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## Genetics of Asthma in Latino Americans

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The Genetics of Asthma in Latino Americans (GALA) Study is designed to determine whether there are identifiable genetic factors that are associated with asthma and severe asthma among Mexican Americans and Puerto Ricans, the two largest Latino ethnic groups in the United States. Asthma is a common but complex respiratory ailment; current data indicate that interaction of genetic and environmental factors lead to its clinical expression. In the United States, asthma prevalence, morbidity, and mortality vary widely among different Latino ethnic groups. The prevalence of asthma is highest in Puerto Ricans, intermediate in Dominicans and Cubans, and lowest in Mexicans and Central Americans.

Independently, known socioeconomic, environmental, and genetic differences do not fully account for this observation. One potential explanation is that there may be unique and ethnic-specific gene-environment interactions that can differentially modify risk for asthma in Latino ethnic groups. These gene-environment interactions can be tested using genetic ancestry as a surrogate for genetic risk factors. Latinos are admixed and share varying proportions of African, Native American, and European ancestry. Most Latinos are unaware of their precise ancestry and report their ancestry based on the national origin of their family and their physical appearance. The unavailability of precise ancestry and the genetic complexity among Latinos may complicate asthma research studies in this population. On the other hand, precisely because of this rich mixture of ancestry, Latinos present a unique opportunity to disentangle the clinical, social, environmental, and genetic underpinnings of population differences in asthma prevalence, severity, and bronchodilator drug responsiveness (Choudhry S et al. Proc Am Thorac Soc. 2007 Jul;4(3):226-33). Hispanics with asthma and without asthma are currently being enrolled in this project to study genes and environmental factors that influence asthma prevalence and severity. More information can be found at:

<http://www.feinberg.northwestern.edu/lab/allergy%20immunology/current>

[%20studies/gala\\_II\\_study.htm](#)

## Culturally Appropriate Delivery of Asthma Management Education via Community Health Workers: Evaluation of a Chicago-based Intervention

*Continued from page 5*

Other important outcomes included improved asthma knowledge, decreased exposure to asthma triggers, and improved medical management. Findings suggest that a CHW model is an effective means of delivering culturally appropriate asthma education to children and their families living in disadvantaged urban communities.

## The Influence of Caregivers’ Psychosocial Status on Childhood Asthma and Obesity

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## Asthma Control – Logistic Regression Models

	Model 1: Child Variables Only		Model 2: Child and Caregiver Variables	
Variable	OR	95% CI	OR	95% CI
Child Characteristics				
Obese	1.92	(1.23-3.00)**	1.89	(1.17-3.05)**
Age	0.80	(0.70-0.91)**	0.79	(0.69-0.90)**
<u>Race</u>				
African American-non Hispanic	3.17	(1.68-5.99)**	2.16	(1.05-4.46)*
Caregiver Characteristics				
Perceived Stress Scale			1.09	(1.01-1.18)*

OR=Odds Ratios adjusted for all variables shown; CI= Confidence Interval; \* p<.05, \*\* p<.01. Only significant results shown.

The prevalence of childhood asthma and childhood obesity has increased in the last two decades, disproportionately burdening ethnic minority children and those living in poverty, with no clear understanding of underlying mechanisms. The objective of this study was to explore the influence of demographic variables, childhood obesity (adjusted body mass index  $\geq$  95th percentile), caregivers’ smoking status, and caregiver psychosocial status on asthma severity and asthma control in an urban sample of children with persistent asthma. Child (with asthma)/caregiver dyads were recruited from public and archdiocese schools in Chicago as part of the Chicago Initiative to Raise Asthma Health Equity (CHIRAH). Data were collected as part of the baseline face-to-face surveys conducted within the community. The 531 dyads were divided into two groups, asthma control and asthma severity. Dyads with children using controller medications were in the asthma control analyses (294) and dyads with children using rescue medications only were in the asthma severity analyses (237).

In multivariate models, asthma control was significantly worse in obese children (OR = 1.89;95%CI = 1.17-3.05), African American children (OR = 2.16; 95%CI = (1.05-4.46), and those with caregivers who had higher stress (OR= 1.09; 95%CI = 1.01-1.18). Older children had better control (OR = 0.79; 95%CI = 0.69-0.90). Children with caregivers who wanted more asthma-specific social support were more likely to have moderate to severe asthma (OR = 2.07; 95%CI= 1.06-4.05). In this community-based sample of children with active asthma, asthma control and asthma severity were associated with different factors. Caregiver variables were significant in both outcomes and childhood obesity was associated only with poor asthma control.

## Implementing Successful Community Health Educator Programs

Victoria Persky, MD<sup>1</sup>, Maureen Damitz, AE-C<sup>2</sup>, Rhonda Williams, MES<sup>2</sup>, Elizabeth Banda, MPH<sup>1</sup>, Mary Turyk, PhD<sup>1</sup>, Gay Chisum, BA, RN<sup>2</sup>, Brandi Godbolt, BS<sup>2</sup>, Vairneke Lesley, BS<sup>2</sup>

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The Addressing Asthma in Englewood Program (AAEP) builds upon 15 years of experience integrating community health educator (CHE) asthma education programs with a variety of targeted interventions. This presentation described the integration of the CHEs into the interdisciplinary team, their support structures, and their role in the broader collaboration partnership. Key lessons regarding the use of a community-based approach to address a chronic illness such as asthma in a low socioeconomic community were shared as were challenges encountered along the way. Central to the approach are CHEs who provide individual home assessments; work with families to mitigate factors exacerbating the disease; provide individual and group education sessions within a variety of community, healthcare, and school settings; and establish linkages among the persons

## Participant Data

- 387 children & 253 families enrolled
- 58% male, 42% female
- 8.2 mean age
- 45% on contoller medications
- 90% have a family history of asthma
- 74% have a history of allergies
- 43% have a history of eczema

and institutions serving children with asthma.Oversight consists of a project director and field supervisor who are supported by principal investigators.

The project seeks input and suggestions

## The Association of Violence and Stress with Childhood Asthma Severity

*Continued from page 5*

violent crime remained significant predictors of asthma severity. Odds of severe childhood asthma were associated with violent crime after adjusting the model for stress (OR=1.98, 95%CI=1.11-3.54). Based on this data, severe childhood asthma appears to be associated with heightened levels of actual violence, perceived violence, and stress. However, the data suggest actual violence is a better predictor of severe asthma than caregiver perception of violence. While actual violence may be affecting asthma through the stress pathway, findings suggest other mechanisms are also at work.

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