Guideline for the management of children and young people with suspected Vitamin D deficiency

WHO TO TEST

Do not routinely test children and young people for vitamin D deficiency, unless: signs and symptoms of rickets or other musculoskeletal symptoms, clinical features of hypocalcaemia (e.g. irritability, tetany, seizures) or conditions associated with vitamin D deficiency (e.g. infantile cardiomyopathy), abnormal bone profile, radiological features of osteopenia, rickets or pathological fractures, suspected or diagnosed bone disease (e.g. osteomalacia), metabolic or chronic conditions (e.g. renal/liver disease)

INTERPRET

25OH vitamin D (nmol/L)

>50
Sufficient

Maintain vitamin D through safe sun exposure and current diet.

25-50
At least until the completion of growth
Inadequate

Children above the age of 1 month a dose of 10 micrograms (400 units) daily 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/

≤50
Deficient

Treat

TREAT

Maintenance

a. Lifestyle advice on maintaining adequate vitamin D levels - safe sunlight exposure and diet.
b. Ensure dietary calcium intake is adequate
c. Signpost to Healthy Start scheme if eligible.
d. Advise purchasing an age-appropriate OTC vitamin D supplement, e.g. Abidec/Dalavit®.
e. Consider prescription only if (c) and (d) 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 young people aged 12-18 yrs, **Invita D3 25,000IU caps**, *one capsule every 6 weeks* may be considered.

Treatment of deficiency with symptoms

Age	Daily Dose	Duration (weeks)	Prep and Dose	Quantity
1 to 5 months	3000IU	8	Thorens 10,000IU/ml 0.3ml daily	20ml
6 months to 11 yrs	6000IU	8	*Thorens 10,000IU/ml 0.6ml daily	40ml
12 to 18yrs	10000IU	8	*Thorens 10,000IU/ml 1ml daily	60ml

Thorens dose is off label

In children and young people 12-18 yrs and concerns about adherence, **Invita D3 25,000IU caps**, *one capsule twice weekly for 6 weeks* may be more convenient.

Maintenance dose of 400 – 600IU daily may be considered after completion of treatment

FOLLOW UP

A repeat bone profile and 25-hydroxyvitamin D concentration (and a PTH test if the patient has rickets or hypocalcaemia) should be performed shortly after completion of treatment for deficiency (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.

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Refer to secondary care if:

- repeated hypocalcaemia (with or without symptoms) or persisting low plasma phosphate or low/high alkaline phosphatase
- medical conditions predisposing to hypercalcaemia (e.g. sarcoidosis, TB, metastatic bone disease or primary hyperparathyroidism)
- abnormalities associated with rickets
- malabsorption disorder, severe liver disease or end of stage CKD
- active or history of renal stones
- poor response to treatment despite adherence
- concerns about vitamin toxicity
- pregnancy

Lifestyle advice

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

Primary care guidance

- If being prescribed on an FP10 then vitamin D preparations, then to be prescribed 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 and young people 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. Calcium - BDA

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
9. Diagnosis | Diagnosis | Vitamin D deficiency in children | CKS | NICE
10. Scenario: Management | Management | Vitamin D deficiency in children | CKS | NICE

These guidelines have been developed by the SY ICB Medicines Optimisation Team Doncaster Place in collaboration with DBTHFT and Primary Care Clinicians. V3.0 September 2025