

Psoriasis severity linked to increased risk of type 2 diabetes

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Severe Psoriasis. Credit: Penn Medicine

People with psoriasis are at a higher risk to develop type 2 diabetes than those without psoriasis, and the risk increases dramatically based on the severity of the disease. Researchers from the Perelman School of Medicine at the University of Pennsylvania found people with psoriasis that covers 10 percent of their body or more are 64 percent more likely to develop diabetes than those without psoriasis, independent of traditional risk factors such as body weight. Applying the study's findings to the number of people who have psoriasis worldwide would equate to 125,650 new cases of diabetes attributable to psoriasis per year. They published their findings this month in the *Journal of the American Academy of Dermatology*.

Psoriasis is a disease of the immune system in which inflammation causes skin cells to multiply faster than normal. They cause raised, red patches covered by silvery scales when they reach the surface of the skin and die. It occurs most commonly on the scalp, knees, elbows, hands, and feet, but can also appear on the lower back, face, genitals, nails, and other places. The American Academy of Dermatology estimates psoriasis affects about 7.5 million Americans.

"The type of inflammation seen in psoriasis is known to promote insulin resistance, and psoriasis and [diabetes](#) share similar genetic mutations suggesting a biological basis for the connection between the two conditions we found in our study," said the study's senior author Joel M. Gelfand, MD MSCE, a professor of Dermatology and Epidemiology at Penn. "We know psoriasis is linked to higher rates of diabetes, but this is the first study to specifically examine how the severity of the disease affects a patient's risk." The study's lead author is Marilyn T. Wan, MBChB, MPH, a post-doctoral research fellow in Gelfand's lab.

In order to measure psoriasis severity, Gelfand and his team used body surface area (BSA), which measures the percentage of the body covered by psoriasis. Using a United Kingdom database, they surveyed general

practitioners about BSA affected by psoriasis and looked at data on 8,124 adults with psoriasis and 76,599 adults without psoriasis over the course of four years, and they adjusted the samples to account for any differences in age, sex, and body mass index and other diabetes risk factors.

They found [patients](#) with a BSA of two percent or less had a relative risk of 1.21 for developing diabetes, meaning their risk is 21 percent higher than those without psoriasis. This risk increased dramatically in patients with a BSA of 10 percent or more. On average, 5.97 out of every 1,000 people will get diabetes in a given year. In the population of patients with a BSA greater than 10 percent, that number jumps to 12.22 per 1,000 people. That group had a relative risk of 1.64, or 64 percent higher than patients with no psoriasis at all. Further, they found that for every 10 percent increase in BSA beyond the initial 10 percent, the relative risk increased by another 20 percent. In other words, patients with 20 percent BSA were at almost an 84 percent higher risk of developing type 2 diabetes, patients with 30 percent BSA were at a 104 percent higher risk, and so on.

"These findings are independent of traditional risk factors for diabetes and still show a strong connection between the increasing severity of psoriasis and the increasing risk of developing diabetes, which makes a strong argument for a causal relationship between the two," Gelfand said.

Gelfand says psoriasis BSA should be routinely measured, and patients targeted for diabetes prevention, especially in those with a BSA of 10 percent or higher. He also says these results add to the growing understanding of the additional risks associated with severe [psoriasis](#), which Gelfand's other studies have shown can include major cardiovascular events, liver disease and death.

More information: Marilyn T. Wan et al, Psoriasis and the Risk of Diabetes: A Prospective Population-Based Cohort Study., *Journal of the American Academy of Dermatology* (2017). [DOI: 10.1016/j.jaad.2017.10.050](https://doi.org/10.1016/j.jaad.2017.10.050)

Provided by Perelman School of Medicine at the University of Pennsylvania

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