

Obese children are more likely to develop skin conditions related to the immune system, study finds

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Childhood obesity can contribute to the development of common immune-mediated skin diseases (IMSDs), such as alopecia areata, atopic

dermatitis, and psoriasis, new research finds. Maintaining a healthy weight could potentially help lower the chances of developing these skin conditions.

A [novel study](#) in the *Journal of Investigative Dermatology* details the findings of an analysis of 2,161,900 Korean [children](#) from 2009 to 2020 to investigate the relationship between obesity or dynamic changes in body weight and the development of IMSDs.

IMSDs have detrimental effects on quality of life, including emotional, physical, social, and functional well-being, in children and their families. Although several biologics have proven effective for treating children with atopic dermatitis or psoriasis, limited treatment options and a lack of clinical trials for systemic therapy still present considerable challenges in treating children with IMSDs.

Childhood obesity rates have surged over the past years, transforming it into an undeniable public health crisis, which was compounded by the effects of the pandemic and national lockdowns. The precise mechanisms responsible for the involvement of obesity in the development of chronic inflammatory skin diseases, including psoriasis, atopic dermatitis, and skin malignancies, remains uncertain.

Co-lead investigator of the study, Seong Rae Kim, MD, Department of Dermatology, Seoul National University College of Medicine, Seoul, Republic of Korea, explains, "Previously, many studies have looked at the link between [childhood obesity](#) and IMSDs. However, most of these studies only looked at data from one point in time or compared groups with and without the condition (i.e., obesity or overweight), and they had small sample sizes.

"Very few studies have followed children over a long period to see how their body weight affects the development of these skin conditions. This

means we still don't know for sure whether being obese or overweight causes atopic dermatitis and psoriasis or if the opposite is true. Also, no studies have yet looked at the effect of body weight on alopecia areata or how dynamic changes in a child's weight affect development of common IMSDs."

Co-lead investigator Hyunsun Park, MD, Ph.D., Department of Dermatology, Seoul National University College of Medicine; Laboratory of Intestinal Mucosa and Skin Immunology; and Department of Dermatology, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Seoul, Republic of Korea, adds, "Our research team is very interested in the skin-gut axis. We think that various factors, including diet, obesity, or other lifestyles can affect gut environment and contribute to the development of IMSDs. We are trying to find the puzzle pieces to demonstrate how they are connected, and our current research is a step towards that understanding.

"We conducted a large study using data from a [national database](#) in Korea, which includes information on almost all infants and children across the country. Our goal was to see how a child's weight and changes in their weight are related to the development of [alopecia areata](#), atopic dermatitis, and psoriasis."

The study revealed that children who were obese were more likely to develop common IMSDs compared to children with a normal weight. Among the three most common IMSDs, atopic dermatitis demonstrated the most obvious trend; children who gained weight (normal to overweight) had a higher risk of developing atopic dermatitis than children who maintained their normal weight, and children who lost weight (overweight to normal) had a lower risk of developing atopic dermatitis than children who maintained their overweight.

Co-lead investigator Seong-Joon Koh, MD, Ph.D., Department of

Internal Medicine and Liver Research Institute, Seoul National University College of Medicine; and Laboratory of Intestinal Mucosa and Skin Immunology, Seoul, Republic of Korea, concludes, "Our findings support the importance of promoting weight maintenance among children who are already within the normal weight range because it may help reduce the risk of developing atopic dermatitis.

"In addition, prevention of excessive weight gain and purposeful weight loss, including adopting healthy diet strategies in children with [obesity](#) to prevent [atopic dermatitis](#), particularly before school age, should be promoted. Implementing purposeful interventions, including nutritional strategies, to decrease body weight may aid in reducing the risk of developing IMSDs in children."

More information: Childhood Obesity, Weight Change, and Pediatric Immune-Mediated Skin Diseases, *Journal of Investigative Dermatology* (2024). [DOI: 10.1016/j.jid.2024.01.037](https://doi.org/10.1016/j.jid.2024.01.037)

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