

Choice of career is a major risk factor for persistent neurodermatitis

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A child who can't stop scratching himself may well be suffering from atopic dermatitis, also known as neurodermatitis. Extreme irritability of the skin with a concomitant urge to scratch is typical of the disorder. The condition often appears during the first year of life and is on the increase in industrialized countries. The patient's skin becomes hypersensitive and reacts strongly to even mild irritation.

A research team led by Dr. Astrid Peters and Professor Katja Radon from Ludwig-Maximilians-Universitaet (LMU) in Munich has just published a [longitudinal study](#) which monitored the course of the disease in almost 4000 subjects from early childhood to adulthood. The participants also supplied information regarding atopic reactions and occupational exposure to possible sensitizing agents. "Based on the data we obtained, we developed a probabilistic model that can predict the progress of the disorder during puberty, a phase which is often critical", says Radon. "It emerged that the most important risk factor for adolescents is occupational exposure to substances such as flour or disinfectants. These results have significant implications for patient care, particularly with respect to their career choices." (*Journal of Allergy and Clinical Immunology* online, 07 September 2010)

Neurodermatitis is very stressful, both for young patients and for their parents. The chronic irritability of nerve endings in the skin associated with the condition can cause young children to scratch until they bleed, which in turn may lead to infection of the inflamed skin. Atopic eczema, the medical term for neurodermatitis, is classified as an allergic disorder.

The condition most likely results from a combination of genetic and environmental factors. [Cigarette smoke](#) and household dust are among the factors associated with the disease, while contact with siblings or other children reduces risk. The incidence of atopic eczema among children in developed nations is steadily increasing, and some estimates put it as high as 20% in Europe.

Neurodermatitis may become manifest in infancy, but often clears up as children get older. In some cases, the disorder resolves itself during early adolescence whereas, in other individuals, puberty markedly exacerbates the condition. "It is known that a patient's choice of career is one factor that plays a role", explains Radon, "but there was no way to predict how the disorder might progress as patients got older. We have re-evaluated data from several previous studies on asthma and allergies, which has allowed us to obtain a general picture of the course of [atopic dermatitis](#) during puberty, to identify exacerbating factors - and to model its development in individual cases."

Data on almost 4000 subjects were analyzed in the study, which was financed by the Federal Ministry for Employment and Social Welfare and the Federal Centre for Occupational Health and Safety. The onset and progression of atopic dermatitis in a follow-up patient cohort at 9-11 and 16-20 years was compared, and factors associated with primary manifestation, re-emergence or maintenance of a pre-existing condition during adolescence were assessed. In about 7% of the participants, atopic dermatitis first appeared during this phase, with girls being at higher risk of developing the condition during their teenage years. Conversely, boys were overrepresented among younger patients. As expected, the chance of developing neurodermatitis increased significantly if a close relative suffered from the disorder.

"Children who were breast-fed, have siblings and attended kindergarten tend not to develop the condition in early childhood", says Peters.

"Strikingly, these factors have much less effect on risk for the late-onset form. Occupational exposure to irritating substances seems to be the only predisposing factor of major significance in cases of late-onset neurodermatitis." Groups that are at increased risk include bakers, cleaners and nurses. "Even short-term exposure to the chemicals one encounters in these settings can have a negative effect", Peters points out. "Allergologists should take these findings into account when dispensing career counseling to young patients or adolescents at risk for neurodermatitis."

Provided by Ludwig-Maximilians-Universität München

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