

## VITAMIN D IN CHILDREN (WITH NORMAL RENAL FUNCTION) FORMULARY GUIDANCE

Vitamin D thresholds (in accordance with Royal College of Paediatrics and Child Health)		Action to be taken
<b>Deficiency</b>	Serum 25-OH Vitamin D < 25 nmol/L	Treat with 8 week loading dose (table 1) then reduce to maintenance therapy (Table 2)
<b>Insufficiency</b>	Serum 25-OH Vitamin D 25 to 50 nmol/L	Treat with maintenance therapy (Table 2)

**Table 1: Vitamin D treatment options for vitamin D deficiency**

Age	Option	Product (Brand)	Dosage	Total cost of regime	Total units of Vitamin D	Medico-legal category
0-6 months	<b>Dose Regime as per RCPCH</b>		<b>3000units daily for 8 weeks</b>		<b>168,000 units</b>	
	<b>Please prescribe:</b>	InVita D3 25,000 units/ml solution	1ml (25,000 units) <b>ONCE a week</b> for 8 weeks	£13.17	200,000 units	Off label use of licensed product P.O.M
	<b>Or</b>	InVita D3 drops 2,400 units/ml	<b>Or</b> 1ml <b>daily</b> for 10 weeks	£32.10	168,000 units	<b>For use only in children where weekly dosing not acceptable</b>
6 months – 12 years	<b>Dose Regime as per RCPCH</b>		<b>6000units daily for 8 weeks</b>		<b>336,000 units</b>	
	<b>Please prescribe:</b>	InVita D3 25,000 units/ml solution	1ml (25,000 units) <b>TWICE a week</b> for 8 weeks	£26.34	400,000 units	Off label use of licensed product P.O.M
	<b>Or</b>	InVita D3 drops 2,400 units/ml	<b>Or</b> 2ml <b>daily</b> for 10 weeks	£64.20	336,000 units	<b>For use only in children where weekly dosing not acceptable</b>
12 – 18 years	<b>Dose Regime as per RCPCH</b>		<b>10,000units daily for 8 weeks</b>		<b>560,000 units</b>	
	<b>Please prescribe:</b>	InVita D3 25,000 units/ml solution	1ml (25,000 units) <b>THREE times a week</b> for 8 weeks	£39.52	600,000 units	Off label use of licensed product P.O.M
	<b>Or</b>	InVita D3 drops 2,400 units/ml	<b>Or</b> 3ml <b>daily</b> for 12 weeks	£90.72	604,800 units	<b>For use only in children where weekly dosing is not acceptable</b>

**Table 2: Vitamin D maintenance following treatment of deficiency or for treatment of insufficiency.**

Age	Option	Product (Brand)	Dosage	Cost	Total units of Vitamin D	Medico-legal category
0 – 1 year	Dose Regime as per RCPCH		400 units daily		400 units daily	
	Please recommend:	Abidec	0.6ml daily	Purchase OTC If prescribed, cost approx. £2.91 per month	400 units daily	Licenced product
	Or	Dalivit	0.6ml daily	Purchase OTC If prescribed, cost approx. £2.91 per month	400 units daily	Licenced product Not licenced for <6 weeks
	Or prescribe:	InVita D3 drops 2,400 units/ml	6 drops daily	£1.80 per month	400 units daily	Licenced product (P.O.M)
1 – 18 years	Dose Regime as per RCPCH		400 - 1000 units		400 – 1000 units	
	Please recommend:	Abidec	0.6ml daily	Purchase OTC If prescribed, cost approx. £2.91 per month	400 units	Licenced product Cost approx. £6 per month
	Or	Dalivit	0.6ml daily	Purchase OTC If prescribed, cost approx. £2.91 per month	400 units	Licenced product Cost approx. £6 per month
	Or prescribe:	Invita-D3 800IU capsule	1 capsule daily	Pack of 30 capsules = £3.02	800 units	Unlicensed in children under 12 (P.O.M)
	Or	InVita D3 drops 2,400 units/ml	6 – 12 drops daily	£1.80 to £3.20 per month	400 - 800 units	Unlicensed above 600 units (P.O.M) <b>For use in children where capsules are not acceptable</b>

**Checking of levels** As Vitamin D has a relatively long half-life levels will take approximately 6 months to reach a steady state after a loading dose or on maintenance therapy. Seasonal variation in Vitamin D levels should be taken into consideration when repeating and interpreting Vitamin D levels. Evidence for repeating Vitamin D levels after commencing therapy is not strong. Concerns regarding compliance should prompt rechecking levels. If the Vitamin D level prior to therapy was very low, you may wish to re-check after 6 months and if the level remains low, re-emphasise the importance of good compliance and consider repeat treatment of low levels as per guidance.

**How long should treatment last?** Children who were deficient or insufficient should continue long term low-dose supplements until completion of growth, unless lifestyle changes (diet / sun exposure/clothing) are assured.

**Vitamin D from diet and lifestyle** Most people get little Vitamin D in their diet. Only a few natural foods such as oily fish and eggs (20 – 40 units per egg) contain significant amounts of Vitamin D. A few foods are fortified with small amounts of Vitamin D (e.g. margarine and some breakfast cereals).

All formula milks are fortified, but plain cow's milk is not fortified in the UK. Breast milk generally contains little Vitamin D. Sunshine is the main source of Vitamin D. However, Vitamin D can only be made in the skin by exposure to sunlight when the sun is high in the sky. Therefore in most of the UK from November to February, Vitamin D cannot be made from sunshine. Good compliance with treatment for low Vitamin D levels is therefore very important. Children born to breast feeding mothers with Vitamin D deficiency are at high risk of Vitamin D deficiency, especially those from ethnic minorities with dark pigmented skin.

References: National Osteoporosis Society Vitamin D and bone health in children 2018  
[https://theros.org.uk/media/100233/nos\\_vitamin\\_d\\_and\\_bone\\_health\\_in\\_children\\_web.pdf](https://theros.org.uk/media/100233/nos_vitamin_d_and_bone_health_in_children_web.pdf)

British National Formulary for Children Accessed on line January 2020

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Latest update January 2020

Date of next review: January 2022