Medical Xpress

Gut flora affects maturation of B cells in infants

May 7 2012

Infants whose gut is colonised by *E. coli* bacteria early in life have a higher number of memory B cells in their blood, reveals a study of infants carried out at the Sahlgrenska Academy at the University of Gothenburg, Sweden.

The bacteria in our gut outnumber the cells in our bodies by a factor of ten and are extremely important for our health because they stimulate the maturation of the immune system. The normal bacterial flora in the gut is established at the very beginning of our lives, but an increasingly hygienic lifestyle has led to changes in this flora.

Colonised ever later

These days Swedish children are colonised by *E. coli* bacteria later and later. They also have a less varied bacterial flora and a smaller turnover of bacterial strains in the gut than children in developing countries. Meanwhile, diseases caused by deficiencies in immune regulation have increased sharply, making allergies a major public health issue in the Western World.

B cells play key role in development of allergies

Researchers at the University of Gothenburg's Sahlgrenska Academy have looked at B cells, a type of white blood cell that produces antibodies that can protect the body against infection and play a key role

in the development of allergies. By studying 65 healthy newborn babies in the Västra Götaland region, researcher Anna-Carin Lundell and her colleagues were able to show that infants whose gut is colonised by *E. coli* bacteria during the first few weeks of life had a higher number of memory B cells at the age of both four and 18 months.

"The results are important for understanding the relationship between our complex bacterial gut flora and our immune system, and show what we risk losing with an excessively hygienic lifestyle," Anna-Carin Lundell explains.

"Most of the bacteria around us are harmless, and we should see them as a very important form of training so that our children's immune systems mature properly. Healthy newborns should not be over-protected against natural exposure of the gut flora."

More information: The article "Infant B cell memory differentiation and early gut bacterial colonization" is soon to be published in the *Journal of Immunology*. May 2012

Provided by University of Gothenburg

Citation: Gut flora affects maturation of B cells in infants (2012, May 7) retrieved 25 April 2024 from https://medicalxpress.com/news/2012-05-gut-flora-affects-maturation-cells.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.