

## Lisa J. Martin, PhD

Assistant Professor

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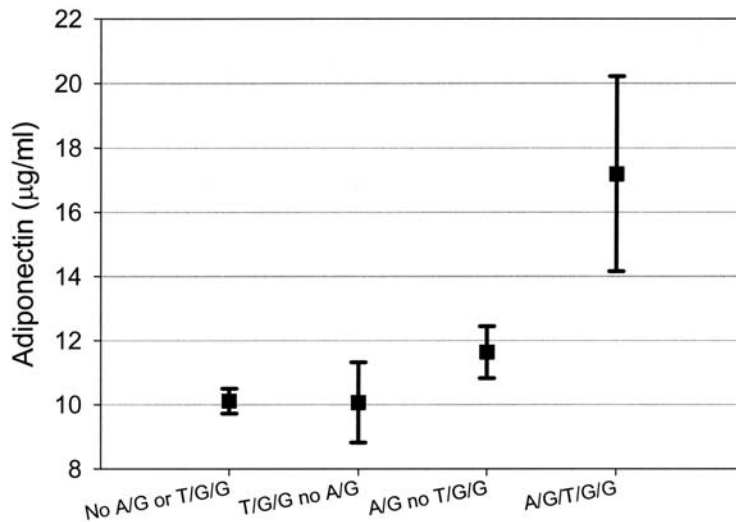
### Description of Research:

Obesity has reached epidemic proportions in children, such that obesity related diseases typically seen in adults now occur in children. Several studies have reported an association between feeding human milk and reduced obesity later in life. The mechanisms by which human milk could provide protection against obesity are unclear but bioactive factors in human milk provide a promising explanation. One such factor is adiponectin. Serum adiponectin improves insulin sensitivity and fatty acid metabolism; low levels are associated with obesity, type 2 diabetes, dyslipidemia, and cardiovascular disease. A major goal of Dr. Martin's work is to determine the impact of human milk adiponectin on the metabolic development of the infant. Dr. Martin is now characterizing the longitudinal changes in human milk adiponectin throughout lactation, to determine if mother's adiposity influences human milk adiponectin, defining the impact of specific factors in human milk on later development of obesity and metabolic traits, and identifying the structures of adiponectin in human milk and their biologic activity and outcomes in breastfeeding infants. Studies of adiponectin will form the basis for developing a novel approach to prevent obesity and co-morbidities with onset in childhood.

### Collaborations:

Dr. Martin collaborates with Dr. Hui the development of a program project grant examining lipid structure, function, and genetics. Additionally, she works with Dr. Morrow on adiponectin in human milk. As a new member, Dr. Martin has not used DHC cores.

### Representative Figure:



Adiponectin by adipocyte collagen-domain containing (ACDC) haplotype. Values are least squares means (error bars = 95% CI), adjusted for sex, puberty stage, BMI Z score, and waist Z score. Number of individuals per group were 480 (no A/G or T/G/G no A/G), 90 (A/G no T/G/G), and 6 A/G/T/G/G). Individuals with A/G and T/G/g haplotypes but not the five-SNP A/G/T/G/G haplotype (n = 2) were not included in the analysis. The adjusted adiponectin level (least squares means  $\pm$  SE) for those two individuals was  $14.5 \pm 7.3$   $\mu\text{g/ml}$ . Fig. 1 from Diabetes, 2006; 55:523-529.