osteopenia that are either receiving vitamin D or calcium and vitamin D combination products. Additionally, this guidance is not intended to affect those patients receiving high-dose vitamin D for the management of multiple sclerosis or in hypoparathyroidism.

TREATMENT OF VITAMIN D DEFICIENCY AND INSUFFICIENCY IN ADULTS

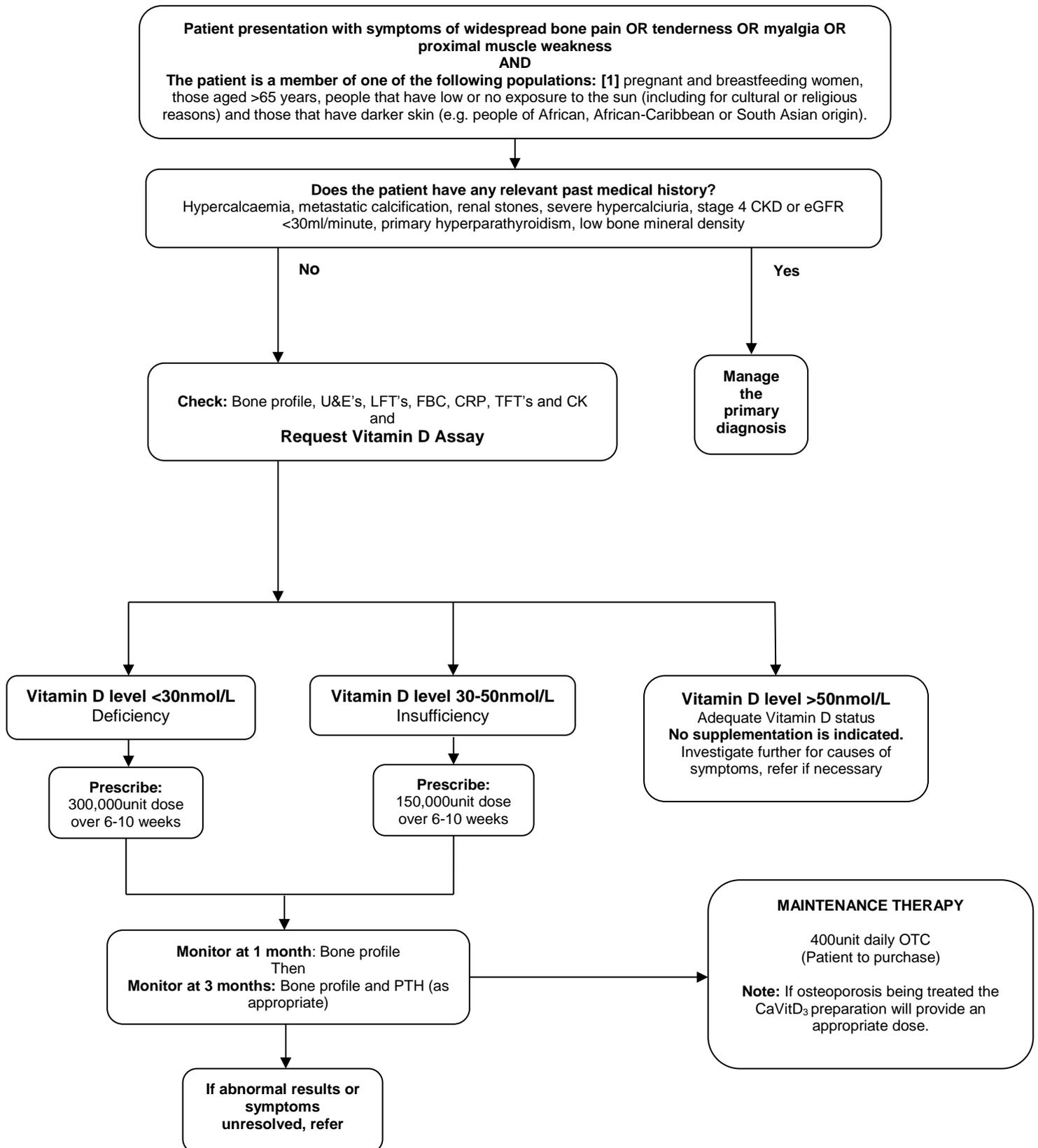
The following treatment pathway (**Figure 1**) has been devised to assist primary care prescribers manage symptomatic adult patients that are found to have vitamin D deficiency or insufficiency.

Asymptomatic adult patients that are at high risk of vitamin D deficiency should be advised to: increase their exposure to sunlight, increase the intake of food groups that are high in Vitamin D (see **Table 1**) or purchase vitamin D supplements over the counter (OTC).

| Food groups high in vitamin D | Approx. vitamin D content |
|--|---------------------------|
| Oily fish e.g. trout, tuna, salmon, herring, mackerel, sardines, ilish/hilsa (note : farmed fish may have lower levels than wild fish) | 200-400unit per 100g |
| Margarine | 280unit per 100g |
| Some breakfast cereals | 120-320unit per 100g |
| Red meat | 40unit per 100g |
| Egg yolk | 20unit each |
| Cod liver oil | 1360unit per 15ml |

Table 1

Figure 1 – Management of Symptomatic Adult Patients with Vitamin D Deficiency or Insufficiency



MONITORING

Important: All patients receiving treatment doses for vitamin D deficiency or insufficiency should be monitored as follows:

1. **1 month after the loading dose:** check plasma-calcium concentration **and**
2. **3 months after the loading dose:** check plasma-calcium, phosphate, alkaline phosphatase and parathyroid hormone*

*Measuring PTH is difficult in the community because the sample has to reach the lab within four hours. Ensure sample taken at correct time to allow transport to lab for analysis, and sample is clearly labelled.

Important: All patients receiving calcium supplementation for hypocalcaemia in addition to pharmacological doses of vitamin D need more frequent monitoring of plasma-calcium. Monitor every 1-2 weeks in the first months of treatment to determine the length of time calcium supplementation is needed and to avoid hypercalcaemia. Patients or carers should be informed about the symptoms of hypercalcaemia e.g. weight loss, sickness, vomiting, headache, abdominal pain, apathy, and polyuria.

TREATMENT OF VITAMIN D DEFICIENCY AND INSUFFICIENCY IN CHILDREN

Vitamin D therapy is only recommended in children where the patient is deficient (<10ng/mL or <25nmol/L [2]) **and** symptomatic. Once corrected, parents should be advised to purchase maintenance dose vitamin D OTC (see **Table 2**). Children under the age of 1-year should be referred to the specialist paediatric service for management ('RED').

| Treatment Dose [3] | |
|----------------------|----------------------------------|
| Age | Daily Dose and Suggested Regimen |
| 1 – 12years | 6000units daily 4 – 8weeks |
| 12 – 18years | 10,000units daily 4 – 8weeks |
| Maintenance Dose [4] | |
| Maintenance | 400units daily |

Table 2 - Management of Symptomatic Child Patients with Vitamin D Deficiency

Please note:

1. It is essential to check the child has a sufficient dietary Calcium intake and that a maintenance Vitamin D dose follows the treatment dose and is continued long term. [2]
2. Monitoring should be carried out in line with 'adult' recommendations. See '**MONITORING**' section above.
3. Any child who is suspected to have hypocalcaemia secondary to vitamin D deficiency should be urgently referred to secondary care.

SUPPLEMENT USE IN PREGNANCY, LACTATION AND FOR CHILDREN

These patient groups are currently advised to take a supplement (OTC) that meets 100% of the reference nutrient intake for their age group. This is: [4]

1. 8.5 µg per day (340units) for infants aged 0–6 months,
2. 7 µg per day (280units) for older infants and children up to the age of 5,
3. 10 µg per day (400units) for pregnant and breastfeeding women (as recommended for the general adult population).

All infants and young children aged 6 months to 5 years are advised to take a daily supplement containing vitamin D in the form of vitamin drops. [4] However, infants who are fed infant formula will not need them until they have less than 500 ml of infant formula a day, as these products are fortified with vitamin D. Breastfed infants may need drops containing vitamin D from 1 month of age if their mother has not taken vitamin D supplements throughout pregnancy.[5]

PROVISION OF HEALTHY START VITAMINS

Women who are pregnant or breastfeeding or families with a child under four years old and who are on certain benefits qualify to receive Healthy Start vitamin supplements. All pregnant women under the age of 18 qualify for Healthy Start vitamins – whether or not they are on benefits. [6]

Healthy Start for children vitamin drops are administered as five drops daily and provide 7.5 µg of vitamin D (in addition to 233 µg of vitamin A and 20 mg of vitamin C). [6]

Healthy Start for women tablets provide 10 µg of vitamin D (in addition to 70 mg of vitamin C and 400 µg of folic acid) and are taken once daily. [6]

REFERENCES

- [1] National Osteoporosis Society, "Vitamin D and bone health: a practical clinical guideline for patient management," National Osteoporosis Society, Bath, 2013.
- [2] Arundel et al, "British paediatric and adolescent bone group's position statement on vitamin D deficiency," British Medical Journal, vol. 345, p. e8182, 2012.
- [3] Royal College of Paediatrics and Child Health, "Guide for vitamin D in childhood," Royal College of Paediatrics and Child Health, London, 2013.
- [4] Scientific Advisory Committee on Nutrition, "Vitamin D and Health," HM Government, London, 2016.
- [5] NICE public health guideline [PH56], Vitamin D: increasing supplement use in at-risk groups, November 2014 [Online]. Available at <https://www.nice.org.uk/guidance/ph56> [Accessed 01/06/17]
- [6] Healthy Start Vitamins, "About Healthy Start vitamins," Department of Health, <https://www.healthystart.nhs.uk/for-health-professionals/vitamins/> [accessed 01/06/2017]