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Original Article

The Influence of Sunlight Exposure on Serum Vitamin D Concentration and Bone Turnover; a controlled clinical trial

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Abstract:

Background: Sunlight exposure is one of the ways for vitamin D synthesis. However, its effect on vitamin D status via experimental studies is poorly understood. This study was undertaken to address the possibility that sunlight exposure may increase the levels of serum vitamin D, and alter bone turnover in healthy young girls.

Methods: In a controlled clinical trial, young girls were assigned to the test group (n= 45) or control group (n= 80). An outdoor swimming pool was considered for this project and the test group was required to participate in these sessions at least for 8 sessions and to expose to direct sunlight at least for 20 minutes in each session. They were not allowed to use sunscreen during this time. Control group continued their usual manner of sun exposing. Serum levels of vitamin D, calcium, alkaline phosphatase, parathormone, osteocalcin and crossLaps were measured before and after duration of the study in both groups and compared between them.

Results: Subjects aged 27.46±8.78 years. Serum levels of vitamin D and bone markers were constant during the study in both groups. Changes of these variables were not significant between the groups after the study. Serum vitamin D in subjects with white skin color correlated with total time of direct sun exposing after the study (*P*= 0.002).

Conclusion: Sunlight exposure did not affect the serum vitamin D and bone turnover in healthy young girls. However, subjects with bright skin complexion benefit from sunlight exposing more than those with a dark skin color in the case of vitamin D improvement.

Keywords:

Sunlight exposure ، *Vitamin D* ، *Bone turnover*

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