



# Dietary vitamin D, calcium and body fat among adolescents in Jakarta, Indonesia.

*by* Nadiyah Nadiyah



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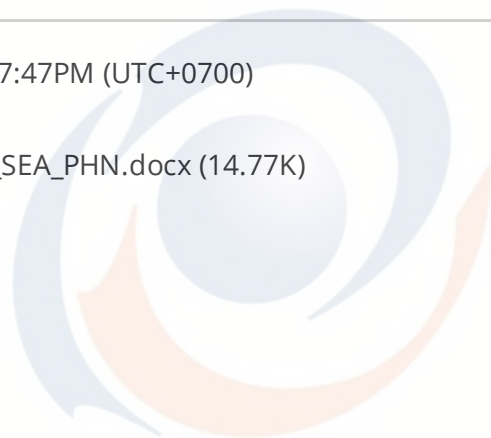
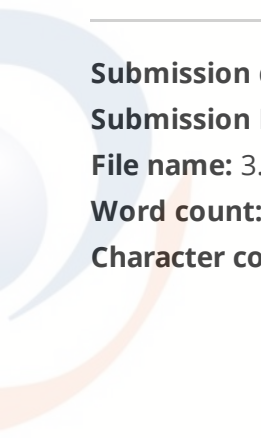
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## **Dietary vitamin D, calcium and body fat among adolescents in Jakarta, Indonesia.**

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With the purpose to explore the relationship between dietary vitamin D, calcium and percentage of body fat in a group of adolescents, this cross-sectional study was carried out with 68 adolescents aged 13 to 14 years old; 37 girls (54.4%) and 31 boys (45.6%). Vitamin D was assessed by two non-consecutive-24 hour dietary recalls, calcium intake was assessed by a semi-quantitative food frequency questionnaire (SQ-FFQ) and percentage of body fat was measured by bioelectrical impedance analysis (BIA). BIA measurements were taken at least 2 hours after meals. The mean age was  $13.2 \pm 0.4$  years. Mean daily vitamin D and calcium intake was  $5.1 \pm 3.9$   $\mu\text{g}$  and  $539.8 \pm 487.6$  mg, respectively. The qualitative evaluation of the diet demonstrated that the main sources of calcium consumed by most adolescents were tofu, tempeh and sweetened condensed milk. Adolescents more often consume egg as a source of vitamin D that has less vitamin D content than fish. Mean percentage body fat was  $23.1 \pm 5.7$  %. Negative correlations were found between body fat and vitamin D intake ( $r = -0.28$ ,  $p = 0.019$ ) and between body fat and calcium intake ( $r = -0.39$ ;  $p = 0.001$ ). In multivariate analysis, vitamin D intake showed a negative correlation with body fat, adjusted by energy intake ( $\beta = -0.438$ , 95%CI: -0.78, -0.09,  $p = 0.012$ ). In conclusion, it was found a negative relationship between vitamin D intake and body fat in adolescents.

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