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An anthroposophic lifestyle and intestinal microflora in infancy.

Alm JS, Swartz J, Bjorksten B, Engstrand L, Engstrom J, Kuhn I, Lilja G, Mollby R, Norin E, Pershagen G, Reinders C, Wreiber K, Scheynius A.

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The intestinal flora is considered to have an impact on the development of the immune system. In the anthroposophic lifestyle, a diet comprising vegetables spontaneously fermented by lactobacilli, and a restrictive use of antibiotics, anti-pyretics and vaccinations, is typical. The aim of this study was to assess the gut flora in infants in relation to certain lifestyle characteristics associated with anthroposophy. Sixty-nine children < 2 years of age with an anthroposophic lifestyle, and 59 infants of a similar age with a traditional lifestyle, were clinically examined and questionnaire replies assessed. Fecal samples were analyzed by bacterial enumeration, bacterial typing through biochemical fingerprinting and by measuring microflora-associated characteristics (MACs). The numbers of colony-forming units (CFU)/g of feces were significantly higher for enterococci and lactic acid bacteria in children who had never been exposed to antibiotics (5.5×10^7 vs. 2.1×10^7 ; $p < 0.001$ and 10×10^7 vs. 4.1×10^7 ; $p < 0.01$, respectively). Furthermore, the number of enterococci was significantly higher in breastfed and vegetarian infants ($p < 0.01$). The diversity (Simpson's diversity index) of lactobacilli, as determined by biochemical fingerprinting, was higher in infants born at home than in those born in hospital ($p < 0.01$). Several MACs were related to specific lifestyle features, and infants with an anthroposophic lifestyle had a higher proportion of acetic acid and a lower proportion of propionic acid in their stool as compared to the control children. In conclusion, lifestyle factors related to the anthroposophic way of life influenced the composition of the gut flora in the infants. These differences may contribute to the lower prevalence of atopic disease previously observed in children in anthroposophic families.

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