

## **Dietary Intake, Serum Vitamin D Status, and Sun Exposure of Malaysian Women of Different Ethnicity**

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**Abstract :** Vitamin D insufficiency is reported to be prevalent among women living in different altitudes including the equator where sunshine is available throughout the year. Multiple factors for vitamin D insufficiency include poor intake of vitamin D rich food and inadequate sun exposure, especially among women working indoor with a sedentary lifestyle. Furthermore, Muslim women in Malaysia whose attire covers the entire body are likely to receive poor sun exposure. This research determined serum vitamin D status, vitamin D intake and sun exposure of women aged 20-45 years of different ethnicity in Kuala Lumpur, Malaysia. Blood samples were collected from 106 women for determination of serum 25(OH)D levels. Information about vitamin D intake and sun exposure were obtained by interviewing the subjects using pre-tested questionnaires. The overall mean serum 25(OH)D was found to be  $29.9 \pm 14$  nmol/L. Vitamin D deficiency and insufficiency was prevalent and highest among the Malay women. Less than ten percent of the subjects in this study met the sufficient vitamin D level recommendation of  $\geq 50$  nmol/L. Intake of vitamin D rich food such as oily fishes was poor across the different ethnicity. Other dietary sources of vitamin D in the diet were fortified bread and skim milk. On the other hand, the median sunlight exposure of the subjects was 3.9 hours per week. The Malay women reported to have the highest duration being exposed to the sun. Nevertheless, due to cultural clothing practices, these women had the least body surface area exposed to sunlight, resulting in the lowest calculated sun index score compared to the Chinese and the Indians. Low intake of vitamin D rich foods and sun exposure were negatively correlated with serum 25(OH)D level. In conclusion, intake of food sources rich in vitamin D and adequate body surface area exposed to the sun are essential to ensure healthy vitamin D level. Supplementation of vitamin D may be recommended to women whom unable to meet these recommendations.

**Keywords :** serum 25-OH, sun exposure, vitamin D food frequency, vitamin D deficiency

**Conference Title :** ICND 2018 : International Conference on Nutrition and Dietetics

**Conference Location :** Kyoto, Japan

**Conference Dates :** November 15-16, 2018