**Allergen Sensitization as a Predictor of Wheezing Phenotype at Age Six Years**


**RATIONALE**: To determine if sensitization patterns to foods and/or aeroallergens can predict the development of wheezing phenotypes.

**METHODS**: The relationship between allergen sensitization and the development of wheezing phenotypes was evaluated in children enrolled in the COAST (Childhood Origins of ASThma) study. At age one, children were evaluated with allergen-specific IgE to multiple foods and aeroallergens. Skin prick testing to aeroallergens was then performed at age five. At age six, children were grouped into four wheezing phenotypes: never wheezed, transient (wheezed in years 1-3), late onset (first wheezed in years 3-6), and persistent (wheezed in years 1-3 and 3-6).

**RESULTS**: Children with a positive RAST to at least one food or aeroallergen were significantly more likely to end up in a combined late onset/persistent wheezing group than were children with negative RAST tests (52% v. 32%, p=0.0041). This association held true when sensitization to foods (53% v. 33%, p=0.0057) or aeroallergens (57% v. 35%, p=0.02) were considered independently. In contrast, by age five the presence of at least one positive skin test did not significantly differentiate children with late onset/persistent wheezing from those without (47% v. 35%, p=0.099), however certain allergens were significant: dust mite (dp: 60% v. 36%, p=0.0093; df: 60% v. 36%, p=0.0088), alternaria (56% v. 37%, p=0.04), cat (55% v. 36%, p=0.028), and cockroach (80% v. 39%, p=0.023).

**CONCLUSIONS**: Sensitization during infancy to at least one food or aeroallergen is a feature of children destined to develop persistent wheezing. By age five, this pattern of sensitization develops a more unique specificity.