Vitamin D Deficiency and Nutritional Rickets - Summary Clinical Guideline

Reference No: CH CLIN G164

Vitamin D levels are defined as:

Vitamin D Status	Vitamin D Severe Deficiency	Vitamin D deficiency:	Vitamin D Insufficiency:	Vitamin D sufficiency:	Risk of Vitamin D toxicity:
Serum 25 hydroxyvitamin D level	<12.5 nmol/l	< 25 nmol/l	25-50 nmol/l	> 50nmol/l	> 250 nmol/l

The Department of Health recommends daily vitamin D supplements (given as a multivitamin preparation) to the following:

1. All children between 6 months and 5 years.

2. Breast fed infants from age of one month if their mother has not taken vitamin D supplements in pregnancy or if she is known to be vitamin D deficient or insufficient

If you are suspecting rickets or vitamin D deficiency please follow the investigations and management in the main guideline.

7.0 Management of Vitamin D insufficiency (Serum 25-hydroxyvitamin D 25-50 nmol/l)

Give advice on safe sun exposure

Advise multivitamin containing vitamin D 200-400units/day. This should be continued long-term unless there is a significant lifestyle change to improve vitamin D levels. Some children require supplementation until growth is completed

Re-testing is not normally required if the individual is asymptomatic and compliant.

8.0 Management of Vitamin D deficiency (<25nmol/l) and Nutritional Rickets

8.1 Colecalciferol (D3) and Ergocalciferol (D2)

Dose depends on age. Doses are equivalent

AGE	Colecalciferol/ Ergocalciferol (3000 IU/ml)
1-6months	1ml per day
6 months – 12 years	2ml per day
12- 18 years	3ml per day

Treatment is advised for 8-12 weeks for vitamin D deficiency and 3-6 months for Nutritional rickets provided dietary factors have improved.

Preparations for treatment:

Colecalciferol solution (3000units/ml) - **contains animal products and is not suitable for vegetarians.**

Ergocalciferol solution (3000 units/ml) – **may contain peanut oil. Unlicensed medicines**

Ergocalciferol tablets (10,000unit/ tablets)

9.0 Indications for secondary care Management

- Low calcium with or without symptoms (irritability, brisk reflexes, tetany, seizures or other neurological abnormalities)
- 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 Emergency department
- Asymptomatic: discuss treatment with paediatrician

Children with underlying complex medical disorders (e.g. liver disease, intestinal malabsorption)

Please refer to the Vitamin D Deficiency and Nutritional Rickets full clinical guidelines for further information.