

RICKETS

Table 11. Assessment of Etiology of Rickets Based on Laboratory Results

	Ca	Phos	Alk phos	iPTH	25-(OH)D	1,25-(OH) ₂ D	Urine Ca/ Cr	TRP
Nutritional/insufficient sunlight	N or ↓	↓	↑	↑	↓	↑	↓	↑
Malabsorption	N or ↓	↓	↑	↑	↓	↑	↓	↑
Renal tubular defects	N or ↓	↓	↑	↑	N	↑	↑	N or ↓
Altered vitamin D metabolism	N or ↓	↓	↑	↑	↓	↑	↓	↑
Genetic forms of rickets								
X-linked, AD, and AR hypophosphatemic rickets	N	↓	↑	N or ↑	N	N or ↑	N or ↓	↓
1 α -hydroxylase deficiency	↓	↓	↑	↑	N	↓	↓	↑
Vitamin D receptor mutations (vitamin D resistance)	↓	↓	↑	↑	N	↑	↓	↑
Hereditary hypophosphatemic rickets with hypercalciuria	N or ↓	↓	↑	↑	N	↑	↑	↓
Hypophosphatasia	N or ↑	N or ↑	↓	N or ↓	N	N or ↓	N or ↑	N

AD, autosomal dominant; alk phos, alkaline phosphatase; AR, autosomal recessive; Ca, calcium; Ca/Cr, calcium/creatinine ratio; iPTH, intact parathyroid hormone; N, normal; 1,25-(OH)₂-D, 1,25-dihydroxy vitamin D; phos, phosphorus; TRP, tubular reabsorption of phosphorus $[(1 - (U \text{ phos} \times P \text{ Cr}/U \text{ Cr} \times S \text{ Phos})) \times 100]$, normal 85–95%; 25-(OH)-D, 25-hydroxy vitamin D.

Table 12. Dietary Reference Intake for Calcium and Vitamin D

Age	Calcium			Vitamin D		
	Estimated Average Requirement (mg/d)	Recommended Dietary Allowance (mg/d)	Upper Level Intake (mg/d)	Estimated Average Requirement (IU/d)	Recommended Dietary Allowance (IU/d)	Upper Level Intake (IU/d)
0–6 mo	200	200	1,000	400	400	1,000
6–12 mo	260	260	1,500	400	400	1,500
1–3 y	500	700	2,500	400	600	2,500
4–8 y	800	1,000	2,500	400	600	3,000
9–18 y	1,100	1,300	3,000	400	600	4,000
19–30 y	800	1,000	2,500	400	600	4,000

Adapted from Ross AC, Abrams SA, Aloia JF, et al. Dietary reference intakes for calcium and vitamin D. <http://www.iom.edu/~media/Files/Report%20Files/2010/Dietary-Reference-Intakes-for-Calcium-and-Vitamin-D/Vitamin%20D%20and%20Calcium%202010%20Report%20Brief.pdf>. Accessed March 1, 2015.