

## **A48 Factors associated with physical activity and sun exposure among preadolescent boys and girls: A secondary analysis of PREBONE-Kids study**

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Currently there is limited local data to describe the physical activity and sun exposure among children in relation to their vitamin D status. The objective of this study is to assess the physical activity and sun exposure of preadolescent school children (aged 9 - 11 years old) in Kuala Lumpur according to their serum 25(OH) D status. Serum 25(OH)D of 243 children were analysed using LCMS/MS while sun exposure and physical activity levels were assessed using questionnaires in the PREBONE-Kids study. In this secondary analysis, physical activity pattern (duration, MET score, types of activities) and sun exposure pattern (duration, Sun Index (SI), body surface area exposed to sun, clothing practices) were being further analysed. Nearly 70% of the preadolescent children in this study had vitamin D insufficiency (<50 nmol/L) with the mean serum 25(OH)D levels of 43.9nmol/L. Children with sufficient vitamin D status had higher MET scores than vitamin D insufficient counterparts [860(656) vs 865(560),  $p<0.005$ ]. Boys with higher serum vitamin D were engaged in activities such as football and *silat* ( $p<0.005$ ). Preadolescent children who wore short-sleeved shirt attire had a higher chance to achieve optimal vitamin D level ( $p<0.001$ ) while children who wore sports cap during school activities were associated with a higher risk of vitamin D insufficiency. In conclusion, higher physical activity, sun exposure; and clothing practices during outdoor activities were factors that contributed to a higher serum vitamin D among Malaysian preadolescents. Thus, the promotion of healthier lifestyle that incorporates physical activity and sun exposure are important as means to boost vitamin D level of preadolescent children in Malaysia.