

**DERBYSHIRE JOINT AREA PRESCRIBING COMMITTEE
(JAPC)**

**GUIDANCE ON THE PREVENTION, DIAGNOSIS AND MANAGEMENT OF
VITAMIN D DEFICIENCY IN PRIMARY CARE**

JAPC continues to support the prescribing of high-dose vitamin D, usually as a short-course treatment, for the correction of diagnosed deficiency for adults and children.

For all other vitamin D requirements, the patient is encouraged to make lifestyle changes such as increasing dietary intake of vitamin D, increasing safe sun exposure and to purchase a supplement over the counter from a local pharmacy, health food shop or supermarket.

See [position statement for self-care with vitamin D](#) for further advice
Local [Patient information leaflet \(available in several languages\)](#)

Key message

- Prescribers should note local variation of definition. NICE classify low vitamin D as <25nmol/litre of 25 hydroxyvitamin D whereas Derbyshire use **<30nmol/litre** as definition of vitamin D deficiency by local endocrinologist agreement.
- Almost a fifth of the UK population is estimated to have a low vitamin D status. For this reason:
 - Routine screening of vitamin D blood levels is not recommended.
 - Lifestyle advice and use of over-the-counter vitamin D preparations are recommended for prevention. (See appendix 1 for patient information). The government [Healthy Start](#) Scheme offers free vitamin supplements (containing vitamin D) to eligible patients. Commercial vitamin supplements are available to buy for those people not eligible for the Healthy Start Scheme. (see appendix 2)

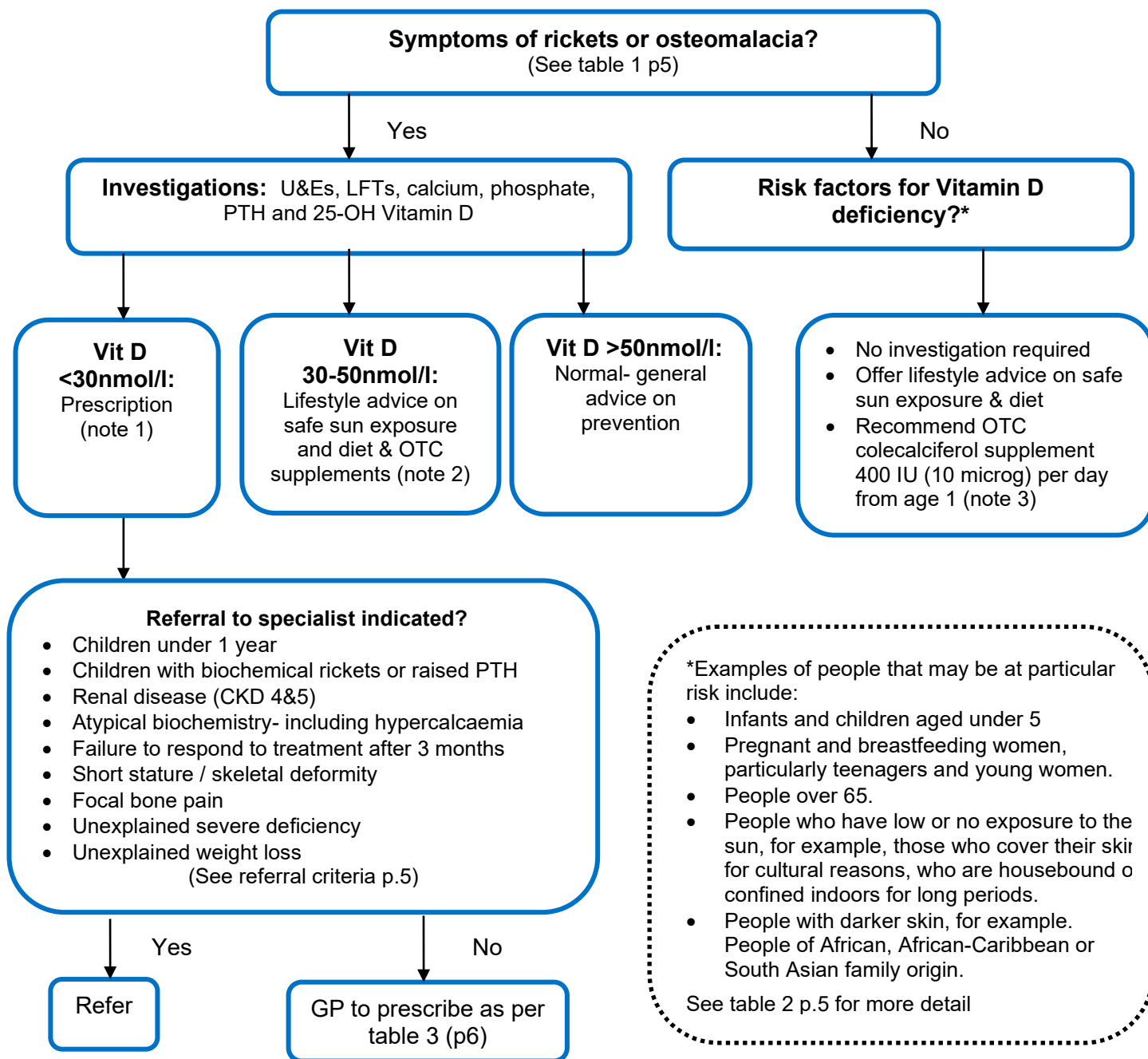
Prescribing of vitamin D preparations should be reserved for treatment of patients with symptoms AND diagnosed deficiency, usually as a short course of treatment.

- Vitamin D products should be prescribed by its brand name so that the most cost-effective licenced product is dispensed. Only use liquid options if capsules or tablets are not suitable. Use a suitable licensed alternative if preferred products are not available.

	Adult	Children
Local formulary choice for treatment of deficiency	Loading regime totalling approx. 300,000 IU Daily regime Rapid replacement for symptomatic patients and to aid compliance Strivit D3 20,000 IU one <u>daily</u> for <u>15 days</u> <u>(off-label use)</u>	Thorens 10,000 unit/ml oral drops 1-5 months: 3,000 IU (15 drops = 0.3ml) daily 6 months- 11 years: 6,000 IU (30 drops = 0.6ml) daily 12-17 years: 10,000 IU daily (50 drops = 1 ml) daily Course length 8-12 weeks
	Weekly regime InVita D3 50,000 IU once <u>weekly</u> for <u>6 weeks</u>	
monitoring following treatment course	check calcium, phosphate & ALP one month after completing loading regimen. Only repeat vitamin D level if symptoms persist or malabsorption, and where poor compliance is suspected.	check calcium, phosphate, ALP and PTH at 1 month (or 1 week if symptomatic hypocalcaemia. Repeat 3 monthly until treatment stopped.)

Algorithm for diagnosis and management of Vitamin D deficiency in primary care

Population screening by measuring Vitamin D levels is unnecessary (see section on diagnosis for more information).



Note 1: Cut off for high dose vitamin D prescription

Symptomatic deficiency is unlikely when 25(OH)D is greater than 30 nmol/l but there is no clear threshold. If symptoms are strongly suspected to be vitamin D related it is reasonable to offer high dose treatment when levels are between 30 and 35 nmol/l.

Note 2: Prescription of vitamin D occasionally indicated with Specialist advice (e.g. in preparation for parenteral treatment of osteoporosis)

Note 3: Daily requirements are 8.5-10 microg (340 IU- 400 IU) per day for breastfed babies from birth to 1 year of age. Babies receiving more than 500ml infant formula per day do not require supplements.

Diagnosis and management of Vitamin D deficiency in primary care

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1. Introduction

Vitamin D is essential for skeletal growth and bone health. Severe deficiency can result in rickets (among children) and osteomalacia (among children and adults). It is estimated that almost a fifth of the UK population are deficient in vitamin D (< 25nmol/litre).

The document provides information on vitamin D- including diagnosis and management of deficiency, and advice for patients with insufficiency.

What is Vitamin D?

- Vitamin D is a group of fat-soluble vitamins that is essential for bone formation in all age groups. The two main forms are D₂ (ergocalciferol), predominantly from plants, and D₃ (colecalciferol), mainly from animal sources. Both have similar actions. Vitamin D is activated in the liver to 25-hydroxycolecalciferol and then in the kidney to 1,25-dihydroxycolecalciferol (active vitamin D). The most well-established action of vitamin D is to promote calcium absorption by the GI tract.
- 90% of our daily vitamin requirement is obtained by the action of UVB sunlight on the skin (only during April to September in the United Kingdom). Between October and early March we do not obtain any vitamin D from the action of sunlight on the skin.
- 10% is obtained through diet such as oily fish (sardines, salmon), liver, egg yolks, fortified margarine and fortified breakfast cereals.

2. Diagnosis:

Vitamin D deficiency is best assessed by measurement of serum 25-OH vitamin D. Measurement of other vitamin D metabolites or sub-fractions adds nothing further and is not recommended.

NICE recommends that health professionals should NOT routinely test people's vitamin D status unless:

- they have symptoms of deficiency - see table 1.
- they are considered to be at particular high risk of deficiency (for example, they have very low exposure to sunlight) – see table 2.
- there is a clinical reason to do so (for example, they have osteomalacia or have had a fall).

Table 1: Clinical features of Vitamin D deficiency

Children	Adults
<ul style="list-style-type: none">• Poor growth, skull softening with frontal bossing and delayed fontanelle closure• Muscular weakness (e.g. difficulty climbing stairs, waddling gait, difficulty rising from a chair or delayed walking)• Tender or swollen joints, classically the wrists or costochondral junctions• Deformed bones (progressive bow legs or knock knees)• Bone pain (for >3 months) or tenderness• Muscle pain or proximal myopathy• Delayed eruption of teeth, or enamel hypoplasia• Carpopedal spasm, tetany, seizures or irritability due to hypocalcaemia & requiring urgent treatment• Infantile cardiomyopathy	<ul style="list-style-type: none">• Gradual onset & persistent bone pain without preceding mechanical injury (frequently in back, ribs or lower limb)• Fragility fracture• Proximal muscle weakness (difficulty with stairs, getting up off the floor or standing after sitting in a low chair, waddling gait) or muscle pain• Carpopedal spasm, tetany, seizures or irritability due to hypocalcaemia & requiring urgent treatment

GPs should consider a diagnosis of vitamin D deficiency in a patient with risk factors (table 2) who presents with chronic musculoskeletal (MSK) pain.

NB. The relationship between chronic MSK pain and vitamin D deficiency is not clear and treatment does not necessarily resolve symptoms.

Table 2: Examples of risk factors for Vitamin D deficiency

Age Groups	Poor exposure to UVB light	Poor dietary intake	Metabolic risk
<ul style="list-style-type: none"> • ≥65years • <5 years • Pregnant women • Breastfeeding women • Children & young people with family members with proven vitamin D deficiency 	<ul style="list-style-type: none"> • Pigmented skin • Occlusive garments • Housebound • Use of sun blocking creams • Disabled & young people who spend very little time outdoors 	<ul style="list-style-type: none"> • Vegetarian or fish-free diet • Malabsorption including post bariatric surgery • Cholestatic liver disease • Breast fed infants • Children & young people with diet low in calcium or with generally poor diet 	<ul style="list-style-type: none"> • Elderly (reduced synthesis) • Liver disease (reduced stores) • Renal disease (reduced synthesis of active vitamin D) • Obese (excess storage in fat) • Drugs: Rifampicin, Antiretrovirals, anticonvulsants, cholestyramine, glucocorticoids

Investigations (to be arranged by primary care):

- U&Es, LFTs, calcium, phosphate and 25-OH Vitamin D
- PTH should be measured when the adjusted calcium is significantly low (<2.15)
- Children: In addition, albumin & PTH should be measured routinely in children (refer if PTH high)
- The findings in osteomalacia are a low/ normal calcium, low/normal phosphate, raised alkaline phosphatase, low vitamin D and raised PTH (secondary hyperparathyroidism)

Vitamin D levels are expressed as nmol/L (ng/ml x 2.5 = nmol/L).

The definition of vitamin D deficiency and insufficiency is based on blood measurements of 25-OH vitamin D:

- >50 nmol/l Satisfactory Vitamin D levels
- 30-50 nmol/l Vitamin D insufficiency
- <30 nmol/l **Vitamin D deficiency**

Note: In patients with a Vitamin D level >30 nmol/l, symptoms are unlikely to be due to Vitamin D deficiency. However, clinicians should use clinical judgment when considering the diagnosis and treatment plan for an individual patient.

Referral

The following patients should be referred to secondary care for further investigation:

- Children under 1 year
- Children with biochemical rickets or raised PTH
- Renal disease (CKD 4&5)
- Atypical biochemistry- including hypercalcaemia
- Failure to respond to treatment after 3 months despite good adherence
- Short stature / skeletal deformity
- Focal bone pain
- Unexplained severe deficiency
- Unexplained weight loss
- Children with repeated low serum calcium concentration with or without symptoms (irritability, brisk reflexes, tetany, seizures or other neurological abnormalities)
 - symptomatic: requires immediate referral to A&E if outpatient
 - asymptomatic: discuss treatment with paediatrician
- Children with underlying complex medical disorders (e.g. liver disease, intestinal malabsorption)
- Children with persisting low serum phosphate or low/high alkaline phosphatase

3. Management of Vitamin D deficiency (Vitamin D level <30nmol/l)

Patients meeting the above criteria should be managed according to the following principles;

- For the purposes of this document we define ‘treatment’ to be high dose therapy to reverse vitamin D deficiency. This is different from lower doses used as long term daily ‘supplementation’ or as ‘maintenance’ following high dose treatment.
- Available evidence suggests that oral colecalciferol offers greater improvements in serum 25-OH Vitamin D compared with oral ergocalciferol or intramuscular preparations at equivalent doses. As such, oral colecalciferol is the first line treatment option.
- Symptomatic patients need high dose colecalciferol treatment to reverse deficiency and eradicate symptoms. Asymptomatic patients should be advised to purchase lower doses of colecalciferol of 800units (20microgram) and deficiency will gradually be resolved.
- When indicated, a single course of high dose therapy should be followed by lifestyle advice and maintenance with lower dose supplementation bought over the counter.
- Alfacalcidol and calcitriol are completely inappropriate for treatment of vitamin D deficiency outside of CKD 4-5, due to high risk of toxicity.
- Unlicensed liquid “specials” of vitamin D should NOT be routinely prescribed as cost effective alternatives are available.

See SPS advice on vitamin D products for patients with [peanut or soya allergy/](#) [vegetarian or vegan](#)

Table 3: Treatment / Maintenance Dosing for Vitamin D

Adults					
Drug	Colecalciferol (oral)				
Treatment Dose	A total of approximately 300,000 units given either as weekly or daily split doses. Specialist may advice higher dose/ more rapid replacement under special circumstances e.g. poor absorption anticipated or suspected poor compliance Where a treatment course is needed prescribe as acute medication, not to be put on repeat prescription.				
	<table border="1"> <thead> <tr> <th>Daily regimen</th> <th>Weekly regimen</th> </tr> </thead> <tbody> <tr> <td>Rapid replacement (locally agreed pragmatic approach for compliance and resolving symptoms, off-label use) 20,000 units daily for 15 days Preferred brand- Strivit D3 20,000 unit caps (Contains gelatine) If liquid necessary: Invita D3 25,000 unit/ml oral solution in 1ml single use ampoules*- one daily for 12 days (off-label use)</td> <td>50,000 units weekly for 6 weeks Preferred brand- Invita D3 50,000 unit caps (Contains gelatin; gelatin in capsule is Kosher and Halal) Or Invita D3 50,000 unit/ml oral solution in 1ml single use ampoules* one weekly for 6 weeks *Snap and squeeze single use ampoules; Can be mixed with food e.g. yogurt; Gelatin free- suitable for vegetarians</td> </tr> </tbody> </table>	Daily regimen	Weekly regimen	Rapid replacement (locally agreed pragmatic approach for compliance and resolving symptoms, off-label use) 20,000 units daily for 15 days Preferred brand- Strivit D3 20,000 unit caps (Contains gelatine) If liquid necessary: Invita D3 25,000 unit/ml oral solution in 1ml single use ampoules*- one daily for 12 days (off-label use)	50,000 units weekly for 6 weeks Preferred brand- Invita D3 50,000 unit caps (Contains gelatin; gelatin in capsule is Kosher and Halal) Or Invita D3 50,000 unit/ml oral solution in 1ml single use ampoules* one weekly for 6 weeks *Snap and squeeze single use ampoules; Can be mixed with food e.g. yogurt; Gelatin free- suitable for vegetarians
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Treatment in Pregnancy	SPS suggests a safe upper limit of 4,000units colecalciferol daily for pregnant women, however, the optimal dose to correct vitamin D deficiency safely in pregnancy is not clear from the available evidence and there is currently no UK guidance on managing vitamin D deficiency in pregnancy. UHDBFT recommends Fultium D3 3,200iu daily for 90 days for the treatment of vitamin D deficiency. Patients are advised to continue maintenance dose of 800iu daily (self-care) thereafter.				

Monitoring	one month after completing the loading regimen- Calcium, phosphate, ALP. Repeat vitamin D levels only if symptoms persist or malabsorption, and where poor compliance with medication is suspected.
Follow up	No further monitoring or follow up needed.
Maintenance therapy (This can be used as initial treatment in asymptomatic individuals)	Patients who continue to be at risk following deficiency correction should be encouraged to make lifestyle changes such as increasing dietary intake of vitamin D, increasing safe sun exposure, and to purchase OTC supplement containing colecalciferol 800units (20microg) daily from their local pharmacy, health food shop or supermarket. <i>Note preparations containing 1000 units (25 micrograms) are considerably cheaper to purchase than those containing 400 units (10 micrograms) or 800 units (20 micrograms) and are suitable for maintenance.</i>
Long term monitoring	No routine monitoring or rechecking of serum 25OHD levels is needed whilst on maintenance therapy. Recheck biochemistry if symptoms return or malabsorption/ poor compliance suspected.

CHILDREN	
Drug	Colecalciferol (oral)
Treatment Dose	Royal Osteoporosis Society recommendations <ul style="list-style-type: none"> • 1 - 5 months: 3,000units (15 drops = 0.3ml) daily for 8-12 weeks • 6 months – 11 years: 6000units (30 drops = 0.6ml) daily for 8-12 weeks • 12 – 17 years: 10,000units (50 drops = 1ml) daily for 8-12 weeks Specialist may advice more rapid replacement e.g. if compliance is a concern.
Preferred formulary choice	If liquid is needed consider Thorens 10,000 unit/ml Oral Drops (10ml dropper bottle; 1ml= 50 drops, 1 drop =200units; 5 drops=1000units) Note-treatment doses above for the licensed preparation are used off-license In children, Thorens can be mixed with a small amount of children's foods, yogurt, milk, cheese or other dairy products. The parents should be warned not to mix Thorens into a bottle of milk or container of soft foods in case the child does not consume the whole portion, and does not receive the full dose. The parents should ensure that their child takes the entire dose. In children who are not breast-feeding, the prescribed dose should be administered with a meal.
Monitoring	<ul style="list-style-type: none"> • Ensure dietary factors improved. • 1 month (or 1 week if symptomatic hypocalcaemia): calcium, phosphate, ALP and PTH. Repeat 3 monthly until treatment stopped. • If ALP does not improve, check compliance • Where treatment continues >6 months, check early morning urine calcium:creatinine Note: If a child's symptoms/signs have not improved despite a satisfactory 25(OH)D concentration, they are unlikely to be related to vitamin D deficiency.
Follow up	Review and investigate family members. Give prevention advice as a minimum.
Maintenance therapy (This can be used as initial treatment in asymptomatic individuals)	Patients who continue to be at risk following deficiency correction, should be encouraged to make lifestyle changes such as increasing dietary intake of vitamin D, increasing safe sun exposure and to take colecalciferol supplement 400-600 units (10-16microg) daily long term. Healthy Start vitamins, Abidec or Dalivit vitamin drops are recommended. Only Children up to the age of 4 years who are entitled through the Healthy Start scheme will continue to receive vitamin supplements through this national scheme. Parents of children >4 years in age (and children not entitled through the Healthy Start scheme) are advised to purchase a Vitamin D containing supplement for maintenance treatment (400 – 600 units daily). Babies that are receiving more than 500ml infant formula a day do not require vitamin D supplementation.
Long term monitoring	No routine monitoring or rechecking of serum 25OHD levels is needed whilst on maintenance therapy. Recheck biochemistry if symptoms return or malabsorption/ poor compliance suspected.

4. Management of Vitamin D insufficiency (vitamin D level 30-50nmol/l)

Use of colecalciferol supplements (purchased over the counter) are recommended for patients with 25-OH Vitamin D 30-50 nmol/l.

If they have one of the following additional factors, patients may be advised to purchase maintenance therapy (see above) over the counter. Prescription of vitamin D occasionally indicated with Specialist advice (e.g. in preparation for parenteral treatment of osteoporosis).

- fragility fracture, documented osteoporosis or high fracture risk
 - treatment with antiresorptive medication for bone disease
 - symptoms suggestive of vitamin D deficiency
 - increased risk of developing vitamin D deficiency in the future because of reduced exposure to sunlight, religious/cultural dress code, dark skin, etc.
 - raised PTH
 - medication with antiepileptic drugs or oral glucocorticoids
- (source: ROS, PrescQIPP)

Lifestyle advice for Vitamin D insufficiency (and deficiency)

Sun exposure: Sun exposure is the main source of vitamin D and should be exploited! However, this should be balanced with the risks of excessive exposure. Time required in the sun to make sufficient vitamin D is generally short and less than the time needed for skin to burn. This should be adjusted on an individual basis and safe practices adopted. Little and often is best.

The following advice was given in the New England Journal of Medicine (2007): *“Exposure of arms and legs for 5 to 30 minutes (depending on time of day, season, latitude, and skin pigmentation) between the hours of 10 a.m. and 3 p.m. twice a week is often adequate”*

Note: Use of creams containing sun protection factors reduces vitamin D synthesis by >95%.

Diet: Dietary sources of Vitamin D include:

- Oily Fish – Salmon, Mackerel, Sardines, Herring, Pilchards, Fresh Tuna etc.
- Cod liver oil & other fish oils
- Red meat & Eggs yolk
- Infant formula milk, powdered milk
- Fortified breakfast cereals
- Soya products, fortified margarines, low fat spreads

It is difficult to obtain enough vitamin D from usual diet alone. The average daily intake from a normal diet is just 80-160 units/day (2-4µg). Without additional risk factors listed above, the following supplement doses are recommended:

Table 4: Supplement dosing for Vitamin D

Age/ group	Daily requirements
Birth to 1 year of age and partially or exclusively breastfed (babies receiving infant formula do not require supplements if receiving more than 500ml per day)	8.5-10 micrograms (340units - 400units)
Aged 1-4 years	10 micrograms (400units)
Limited UVB exposure including due occlusive clothing, low levels of exposure or dark skin	10 micrograms (400units)
All individuals not otherwise at risk 5 years of age and above, including pregnant women	10 micrograms (400units)

NB: There is no benefit in using preparations of vitamin D combined with calcium in most patients. However calcium & vitamin D 400-800 units/day maybe appropriate in the elderly, most people aged 65 years or more taking bisphosphonates, and those taking corticosteroids.

OTC supplementation should be continued long term in most patients unless there is a significant lifestyle change to improve vitamin D status.

5. Prevention of Vitamin D deficiency in the general population:

Most of these patients should be offered lifestyle advice as detailed above and advised to purchase supplementation over the counter (eligible patients can obtain free supplements through the Healthy Start scheme). More information on available products for supplementation and the Healthy Start scheme can be found in appendix 2 (p12).

Recommendation based on SACN guidance and NICE PH56:

Age/ group	Advice
Infants from birth up to 1 year of age (exclusively or partially breastfed)	Should be given a daily supplement containing 8.5-10 micrograms (340 – 400 units) vitamin D. Babies fed infant formula should not be given a vitamin D supplement unless they are receiving less than 500mls (17.6 fl oz or about a pint) of formula a day as it is fortified with vitamin D and no other supplementation is required.
Children ages 1 – 4 years	Parents should be encouraged to purchase a daily supplement containing 10 micrograms (400 units) vitamin D. Some children aged 1 – 4 may be entitled to free Healthy Start vitamin drops.
Pregnant and lactating women and populations at increased risk of vitamin D deficiency	Should be encouraged to purchase 10 micrograms (400units) vitamin D throughout the year . (NICE PH56, May 2017). Some pregnant women and new mothers may be entitled to free Healthy Start vitamins
Little or no UVB exposure	Should be encouraged to purchase a daily supplement containing 10 micrograms (400 units) vitamin D throughout the year. They are: <ul style="list-style-type: none"> • people who are seldom outdoors such as frail or housebound individuals and those who are confined indoors e.g. in institutions such as care homes • people who habitually wear clothes that cover most of their skin while outdoors.
People from minority ethnic groups with dark skin	e.g. African, African-Caribbean and South Asian origin Should be encouraged to purchase a vitamin D supplement containing 10 micrograms (400 units) throughout the year.
General population ages 4 years and older including	Should be encouraged to purchase 10 micrograms (400units) vitamin D throughout the year. (NICE PH56, May 2017).

6. Exceptionalities:

Hyperparathyroidism/ hypercalcaemia and development of new hypercalcaemia during vitamin D replacement

Patients with Hyperparathyroidism frequently have vitamin D deficiency. Vitamin D deficiency in hyperparathyroidism may exacerbate bone loss in this condition.

Treatment with vitamin D has the potential to exacerbate hypercalcaemia and hypercalciuria but is still often indicated. Specialist advice (Endocrinology) is recommended prior to vitamin D treatment in this context.

Patients may develop hypercalcaemia during correction of vitamin D deficiency. This can indicate vitamin D toxicity although this would not be expected when using recommended doses. Most other cases are due to underlying and previously undiagnosed Hyperparathyroidism although granulomatous conditions are also relevant (e.g. Sarcoidosis). The diagnosis can be aided by measurement of PTH- and such cases should be referred to Endocrinology for assessment.

Parenteral Osteoporosis treatments

Parenteral treatments for osteoporosis require adequate vitamin D levels in order to be safe and effective. Follow specialist advice.

References

Based on guidance originally written by S Fitton and Dr G Summers.

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- Vitamin D for the treatment of chronic painful conditions in adults (review). The Cochrane Collaboration. 2010. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD007771/pdf_fs.html

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Document control	Date

Appendix 1: Patient information

A variety of patient information is available nationally including:

[NHS Choices Vitamin D](#)

[Patient.co.uk Vitamin D deficiency](#)

[National Osteoporosis Society: Healthy eating for bones: Facts about food](#)

National Osteoporosis society: [Vitamin D supplements and tests factsheet](#)

[Royal National Orthopaedic Hospital: Vitamin D dosage guide for children](#)

Local vitamin D patient information [leaflet](#) (also available in other languages)

Appendix 2: Healthy Start vitamins/ OTC preparations for children

Healthy Start vitamins

Women and children from families who are eligible for the Government's Healthy Start scheme can get supplements which include vitamin D, in the form of tablets for women and drops for children.

- [Vitamin drops](#) contain Vitamins A, C & D (292 units per 5 drops) – dose 5 drops daily
- [Vitamin tablets](#) contain Vitamins C, D (400 units per tablet) and folic acid – dose 1 tablet daily

Women qualify for Healthy Start from the 10th week of pregnancy or if they have a child under four years old, **and** if she or her family receive:

- Income Support, or
- Income-based Jobseeker's Allowance, or
- Income-related Employment and Support Allowance, or
- Child Tax Credit (but not Working Tax Credit unless the family is receiving Working Tax Credit run-on only) **and** has an annual family income of £16,190 or less.

Women under 18 and pregnant also qualify even if not on the above benefits.

To obtain free supplies, present a Healthy Start voucher (sent to Healthy Start recipients every 8 weeks). For further information and application forms, visit <http://www.healthystart.nhs.uk/>

OTC preparations

Healthy Start vitamins are no longer available for sale, but commercial preparations such as Abidec and Dalivit are available to buy from pharmacies, supermarkets, and other health food retailers.

- **Abidec** – contains Vitamins A, B, C & D (400 units per 0.6ml dose):
 - Under 1 year: dose 0.3ml daily;
 - 1-12 years: dose 0.6ml daily.Contains arachis oil: Not suitable for those with peanut allergy.
Contains sugar so place at the back of the tongue to avoid contact with teeth.
- **Dalivit** – contains Vitamins A, B, C & D (400 units per 0.6ml dose) – dose: 6 weeks – 1 year 0.3ml (7 drops) daily; Older children, adults and elderly 0.6ml (14 drops) daily.
Does not contain arachis oil: Suitable for those with peanut allergy.
Contains sugar so place at the back of the tongue to avoid contact with teeth.

NB: Some vitamin D preparations contain soya oil or peanut oil; most vitamin D capsules contain gelatin. Retailers can provide information on the contents and suitability of their products.