

## NHS GGC – Vitamin D Supplementation Frequently asked Questions

In February 2012, the UK Departments of Health issued advice on use of vitamin D supplements to at risk groups. This advice can be found [here](#). NICE published further guidance in November 2014 which aimed to increase supplement use to prevent vitamin D deficiency among at-risk groups identified in the Department of Health advice. NICE guidance can be found [here](#).

NHSGGC previously published 2 guidelines to aid clinicians in the management of patients who are deficient in vitamin D, who may get insufficient vitamin D from sunlight or diet or have osteoporosis. These two guidelines have now been replaced by a single NHSGGC Osteoporosis Strategy Group Clinical Guideline entitled **Vitamin D: Prevention and Treatment of Deficiency in Adults** which is available [here](#).

The main aim of the guideline is to aid:

- the identification of patients in which there is a robust evidence base for increasing vitamin D levels
- decision making around the most appropriate method of increasing their vitamin D e.g. through increased sun exposure, dietary sources, over the counter vitamin D supplements or prescribed vitamin D supplements

Following publication of the previous guidelines, a number of queries were received from clinical staff around practical application. The Prescribing Management Group: Primary Care reviewed these queries and, having sought consensus from local experts and the authors published a frequently asked questions document and patient information leaflet to offer practical advice for prescribers.

This document is an update of the previous FAQs reflecting any changes in advice included in the new protocol since publication of the previous guidelines.

It should be noted that the terms Vitamin D and colecalciferol are used interchangeably throughout the document.

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## 1. Which products/formulations containing vitamin D are included in the NHSGGC Formulary?

**CALCIUM & VITAMIN D** – Preferred list - for patients with osteoporosis unless contra-indicated, prescribe calcium and vitamin D (tablet or chewable formulations) supplements. The current preferred calcium and vitamin D preparations in Primary Care are;

- **Accrete D3 tablets** (twice daily) and
- **TheiCal-D3 chewable tablets** (once daily).

N.B - effervescent tablets, sachets and caplets are on the total formulary for use when tablets or chewable formulations are not tolerated.

**COLECALCIFEROL** - In the absence of osteoporosis prescribe colecalciferol alone.

Colecalciferol is included in the NHSGGC total formulary. **Restrictions:** Excludes Fultium D3 3,200 unit strength. Invita D3 oral ampoules are restricted to use only when other oral vitamin D preparations are not suitable.

Vitamin D supplementation usually falls into two broad categories, low dose supplementation and high dose supplementation. Low dose is considered to be doses of 1,000 units daily or less and is used most often for supplementation in insufficiency states. Generic prescribing of colecalciferol 800 unit capsules is the preferred method of prescribing low dose supplementation as this formulation is currently included in the Scottish Drug Tariff Part 7. High dose vitamin D is considered to be doses in excess of 20,000 units per week. High dose vitamin D is more likely to be used in deficiency states leading to morbidity. [Back to main menu.](#)

## 2. Why is colecalciferol not included in the preferred list on the formulary?

The inclusion of colecalciferol on the preferred list has been considered by The Prescribing Management Group: Primary Care. The consensus was that preferred treatment option would be dietary advice and/or OTC purchase of supplements as required. Analysis of prescribing data shows that only a very small minority of practices have significant volume of colecalciferol prescribing. If individual practices note a high volume of colecalciferol is affecting their preferred list adherence, prescribing audits of colecalciferol prescribing against guidance can be submitted to [les.prescribingteam@ggc.scot.nhs.uk](mailto:les.prescribingteam@ggc.scot.nhs.uk) allowing adjustment to be considered. [Back to main menu.](#)

## 3. What licensed vitamin D preparations are available?

See Appendix 1 and 3a – 3c.

Vitamin D supplementation usually falls into two broad categories, low dose supplementation and high dose supplementation. Low dose is considered to be doses of 1,000 units daily or less and is used most often for supplementation in insufficiency states. High dose vitamin D is considered to be doses in excess of 20,000 units per week. High dose vitamin D is more likely to be used in deficiency states leading to morbidity. [Back to main menu.](#)

### 3a) What are the available products for low dose supplementation? – (Also see Appendix 1)

There are currently no licensed single 400 unit (10micrograms) solid colecalciferol preparations available. Refer to the table in Appendix 1 for licensed liquid formulations which can deliver this dose.

A number of licensed preparations containing 800 units (20micrograms) of colecalciferol are available as detailed in Appendix 1. 800-1000 units is an appropriate daily dose for patients with

osteoporosis who have contra-indications to calcium. It should be noted, however, that these doses are above the recommended dose of Vitamin D for adults who are considered to be at risk of vitamin D deficiency (400 units per day) as outlined in guidance issued from the Chief Medical Officer for Scotland in February 2012.

Over the counter preparations are inexpensive and are widely available from pharmacies, supermarkets and health food shops. For eligible patients (see question 7 for more details), consider Healthy Start vitamins via the coupon scheme. [Back to main menu.](#)

### **3b) What are the available products for High Dose Supplementation? (Also see Appendix 1)**

There are a number of high dose licensed vitamin D preparations available. These can be used to provide loading doses of up to 300,000 units using different dosing regimes. A cost effective way to deliver a 300,000 unit loading dose is using Stexerol<sup>®</sup> D3 25,000 unit tablets. A pack of 12 can be used to deliver the entire dose prescribed as 2 tablets weekly over a six week period (as per SPC). Thorens<sup>®</sup> 25,000 units/2.5ml drops is a cost effective alternative if a liquid preparation is required. [Back to main menu.](#)

### **3c) When is an unlicensed vitamin D preparations required?**

Until recently there were no licensed high dose vitamin D preparations available. There are now a number of products available and use of unlicensed “specials” formulations should rarely be indicated. There are a number of unlicensed preparations available on the GP prescribing systems so there is a risk of GPs selecting these without realising that there are equivalent licensed products available. Use of unlicensed “specials” should not be used where there is an alternative licensed product available.

In October 2012 ergocalciferol was removed from the NHS GGC Formulary. ADTC Formulary and New Drugs Committee recognised that low levels of use and unavailability of licensed preparations rendered this product less suitable for general use. It was acknowledged however, that appropriate use of unlicensed preparations might continue in secondary care under specialist supervision. [Back to main menu.](#)

### **4. The CMO recommends that all pregnant women should take a daily vitamin D supplement. Should I issue prescriptions for vitamin D supplements to all pregnant patients?**

No.

#### **Explanation**

At the time of publication there is no licensed solid single vitamin D supplement available for supplementation in pregnant women.

A number of licensed liquid formulations are now available which can be used in pregnancy. Although many formulations are licensed and suitable for use in pregnancy, inexpensive multivitamin products tailored for pregnancy are widely available for purchase.

First line recommendation – Women eligible for Healthy Start vouchers can get free supplements containing vitamin D (**Healthy Start women’s vitamin tablets** contain 400 units of vitamin D, 70 milligrams of vitamin C and 400 micrograms of folic acid). For more information on Healthy start please click [here](#).

Second line recommendation For pregnant and breastfeeding women who are not eligible for free vitamins via the Healthy Start coupon scheme, Healthy Start women’s vitamin tablets can be purchased over the counter. There are many other vitamin supplements available that are

specially tailored for pregnancy (containing 400 units of vitamin D) and these are widely available to buy in pharmacies and supermarkets.

Third line recommendation - A number of licensed liquid formulations are now available which can be used in pregnancy (see Appendix 1). Where a GP considers it necessary to prescribe for an individual patient, licensed, prescribable colecalciferol supplements are available. It should be noted, however, that other vitamin supplementation is also recommended during pregnancy and these would need to be purchased or prescribed separately. [Back to main menu](#).

**5. The CMO recommendations state all infants and young children aged 6 months to 5 years of age take a daily vitamin D supplement. Should I issue prescriptions for vitamin D supplements to all children in this group?**

No.

**Explanation**

Children who are having 500ml of formula milk per day do not need additional vitamin D supplementation.

**For children requiring supplementation:**

First line recommendation – some children are eligible for Healthy Start vouchers and they qualify for free vitamin supplements from 6 months until their fourth birthday. The daily dose of five drops contains: 300 units 7.5 micrograms of vitamin D3, 233 micrograms of vitamin A and 20 milligrams of vitamin C. Healthy Start vitamins are recommended for eligible children from six months old. More advice on healthy start including eligibility is available [here](#).

Second line recommendation – Not all children are eligible for Healthy Start vouchers. For children who are not eligible for free vitamins via the Healthy Start coupon scheme, supplements can be purchased over the counter if needed. A wide range of inexpensive palatable and chewable children's vitamin supplements containing appropriate doses of vitamin D are available over the counter at pharmacies and supermarkets.

Third line recommendation – where clinicians consider that prescribing Vitamin D is appropriate for at risk children, Dalivit<sup>®</sup> multivitamin drops are included in the [NHSGGC Paediatric Formulary](#) and contain 400 units of ergocalciferol. N.B Healthy Start vitamins should not be prescribed on GP10.

Breastfed infants may need to receive drops containing vitamin D from one month of age if their mother has not taken vitamin D supplements throughout pregnancy. [Back to main menu](#).

**6. The Vitamin D guidelines for adults have changed but is there an update for children?**

The NHSGGC Vitamin D: Prevention and Treatment of Deficiency in Adults guidance is intended only for adults. Royal College of Paediatrics and Child Health (RCPCH) Guide for Vitamin D in Childhood available [here](#). [Back to main menu](#).

**7. The CMO issued guidance detailing high risk groups who should take a daily vitamin D supplement. Should all patients in these groups be treated regardless of symptoms and without checking vitamin D levels?**

No.

**Explanation**

If, as part of a routine review, a patient in one of these groups is identified then daily supplements would be indicated. This would be regardless of symptoms. There is **no need to check vitamin D levels**. Vitamin D 400 - 800units daily (as detailed in the table below) would be recommended for these patients while they remain in this at-risk category. If patient circumstances change then

treatment can be reviewed. Vitamin D 400-800units daily is a physiological dose and there is **no need to monitor** vitamin D levels.

N.B Treatment of very frail people with vitamin D should be guided by individual circumstances and co-morbidities and need not follow guideline recommendations.

At risk group as per <a href="#">NHSGGC Vitamin D Guidance</a>	Treatment advice
Patients with vitamin D < 30nmol/l or 30 - 50nmol/l and symptoms of osteomalacia or osteoporosis present	See Flowchart 2 in <a href="#">NHSGGC Vitamin D Guidance</a>
Pregnant or breastfeeding women	See Question 2 above
Housebound patients aged 65 years and older*	<p>For patients with osteoporosis unless contra-indicated, prescribe calcium and vitamin D supplementation from NHSGGC Formulary preferred list</p> <p>In the absence of osteoporosis prescribed colecalciferol 400 units daily may be indicated – see question 1 and Appendix 1 for options.</p>
Other high-risk asymptomatic patient groups*	Give advice on regular sun exposure, dietary sources of vitamin D and over the counter vitamin D supplements (particularly in the winter).

\* The CMO recommends that all adults over 65 are at risk of vitamin D deficiency regardless of whether they have low sun exposure or not however this does not mean that supplementation is indicated in all over 65s. GPs should not routinely prescribe without first considering dietary advice and /or purchase of vitamin D. [Back to main menu.](#)

**8. Previous guidance stated - Patients with a history of cardiovascular disease or cerebrovascular disease should be commenced on colecalciferol 800 units once daily rather than a combined calcium and vitamin D preparation.**

**8a) Does this guidance still stand?**

No.

#### Explanation

Despite previously published concerns, there has been no change in the licensing of combined calcium and vitamin D supplements in patients with cardiovascular or cerebrovascular disease and there is no need to review your practice population on combined supplements. The MHRA statement can be found by clicking here [MHRA Oct 2011](#). Dietary calcium intake should be optimised if possible particularly for patients on bisphosphonates. [Back to main menu.](#)

**8b) Should patients previously switched from combined calcium and vitamin D preparations due to cardiovascular risks be switched back?**

It may not be necessary to change to a combination product if dietary intake is sufficient, particularly in patients who are not on bisphosphonates but this should be considered on an individual patient basis. [Back to main menu.](#)

**9. Where patients present with symptoms suggestive of osteomalacia, what tests should be done?**

- PTH
- ALP
- Calcium
- Vitamin D

All tests can be done in Primary Care including PTH (only lavender topped EDTA specimens will be accepted for PTH analysis). Please ensure that the above are tested and reviewed in patients presenting with symptoms of osteomalacia.

Vitamin D levels in isolation are not helpful as the prime aim of giving Vitamin D to patients is to prevent osteomalacia (see explanation in Q7). [Back to main menu.](#)

**10. If vitamin D levels have been measured in groups not covered in these guidelines and are found to be insufficient (< 30nmol/l or 30-50nmol/l), is vitamin D treatment always indicated?**

No.

**Explanation**

Asymptomatic patients should not have vitamin D levels measured. Symptomatic patients should not have vitamin D measured in isolation (see question 9). Local expert consensus was that as the prime aim in giving vitamin D to our patients is to prevent and treat osteomalacia, vitamin D supplementation is only necessary in patients with, or at risk of, osteomalacia.

This means that (other than the at risk groups identified in the [VITAMIN D Prevention and Treatment of Deficiency in Adults guidance](#)) vitamin D treatment is only recommended in the following patient groups:

- those with previous fragility fracture
- those with documented osteoporosis (supplement with calcium also)
- those treated with antiresorptive medication for bone disease
- those with symptoms suggestive of vitamin D deficiency
- patients with malabsorption such as coeliac, pancreatic insufficiency or chronic liver disease
- patients with chronic kidney disease – discuss with specialist

Where patients are judged not to be at risk of osteomalacia as detailed above, provide reassurance and give advice on maintaining adequate vitamin D levels through safe sunlight exposure and diet. NHS GGC patient information leaflet on vitamin D supplementation could also be provided. [Back to main menu.](#)

**11. If a random Vitamin D is measured outwith the context of flowchart 2 in the vitamin D guidance, and the level is < 30nmol/l should treatment be prescribed by the GP?**

This is out with the remit of this guidance as the guideline advises not to test in these patients. If, despite the guidance not to test, a clinician has made a decision to test they would require to interpret and make a treatment decision - this may involve seeking patient specific advice from a specialist if need be and this would require to be done on a patient by patient basis. Prescribers are encouraged to avoid unnecessary random testing. [Back to main menu.](#)

## 12. What vitamin D formulations are suitable for people with special dietary requirements?

For patients who have a medical, moral or ethical reason for requiring a kosher, halal or non-animal sourced product, information on suitable products can be found [here](#). [Back to main menu](#)

## 13. Who should receive vitamin D injections and should this be done in primary care?

Only patients with osteomalacia who have been **diagnosed with malabsorption syndromes** – these patients should be under the care of a secondary care specialist. The injection can be given in primary care if it has been recommended as the most appropriate option for an individual patient by secondary care.

### Explanation

Oral administration of vitamin D is recommended in NHS GGC. While intramuscular administration results in 100% adherence, there are important factors to consider before usage, including lack of availability of licensed preparations, unpredictable bioavailability, slower onset of repletion and the additional administration burden in comparison to oral preparations. [Back to main menu](#).

## 14. How should I respond to a request from a secondary care specialist asking me to prescribe vitamin D supplements out with NHSGGC Guidance?

Where requests lie out with the NHSGGC prescribing guidance you may want to discuss the rationale with the requesting clinician.

### Explanation

The prime aim in giving vitamin D to our patients is to prevent osteomalacia. Diverse health problems ranging from MS to heart disease, from TB to cancers at various sites have been ASSOCIATED with low levels of vitamin D and with higher latitude BUT there is NO or INSUFFICIENT evidence to support a causal link between low vitamin D and any of these problems; furthermore there is no evidence that giving vitamin D alters the incidence of any of these conditions. [Back to main menu](#).

## 15. What information can I give to my “worried well” patients?

NHS GGC prescribing team has produced a patient information leaflet to support this FAQ document. This can be handed to patients to explain who needs vitamin D supplements and which supplements are right for them.

For further information please contact [prescribing@ggc.scot.nhs.uk](mailto:prescribing@ggc.scot.nhs.uk). [Back to main menu](#).

## Appendix 1 - Currently licensed vitamin D preparations included in NHSGGC formulary

Preparation	Dose	Pack size	Cost
TheiCal D <sub>3</sub> <sup>®</sup> Chewable tablets (equivalent to 1000mg calcium and 880 units of vitamin D)	One daily	30	£2.95 <sup>2</sup>
Accrete D <sub>3</sub> <sup>®</sup> (swallow whole) tablets (equivalent to 600mg calcium and 400 units of vitamin D)	One twice daily	60	£2.95 <sup>2</sup>
Adcal D <sub>3</sub> <sup>®</sup> Chewable tablets (equivalent to 600mg calcium and 400 units of vitamin D)	One twice daily	56	£3.65 <sup>2</sup>
Calcichew D <sub>3</sub> Forte <sup>®</sup> chewable tablets (equivalent to 500mg calcium and 400 units of vitamin D)	One twice daily	60	£4.24 <sup>2</sup>
Adcal D3 caplets (equivalent to 300mg calcium and 200 units of vitamin D)	Two twice daily	112	£2.95 <sup>2</sup>
Colecalciferol 10,000 units per ml drops (Thorens <sup>®</sup> )*	Depends on indication 1 drop = 200 units	10 mls	£5.85 <sup>2</sup>
Colecalciferol 2740 units per ml drops (Fultium D <sub>3</sub> <sup>®</sup> )*	Depends on indication 3 drops = 200 units	25 mls	£10.70 <sup>2</sup>
Colecalciferol 20 micrograms (800 unit) capsules (Invita D <sub>3</sub> <sup>®</sup> )**	Depends on indication	28	£2.50 <sup>2</sup>
Colecalciferol 20 micrograms (800 unit) capsules (Aviticol <sup>®</sup> , Desunin <sup>®</sup> , Fultium D <sub>3</sub> <sup>®</sup> , and generic)**	Depends on indication	30	£3.60 <sup>1,2</sup>
Colecalciferol 20 micrograms (800 unit) capsules (Strivit D <sub>3</sub> <sup>®</sup> )**	Depends on indication	30	£2.34 <sup>2</sup>
Colecalciferol 25 micrograms (1000 unit) capsules ( Aviticol <sup>®</sup> )**	Depends on indication	30	£2.34 <sup>2</sup>
Colecalciferol 25 micrograms (1000 unit) tablets (Stexerol D <sub>3</sub> <sup>®</sup> )**	Depends on indication	28	£2.95 <sup>2</sup>
Colecalciferol 100 microgram (4000 unit) tablets (Desunin <sup>®</sup> )**	Depends on indication	70	£15.90 <sup>2</sup>
Colecalciferol 500 micrograms (20,000 unit) capsules (Fultium D <sub>3</sub> <sup>®</sup> )	Depends on indication	30	£29.00 <sup>2</sup>
Colecalciferol 500 micrograms (20,000 unit) capsules( Aviticol <sup>®</sup> )	Depends on indication	30	£20.25 <sup>2</sup>
Colecalciferol 500 micrograms (20,000 unit) capsules (Plenachol <sup>®</sup> )	Depends on indication	10	£9.00 <sup>2</sup>
Colecalciferol 625 micrograms (25,000 unit) tablets(Stexerol D <sub>3</sub> <sup>®</sup> )	Depends on indication	12	£17.00 <sup>2</sup>
Colecalciferol 625 micrograms (25,000 unit) / 2.5mls drops (Thorens <sup>®</sup> )	Depends on indication	10mls	£5.85 <sup>2</sup>
Colecalciferol 1000 micrograms (40,000 unit) capsules (Planechol <sup>®</sup> )	Depends on indication	10	£15.00 <sup>2</sup>
Dalivit <sup>®</sup> (multivitamin preparation containing 10 microgram (400 unit)	Depends on indication	25ml	£6.19 <sup>3</sup>

Prices from BNF Online<sup>1</sup>, Scottish Drug Tariff<sup>2</sup> and BNF for children online<sup>3</sup> (accessed 15<sup>th</sup>. Sept. 2017)

\*Licensed in pregnancy for prevention and treatment of deficiency

\*\* Licensed in pregnancy for deficiency only