

Farm moms may help children beat allergies

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Mothers exposed to farms, particularly to barns and farm milk, while pregnant confer protection from allergies on their newborns, according to a group of German researchers, who will present their findings at the American Thoracic Society's 2008 International Conference in Toronto on Wednesday, May 21.

In a study of the children of 18 farming mothers and 59 non-farming mothers, the researchers believe they have proved their hypothesis that a mother's farm exposure affects her baby's T regulatory cells. These cells, it is now believed, act to suppress immune responses and thereby maintain immune system homeostasis to contribute to healthy immune development.

"We found that the babies of mothers exposed to farms have more and better functioning regulatory T cells," explained Bianca Schaub, M.D., who led the research team at University Children's Hospital in Munich. "The effect was strongest among those mothers who entered barns or drank farm milk."

Dr. Schaub and her researchers believe that the findings represent "a potential immunological explanation of the mechanism" that produces "the protective farm effect" on the development of childhood atopic diseases.

To conduct this study, the investigators assessed exposure through detailed questionnaires. They then recorded the number of regulatory T cells (CD4+CD25+ high, Foxp3+) and their associated genes

(Foxp3/LAG3) after stimulating cord blood mononuclear cells with microbial stimuli and allergens. Expression of the regulatory T cells and associated genes were significantly higher in the blood drawn from the umbilical cord of babies whose moms spent time on a farm.

According to Dr. Schaub, the findings support the “paradigm shift” from attributing allergic diseases solely to an impaired balance between anti-allergic Th1 cells and pro-allergic Th2 cells. “It may be possible that T regulatory cells are capable of preventing an allergic response at an early time point by suppressing Th2 cells.”

“It is a long way off,” she concluded, “but these findings may one day hopefully help researchers to develop an effective preventive strategy, perhaps even a vaccine, against allergic diseases.”

Source: American Thoracic Society

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