

STRONG CHILDREN'S RESEARCH CENTER

2021 Summer Research Scholar

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ABSTRACT

Title: Maternal Systemic and Mucosal IgA and IgG in Cohorts with Different Atopic Rates

Background: Rates of allergic disease including atopic dermatitis, food allergy, allergic rhinitis, and asthma have been increasing.¹ However, many studies have indicated that individuals who practice a traditional farming lifestyle have lower rates of allergy.² Several factors are thought to contribute to this protective effect, including enhanced microbial exposures, consumption of unpasteurized milk, and greater consumption of human milk.^{2,3} Moreover, studies have shown that maternal farm exposure can confer protection to developing infants.⁴ In this experiment, we measured IgA and IgG in plasma and saliva samples of mothers from the Old Order Mennonite (OOM), who live a traditional farming lifestyle with low risk of allergy and from mothers living an urban/suburban high allergy risk lifestyle in Rochester (ROC). We hypothesize that the OOM mothers will have greater levels of IgA and IgG, suggestive of a more enhanced and/or diverse exposure.

Methods: 144 plasma (80 ROC, 64 OOM) and 176 saliva (96 ROC, 80 OOM) samples were analyzed. A standard sandwich ELISA protocol was followed to determine antibody levels. Statistical analysis was performed using an unpaired non-parametric T-test with a significance level of $p < 0.05$ denoting significant differences.

Results: