Vitamin D requirements during pregnancy: A new day

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For decades, vitamin D has been recognized only for its ability to correct skeletal abnormalities. This point is made clear by recent recommendations by the Institute of Medicine (IOM). This organization has only recognized vitamin D to have a role in skeletal homeostasis and thus recommended a minimal amount, 400-600 IU/d [1]. Part of the problem here is that vitamin D has long been thought to be a teratogenic substance and thus feared by the obstetrics community [2]. However, these fears are no longer valid and vitamin D not only is not a teratogen, significant amounts are required during pregnancy to avert a wide range of problems including complications of birth, preeclampsia, gestational diabetes, neurodevelopment and asthma incidence in the newborn child [3-4]. Surely more roles of vitamin D will be uncovered in the future in the area of autoimmune function involving type 1 diabetes and multiple sclerosis. How does vitamin D alter all these systems in utero? Our research tell us that this is occurring through epigenetic gene alteration and we are just now starting to understand the processes involved which predominately include inflammation and immune function [8]. It is heartening to see countries like Iran involved in this area of clinical research [6].

How much vitamin D does our group recommend during pregnancy? Our evidence tells us that 4,000 IU/d vitamin D₃ is required and this should begin preconception. We base this recommendation on the amount of vitamin D required to maintain a circulating 25(OH)D levels of 40 ng/ml, the level at which the conversion of 25(OH)D to 1,25(OH)₂D is optimized [3]. If a woman, following delivery, chooses to breast feed her infant she should take a supplement of 6,000 IU/d vitamin D₃ [9]. This amount will ensure adequate vitamin D in her milk to supply her nursing infant with all the vitamin D that the infant requires. These vitamin D intakes in Muslim countries are vitally important because of clothing practices which prohibit any significant vitamin D₃ production due to lack of exposed skin to the sun.

References

5. Litonjua AA, Carey VJ, Laranjo N, Harshfield BJ, McElrath TF, O’Conner GT, et al. Effect of prenatal supplementation with vitamin D on asthma or recurrent wheezing in offspring by age