

Vitamin D Status in Healthy Pre-pubertal Egyptian Children

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Authors declare no conflicts of interest

Background/Aims:

Despite a shining sun all through the year, vitamin D deficiency is still prevalent in Egyptian children which suggests a relative resistance to vitamin D in Egyptian population.

Thus, we aimed to assess 25(OH)D status in healthy pre-pubertal Egyptian children and its relation to anthropometric and calcium homeostatic parameters.

Results:

The median hours of sun exposure was 3 hours/week. Twenty seven cases (45%) had 25(OH)D deficiency, 23(38.3%) had insufficiency and only 10 (16.7%) had adequate 25(OH)D levels.

Serum 25(OH)D correlated positively with hours of sun exposure ($p=0.01$), percentage of body exposure to the sun (0.002), height SDS ($p=0.023$), serum calcium ($p=0.02$) and negatively with BMISDS ($P=0.01$), serum ALP ($p=0.02$) and PTH (0.001).

Data according to 25(OH)D status are shown in Table 1.

Methods:

Sixty healthy children aged 3-10 years coming to the Outpatient clinic, Children's Hospital, Ain Shams University for minor complaints were randomly recruited in the study. Children having any form of rickets, chronic illness, receiving any medications that might interfere with vitamin D absorption or calcium and/or vitamin D therapy in the last 6 months prior to study were excluded. All were subjected to history taking, anthropometric assessment and measurement of serum calcium, phosphorus, alkaline phosphatase, 25(OH)D and parathyroid hormone. Serum 25(OH)D levels <30 ng/mL and 20 ng/mL were defined as vitamin D insufficiency and deficiency, respectively, while levels >30 ng/mL were defined as vitamin D sufficiency

Table 1. Data of subjects according to vitamin D status

	Vitamin D deficiency (n=27)	Vitamin D insufficiency (n=23)	Adequate vitamin D (n=10)	p
Sun exposure (hrs/wk)	2.3±0.45	3.0±0.5	3.5±0.8	0.87
Height SDS	-0.12±0.21	+0.78±0.51	+1.53±0.33	0.02
BMI SDS	+4.23±0.11	+3.10±0.21	+2.29±0.34	0.01
Total serum calcium (mg/dl)	7.9±0.6	8.3±0.4	9.2±0.5	0.02
Total serum phosphorous (mg/dl)	5.2±0.8	4.9±0.7	5.3±0.8	0.6
Serum ALP	310±100.5	219±112.2	163±117.3	0.03
Serum PTH	67.7±12.4	43.3±10.2	25.9±15.2	0.001

Conclusions:

Vitamin D deficiency and insufficiency are prevalent among Egyptian pre-pubertal children which may be due to vitamin D receptor polymorphism.

