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Vitamin and minerals may reduce eczema risk in children.

Increased intakes of beta-carotene, vitamin E, folic acid, and iron may reduce the risk of atopic dermatitis, a form of eczema, suggests a new study from Korea.

Children with the highest average intakes of the four nutrients were found to have significantly lower risks of atopic dermatitis, than children with the lowest average intakes, according to findings published in the European Journal of Clinical Nutrition.

Researchers from Kyung Hee University in Seoul used both data on intakes of vitamin and minerals, and corresponding biomarkers, in relation to atopic dermatitis, the first time such an approach had been used.

Atopic dermatitis (AD), characterised by areas of severe itching, redness and scaling, is one of the first signs of allergy during the early days of life and is said to be due to delayed development of the immune system. According to the American Academy of Dermatologists it affects between 10 to 20 per cent of all infants, but almost half of these kids will 'grow out' of eczema between the ages of five and 15.

Study details

The Seoul-based scientists recruited 180 five-year olds with AD, and 242 five-year olds without AD and assessed their diets using a validated semi-quantitative food frequency questionnaire (FFQ). Blood samples were also taken after a period of fasting to determine levels of fat-soluble vitamins, like retinol, alpha-tocopherol (a form of vitamin E), and beta-carotene, and vitamin C.

Results showed that the risk of AD was 56 per cent lower in children with the highest average intakes of beta-carotene, compared to the lowest.

Moreover, dietary vitamin E, folic acid, and iron were associated with 67, 63, and 61 per cent reductions in AD risk, added the researchers.

The dietary intake data was also matched by data from the blood samples, with the highest average levels of alpha-tocopherol associated with a 36 per cent lower risk of AD, while retinol was associated with a 26 per cent lower risk.

"These findings suggest that higher antioxidant nutritional status reduces the risk of AD and that such risk-reduction effects depend on nutrient type," wrote the researchers.

Benefits are skin deep

Commenting on the possible mechanism, the researchers note that reactive oxygen species (ROS) from environmental pollution and the sun may promote oxidative damage to proteins in the outermost layer of the skin (stratum corneum), which would exacerbate AD.

"Antioxidant nutrients have been proposed to counteract oxidative stress and inhibit the inflammatory response and are known to be possibly associated with the ability of the individual to restrain the inflammatory response and allergic diseases," they added.

Source: European Journal of Clinical Nutrition

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