

STRONG CHILDREN'S RESEARCH CENTER

Summer 2016 Research Scholar

Name: Valerie Urban

School: Connecticut College

Mentor: Dr. Kirsi Jarvinen -Seppo, MD PhD

ABSTRACT

Title:

IgA concentration in breast milk and infant saliva may relate to allergy incidence

Background:

Food allergy development typically occurs within the first year of life, when the infant's immune system is still developing. Breast milk can have a protective effect by providing immunomodulatory factors such as anti-inflammatory secretory IgA (SIgA) and cytokines upregulating IgA production. It is thought that in early life breast milk is the infant's main source of IgA, which has a protective effect.

OOM=0.031 mg/ml, ROC=0.026 mg/ml, Infant Saliva: OOM=0.053 mg/ml, ROC=0.031 mg/ml).

Conclusions:

The OOM population demonstrates significantly higher IgA concentrations in both breast milk and saliva than the Rochester population. This may be the result of the different living conditions and environmental stimuli. OOM typically follow a more traditional farming lifestyle involving higher microbial pressure, which would have an impact on the gut microbiome and IgA production. These results support previous observations that SIgA is associated with higher microbial pressure. It remains to be seen in this cohort whether infants with low IgA develop higher rates of food and other allergic diseases. Moving forward, this study could be enhanced by increasing the sample size for both populations, performing more replicates to yield precise average concentrations, and by analyzing antigen specific IgA in the samples.

References:

1. Järvinen KM, Westfall JE, Seppo MS, James AK, Tsuang AUSTE PJ, Sampson HA, Berin MC. Role of maternal elimination diets and human milk IgA in the development of cow's milk allergy in infants. *J Clin Exp Allerg.* 2013; 44: 69-79.
- 2.