

VITAMIN D DEFICIENCY RICKETS (VDDR)
NZPSU Reporting form

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CASE DEFINITION FOR VITAMIN D DEFICIENCY RICKETS

Children ≤ 15 years of age with rickets secondary to simple Vitamin D deficiency (also known as nutritional rickets) confirmed biochemically and/or radiologically.

Inclusion criteria (Biochemical)

1. Low serum 25-hydroxyvitamin D (25OHD)
2. Elevated serum alkaline phosphatase

Supplemental data *ideally* to be obtained prior to treatment (and expected results*):

1. Serum calcium and albumin (normal or low) [†]
2. Serum phosphate (normal or low)
3. Serum PTH (elevated)
4. X-ray confirmation of rickets at the distal ulnar or femoral epiphysis[‡]
5. Haemoglobin, MCV and serum ferritin

* These results are not essential for reporting.

[†] Ionized Calcium is also acceptable

[‡] In rare instances, the x-ray features of rickets may not be present at diagnosis e.g. if linear growth is arrested (and growth plate activity is blunted) or in the very early phase of the disease when x-ray changes at the growth plate are not yet visible. For this reason, x-ray confirmation of rickets is not a strict inclusion criterion but should be obtained during the initial patient evaluation.

Exclusion criteria

1. Vitamin D deficiency rickets associated with underlying disease, such as fat malabsorption, liver disease and renal insufficiency. Patients receiving total parenteral nutrition are also excluded.
2. Vitamin D deficiency secondary to heritable disorders of vitamin D metabolism, including:
 - 1 α -hydroxylase deficiency (pseudo-vitamin D deficiency rickets)
 - Vitamin D receptor defects (hypocalcemic vitamin D resistant rickets)
3. Phosphopaenic rickets of any aetiology (where hypophosphatemia is the primary cause of the rickets, and not due to calcipenic rickets with secondary hyperparathyroidism)

REPORTING CLINICIAN

1. Name _____

2. Month/Year of Report ____/____

3. Date questionnaire completed ____/____/____

PATIENT DETAILS

4. First 2 letters of first name _____

5. First 2 letters of surname: _____

6. Date of Birth ____/____/____

7. Sex: ☐ M ☐ F

8. Date of diagnosis: ____/____/____

9. Location (City/Town) _____

10. Country of birth of child: _____

11. Has the child's mother immigrated to New Zealand? Yes ☐ No ☐ Unknown ☐

If Yes, from what country? _____

When (month/year)? ____/____

If this patient is primarily cared for by another physician whom you believe will report the case, please write the other physician's name and complete questionnaire details above this line and return. If no other report is received for this child we will contact you for further information. Please keep the patient's name and other details on your NZPSU file.

The primary clinician caring for this child is: **Name:**

Hospital

Instructions: Please answer each question by ticking the appropriate box or writing your response in the space provided.

DK = Don't Know

NA = Not Applicable

FAMILY DETAILS

12. Ethnicity of Mother: *(tick as many as apply)*

NZ European ☐ Maori ☐ Samoan ☐ Cook Island Maori ☐ Tongan ☐
Chinese ☐ Indian ☐ Niuean ☐ Other ☐ Please state: _____

13. Mother's Country of birth: _____

14. Ethnicity of Father: *(tick as many as apply)*

NZ European ☐ Maori ☐ Samoan ☐ Cook Island Maori ☐ Tongan ☐
Chinese ☐ Indian ☐ Niuean ☐ Other ☐ Please state: _____

15. Father's Country of birth: _____

16. Where did the child spend most of his/her life? _____ City/Town _____ Province DK ☐

17. a) Number of children in the family: _____ DK ☐

b) Number diagnosed with vitamin D deficiency rickets: _____ DK ☐

MEDICAL HISTORY:

18. Does the child have other medical conditions (including allergies)? Yes ☐ No ☐ DK ☐

If yes, please specify: _____

19. Was the child on any medications at diagnosis (other than Vitamin D)? Yes ☐ No ☐ DK ☐

If yes, please specify: _____

20. Age of mother at delivery: _____ DK ☐

21. Gestational age: _____ DK ☐

22. Birth Weight: _____ DK ☐

NUTRITION HISTORY:

A) CHILD

23. Was/is the child breastfed? Yes ☐ No ☐ DK ☐

If yes, specify duration: _____ months Exclusively? Yes ☐ No ☐ DK ☐

24. Did the child receive commercial infant formula? Yes ☐ No ☐ DK ☐

If yes, at what age? _____

25. Does/did the child drink unmodified cow's milk? Yes ☐ No ☐ DK ☐

26. Did the child receive multi-vitamin/vitamin D supplements prior to diagnosis of rickets? Yes ☐ No ☐ DK ☐

If yes, specify which vitamin preparation was used? _____ DK ☐

If yes, prescribed dose: _____ DK ☐ Age started: _____ DK ☐ Duration given: _____ DK ☐

B) MOTHER

27. Did the mother receive vitamin D supplementation during her pregnancy? Yes ☐ No ☐ DK ☐

If yes, specify which vitamin preparation was used? _____ DK ☐

If yes, prescribed dose: _____ DK ☐ Duration taken (months): _____ DK ☐

28. Did the mother receive vitamin D supplementation after delivery? Yes ☐ No ☐ DK ☐

If yes, specify which vitamin preparation was used? _____ DK ☐

If yes, prescribed dose: _____ DK ☐ Duration taken (months): _____ DK ☐

OTHER RISK FACTORS FOR VITAMIN D DEFICIENCY

29. What is the child's skin colour? Dark ☐ Intermediate ☐ Fair ☐

30. What is the mother's skin colour? Dark ☐ Intermediate ☐ Fair ☐

31. Did/Does the child use sunscreen? Always ☐ Usually ☐ Never ☐ DK ☐

32. Was the mother veiled during the pregnancy? Yes ☐ No ☐ DK ☐

If yes, please tick the appropriate category below (tick one only): DK ☐

☐ consistently covered – covered up, including arms, hair and neck, when outdoors

☐ inconsistently covered – did not usually cover fully in her own backyard/garden

☐ uncovered – did not generally cover up arms, hair and neck when outdoors

33. Is the child veiled? Yes ☐ No ☐ DK ☐

If yes, please tick the appropriate category below (tick one only): DK ☐

☐ consistently covered – covered up, including arms, hair and neck, when outdoors

☐ inconsistently covered – did not usually cover fully in her own backyard/garden

☐ uncovered – did not generally cover up arms, hair and neck when outdoors

If yes, from what age? _____

CLINICAL PRESENTATION AND DIAGNOSTIC STUDIES (ideally obtained prior to treatment)

34. a) What were the child's presenting signs and symptoms? (tick as many as apply)

Seizures ☐ Limb deformity ☐ Fracture ☐ Motor delay ☐ Respiratory disease ☐
 Poor growth ☐ Hypotonia ☐ Bone pain ☐ Other: _____

b) Was the child diagnosed due to screening because of affected sibling/s? Yes ☐ No ☐

35. Were there radiological signs of rickets?

Yes ☐ No ☐ Not Done ☐ DK ☐

If yes, (tick as many as apply)

distal ulna ☐ distal femoral epiphysis ☐

36. Biochemical data (please indicate whether results were obtained prior to treatment (Rx) or once Rx was initiated, along with the appropriate units and normal ranges for your laboratory)

Parameter	Results prior to Rx	Results during Rx*	Units	Normal range	DK
25-hydroxyvitamin D					
Alkaline phosphatase					
Ionized calcium					
Total calcium					
Albumin					
Phosphate					
PTH					
Haemoglobin					
MCV					
Ferritin					
* Only necessary if biochemistry was not performed <i>before</i> starting vitamin D therapy.					

37. Was 25-hydroxyvitamin D obtained in the mother?

Yes ☐ No ☐ DK ☐

If yes, what was the result? _____

MEDICAL TREATMENT

38. Was the child commenced on treatment?

Yes ☐ No ☐ DK ☐

If yes, what was prescribed?

Medication	Dose (units)	Frequency	Duration (days/weeks/months)

MISCELLANEOUS

39. In your opinion, please check the risk factors for Rickets: (tick as many as apply)

	<u>Child</u>	<u>Mother</u>
Dark-skinned		
Inadequate dietary intake of vitamin D		
Inadequate vitamin D supplementation		
Inadequate sun exposure - Lifestyle		
Inadequate sun exposure - Southern latitude		

Other (please specify): _____

Thank you for completing this form