Indonesian Children Susceptible to Vitamin D Deficiency

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Deficiency or a lack of vitamin D becomes a health problem that threatens Indonesian children. Vitamin D deficiency can stunt growth and cause bone diseases, as well as other diseases, such as cardiovascular disease, dyslipidemia, diabetes, and hypertension.

UGM nutritionist, Dian Caturini Sulistyoningrum, B.Sc., M.Sc., said the prevalence of vitamin D deficiency is higher in countries having four seasons with limited exposure to sunlight, for instance, in European countries, North America, and some parts of Australia. However, vitamin D deficiency is now affecting tropical countries as well.

“Vitamin D deficiency has become a problem in almost all countries in the world, including countries with abundant sun exposure, such as Indonesia,” said Dian at the Department of Health Nutrition, Faculty of Medicine, Public Health, and Nursing UGM.

Dian explained the result of her research in Canada on various ethnic groups, namely Caucasian, East Asian, South Asian, and Aborigine, showed that individuals of South Asian ethnicity have the lowest level of vitamin D compared to other ethnic groups despite having the same body mass index (BMI). This fact shows that South Asian people with the same sun exposure as Caucasians in four season countries are susceptible to vitamin D deficiency.

The issue of low vitamin D level in South Asian people, she stated, is caused by excess visceral fat around the organs like the liver, heart, and kidney. Visceral fat absorbs more vitamin D, causing low vitamin D level in blood. Body fat distribution is linked to vitamin D deficiency, as the vitamin is fat soluble.

Dian said her research on children aged 15-18 years in 10 schools of Yogyakarta showed a similar result. Almost 100% of the study sample had vitamin D deficiency.

“As much as 68 obese teenage boys had vitamin D deficiency.”

The vitamin D level of the teenagers was found at the minimum level of 15 ng/dL. Meanwhile, according to the standard, vitamin D level in blood should be at least 20 ng/dL. Low level of vitamin D in the body can increase the risk of nontransmissible diseases, such as cardiovascular, hypertension, dyslipidemia, glucose intolerance, diabetes, as well as autoimmune diseases.

Vitamin D supplement intervention with intake of 800 UI per day in six weeks improved the insulin resistance on the teenagers. Hence, the provision of supplement can be one of the solutions to treat vitamin D deficiency.

Dian pointed out the importance of increasing public awareness of the significance of vitamin D in creating a better future for children. If a child has a vitamin D deficiency, it will stunt their growth and make them susceptible to nontransmissible diseases, and affect their quality of life in the future.

“Sunlight exposure provides 90% of vitamin D intake, while the remaining intake can be obtained from food, including tuna, mackerel (Spanish and Indian mackerel), salmon, eggs, milk, and so on,” explained Dian.

In addition to maintaining a healthy lifestyle and balanced diet combined with physical activities, Dian encouraged the community to consult their health regularly to health workers, including their vitamin D status so that it can be monitored properly.

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