

Lower occurrence of atopic dermatitis in children thanks to farm animals and cats

December 2 2010

Children whose mothers are exposed to farm animals and cats are better protected against atopic dermatitis and are less likely to develop this painful inflammation of the skin in their first two years of life. A group of researchers from the University of Zurich and other universities have published evidence supporting this theory in the *Journal of Allergy & Clinical Immunology*.

Atopic [dermatitis](#) (also known as atopic eczema) is a chronic and extremely painful inflammation of the skin that frequently occurs in early childhood, generally already in infancy. Up to 20 percent of all [children](#) in industrialized countries are affected, making it one of the most common childhood skin diseases.

The need to better understand this disease is all the greater considering the intense suffering it causes in small children. Atopic dermatitis is, however, an allergic condition and all allergic reactions result from complex interactions of genetic and environmental factors on the [immune system](#). Earlier research has already indicated that allergies are less common in children who grow up on farms and whose mothers live on farms during their pregnancy. Exposure to farm animals and bacteria frequently found in farms as well as drinking milk from the dairy offer the immune system protection. However, proof of this protective effect in connection with atopic dermatitis has remained elusive.

Now, the *Journal of Allergy & Clinical Immunology* (JACI) has published a study by Caroline Roudit from the research team of Roger

Lauener, University of Zurich. The study analyzes how prenatal environmental factors and genetic mechanisms influence the development of atopic dermatitis during the first two years of life. The authors of the study examined children in rural areas of five European countries: Austria, Finland, France, Germany and Switzerland. Of the 1,063 children taking part in the study, 508 were from families that lived on farms, 555 were not farm children.

The researchers were able to demonstrate that women who spend their pregnancy in the proximity of farm animals and [cats](#) have children with a reduced risk of developing atopic dermatitis in their first two years of life. The research team also identified two genes in these children that are of vital importance for innate immunity and was able to link the expression of these genes to a lower likelihood of a doctor diagnosis of an allergic condition. The findings of the study are not only significant in the face of the frequency of the disease and the suffering it causes: They also support the theory that gene-environment interaction with the developing immune system influences the development of atopic dermatitis in young children.

More information: *Journal of Allergy & Clinical Immunology* (JACI), [doi:10.1016/j.jaci.2010.10.010](https://doi.org/10.1016/j.jaci.2010.10.010)

Provided by University of Zurich

Citation: Lower occurrence of atopic dermatitis in children thanks to farm animals and cats (2010, December 2) retrieved 20 April 2024 from <https://medicalxpress.com/news/2010-12-occurrence-atopic-dermatitis-children-farm.html>

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