

Lifestyle behaviors and serum vitamin C in the Thai population in Bangkok Metropolitan

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Abstract

This study aimed to investigate the influence of lifestyle behaviors on the vitamin C levels in the circulating blood of the Thai population in Bangkok Metropolitan. The participants (n=250) included community workers (i.e., construction and business office workers) from the Bangkok Metropolitan, and the participants were placed in various behavior and lifestyle groups (Group I: reference; Group II: alcohol drinkers; Group III: outdoor workers; Group IV: smokers; and Group V: combined). The results showed that the lowest and highest vitamin C intakes were 7 and 27 mg/day in Groups IV and III, respectively. Group I (indoor workers free of smoking and drinking), had the highest total serum vitamin C level (39.7 $\mu\text{mol/L}$), while Group V (outdoor workers with smoking and drinking), had the lowest value (12.5 $\mu\text{mol/L}$). Furthermore, Group V had the highest prevalence (44 %) of total serum vitamin C deficiency (<11 $\mu\text{mol/L}$), while Group I had the lowest deficient indication (8 %). The vitamin C dietary intake and total serum levels were positively correlated in the reference group (Spearman's correlation=0.402, $p < 0.05$) but not in the other four groups. The significant adjusted odds ratio of inadequate total serum vitamin C (< 23 $\mu\text{mol/L}$) was 2.90 (CI: 1.15, 7.31) in Group IV and 3.73 (CI: 1.42, 9.81) in Group V. Moreover, the tendency to have an inadequate total serum vitamin C level was demonstrated in the following order: Group I < II < III < IV < V. Our results indicated that outdoor workers (Group III) and smokers (Group IV) had a greater likelihood of having a vitamin C deficiency than the reference group. A high percentage of deficiency was clearly observed among the outdoor workers with smoking and drinking behaviors (Group V).

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