AMERICAN INDIAN CHILDREN WITH ASTHMA: COVARIATES OF BMI AND TOBACCO EXPOSURE

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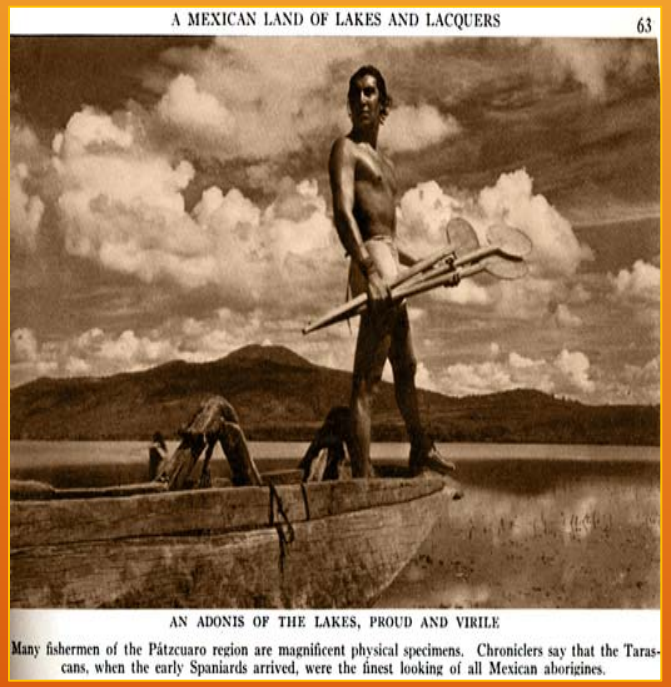
- ***Cante wasteya nape chiyuziyapelo. Tate kici Inajin emaciyapelo. Jesus Yracheta tȟuŋkášila waye na Eladio Duran uŋčí waye.***

- ***Tata jurhiata ka nana echeri tsimarani jarhuuajperani jatiksi, ka ji sesi jáma xaka ini jurhiatekua jimbo. Ji purhépecheeska Ka juchéti taatecha arhíkuarhesïnti Maria ka Manueli. Ji aringasinga Tangaxhuan.***

GREETINGS!

JOSEPH M. YRACHETA, MS PHARMACEUTICS, UW

(ORIGINAL SPELLING IRATXETA, MEANING THE PLACE OF FERNS. PRONOUNCED
EAR-UH-SHƏTA AND DERIVES FROM THE EUSKADI LANGUAGE KNOWN AS BASQUE/VASCO.)


A MEXICAN LAND OF LAKES AND LACQUERS 63

AN ADONIS OF THE LAKES, PROUD AND VIRILE

Many fishermen of the Pátzcuaro region are magnificent physical specimens. Chroniclers say that the Tarascans, when the early Spaniards arrived, were the finest looking of all Mexican aborigines.

P'urh épecha (Tarascan) , Raramur í (Tarahumara)

MISSOURI BREAKS INDUSTRIES RESEARCH, INC.

- Some studies show increased American Indian asthma prevalence compared to other ethnicities, but little is known about the causes

- **18.5%** of American Indians VS **11%** General population

- Asthma is clearly multifactorial:
  - Biological
  - Environmental
  - Social /Behavioral

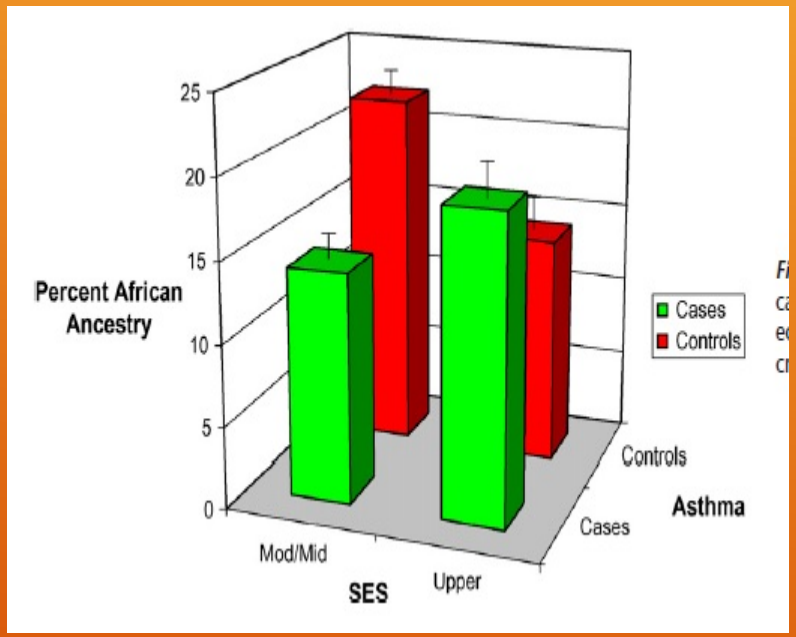
- Socio-Economic
  - Inversely related to level of income
  - Obesity
  - High rates of smoking

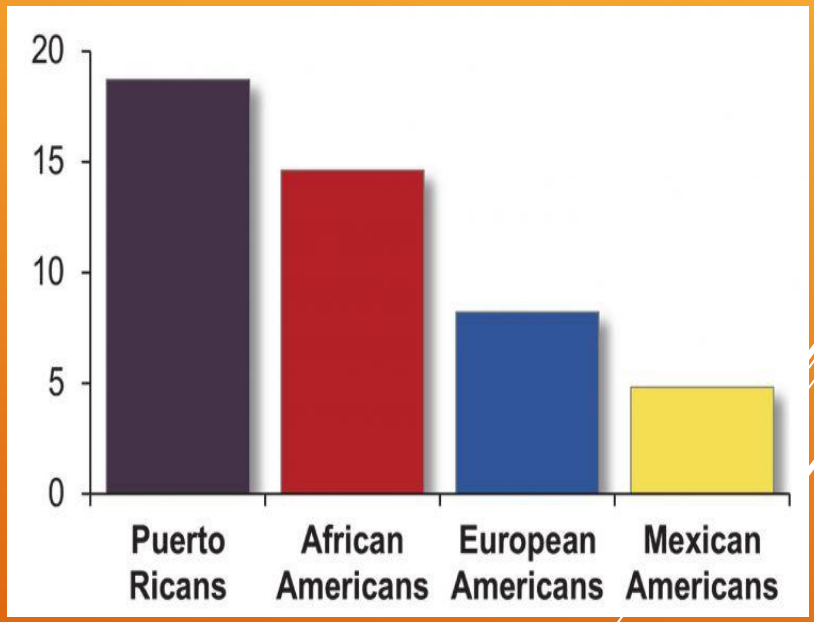
Why We Are Interested?

TABLE 3. AFRICAN, EUROPEAN, AND NATIVE AMERICAN ANCESTRY FOR CASES WITH ASTHMA AND CONTROL SUBJECTS WITHIN CLINIC RECRUITMENT SITE BY HOME ADDRESS SOCIOECONOMIC STATUS

Clinic Recruitment Site	Home Address SES	n (*case/control*)	African			European			Native American		
			Case	Control	δ*	Case	Control	δ	Case	Control	δ
Cataño	Mod/Mid	23/71	17.0 ± 14.2	25.1 ± 13.4	−8.1	61.8 ± 16.3	55.0 ± 18.3	6.8	21.2 ± 12.1	19.9 ± 16.0	1.3
	Upper	6/9	26.3 ± 19.7	12.7 ± 9.2	13.6	55.3 ± 17.2	68.0 ± 17.6	−12.7	18.3 ± 18.1	19.3 ± 14.5	−1.0
San Juan	Mod/Mid	8/6	17.4 ± 10.8	21.0 ± 13.5	−3.6	66.9 ± 19.1	60.8 ± 9.1	6.1	15.7 ± 15.5	18.2 ± 12.6	−2.5
	Upper	2/22	9.5 ± 9.2	11.9 ± 11.8	−2.4	52.5 ± 3.5	70.6 ± 14.7	−18.1	38.0 ± 5.7	17.5 ± 10.7	20.5

Definition of abbreviation: SES= socioeconomic status.
* δ represents the difference in ancestry proportion between cases and control subjects.



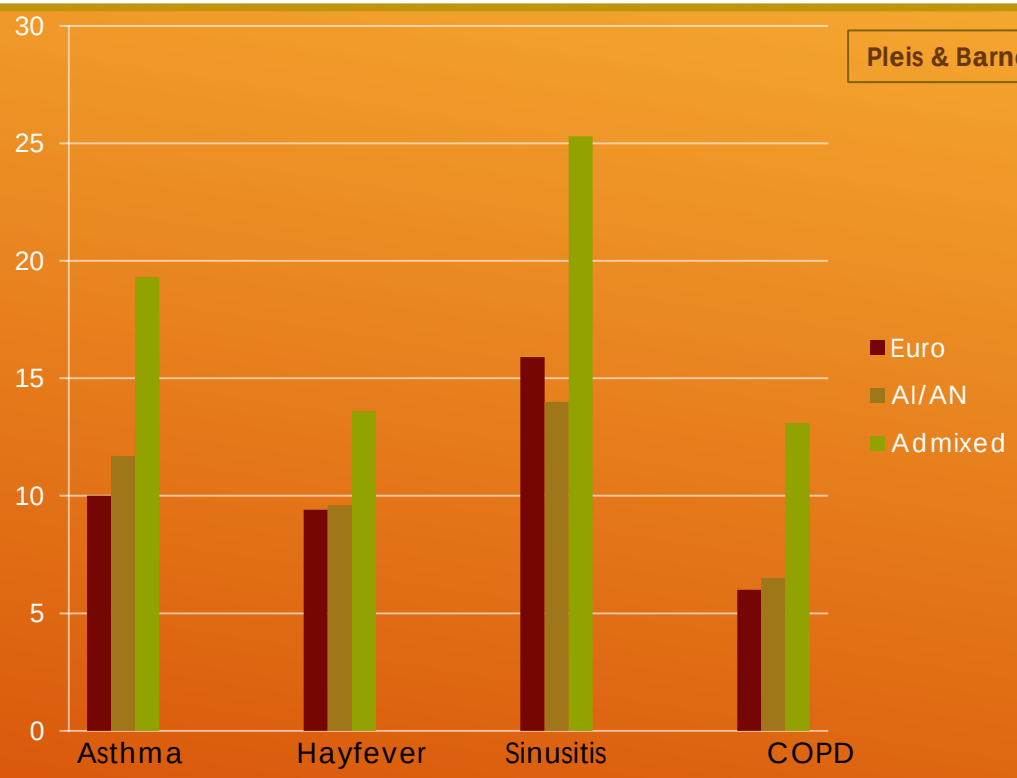


Burchard Asthma Origins Lab, University of California, San Francisco.

Native American Contributions Are Protective

Table 1. Prevalence of selected respiratory conditions among adults by race.[a]

	Respiratory condition[b]			
	Asthma	Hay fever	Sinusitis	COPD
	Percent (standard error)			
Race				
White only	10.1 (0.12)	9.4 (0.12)	15.9 (0.16)	6.0 (0.09)
AIAN only[c]	11.7 (1.59)	9.6 (1.33)	14.0 (1.51)	6.5 (1.09)
AIAN and white[c]	19.3 (1.86)	13.6 (1.60)	25.3 (1.96)	13.1 (1.58)



Pleis & Barnes, Ethnicity & Health, 2008

ADMIXTURE CONSIDERATIONS

PARTICIPANTS& METHODS

- The electronic medical records of a northern plains Indian Health Service facility identified all children between ages 6 and 17 meeting the case definition of asthma (N=216).
- Detailed medical records were reviewed for at least 2 of the following 3 case defining criteria: clinical diagnosis on at least one occasion, and/or prescription for bronchodilator in the past 5 years, and/or demonstrated 20% improvement in FEV1 after inhaled albuterol.
- Control children (N=108), matched within 2 months of age, were identified.
- Weighed & Measured at time of home visit
- Nic Alert assay administered at time of home visit

American Indian Children with Asthma had a greater BMI

Group Statistics

	CAS_CON	N	Mean	Std. Deviation	Std. Error Mean
AGE	0	216	12.1317	3.18326	.21659
	1	108	11.7855	3.20157	.30807
BMI	0	215	23.5553	6.60814	.45067
	1	108	25.4278	8.16249	.78544

BMI p value =0.027

BMI AND ASTHMA

- 84% of American Indian Children were exposed to Cotinine
- > 70% in 10 – 30 ng/ml (Level1) range

- Higher Cotinine Exposures found in Controls (unexpected)

- Higher Cotinine Exposures found in children with Higher BMI's

nicalert

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	50	15.4	15.4	15.4
	11	229	70.7	70.7	86.1
	22	17	5.2	5.2	91.4
	33	22	6.8	6.8	98.1
	55	6	1.9	1.9	100.0
	Total	324	100.0	100.0	

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	nicalert	-.023	.014	2.846	1	.092	.977
	Constant	-.419	.196	4.563	1	.033	.657

a. Variable(s) entered on step 1: nicalert.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	23.194	.644		35.990	.000
	nicalert	.081	.041	.108	1.952	.052

a. Dependent Variable: BMI

***Unable to find any association between nicalert level or BMI and risk of hosp or steroid use**

***Unable to find any association between any steroid use and BMI**

COTININE EXPOSURE AND ASTHMA

DIFFICULT DATA CAPTURE

- Mobile pediatric population
- Ephemeral Phone Subscription
- Assessment of parental/ guardian understanding
- Patient adherence and follow up
- Validation of Biological & Psychosocial measures
- Vetted Health Records

ACKNOWLEDGEMENTS

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- **Sanford Research Foundation**
- **Cheyenne River Sioux Tribal Council**
- **The Study Management Staff at MBIRI (Kendra Enright & Terrilynn)**