

Guidelines for the management of children with suspected Vitamin D deficiency

WHO TO TEST

Do not routinely test children and young people for vitamin D deficiency.

If a patient presents with any of the symptoms and /or there are other **strong** reasons to suspect vitamin D deficiency check vitamin D and bone profile.

Infants	Seizures, tetany and cardiomyopathy
Children	Pains, aches
Adolescent	Aches and pains, muscle weakness

INTERPRET

>50
(Sufficient)

Maintain vitamin D through safe sun exposure and current diet.

25OH vitamin D (nmol/L)

25-50

At least until the completion of growth
Inadequate (Prevention)

Children above the age of 1 years a dose of 10 micrograms (400 units) daily in the summer and a dose 25micrograms (1000 units) daily in the winter to be given at least until the completion of growth, unless there is significant lifestyle change to improve vitamin D status. NHS 'Healthy Start' vitamin drops are available if eligible.
<https://www.healthystart.nhs.uk/for-health-professionals/vitamins/>

≤ 25
Deficient (Treatment)

Treat

TREAT

Prevention (maintenance)

- a. Lifestyle advice on maintaining adequate vitamin D levels - safe sunlight exposure and diet.
- b. Signpost to Healthy Start scheme if eligible
- c. Advise purchasing an age-appropriate Over The Counter vitamin D supplement, e.g. **Abidec/Dalavit**[®]
- d. Consider prescription **only** if options (b) and (c) not appropriate.

Invita D3 2,400 IU/ml oral drops
(1 drop contains 67 IU)
0-1 years 400 IU/day (6 drops)
1-18 years 600 IU/day (9 drops)
In children aged 12-18 Invita D3 25,000 caps maybe more convenient (dose 25,000IU (1 cap) every 6 weeks.

Treatment of deficiency with symptoms

Age	Daily Dose	Duration in Weeks	Prep & Dose	Quantity to Prescribe
1 to 6 months	3000iIU	6	*Thorens 10,000IU/ml 0.3ml daily	10ml
6 months to 11 yrs.	6000iIU	8	*Thorens 10,000IU/ml/ 0.6ml daily	40ml
12-18 yrs.	10000iIU	8	*Thorens 10,000IU/ ml 1ml daily	60ml

***Off label dose**

In children aged 12-18 Invita D3 25,000 caps may be more convenient (dose 25,000IU (1 cap) once every 2 weeks for 6 weeks followed by 400-1000u per day (equiv 1 x 25,000u cap every month)

Prevention may be considered after completion of treatment of deficiency.

FOLLOW UP

If an individual has been treated for deficiency then a repeat bone profile and 25-hydroxyvitamin D concentration should be performed 2-3 months after commencement of treatment to ensure that any biochemical abnormality has resolved and that the serum 25-hydroxyvitamin D concentration is >50nmol/L. If any abnormality has not resolved despite compliance with adequate vitamin D treatment and you are confident about compliance then consider referral to secondary care team. Discuss with secondary care team if you have any concerns about vitamin D toxicity.

Life style advice

- Safe exposure to sunlight is the main source of vitamin D.
Aim to follow current NHS guidance on sun exposure for babies, infants and children.
<https://www.nhs.uk/conditions/pregnancy-and-baby/safety-in-the-sun>
- Dietary source of vitamin D includes oily fish, dairy products, liver and egg yolk.

Primary Care guidance

- Primary Care should always prescribe vitamin D preparations as the brand name 'InVita D3' or 'Thorens' to ensure the correct licensed preparation is dispensed in line with local formulary choice.
- Healthy Start vitamins are available from all children's centres in Doncaster and are free to families eligible for Healthy Start vouchers for children under the age of four.

<https://www.healthystart.nhs.uk/for-health-professionals/vitamins/>

- Vitamin D preparations are available as a health food supplement i.e. Abidec or Dalavit could be used as prevention/maintenance therapy and can also be purchased from community pharmacy, health stores or supermarket.

Calcium Supplementation

Always consider the need for improving calcium intake. Many children with vitamin D deficiency will have a depleted calcium status and/or a poor calcium intake and may therefore benefit from advice about dietary calcium intake.

References

1. National Osteoporosis Society (NOS) guideline Vitamin D and bone health: a practical clinical guideline for management in children and young people [National Osteoporosis Society, 2015]
2. The National Institute for Health and Care Excellence (NICE) guideline *Vitamin D: supplement use in specific population groups* [NICE, 2014]
3. RCPCH Guidance for Vitamin D in Childhood Oct 2013.
4. Sheffield CCG Guidelines for the management of children with suspected vitamin D deficiency in primary care setting.
5. SACN [Vitamin D and Health](#) 2016
6. NICE CKS [Vitamin D deficiency in children](#) 2016
7. [Invita D3 2,400 IU/ml oral drops, solution SPC](#)
8. [THORENS 10 000 I.U. /ml oral drops, solution SPC](#)

These guidelines have been developed by the Medicines Management Team in collaboration with DBTHFT and Primary Care Clinicians.

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