

East & South East England Specialist Pharmacy Services
East of England, London, South Central & South East Coast

**Vitamin D deficiency and insufficiency in adults and paediatrics:
a guideline collation document for London and East & South-East England**

Background

Awareness of Vitamin D deficiency in the UK population has increased substantially in recent years and there have been numerous articles published on the subject. Developing guidance in this area has, however, been hampered for a number of reasons:

- Opinions on the ideal level of vitamin D and optimal serum concentrations vary (although there is suggestion that normal vitamin D status is represented by 25-hydroxyvitamin D (25-OHD) of 75nmol/L or more, insufficiency by 25-OHD of 25-50nmol/L, and deficiency by 25-OHD levels <25nmol/L¹).
- The evidence-base is not completely defined in relation to best management of different vitamin D deficiency states and the monitoring required following treatment.
- The availability of licensed vitamin D products is limited and unlicensed products have variable (and often substantial) costs.

Purpose of this document

This document outlines prescribing guidance in use in London and East and South-East England for the management of vitamin D deficiency in adults and children. The document outlines commonalities and differences in guidance both for the treatment of deficiency, and for maintenance following insufficiency. The document covers only those prescribing guidelines of which the London Medicines Information were aware of as at March 2011 following contact with hospital pharmacy departments and PCTs.

The document does not offer a consensus view on the use of vitamin D products, nor does it make regional recommendations. It is provided merely as an aid to enable comparison between work already undertaken and to assist local and sector based guideline development.

The document is presented as two tables: the first comparing adult guidelines, the second paediatric. Each table summarises pharmacological recommendations (i.e. not those related to diet and sunshine) from the various guidelines. The following should be noted:

- Vitamin D preparations are specified as colecalciferol or ergocalciferol, or where guidance did not specify the form "vitamin D" is stated. Many of the guidelines reviewed indicated that colecalciferol is preferred despite the BNF stating that the forms should be considered bioequivalent and interchangeable (with 10 micrograms of ergocalciferol *or* colecalciferol giving 400 IU of vitamin D²).
- Where the route of administration is not stated in the tables the oral route should be assumed.
- The doses and main monitoring recommendations in each guideline for the various deficiency states have been re-reproduced; other detail has not.
- The guidelines reviewed do not generally cover vitamin D use in more complex patients such as those with secondary deficiency due to renal disease, primary hyperthyroidism, hypercalcaemia, or hypocalcaemia.

- This document does not provide any element of cost comparison. The document [Using appropriate available products](#) on NeLM should be referred to for information on currently available vitamin D preparations and to aid recommendations and prescribing.

The update process for the document and your comments

This document was produced with information available on prescribing guidance in use across London as at March 2011. A process of review with primary care QIPP and other colleagues precluded publication until August 2011.

The document will be updated every 6 months initially and then annually thereafter. We welcome comment both on its specific content and overall usefulness. We would also welcome receipt of any local guidance in place that we will add to the document at each review.

Please send any individual guidance from your organisation or any other comments to Ben Rehman, Director, London Medicines Information Service at b.rehman@nhs.net; or Varinder Rai, Principal Medicines Information Pharmacist at varinder.rai@nhs.net .

References

1. Pearce S, Cheetham D. Diagnosis and management of vitamin D deficiency. *BMJ* 2010; 340: b5664
2. British National Formulary 61st Edition. London: BMJ Group and Pharmaceutical Press, 2011

Guidelines for the treatment of vitamin D deficiency and insufficiency in adults

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
NHS Barking and Dagenham (published February 2011/review February 2012)	<p>Deficiency (<25nmol/L) Options:</p> <ul style="list-style-type: none"> • Colecalciferol 60,000 IU weekly for 12 weeks • Colecalciferol 300,000 IU IM injection, two doses three months apart • Colecalciferol 150,000 IU daily for two days <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 1000-2000 IU daily for 12 weeks <p>Maintenance</p> <ul style="list-style-type: none"> • Calcium 1.5g + colecalciferol 400 IU twice daily 	<p>Routine monitoring of vitamin D is not recommended</p> <p>Vitamin D monitoring only required in patients with both clinical symptoms and risk factors</p>
Barking, Havering and Redbridge University Hospitals NHS Trust	<p>Deficiency (0-25nmol/L) Options:</p> <ul style="list-style-type: none"> • Colecalciferol 50,000 IU daily for 6 days • Patients with extensive small bowel resection: vitamin D 300,000 IU IM injection every 6 months <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 50,000 IU daily for 3 days <p>Followed by maintenance therapy recommendations.</p> <p>Maintenance</p> <ul style="list-style-type: none"> • Colecalciferol 50,000 IU monthly 	<p>No recommendations on routine monitoring</p>
Barnet and Chase Farm Hospital NHS Trust (published November 2010/ review November 2012)	<p>Deficiency (<50nmol/L) Options:</p> <ul style="list-style-type: none"> • Ergocalciferol 300,000-600,00 IU IM injection every 3-4 months • Colecalciferol 50,000 IU weekly for 6-8 weeks • Colecalciferol 300,000 IU IM injection every 6-12 months. <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (50-75nmol/L) Options:</p> <ul style="list-style-type: none"> • Adcal D3 tablet twice daily • Ergocalciferol 300,000 IU IM injection every three months • Colecalciferol 20,000 IU monthly • Colecalciferol 50,000 IU every two months • Colecalciferol 150,000 IU IM injection every 6-12 months. <p>Maintenance Options:</p> <ul style="list-style-type: none"> • Colecalciferol 800 IU daily • Vitamin BPC capsules two daily (vitamin D 300IU, Vitamin A 2500 IU per capsule) 	<p>Check calcium and vitamin D levels every 3 months while receiving treatment dose</p>

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
<p>Barts and The London Clinical Effectiveness Group (published January 2011)</p>	<p>Deficiency (<30nmol/L) <i>Options:</i> Symptomatic patients</p> <ul style="list-style-type: none"> • Colecalciferol 100,000 IU daily for 2 days • Oral therapy not tolerated or poor concordance - ergocalciferol 300,00 IU IM injection • Monitor vitamin D level in 12 weeks and if level <80nmol/L repeat loading dose <p>Asymptomatic patients</p> <ul style="list-style-type: none"> • Vitamin D 800-2000 IU daily (or given once weekly e.g. 2000 IU daily given as 14,000 IU weekly • Limited evidence for loading dose of colecalciferol 100,000 IU daily for 2 days. <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (31-80nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Vitamin D 800-2000 IU daily 	<p>Monitor vitamin D and calcium levels at 12 weeks after loading dose</p> <p>No routine monitoring required for patients on maintenance doses</p>
<p>NHS Ealing (published December 2010 / review December 2012)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Colecalciferol or ergocalciferol 6000-10,000 IU daily • Patients with intestinal absorption or chronic liver disease: colecalciferol or ergocalciferol up to 40,000 IU daily • Ergocalciferol 300,00 IU IM injection and repeat in 3 months if necessary • Colecalciferol 60,000 IU weekly for 8-12 weeks 	<p>Insufficiency (25-50nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Vitamin D 800-2000 IU daily 	<p>Check calcium, phosphate, alkaline phosphate, vitamin D levels at 3 months after high dose treatment</p>

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
Guys and St Thomas NHS Foundation Trust / King's College Hospital NHS Foundation Trust (review March 2012)	<p>Deficiency (0-35nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 40,000 IU daily for 7 days <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (>35nmol/L) or maintenance</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Calcium 600mg + vitamin D 400 IU twice daily • Patients with high dietary calcium intake: vitamin D 40,000 IU monthly • Patients with poor oral compliance: colecalciferol 40,000 IU monthly or ergocalciferol 300,000 IU IM injection or soluble calcium/vitamin D preparations • Patients with extensive bowel resection: ergocalciferol 300,000 IU IM injection 6-monthly 	<p>Monitor calcium levels 6-8 weeks after loading dose</p> <p>Monitor vitamin D in autumn if considered necessary</p>
Harrow NHS PCT (published January 2010)	<p>Deficiency (<20nmol/L)</p> <ul style="list-style-type: none"> • Ergocalciferol 300,000 IU IM injections every 4 months for two doses <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L)</p> <ul style="list-style-type: none"> • Ergocalciferol 300,00 IU IM injection single dose <p>Followed by maintenance therapy recommendations.</p> <p>Maintenance</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Vitamin Capsules, 2-3 capsules daily • If vitamin capsules contra-indicated or calcium replacement required: Adcal D3/Calcichew D3 Forte twice daily or Calfovite D3 once daily • Non complaint to oral medication: ergocalciferol 300,000 IU IM injection 4 monthly injections as required 	<p>Check vitamin D levels after 4-6 months of treatment</p>
Hounslow NHS Trust (published September 2010)	<p>Deficiency (<30ng/mL)</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Ergocalciferol 300,000 IM injection, repeat after 8 weeks if necessary • Ergocalciferol 50,000 IU monthly for 8 weeks then review • Concurrent treatment of calcichew D3 Forte/Adcal D3 twice daily recommended with the above 	<p>Insufficiency (31-50ng/mL) or maintenance</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Calcichew D3 forte twice daily (or equivalent) • Treat as per deficiency if obvious proximal muscle weakness or sustained fragility fractures 	<p>Check calcium levels at week 4 and 8 or if symptomatic of hypercalcaemia</p> <p>Check vitamin D and PTH levels at week 8, then every 4-6 months</p>

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
Imperial College Healthcare NHS Trust	<p>Deficiency (<25nmol/L) Options:</p> <ul style="list-style-type: none"> • Colecalciferol 20,000 IU once weekly for 12 weeks • Patients with malabsorption problems: ergocalciferol 300,000 IU IM injection three monthly for two doses <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L) or maintenance Options:</p> <ul style="list-style-type: none"> • Colecalciferol 800-2000 IU daily (dose depending on weight) • Colecalciferol 20,000 IU capsule every 2 weeks 	Monitor vitamin D, PTH, calcium after 3 months of treatment and then 6 monthly thereafter
Kensington and Chelsea NHS Trust	<p>Deficiency (<25nmol/L) Options:</p> <ul style="list-style-type: none"> • Colecalciferol 60,000 IU capsules weekly for 12 weeks • Patients with malabsorption or compliance problems: ergocalciferol 300,000 IU IM injection three monthly • Capsules or injection not suitable: liquid colecalciferol 150,000 IU daily for two days <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 1000-2000 IU daily for 12 weeks <p>Maintenance Options:</p> <ul style="list-style-type: none"> • Calcium 1.5g + colecalciferol D 400 IU twice daily • Patients with adequate dietary calcium intake or at risk of hypercalcaemia: colecalciferol 1000 IU daily 	<p>Check vitamin D levels 12 weeks after loading dose</p> <p>No routine monitoring required for patients on maintenance doses</p> <p>Once deficiency corrected monitor every 12 months for those considered at risk</p>
Kingston Hospital NHS Trust (published December 2010)	<p>Deficiency (<25nmol/L) Options:</p> <ul style="list-style-type: none"> • Colecalciferol 60,000 IU weekly for 8-12 weeks • Malabsorption or compliance problems: Colecalciferol 300,000 IU IM injection three months apart; once or twice a year <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-50nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Colecalciferol 1000-2000 IU daily 	<p>Monitor calcium, phosphate and ALP prior to treatment</p> <p>Monitor vitamin D levels 3 months after starting treatment</p> <p>Check calcium if patient showing signs and symptoms of hypercalcaemia</p>
Lewisham Healthcare NHS Trust (review January 2013)	<p>Deficiency (0-35nmol/L) Colecalciferol 40,000 IU capsules daily for 7 days</p> <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (>35 nmol/L) or maintenance Options:</p> <ul style="list-style-type: none"> • Calcium 600mg + Vitamin D 400 IU twice daily • Patients with high dietary calcium intake or poor compliance: vitamin D 40,000 IU monthly • Poor responders: consider ergocalciferol 300,000 IU IM injection 	<p>Monitor calcium levels 6-8 weeks after loading dose</p> <p>Monitor vitamin D in autumn if considered necessary</p>

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
<p>NHS North Central London (published May 2011 / review May 2013)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i> Symptomatic:</p> <ul style="list-style-type: none"> • Colecalciferol 300,000 IU single dose • Colecalciferol 40,000 IU daily for 7 days • Colecalciferol/ergocalciferol 300,00 IU IM injection every 3-4 months <p>Asymptomatic:</p> <ul style="list-style-type: none"> • Vitamin D 1000-2000 IU daily • Patients at high risk/ very low vitamin D levels: colecalciferol 50,000-60,000 IU weekly for 6-8 weeks or colecalciferol/ergocalciferol 300,000 IU IM injection every 3-4 months <p>Followed by maintenance therapy recommendations if necessary.</p>	<p>Insufficiency (25-49nmol/L) or maintenance <i>Options:</i></p> <ul style="list-style-type: none"> • Vitamin D 1000-2000 IU daily • Diet and sunshine advice • Colecalciferol 40,000-50,000 IU monthly for 2 months • Colecalciferol/ergocalciferol 300,000 IU IM injection 6-12 monthly • Combination calcium and vitamin D preparations providing vitamin D 800 IU daily 	<p>Monitor calcium levels monthly</p> <p>Monitor vitamin D, calcium, ALP, PO₄ and PTH at 3 months</p>
<p>North Middlesex University Hospital NHS Trust (published February 2011 / review February 2013)</p>	<p>Deficiency <25nmol/L <i>Options:</i></p> <ul style="list-style-type: none"> • Vitamin D 10,000 IU daily for 8-12 weeks • Vitamin D 60,000 IU weekly for 8-12 weeks • Non-compliance or patients with malabsorption: stoss therapy, total vitamin D dose 300,00-500,000 IU in 2-4 divided doses <p>Followed by maintenance therapy recommendations or continue for a further 3 months if vitamin D levels below target.</p>	<p>Insufficiency (25-50nmol/L) or maintenance <i>Options:</i></p> <ul style="list-style-type: none"> • Vitamin D 400-800 IU daily • Vitamin D 10,000 IU weekly 	<p>Check calcium levels 4 weeks after loading dose</p> <p>Check vitamin D levels 3 months after loading dose</p>

Author (Published/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Adults	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Adults	Monitoring recommendations following treatment
Oxfordshire (published 25 th July 2009 / review January 2010)	<p>Severe deficiency (0- 25nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 50,000 IU daily for 6 days <p>Deficiency (25-50nmol/L)</p> <ul style="list-style-type: none"> • Colecalciferol 50,000 IU daily for 3 days <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (>50 nmol/L) or maintenance</p> <p><i>Dose according to estimated dietary calcium intake as below:</i></p> <ul style="list-style-type: none"> • Very low calcium intake (<500mg/day): Calcium 1-1.2g twice daily + vitamin D 800-1000 IU twice daily • Low calcium intake (500-1000mg/day): Calcium 500-600mg daily + vitamin D 400 IU daily + vitamin D 50,000 IU monthly • Adequate calcium intake (>1000mg/daily): vitamin D 50,000 IU monthly 	<p>Patients receiving treatment therapy - monitor calcium levels two weeks after treatment started</p> <p>Patients receiving maintenance therapy – monitor vitamin D in late spring if considered necessary</p>
St George’s Healthcare NHS Trust / NHS Wandsworth (published August 2010)	<p>Deficiency <25nmol/L</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Colecalciferol 60,000 IU capsules weekly for 12 weeks • Patients with malabsorption or compliance problems: ergocalciferol 300,000 IU IM injection 3 monthly • Capsules or injection not suitable: liquid colecalciferol 150,000 IU daily for 2 days <p>Followed by maintenance therapy recommendations in severely deficient patients.</p>	<p>Insufficiency (25-50nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Colecalciferol 1000-2000 IU daily for 12 weeks <p>Maintenance</p> <p><i>Options:</i></p> <ul style="list-style-type: none"> • Calcium 1.5g + colecalciferol D 400 IU twice daily • Patients with adequate calcium intake or at risk of hypocalcaemia: colecalciferol 1000 IU 	<p>Monitor calcium levels 12 weeks after loading dose.</p> <p>No routine monitoring required for patients on maintenance doses</p> <p>Once deficiency corrected monitor every 12 months for those considered at risk</p>

Guidelines for the treatment of vitamin D deficiency and insufficiency in paediatrics

Author (Date written/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Paediatrics	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Paediatrics	Monitoring recommendations following treatment
<p>Barts and The London Clinical Effectiveness Group (published January 2011)</p>	<p>Deficiency (<30nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6 months: colecalciferol 3000 IU daily for 8-12 weeks • Child 6 months-12 years: colecalciferol 6000 IU daily for 8-12 weeks • Child 12-18 years: colecalciferol 10,000 IU daily for 8-12 weeks • Child 1-12 years: patients with poor compliance, stoss therapy of colecalciferol 300,000 IU in two divided doses after discussion with paediatrician <p>Followed by maintenance therapy recommendations or continue for a further 8-12 weeks if levels below 80nmol/L.</p>	<p>Insufficiency (31-80nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Neonate: colecalciferol 400 IU daily • Child 1 month-12 years: colecalciferol 400-600 IU daily 	<p>Check vitamin D, calcium levels and ALP three months after loading dose.</p> <p>No routine monitoring required for patients on maintenance doses.</p>
<p>NHS North Central London (published May 2011 / review May 2013)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6 months: colecalciferol 3000 IU daily for 8-12 weeks • Child 6 months-12 years: colecalciferol 6000 IU daily for 8-12 weeks • Child 12-18 years: colecalciferol 10,000 IU daily for 8-12 weeks <p>Followed by maintenance therapy recommendations.</p>	<p>Insufficiency (25-49nmol/L) or maintenance <i>Options:</i></p> <ul style="list-style-type: none"> • All children up to 5 years – offer Healthy Start vitamins (colecalciferol 300 IU per 5 drops) • Child <1 year: Abidec drops 0.3mL (ergocalciferol 200 IU) daily • Child >1 year: Abidec drops 0.6mL daily (ergocalciferol 400 IU) daily 	<p>Check calcium levels monthly.</p> <p>Check vitamin D levels, calcium levels, ALP, PO₄ and PTH three months after loading dose.</p>

Author (Date written/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Paediatrics	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Paediatrics	Monitoring recommendations following treatment
<p>North Middlesex University Hospital NHS Trust (Published February 2011/Review February 2013)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6 months: colecalciferol or ergocalciferol 3000 IU daily for 8-12 weeks • Child 6 months-12 years: colecalciferol or ergocalciferol 6000 IU daily for 8-12 weeks • Child 12-18 years: colecalciferol or ergocalciferol 6000-10,000 IU daily for 8-12 weeks <p>Followed by maintenance therapy recommendations or continue for a further three months if levels below target.</p>	<p>Insufficiency (25-50nmol/L) or maintenance <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6months, breastfed: colecalciferol or ergocalciferol 400 IU daily • Child 6-12months, breastfed: colecalciferol or ergocalciferol 400-800 IU daily • Child 1-18 years: colecalciferol or ergocalciferol 400-800 IU daily 	<p>Check calcium levels four weeks after treatment initiated.</p> <p>Check vitamin D levels three months after treatment initiated.</p>
<p>NHS Ealing (published December 2010 / review December 2012)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6 months: colecalciferol or ergocalciferol 3000 IU daily • Child 6 months-12 years: colecalciferol or ergocalciferol 6000 IU daily • 12 years - adult: colecalciferol or ergocalciferol 6000-10,000 IU daily <p><i>Intestinal malabsorption or chronic liver disease:</i></p> <ul style="list-style-type: none"> • Child 1-12 years: colecalciferol or ergocalciferol 10,000-25,000 IU daily adjusted as necessary • Child 12-18 years: colecalciferol or ergocalciferol 10,000-40,000 IU daily adjusted as necessary. <p>Followed by maintenance therapy recommendations or continue for a further 8-12 weeks if levels below 80nmol/L.</p>	<p>Insufficiency (25-50nmol/L) or maintenance</p> <ul style="list-style-type: none"> • Neonates-18 years: vitamin D 400 IU daily 	<p>Check calcium levels at regular intervals (initially once or twice weekly) and if nausea/vomiting in patients receiving pharmacological doses of vitamin D.</p> <p>Check calcium levels, ALP, vitamin D levels three months after loading dose.</p> <p>PTH may be checked if patient does not respond or relapses.</p> <p>No routine monitoring required for patients taking maintenance doses.</p>

Author (Date written/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Paediatrics	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Paediatrics	Monitoring recommendations following treatment
<p>Imperial College Healthcare NHS Trust (published June 2010)</p>	<p>Deficiency (<25nmol/L) <i>Options:</i></p> <ul style="list-style-type: none"> • Child 1-6 months: colecalciferol or ergocalciferol 3000 IU daily • Child 6months-12 years: colecalciferol or ergocalciferol 6000 IU daily • Child 12 years-adult: colecalciferol or ergocalciferol 6000-10,000 IU daily <p>Followed by maintenance therapy recommendations if levels above 80nmol/L and ALP normal or continue for a further 2-3 months if levels below 80nmol/L.</p> <p><i>Compliance problems:</i></p> <ul style="list-style-type: none"> • Child 6 months-12 years: ergocalciferol 150,000 IU IM injection every 3 months • Child >12 years: ergocalciferol 300,000 IU IM injection every 3 months 	<p>Insufficiency (25-50nmol/L) or maintenance</p> <ul style="list-style-type: none"> • colecalciferol or ergocalciferol 400 IU daily 	<p>Check urea, electrolytes, calcium levels, phosphate, LFTs, PTH and vitamin D levels three months after treatment doses initiated</p> <p>Check vitamin D levels and ALP three monthly if receiving treatment doses</p>
<p>Royal National Orthopaedic Hospital – The North West London NHS Trust (published January 2009)</p>	<p>Deficiency <i>Options:</i></p> <ul style="list-style-type: none"> • Child <6 months: colecalciferol 3000 IU daily • Toddlers/children: colecalciferol 6000 IU daily • Adolescents: colecalciferol 10,000 IU daily <p><i>Compliance issues:</i></p> <ul style="list-style-type: none"> • Infants/children: loading dose of colecalciferol 60,000 IU then 30,000 IU monthly • Children/adolescents: loading dose of colecalciferol 150,000 IU then 50,000 IU monthly 	<p>Insufficiency or maintenance <i>Options:</i></p> <ul style="list-style-type: none"> • All children from birth-6 months: vitamin D 200 IU daily • Child 6 months-Adolescents: vitamin D 400 IU daily 	<p>No recommendations on routine monitoring</p>

Author (Date written/review date – if known)	Drug and dose recommendation for the treatment of vitamin D deficiency - Paediatrics	Drug and dose recommendation for the treatment of insufficiency or for maintenance therapy following deficiency of vitamin D - Paediatrics	Monitoring recommendations following treatment
<p>Barts and The London NHS Trust (published February 2011/review February 2013)</p>	<p>Deficiency <i>Options:</i></p> <ul style="list-style-type: none"> • Child <12 months: colecalciferol or ergocalciferol 1500-2000 IU daily adjusted as necessary for a minimum of three months • Child 1-12 years: colecalciferol or ergocalciferol 3000 IU daily adjusted as necessary for a minimum of three months • Child 12-18years: colecalciferol or ergocalciferol 5000 IU daily adjusted as necessary for a minimum of three months <p><i>Intestinal absorption or in chronic liver disease:</i></p> <ul style="list-style-type: none"> • Child 1-12 years: colecalciferol or ergocalciferol 10,000-25,000 IU daily, orally or IM • Child 12-18 years: colecalciferol or ergocalciferol 10,000-40,000 IU daily, orally or IM • The total monthly dose can be administered as a single dose <p>Followed by maintenance therapy recommendations if levels >80nmol/L. If levels <50nmol/mL increase dose or consider stoss therapy if non-compliance suspected.</p> <p><i>Stoss therapy-suitable for patients with compliance issues:</i></p> <ul style="list-style-type: none"> • Child 1-12months: colecalciferol or ergocalciferol 150,000 IU in two divided doses twelve hours apart, orally or single IM dose. Repeat every three months if necessary • Child 1-12 years: colecalciferol or ergocalciferol 300,000 IU in two divided doses twelve hours apart, orally or single IM dose. Repeat every three months if necessary • Child 12-18 years: colecalciferol or ergocalciferol 500,000 IU in two divided doses twelve hours apart, orally or single IM dose. Repeat every three months if necessary 	<p>Maintenance</p> <ul style="list-style-type: none"> • Colecalciferol or ergocalciferol 400 IU daily 	<p>No routine monitoring required for patients taking maintenance doses and those receiving treatment doses and symptoms have resolved following treatment.</p> <p>Patients being treated for rickets - check vitamin D levels, U+Es and bone profile at 2-4 weeks and end of three month treatment. X-rays at 3 months.</p>