

# Asthma among American Indian/ Alaskan Native Adults in Washington State, BRFSS 2003-2006



Photo by Linda Gunnells, DOH

Data in this report are from the

# Behavioral Risk Factor Surveillance System (BRFSS)

2003 through 2006 combined



Sponsored by CDC, BRFSS is the world's largest telephone survey. BRFSS uses random digit dialing to track health risks among the American people.

For further information please visit the BRFSS website at <http://www.cdc.gov/brfss/about.htm>

# How we chose our categories:

“Indians” for this analysis were respondents who self-identified their race as:

- American Indian/Alaskan Native (AI/AN) alone
- AI/AN plus one other race
- 3 or more races, AI/AN best represents their race

Those who did not meet the above definition were classified as “non-Indians.”

Respondents with 3 or more races including AI/AN but not best represented as AI/AN were dropped from analysis.

Hispanic ethnicity was not taken into account.



# The study population:

WA BRFSS 2003, 2004, 2005, 2006 combined



**Total respondents included in study = 83,351**

- **Respondents coded as Indian, N=3,113 (3.7%)**
  - Single race, Indians = 1,214 (1.5%)
  - Bi-racial (Indian + white) = 1,805 (2.2%)
  - Bi-racial (Indian + non-white) = 77 (<1%)
  - multi-racial (3 or more), prefers AI/AN = 17 (<1%)
- **Respondents coded as non-Indian, N=80,238 (96.3%)**
- **942 respondents dropped from the study for missing race or more than two races that included AI/AN but not “prefers AI/AN”.**

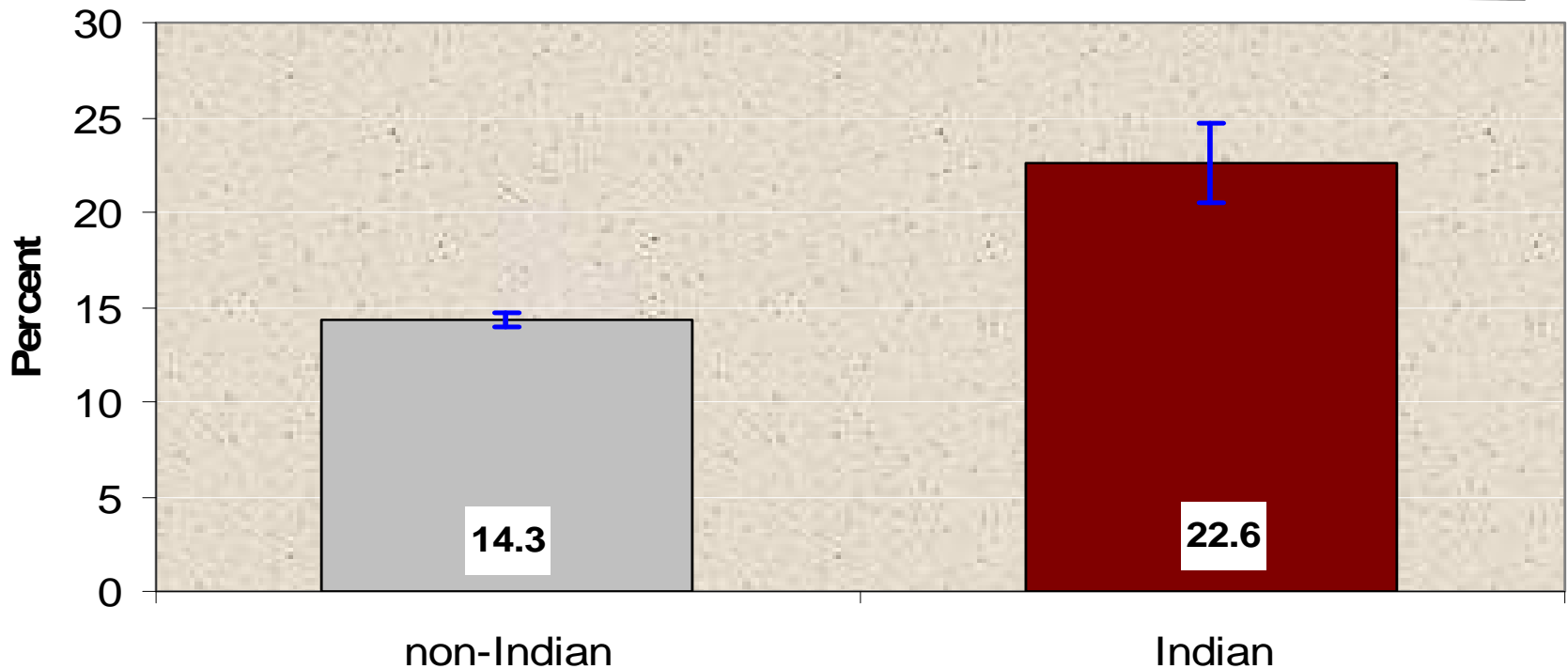
**To determine asthma status, BRFSS respondents were asked the following questions:**

- 1) Have you ever been told by a doctor, nurse, or other health professional that you had asthma?** *(lifetime asthma)*
- 2) Do you still have asthma?** *(current asthma)*



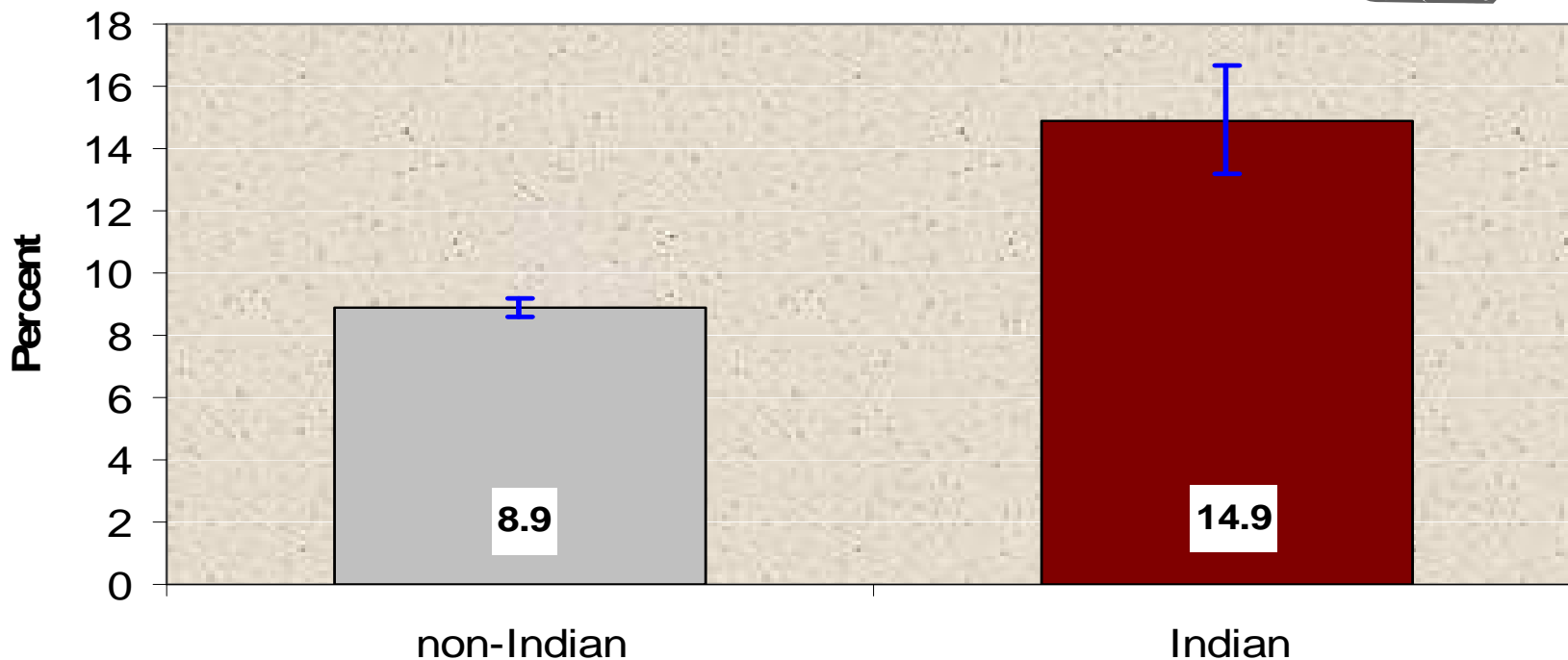
**About 22% (n=715) of Indians reported they had ever been told they had asthma. This was over 50% higher than the rate among non-Indians.**

**Lifetime asthma, by Indian vs. non-Indian race,  
WA BRFSS 2003-2006, combined**

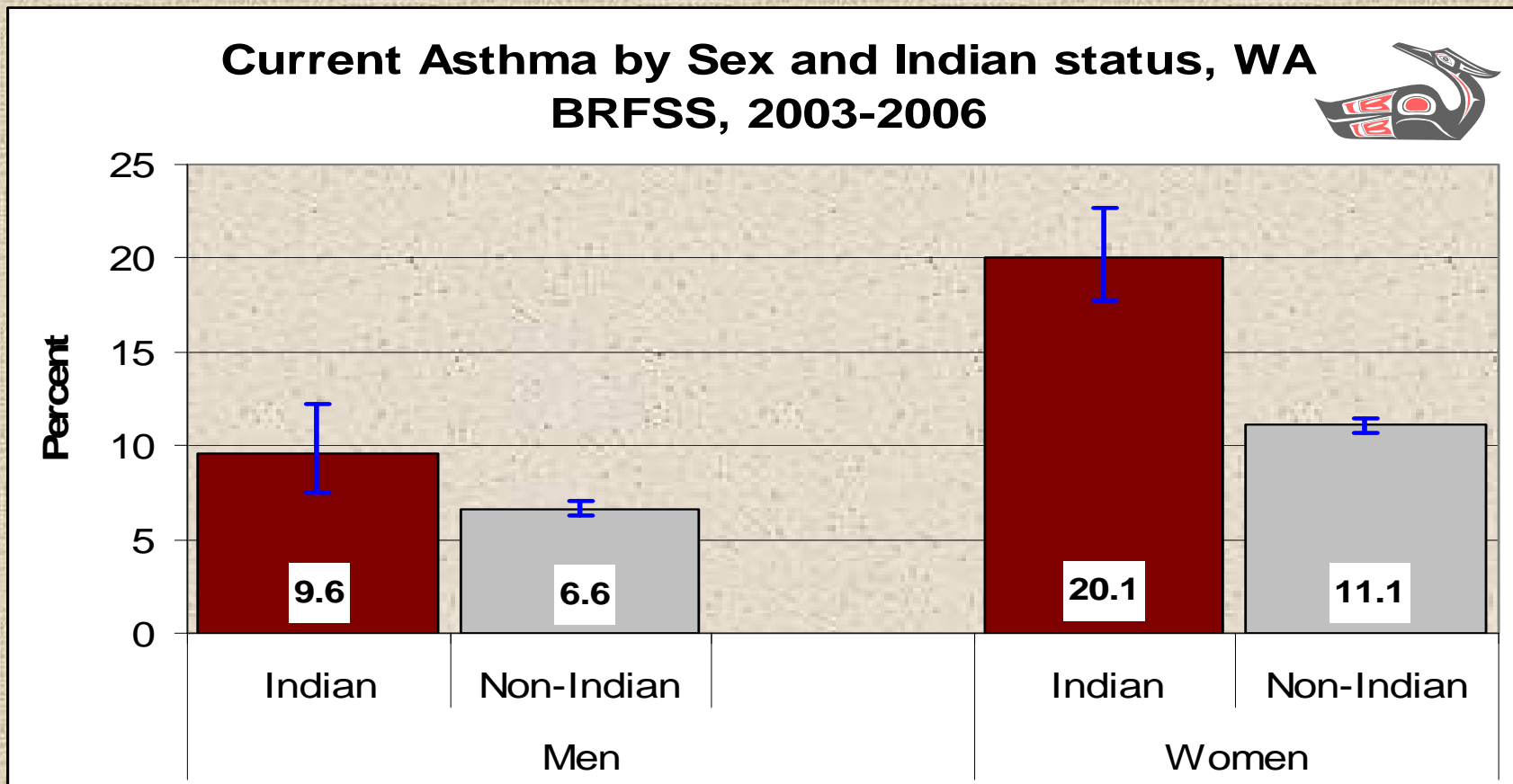


**About 15% (n=503) of Indians reported they still had asthma, a rate more than 67% higher than that reported by non-Indians.**

**Current asthma by Indian vs. non-Indian race,  
WA BRFSS 2003-2006, combined**



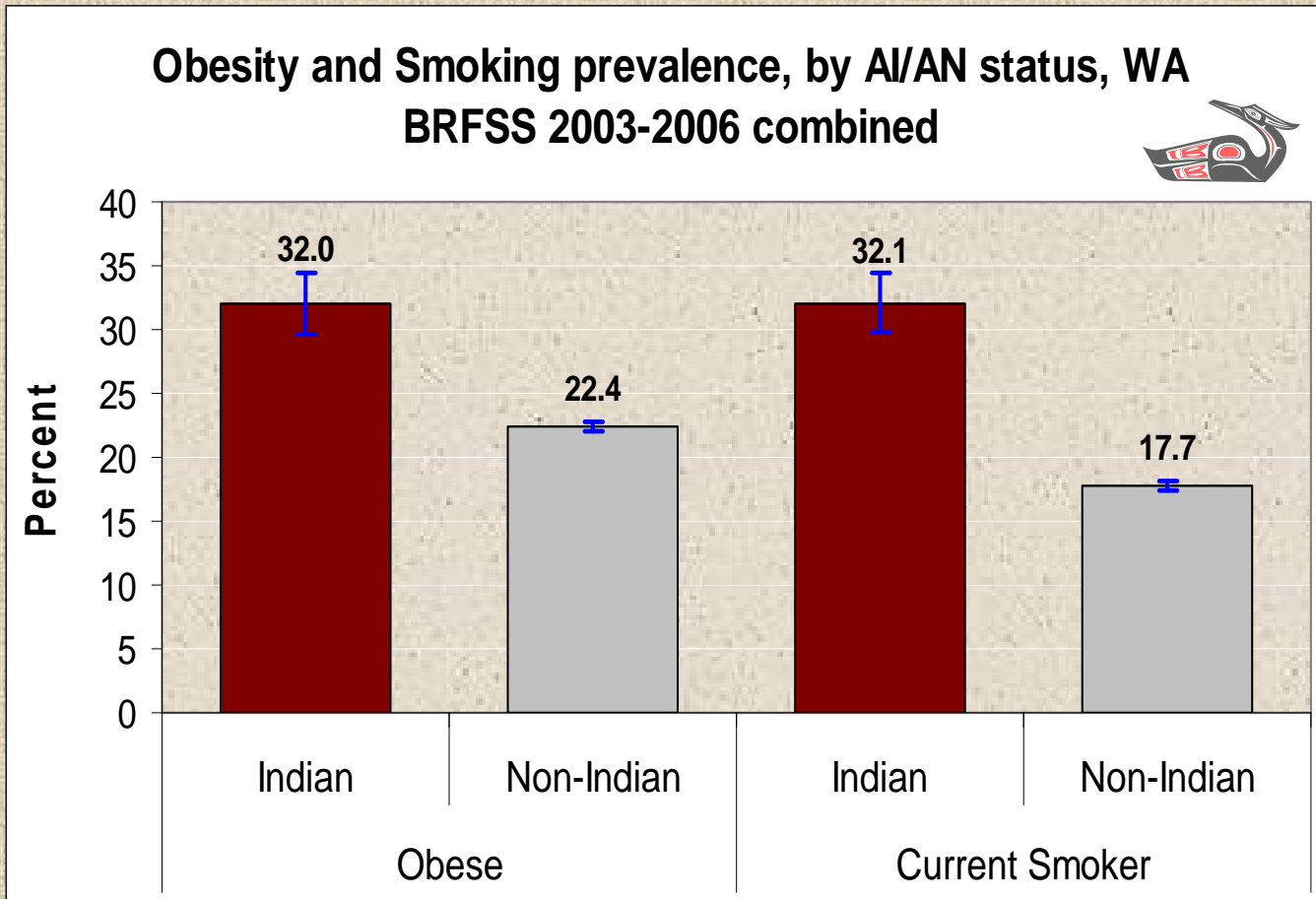
Although both Indian men and Indian women had significantly higher rates of current asthma than their non-Indian counterparts, the difference for women was more pronounced.



P value for difference between Indian and non-Indian men was 0.0044



# RISK FACTORS: Obesity and smoking are important risk factors linked with increased asthma prevalence\*.

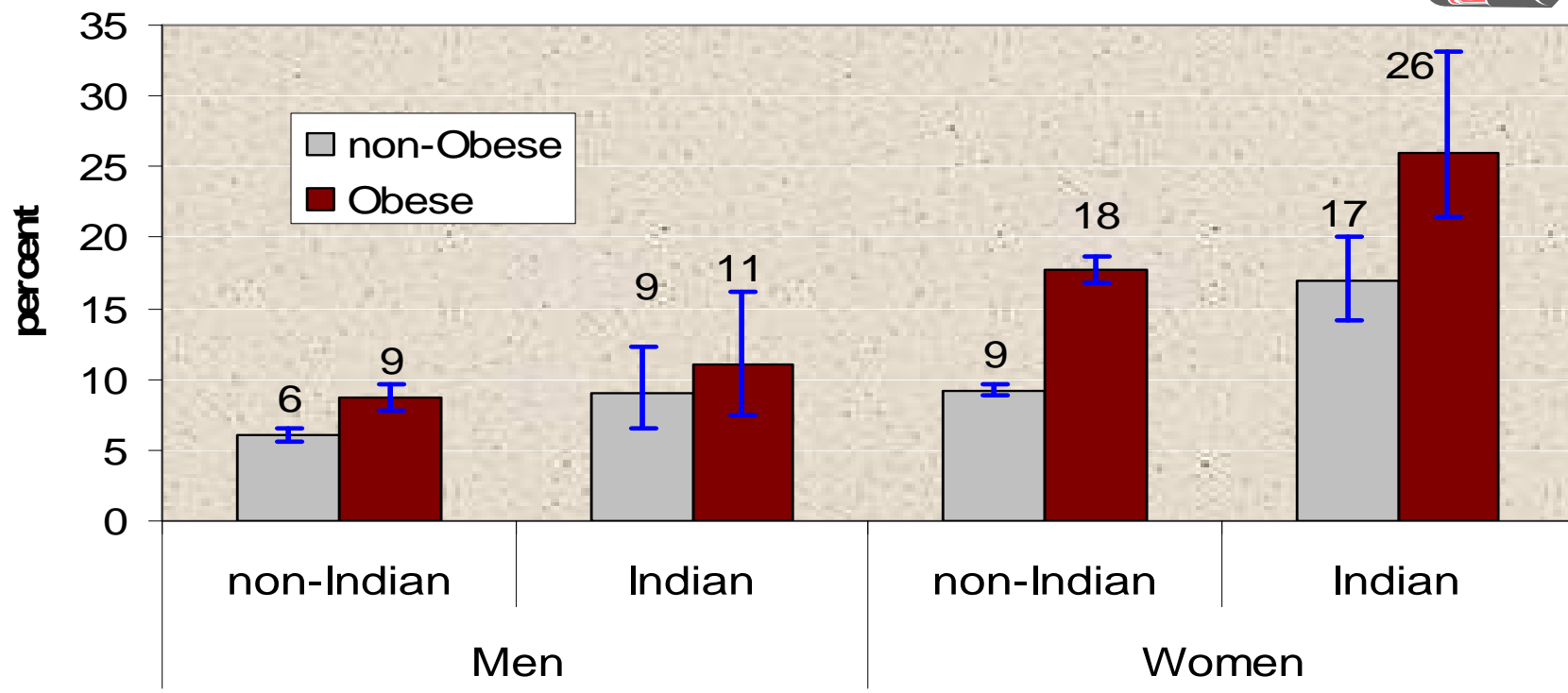


Indians were over 40% more likely to be obese and 80% more likely to smoke than non-Indians.

\*Dilley JA, Pizacani BA, Macdonald SC, Bardin J. The Burden of Asthma in Washington State. Washington State Department of Health. Olympia, WA. June 2005. DOH Pub No. 345-201.

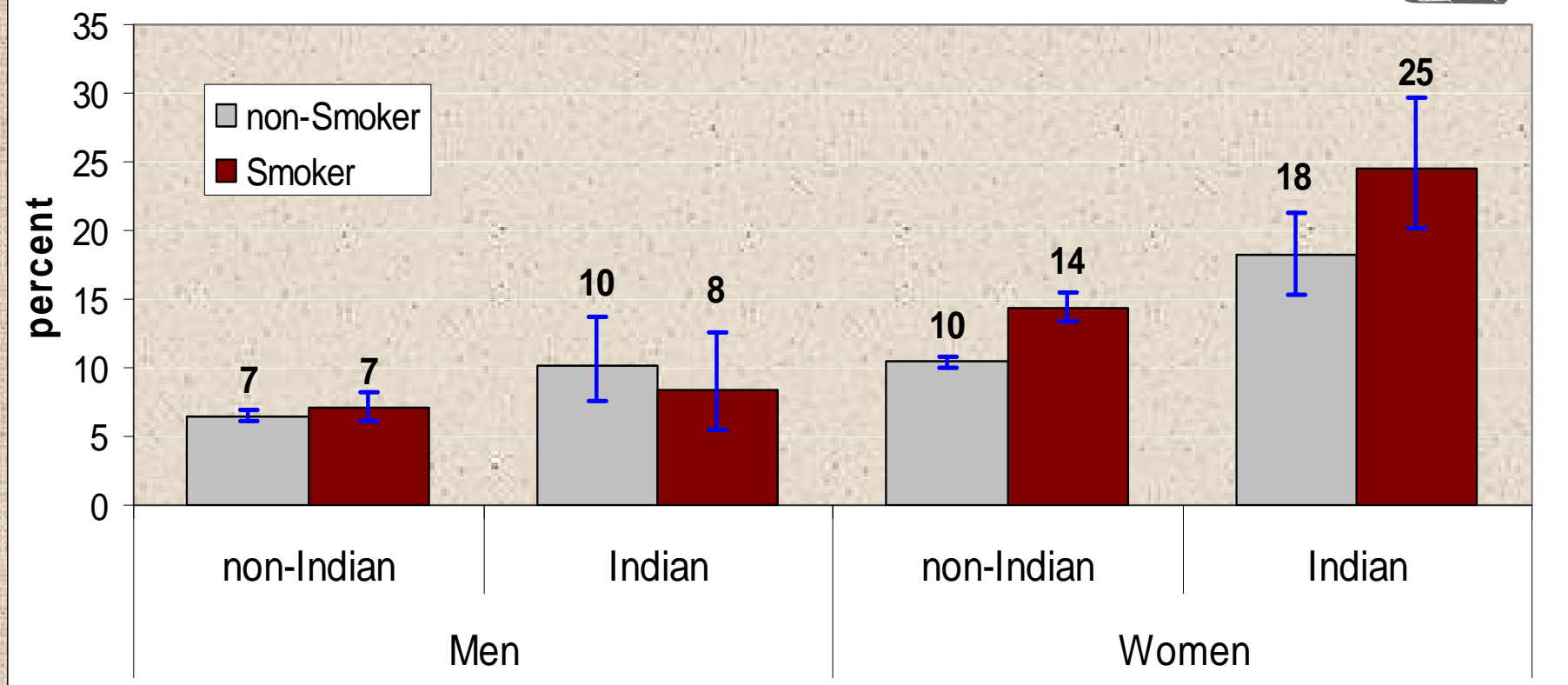
# Obesity significantly increased the risk of asthma among both Indian and non-Indian women, and among non-Indian men.

Current asthma by AI/AN status, sex, and obesity, WA BRFSS 2003-2006 combined

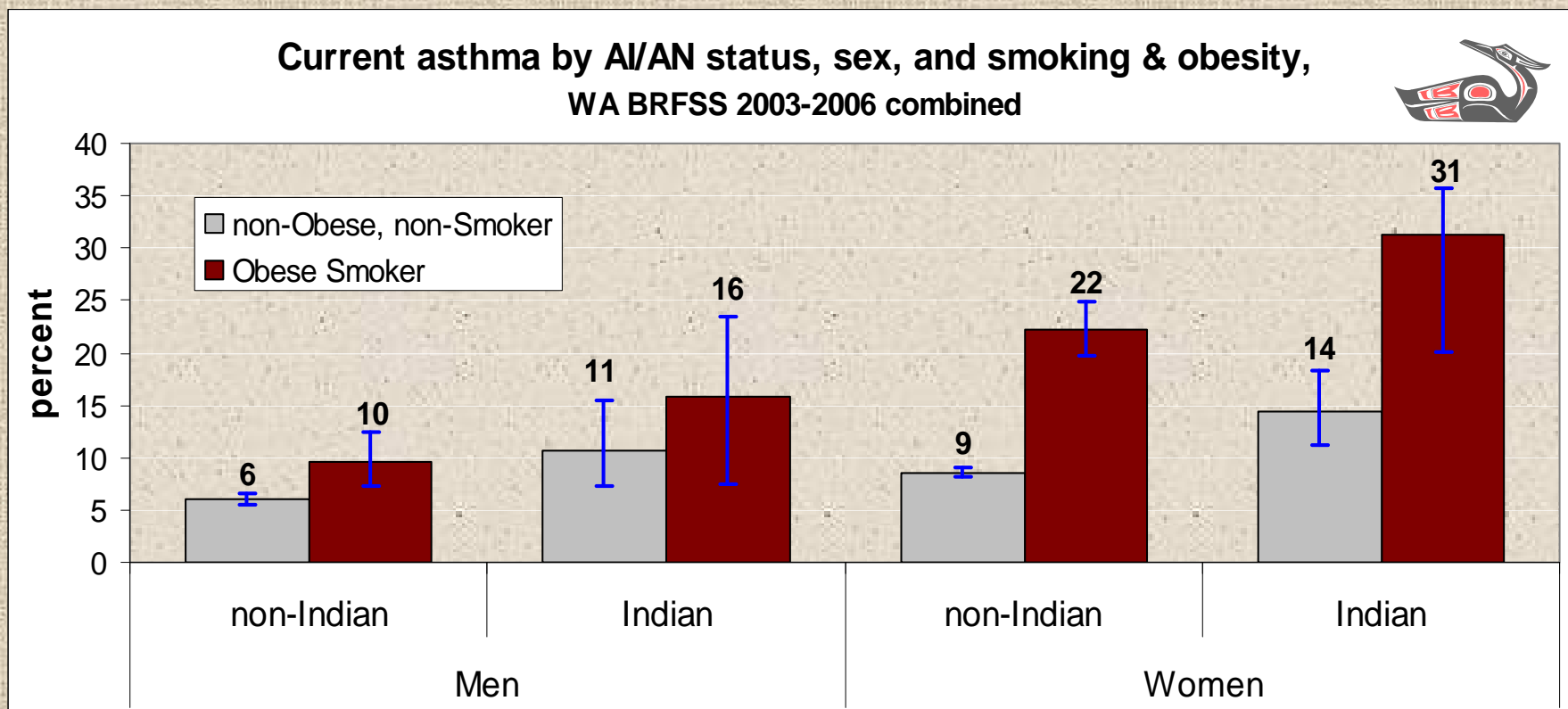


# Smoking significantly increased the risk of asthma among non-Indian women.

Current asthma by AI/AN status, sex, and current smoking status, WA BRFSS 2003-2006 combined



# SMOKING AND OBESITY COMBINED: Non-Indian men, non-Indian women and Indian women who were obese and currently smoked were significantly more likely to have asthma than non-obese, non-smokers.



Although asthma rates among Indian men who smoked and were obese appear to be higher, their were insufficient numbers for the difference to be significant.

*Nearly one in three Indian women who both smoked and were obese had asthma.*



Photo from: <http://www.nativeamericanlinks.com/>

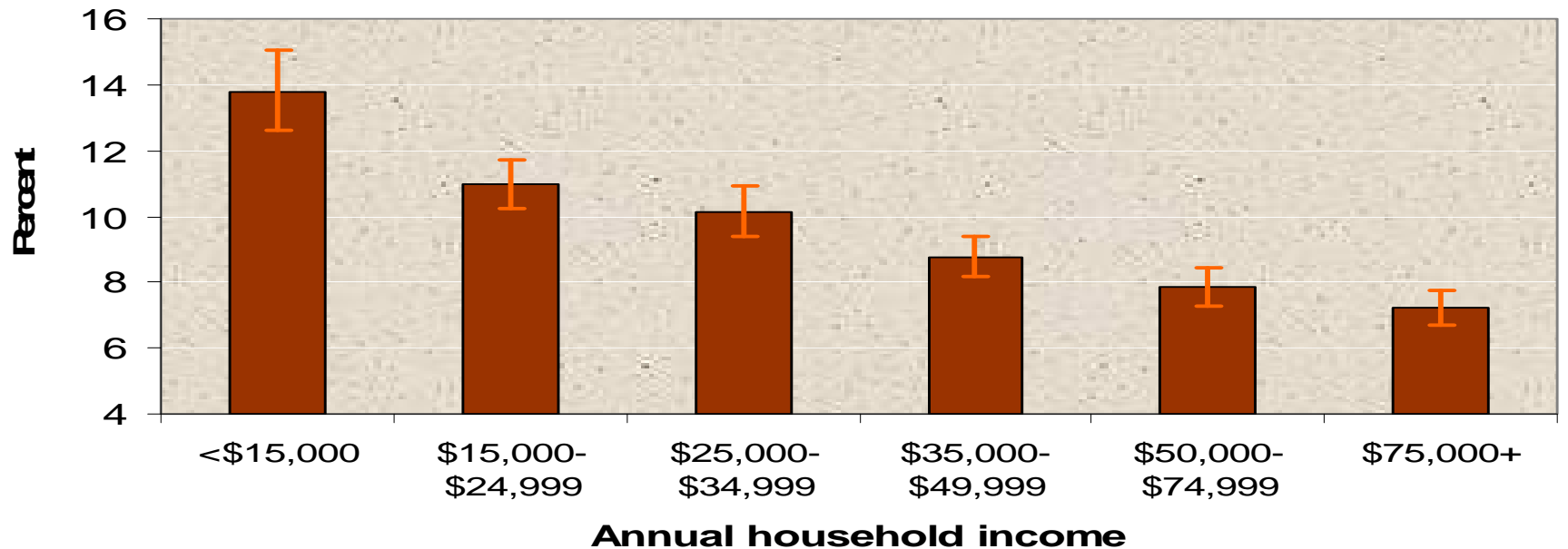


# RISK FACTOR:

Low Income is associated with higher risk of asthma.

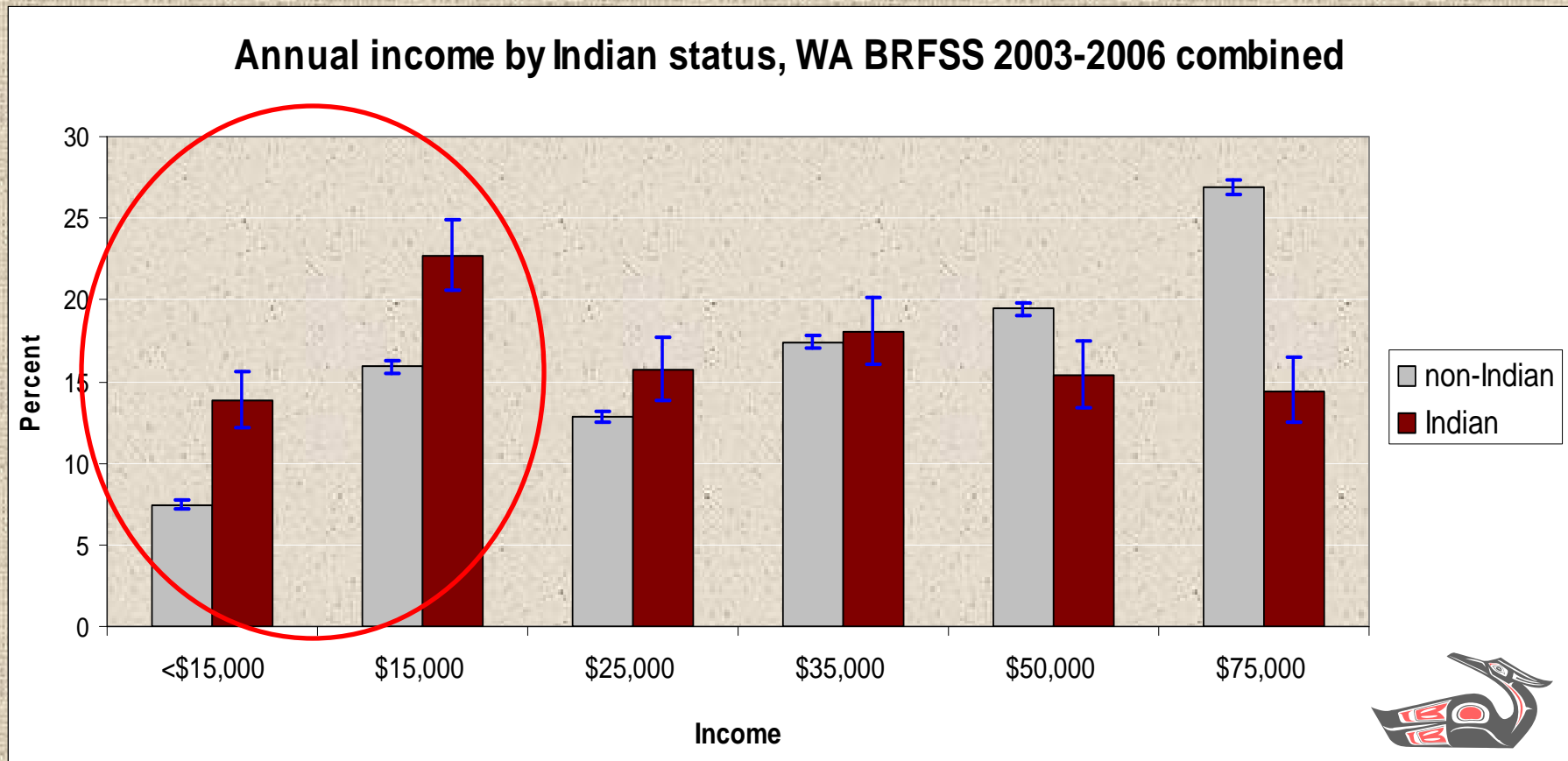


**Current Asthma by Income among all WA BRFSS respondents, 2003-2006**



P = 0.0000

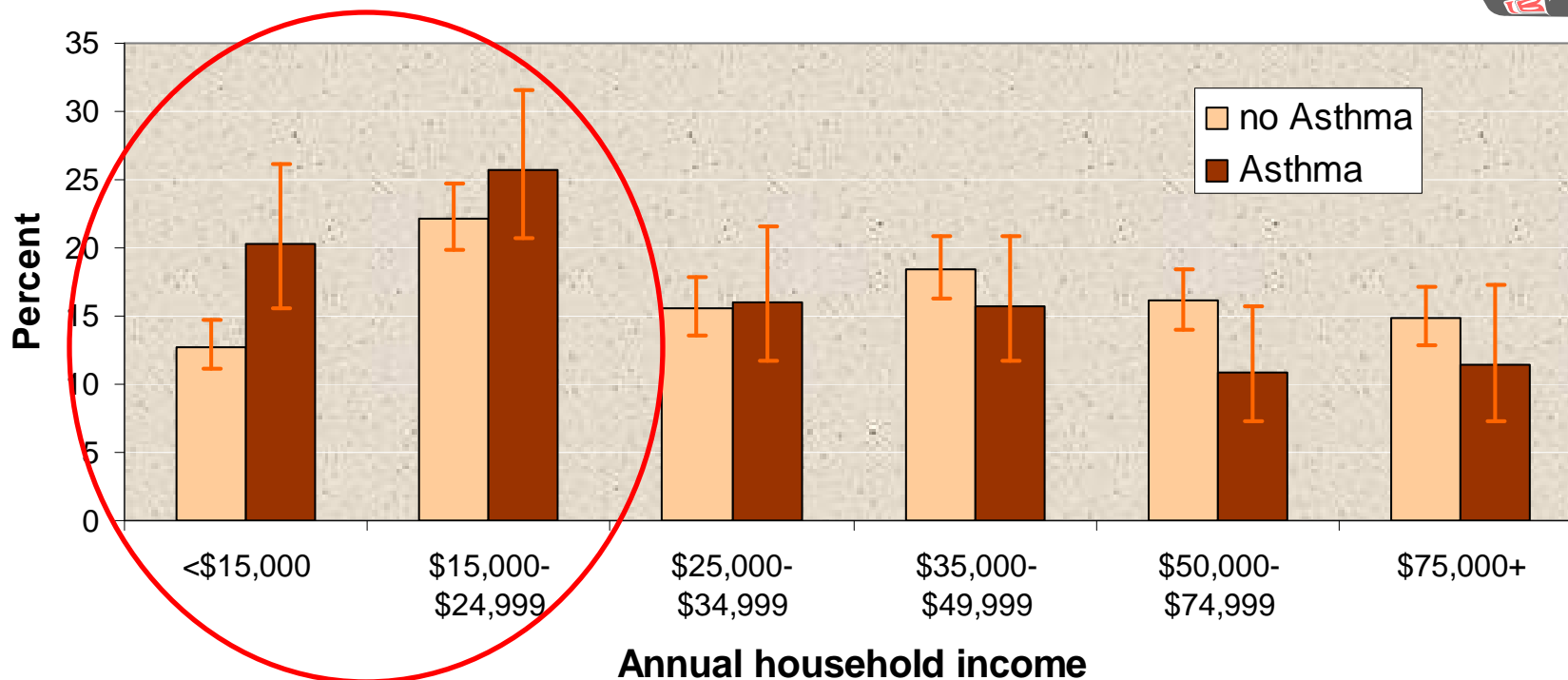
# Indian people who responded to the WA BRFSS were more likely than non-Indians to have low income



**Over 35% of Indians had annual incomes of less than \$25,000, compared to 23% of non-Indians.**

Among Indian people who responded to the WA BRFSS, over 46% of those who had asthma had incomes below \$25,000, compared to about 35% of Indians without asthma.

**Current Asthma status among Indians in Washington State, by income level, BRFSS 2003-2006**





**Odds ratios for risk factors:** Taking multiple factors into account, female sex, obesity, Indian race, annual income below \$20,000 and current smoking were all significantly associated with current asthma in this study.

## **Significant factors affecting asthma rates**

Results of logistic regression analysis

Female	1.9 (1.7-2.1)
Obese	1.8 (1.7-2.0)
Indian	1.5 (1.3-1.8)
Income <\$20,000/yr	1.4 (1.3-1.6)
Current Smoker	1.2 (1.1-1.3)



## *In conclusion:*



*Asthma rates were higher for Indians than for non-Indians in this study. Indian women had the highest risk. Although lower income, obesity and smoking status contributed to these higher rates, a significant portion of the increase cannot be explained by these factors.*

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Photo from <http://www.nativeamericanlinks.com/>

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*Comments and feedback are always appreciated*

*Thank you!*

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