

Primary Care Vitamin D Prescribing Guidance

1. Introduction/rationale

- Guidance for vitamin D prescribing in Primary Care.
- To be used in conjunction with Primary Care vitamin D treatment algorithm: <https://g-care.glos.nhs.uk/uploads/prescribing/FINAL%20Primary%20Care%20vitamin%20D%20treatment%20algorithm.pdf>
- For GHNHSFT 'TREATMENT OF VITAMIN D DEFICIENCY' guideline please visit: <https://www.gloshospitals.nhs.uk/healthcare-professionals/treatment-guidelines/vitamin-d-deficiency/>
- This guidance does not apply to prescription only vitamin D analogues alfacalcidol and calcitriol and these should continue to be prescribed as recommended by secondary care specialists.

2. Definitions

Word/Term	Descriptor
Colecalciferol	Vitamin D3
Ergocalciferol	Vitamin D2
Supplementation	over the counter supplementation for prevention of vitamin D deficiency
Maintenance therapy	where correction of Vitamin D deficiency is less urgent, or when co-prescribing supplements with an oral anti-resorptive agent, maintenance therapy can be started without the use of loading doses. This is suitable for the majority of people with confirmed Vitamin D deficiency.
Higher dose loading	(Initiation only on the advice of a bone health specialist) where more rapid correction is needed e.g., in symptomatic disease or prior to commencing treatment with a potent anti-resorptive agent (e.g., Denosumab, Zoledronic acid, Teriparatide or Romosozumab).

3. NHS Gloucestershire ICB position:

NHS Gloucestershire supports the local implementation of [NHS England » Policy guidance: conditions for which over the counter items should not be routinely prescribed in primary care](#) (2024). This includes guidance on the prescribing of vitamin D for which NHS England advise:

- Vitamin D should not be prescribed on the NHS for the prevention of deficiency due to insufficient evidence of clinical effectiveness but:
- Vitamin D may be NHS prescribed to treat deficiency including for those patients who may have a lifelong or chronic condition, or have undergone surgery that results in malabsorption, or in the management of osteoporosis. when co-prescribed with bisphosphonates.

Care Homes

For residents in nursing or residential homes, **supplementation** doses of vitamin D **should** be purchased on behalf of the resident unless the above prescribing criteria are met. Vitamin D supplementation to prevent deficiency does not require the authorisation of a prescriber as it is an OTC nutritional supplement. Care homes have a duty to provide this where necessary in order to comply with the Health and Social Care Act: regulation 14.

In line with [NHS England » Policy guidance: conditions for which over the counter items should not be routinely prescribed in primary care](#) and in agreement with local clinical opinion the following reasons are considered acceptable reasons to prescribe vitamin D in Primary Care (also see [vitamin D treatment algorithm](#)):

- To treat vitamin D deficiency *
- For the treatment or secondary prevention of osteoporosis**
- When co-prescribed with bisphosphonates for the primary prevention of osteoporosis**
- For those on parenteral osteoporosis treatments (e.g., Denosumab, Zoledronic acid, Teriparatide, Romosozumab).
- When a patient has been prescribed a medication that either reduces vitamin D absorption or causes bone density loss? (e.g., aromatase inhibitors, hormone therapy for prostate cancer, anti-epileptic drugs or oral glucocorticoids).
- had a fragility fracture, or over 75 years old with history of falls or low BMI (<18.5kg/m²)
- raised parathyroid hormone (PTH) or hypocalcaemia.
- some medical conditions (e.g., chronic pancreatitis) or surgery causing or leading to risk of malabsorption.

* If vitamin D has been prescribed to correct deficiency, the NHS prescribing should only be for 6 months. After that time, the deficiency can be assumed to have been corrected and the patient should be directed to purchase their ongoing vitamin D supplementation over the counter (OTC).

**If vitamin D has been prescribed for the treatment or secondary prevention of osteoporosis or is co-prescribed with bisphosphonates for the primary prevention of osteoporosis, discuss with the patient the option of purchasing Calcium and Vitamin D if that is more convenient or more cost effective for them

Patients who may benefit from vitamin D supplementation for reasons other than the above should be directed to purchase this OTC as part of their responsibility for self-care. If there are concerns that a patient is vulnerable and not capable of purchasing vitamin D supplements OTC primary care prescribers can consider prescribing.

4. Prevention of vitamin D deficiency

The [NICE Vitamin D Clinical Knowledge Summary](#) (revised Jan 2022) also detail the following adult groups at higher risk of Vitamin D deficiency requiring supplementation. Those:

- over 65 years old
- who have low or no exposure to the sun, e.g., who cover their skin for religious/cultural reasons, who are housebound or confined indoors for long periods
- with darker skin pigmentation. e.g., of African, African-Caribbean, or South Asian origin
- who are pregnant or breastfeeding (NICE recommend that **pregnant and breastfeeding** women take **400 IU daily**).
- with obesity

It is recommended that those over 65 years old or in one of these higher risk groups take a daily supplement containing 400 IU (10µg) of vitamin D.

NOTE: supplements are widely available as over the counter (OTC) preparations and SHOULD NOT be prescribed to the general population for the prevention of Vitamin D deficiency.

5. Who should be tested for vitamin D deficiency?

Routine testing for Vitamin D deficiency is **NOT** necessary. Please see Gloucestershire Hospitals NHS Foundation Trust guidance on Treatment of vitamin D deficiency:

<https://www.gloshospitals.nhs.uk/healthcare-professionals/treatment-guidelines/vitamin-d-deficiency/>

6. Dietary advice

Diet is generally a poor source of vitamin D, however there are some foods that can be eaten to help the body get more vitamin D below:

- Oily fish such as salmon, sardines, pilchards, trout, herring, kippers and eel all contain reasonable amounts of vitamin D
- Cod liver oil contains a lot of vitamin D (don't take this if you are pregnant because cod liver oil is also high in vitamin A which can harm the unborn baby during pregnancy)
- Egg yolk, meat, offal and milk contain small amounts but this varies during the seasons
- Margarine, some breakfast cereals, infant formula milk and some yoghurts have added or are 'fortified' with vitamin D

7. Sun advice

Sun exposure is the main source of vitamin D, but excessive sun exposure is the main cause of skin cancer, including melanoma, the fastest rising type of cancer in the UK. Enjoying the sun safely, while taking care not to burn, can help to provide the benefits of vitamin D without unduly raising the risk of skin cancer.

It is impractical to offer a 'one-size-fits-all' recommendation for the amount of sun exposure that people need to make sufficient vitamin D, as this varies according to a number of environmental, physical and personal factors.

The time required to make sufficient vitamin D is typically short and less than the amount of time needed for skin to redden and burn. Regularly going outside for a matter of minutes around the middle of the day without sunscreen should be enough. When it comes to sun exposure, little and often is best, and the more skin that is exposed, the greater the chance of making sufficient vitamin D before burning. However, people should get to know their own skin to understand how long they can spend outside before risking sunburn under different conditions.

8. Over the counter recommendations for primary prevention of vitamin D deficiency

The OTC dose of vitamin D would depend on the individual's particular requirements and should be advised by the relevant health care professional. Public Health England recommends that in the autumn and winter months (October to March) EVERYONE should consider taking a daily supplement of vitamin D. The following dose guidance should be considered:

Primary Prevention	
Age	Recommended Daily Dose
Babies up to the age of 1	340 - 400 IU (8.5 – 10 µg/mcg) Note - Children who have more than 500ml of infant formula per day do not need any additional vitamin D as infant formula is already fortified with vitamin D.
Children aged 1 + or Adults wishing to prevent deficiency who are not at particular risk, including in pregnancy.	400 IU (10 µg/mcg)
Adults who are at particular risk of developing a condition associated with lower vitamin D levels.	400-800 IU (10 - 20 µg/mcg) (If previously prescribed 20micrograms (800 units) of Vitamin D, it is acceptable to buy a 25micrograms (1,000unit) vitamin D supplement instead, if this strength is more readily available)

NB (1): Calcium supplementation is required only if dietary calcium intake remains insufficient after following dietary advice to increase this. To assess whether a patient is getting enough calcium from their diet consider using this online calcium calculator from the University of Edinburgh: <https://webapps.igc.ed.ac.uk/world/research/rheumatological/calcium-calculator/>

NB (2): Vitamin and mineral supplements are available via the healthy start scheme for pregnant women and children younger than 4 years old:

<https://www.healthystart.nhs.uk/frequently-asked-questions/vitamin-faqs/>

<https://www.gloucestershire.gov.uk/healthy-start/>

NB (3): Vegan considerations: Colecalciferol is derived from sheep wool and therefore not suitable for vegans. Ergocalciferol is derived from yeast and is therefore suitable for vegans, provided it is not encapsulated in animal gelatine. However, inconsistent data regarding persistence and bioactivity and so not recommended unless animal source of vitamin D is unacceptable.

Additional Information

A number of large-scale reviews and national guidance relating to vitamin D prescribing have been considered when forming this NHS Gloucestershire prescribing guidance. Below are extracts of particular relevance.

- NICE [guideline CG161](#) (2013) '**Falls in older people: assessing risk and prevention**'
"Vitamin D is an intervention which is NOT recommended to address falls risk factors due to insufficient or conflicting evidence, although it may result in other health benefits".

- [The Scientific Advisory Committee on Nutrition \(SACN\) review of the evidence on Vitamin D and Health \(2016\)](#) states:

"Serum 25(OH)D concentration is an indicator of exposure to vitamin D (from skin synthesis and dietary intake). In order to protect musculoskeletal health, it is recommended that the serum 25(OH)D concentration of all individuals in the UK should not fall below 25 nmol/L at any time of the year."

"Data in adults ≥ 50 y are mixed but, on balance, suggest that vitamin D supplementation does not reduce fracture risk. The evidence base on the effect of vitamin D supplementation on stress fracture risk on adults < 50 y was insufficient to draw conclusions."

Falls: "Evidence was mixed but, overall, suggested vitamin D supplementation reduces fall risk in community dwelling adults ≥ 50 y with mean baseline serum 25(OH)D concentrations across a range of values [likely due to some studies suggesting vitamin D and calcium could possibly affect calcium homeostasis, increase muscle strength, improve body sway and decrease parathyroid hormone secretion and bone resorption, leading to reduced risk of falling] . Two studies reported an increase in fall risk with vitamin D supplementation; however, doses were very high and administered annually or monthly which may produce different effects from daily supplementation at lower doses."

Additional Evidence: To ensure that the most up to date evidence was considered in forming this NHS Gloucestershire guidance, a literature search on the use of vitamin D supplementation and musculoskeletal health was conducted to identify any relevant reviews or RCTs published since the publication of the above SACN evidence review in 2016. **A review of these results showed mixed evidence and opinions and highlighted that this remains an area of ongoing debate (e.g., [JAMA 2018](#)).**

Vitamin D advice for specific patient groups:

The above SACN report informed the 2016 [Public Health England guidance](#) which states:

In spring and summer, the majority of the population get enough vitamin D through sunlight on the skin and a healthy, balanced diet.

During autumn and winter, everyone will need to rely on dietary sources of vitamin D. Since it is difficult to meet the 10 micrograms daily recommendation from consuming foods naturally containing, or fortified with vitamin D, a general public health message is that everyone should consider taking a daily vitamin D supplement in autumn and winter.

People who are at particular risk of vitamin D deficiency throughout the year should be advised to purchase over the counter (OTC) vitamin D supplementation from a pharmacy or supermarket as part of their responsibility for self-care, as NHS England guidance no longer supports NHS prescribing for deficiency prevention. These at-risk groups are:

- People whose skin has little or no exposure to the sun, like those in institutions such as care homes, or who always cover their skin when outside, risk vitamin D deficiency and need to take a supplement throughout the year.
- Ethnic minority groups with dark skin, from African, Afro-Caribbean and South Asian backgrounds, may not get enough vitamin D from sunlight in the summer and therefore should consider taking a supplement all year round.

This NHS Gloucestershire vitamin D [patient information leaflet](#) may be helpful to give to patients to support this advice.

NICE guidance PH56 (2014) '**Vitamin D: supplement use in specific population groups**'. This guidance includes recommendations on how to:

- [increase access to vitamin D supplements](#) including those provided as part of the Healthy Start supplements scheme
- [increase local availability of vitamin D supplements for at-risk groups](#)
- [ensure health professionals recommend vitamin D supplements](#)
- [raise awareness of the importance of vitamin D supplements among the local population](#)
- [ensure a consistent multiagency approach](#)
- [monitor and evaluate the provision and uptake of vitamin D supplements](#)

Management of vitamin D deficiency or insufficiency:

NICE vitamin D deficiency in adults (2022). **Scenario: Management of vitamin D deficiency or insufficiency.** This guidance provides an update on what dose should be given to adults over the age of 18 with vitamin D deficiency who don't first require higher dose loading or those who have had loading treatment and need to maintain their levels.

<https://cks.nice.org.uk/topics/vitamin-d-deficiency-in-adults/management/management/>

Cochrane evidence relating to vitamin D supplementation for chronic liver diseases:

https://www.cochrane.org/CD011564/LIVER_vitamin-d-supplementation-chronic-liver-diseases