

Obesity and Chronic Conditions Among Asian Americans

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Background

- Obesity causes more chronic conditions in Asian American than in Whites
- McNeely & Boyko (2004) – Compared with Whites, Obese Asian Americans were 1.7 times more likely to have Type II Diabetes
- Bell, Adair & Popkin (2002) – Chinese Americans have steeper increase in HTN prevalence than Whites as BMI increases
 - BMI 29 – 31: Chinese, 50.4%; Whites, 36.9%

Background

- Obesity ($\text{BMI} \geq 30$) is more critical to Asian Americans than to Whites
 - Asians have more body fat at the same BMI than Whites
 - BMI cutoff for obesity may be different for Asians. Optimal BMI for Asians were
 - <23.8 for HTN vs <25 for whites
 - <25 for Diabetes vs <30 for whites
- How about other chronic conditions?

Background

- Body Mass Index (BMI)
 - kg / m^2
 - WHO Classification
 - Normal Weight, BMI < 25
 - Overweight, BMI 25 – 29.9
 - Obese, BMI ≥ 30

Objective

- To examine the effect of obesity on the prevalence rates of chronic conditions for Asian Americans
- To examine whether optimal BMI cutoff can be found for Asian Americans for these conditions

Method

- Behavioral Risk Factor Surveillance System (BRFSS), 2005
 - World's largest telephone survey of health (> 300,000 subjects)
 - Tracking behavioral health risks in the U.S.
 - Representative sample of adult U.S. population (age ≥ 18)

Method

■ Chronic conditions in 2005 BRFSS

- Diabetes (Ever)
- Hypertension (Ever)
- High cholesterol (Ever)
- Heart attack (Ever)
- Cardiovascular Disease (Ever)
- Stroke (Ever)
- Asthma (Now)
- Arthritis (Ever)
- Osteoporosis (Ever)

Method

- Other indicators of health in 2005 BRFSS
 - General health status
 - Satisfaction with life
 - Disability (activity limitation)

Method

■ Factors that affect health and chronic conditions

- Age
- Sex
- Marital Status
- Urban/Rural Residence
- Income
- Education
- Smoking
- Drinking

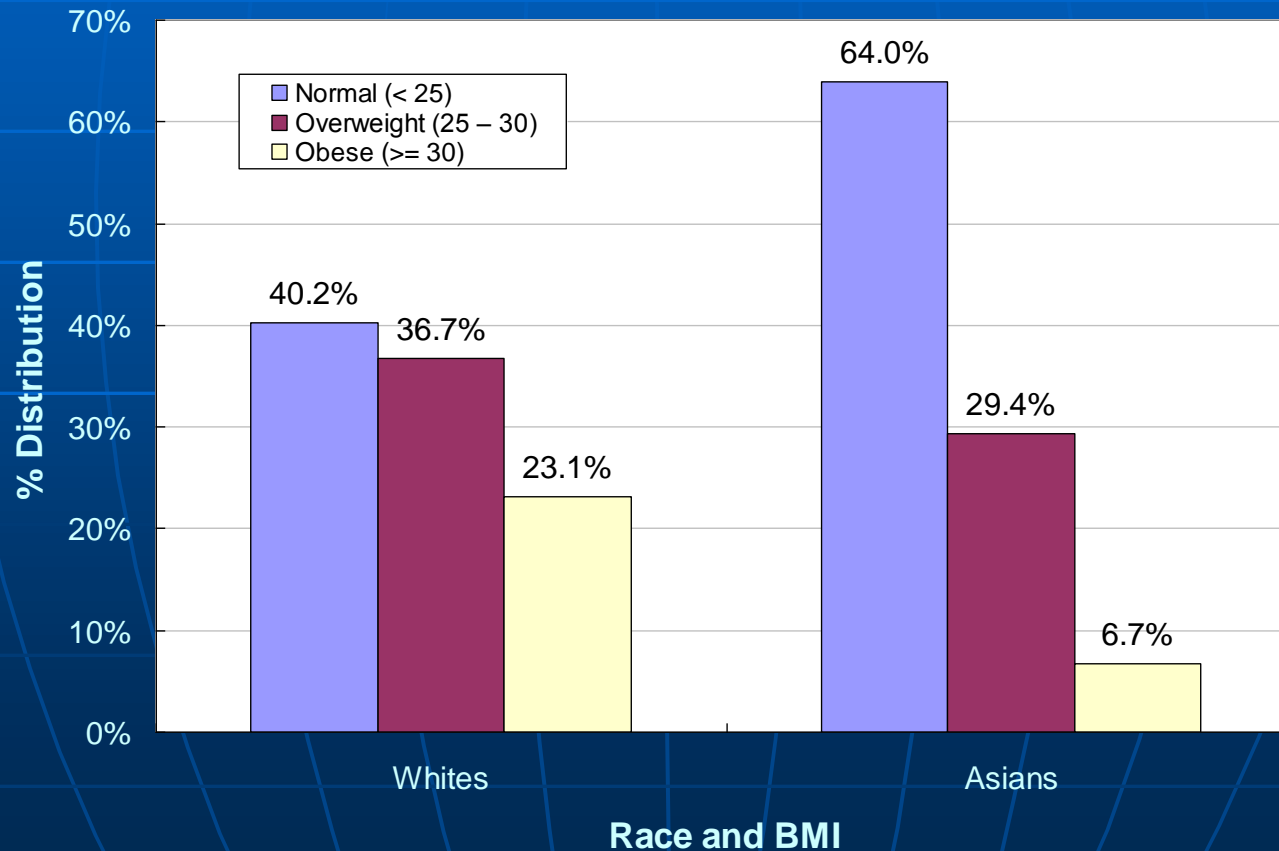
Results

- BMI Groups by Race in Sample, unweighted

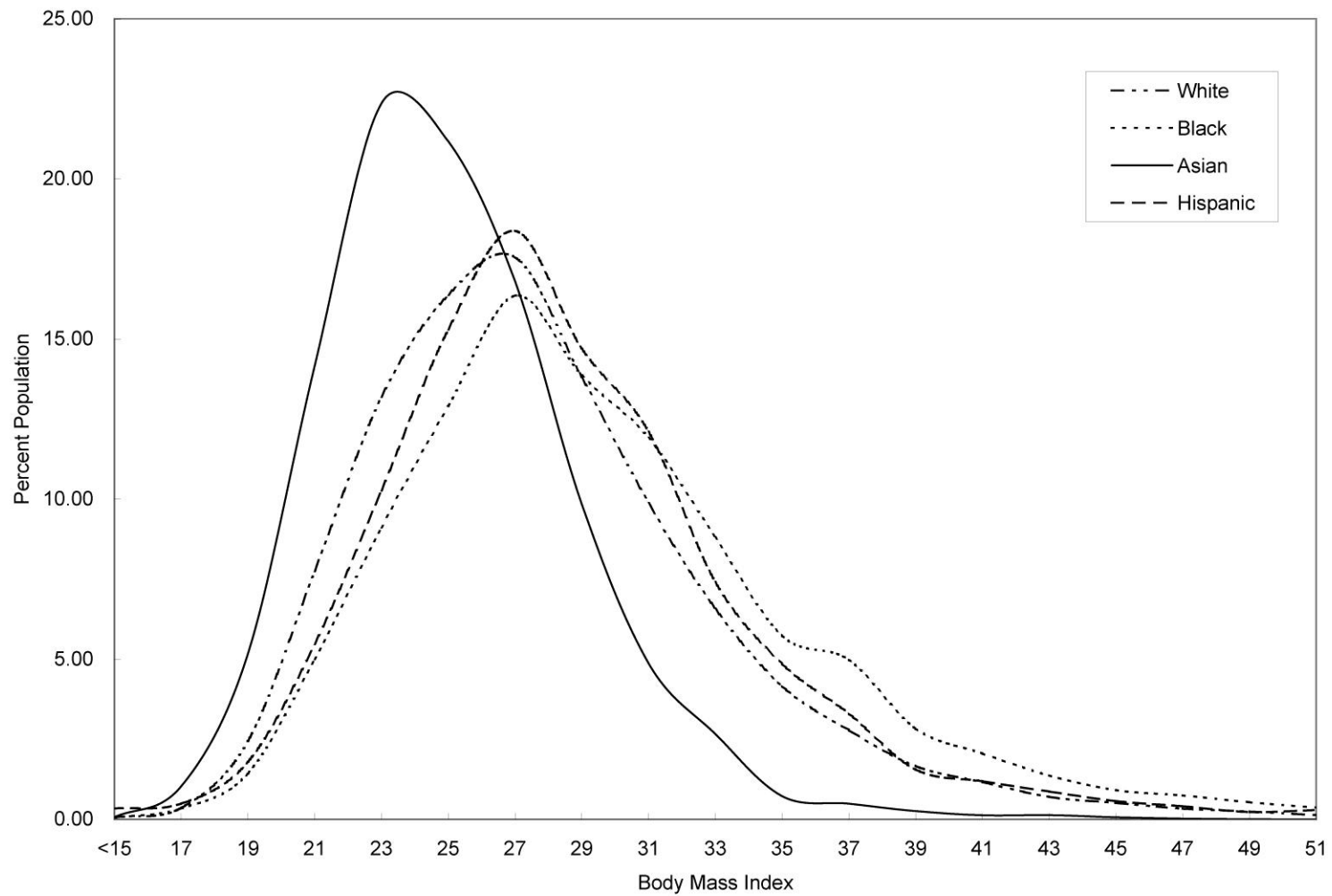
BMI Group	Whites	Asians	Total
Normal	105,258	3,541	108,799
	39.3%	62.2%	39.8%
Overweight	97,921	1,657	99,578
	36.6%	29.1%	36.4%
Obese	64,376	497	64,873
	24.1%	8.7%	23.7%
Total	267,555	5,695	273,250
	97.9%	2.1%	100.0%

Results

■ BMI Groups by Race, weighted & unadjusted



Results



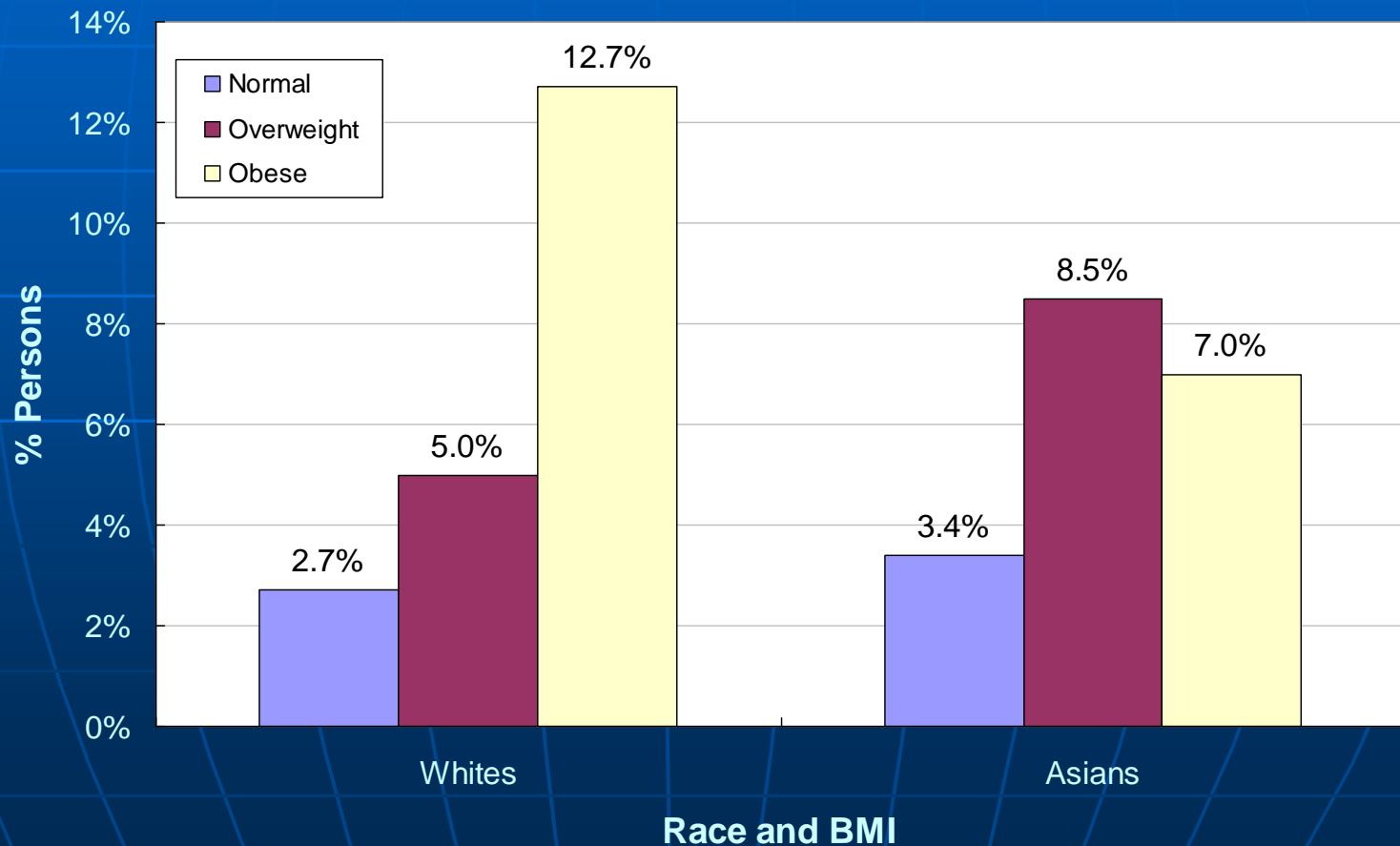
Results

■ Diabetes Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	3.0%	2.9%
Overweight	6.4%	7.2%
Obese	15.2%	8.4%
All	7.1%	4.6%

Results

■ Diabetes Prevalence Rates, Adjusted



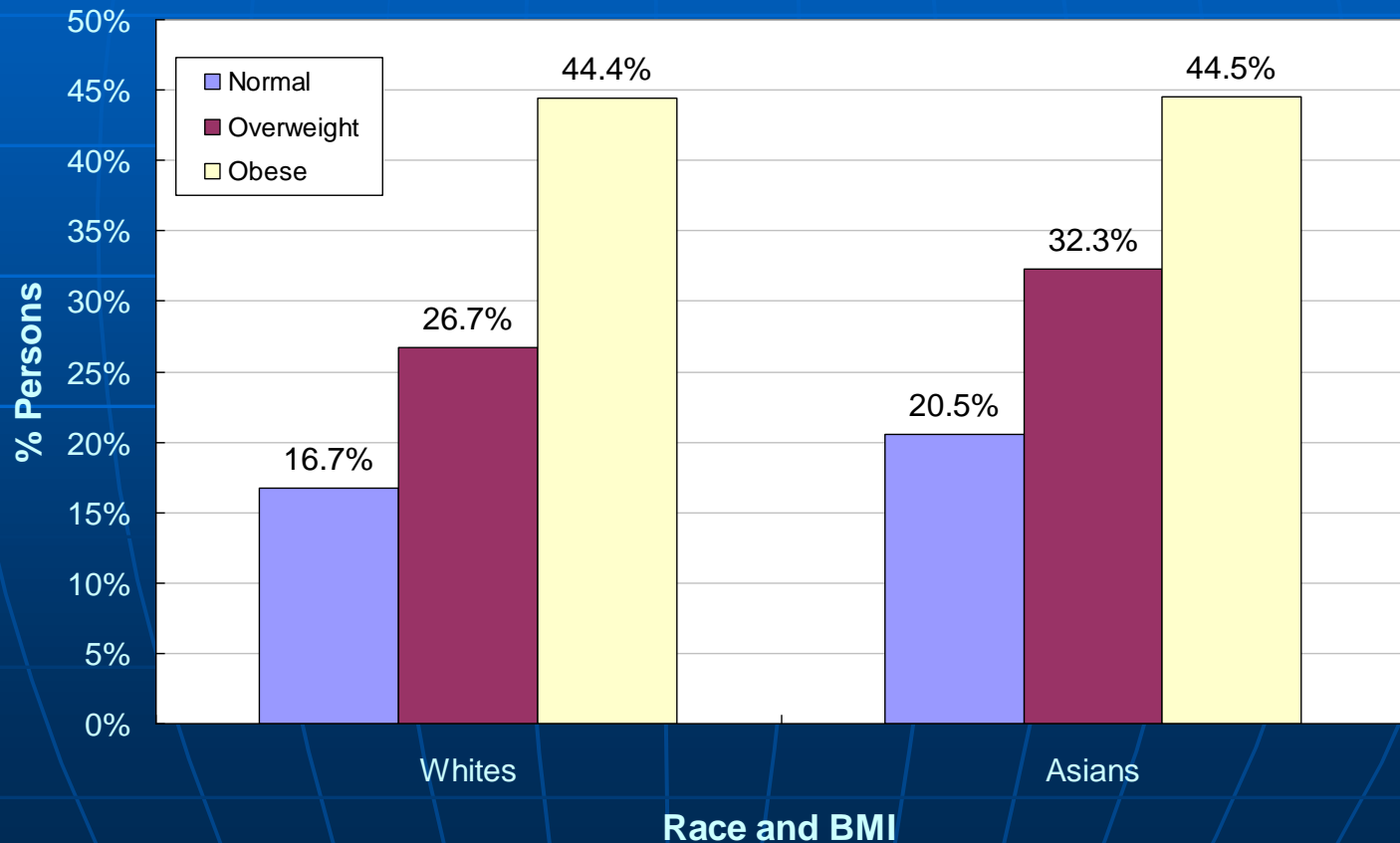
Results

■ Hypertension Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	16.4%	12.7%
Overweight	27.7%	23.3%
Obese	42.0%	33.8%
All	26.5%	17.2%

Results

■ Hypertension Prevalence Rates, Adjusted



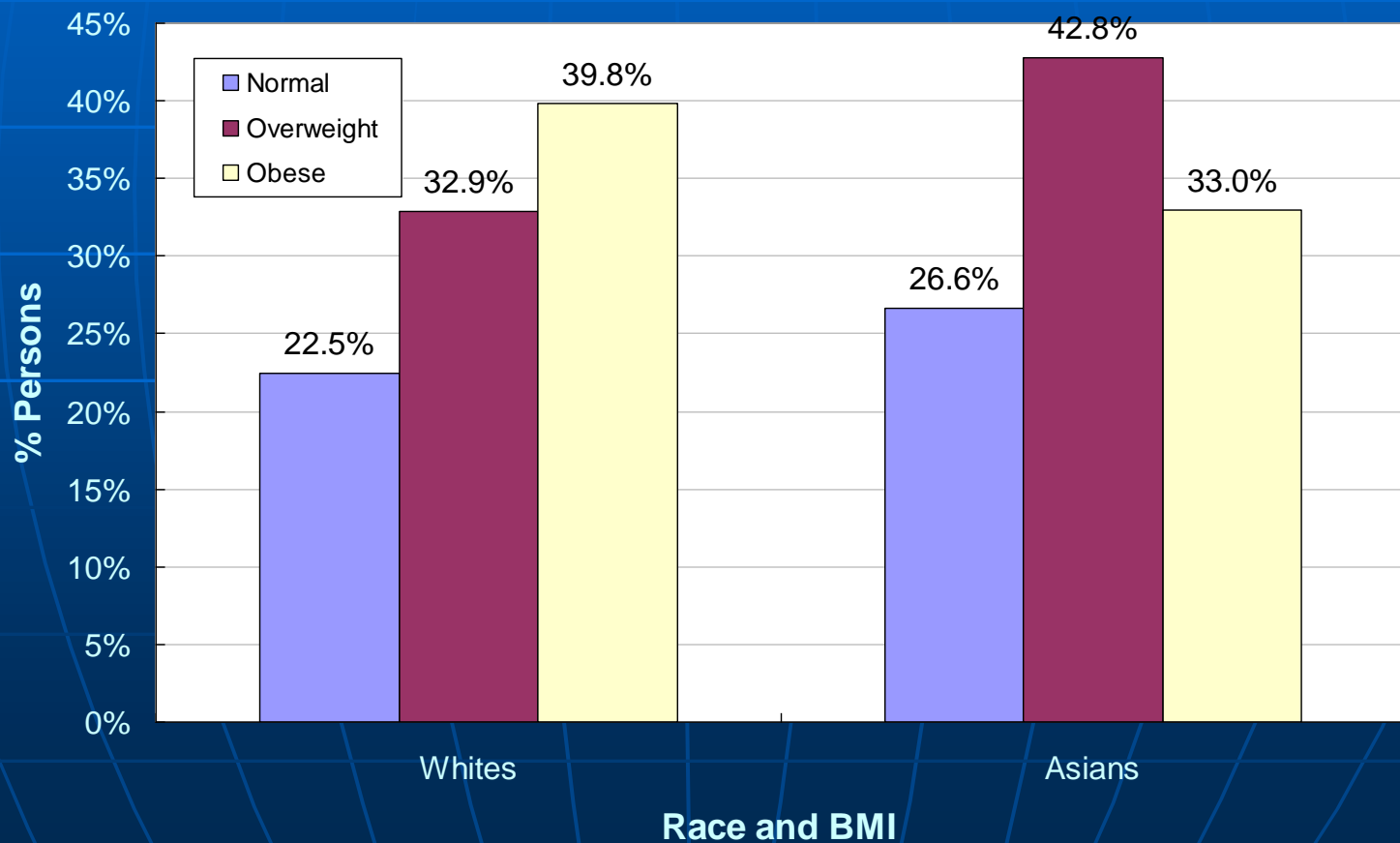
Results

- High Cholesterol Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	20.5%	19.3%
Overweight	33.1%	34.9%
Obese	38.9%	28.6%
All	29.4%	24.5%

Results

- High Cholesterol Prevalence Rates, Adjusted



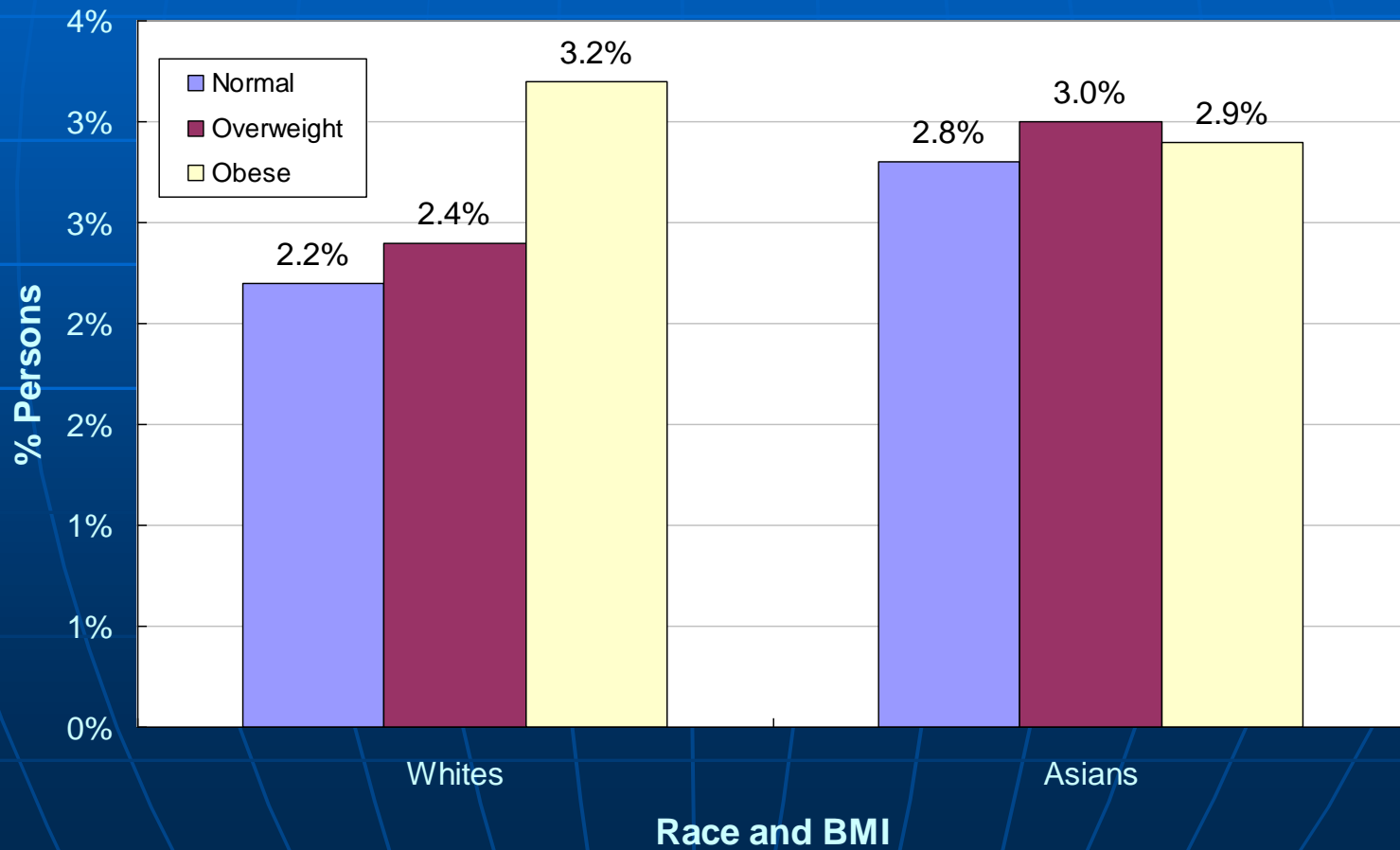
Results

- Heart Attack Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	3.4%	1.6%
Overweight	4.9%	3.1%
Obese	6.0%	3.7%
All	4.6%	2.2%

Results

■ Heart Attack Prevalence Rates, Adjusted



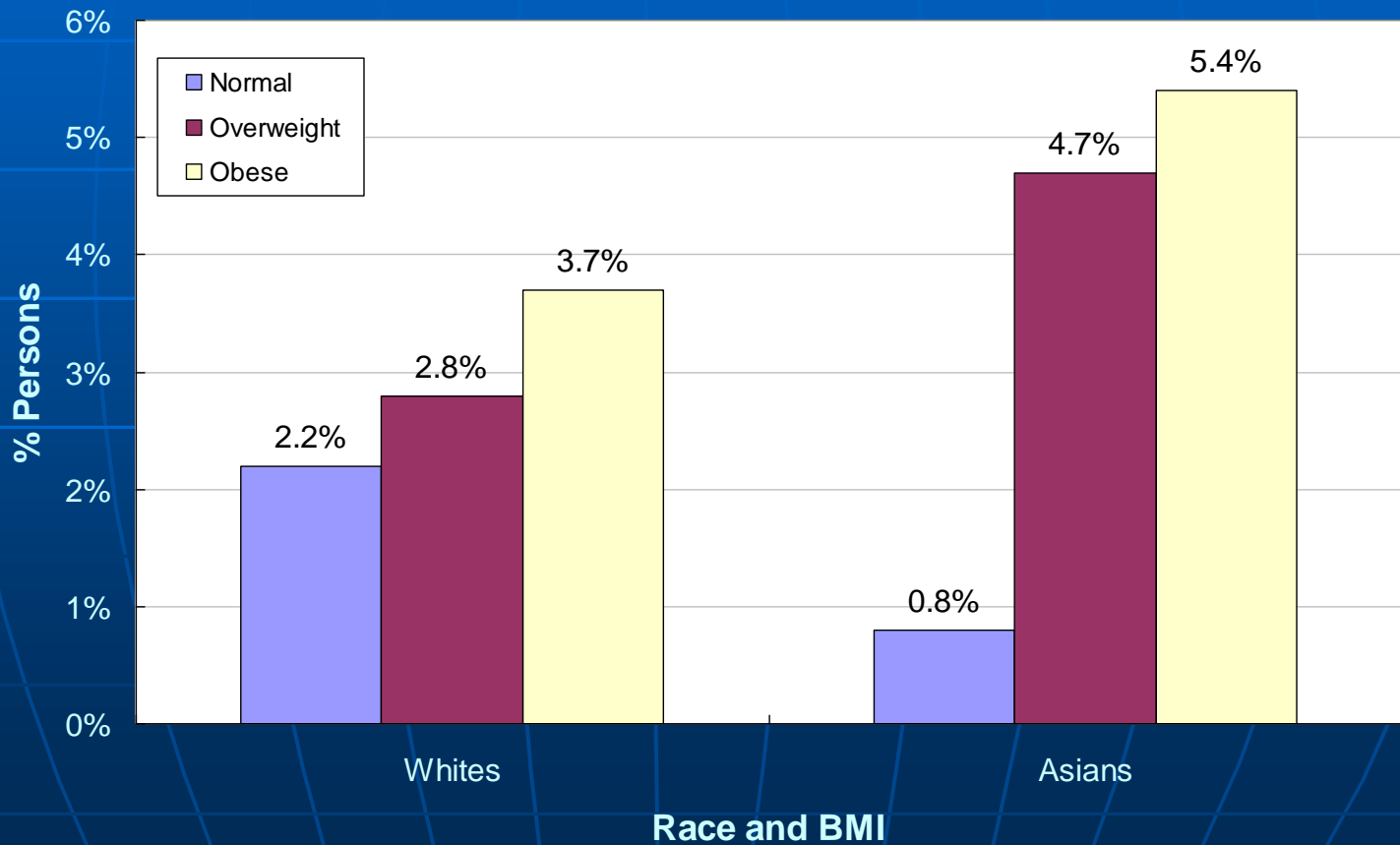
Results

■ CVD Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	3.3%	0.8%
Overweight	5.3%	4.8%
Obese	6.5%	7.4%
All	4.8%	2.4%

Results

■ CVD Prevalence Rates, Adjusted



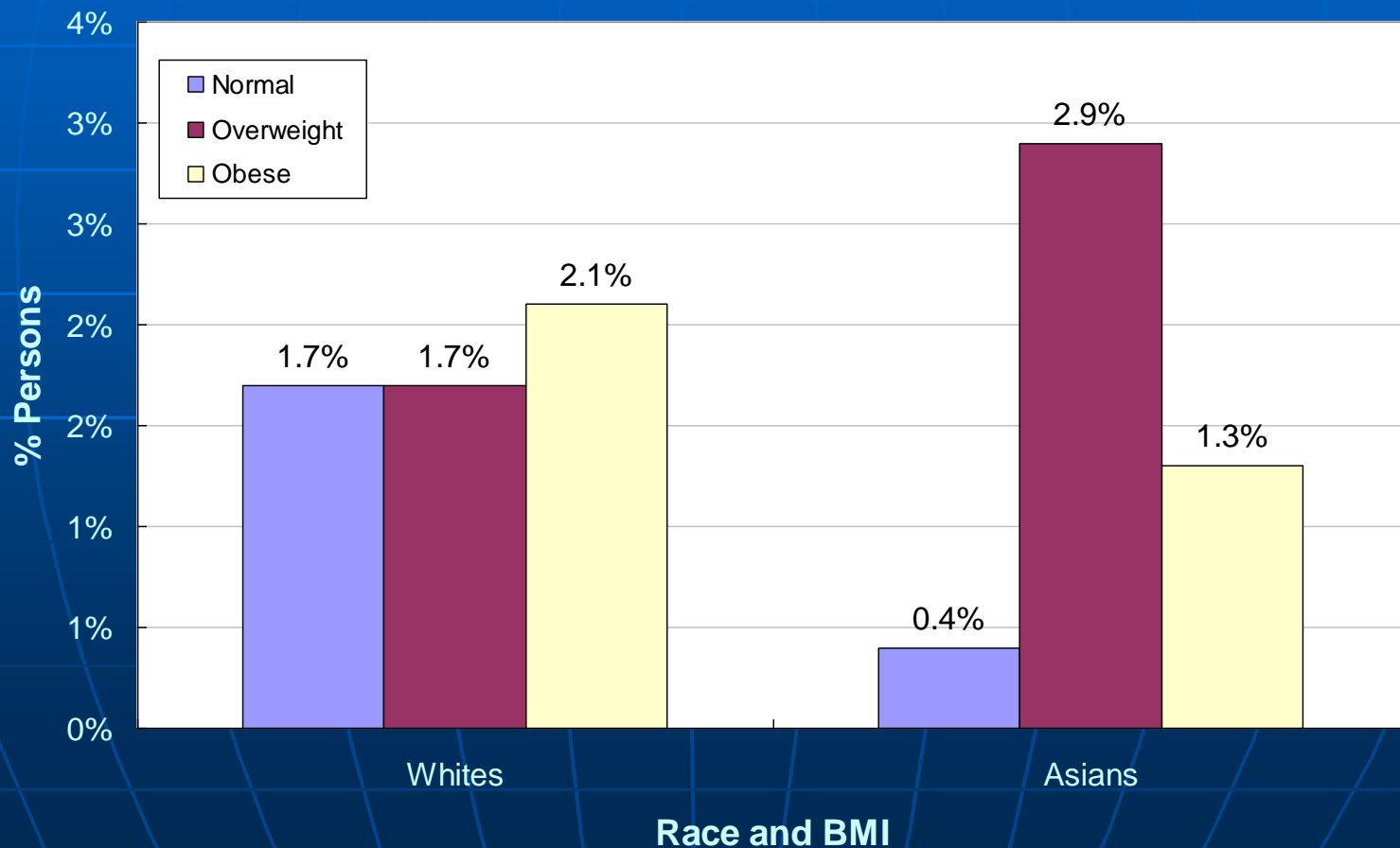
Results

■ Stroke Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	2.4%	0.5%
Overweight	2.5%	2.2%
Obese	3.1%	1.2%
All	2.6%	1.0%

Results

■ Stroke Prevalence Rates, Adjusted



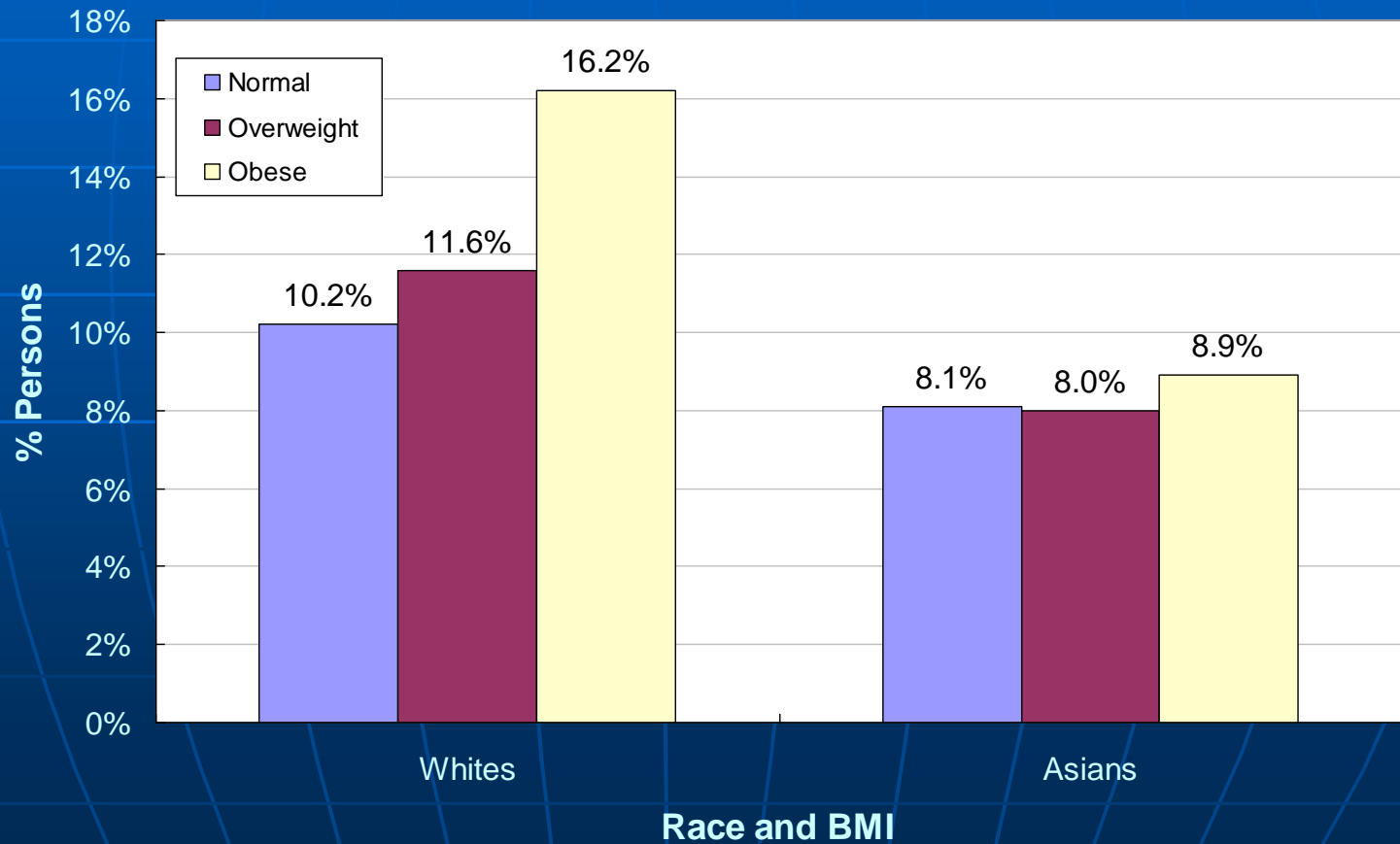
Results

■ Asthma Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	11.6%	9.2%
Overweight	11.4%	8.9%
Obese	16.4%	9.3%
All	12.6%	9.1%

Results

■ Asthma Prevalence Rates, Adjusted



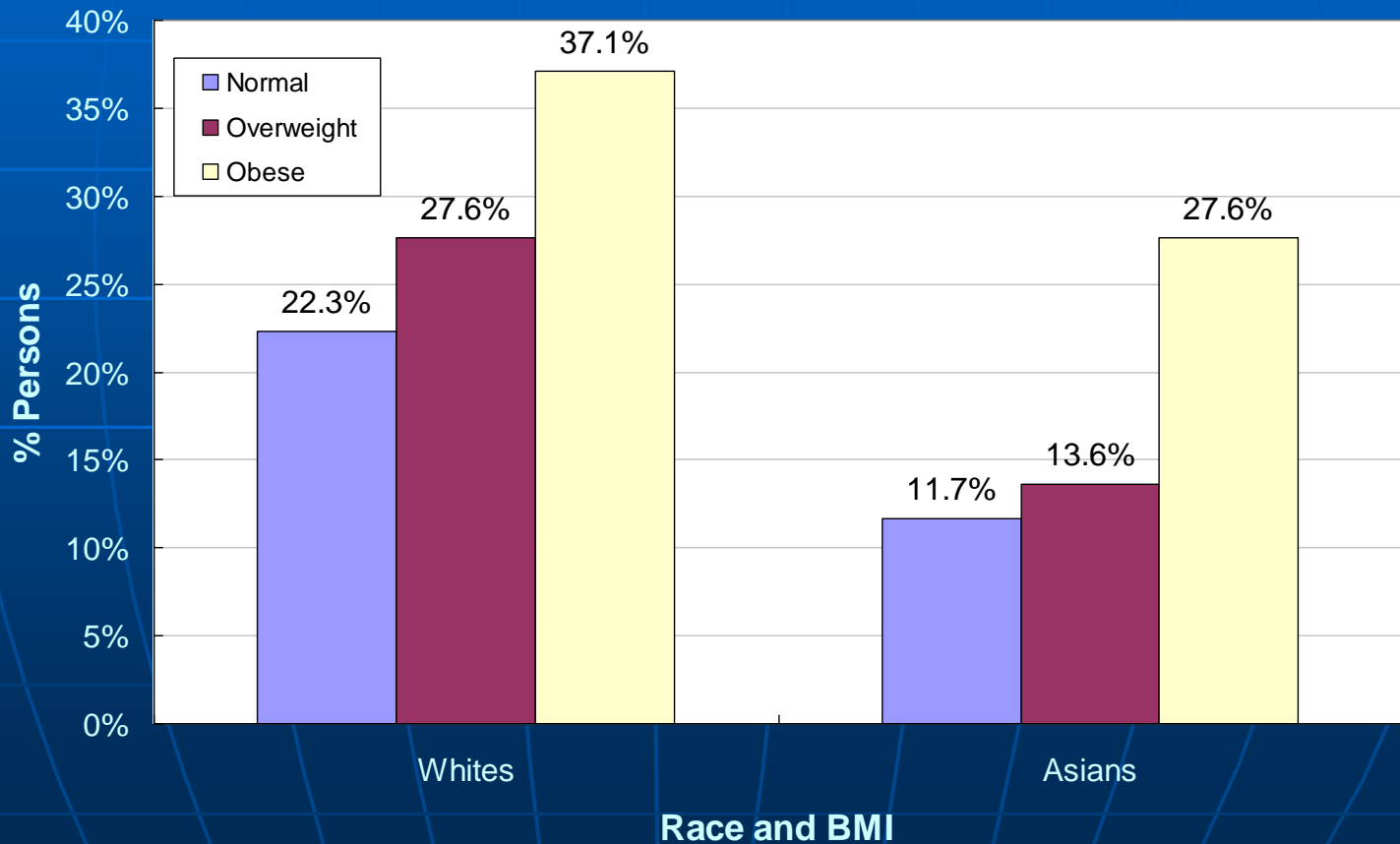
Results

■ Arthritis Prevalence Rates, Crude

BMI Group	Whites	Asians
Normal	19.8%	8.7%
Overweight	25.9%	9.7%
Obese	35.3%	22.2%
All	25.6%	9.9%

Results

■ Arthritis Prevalence Rates, Adjusted



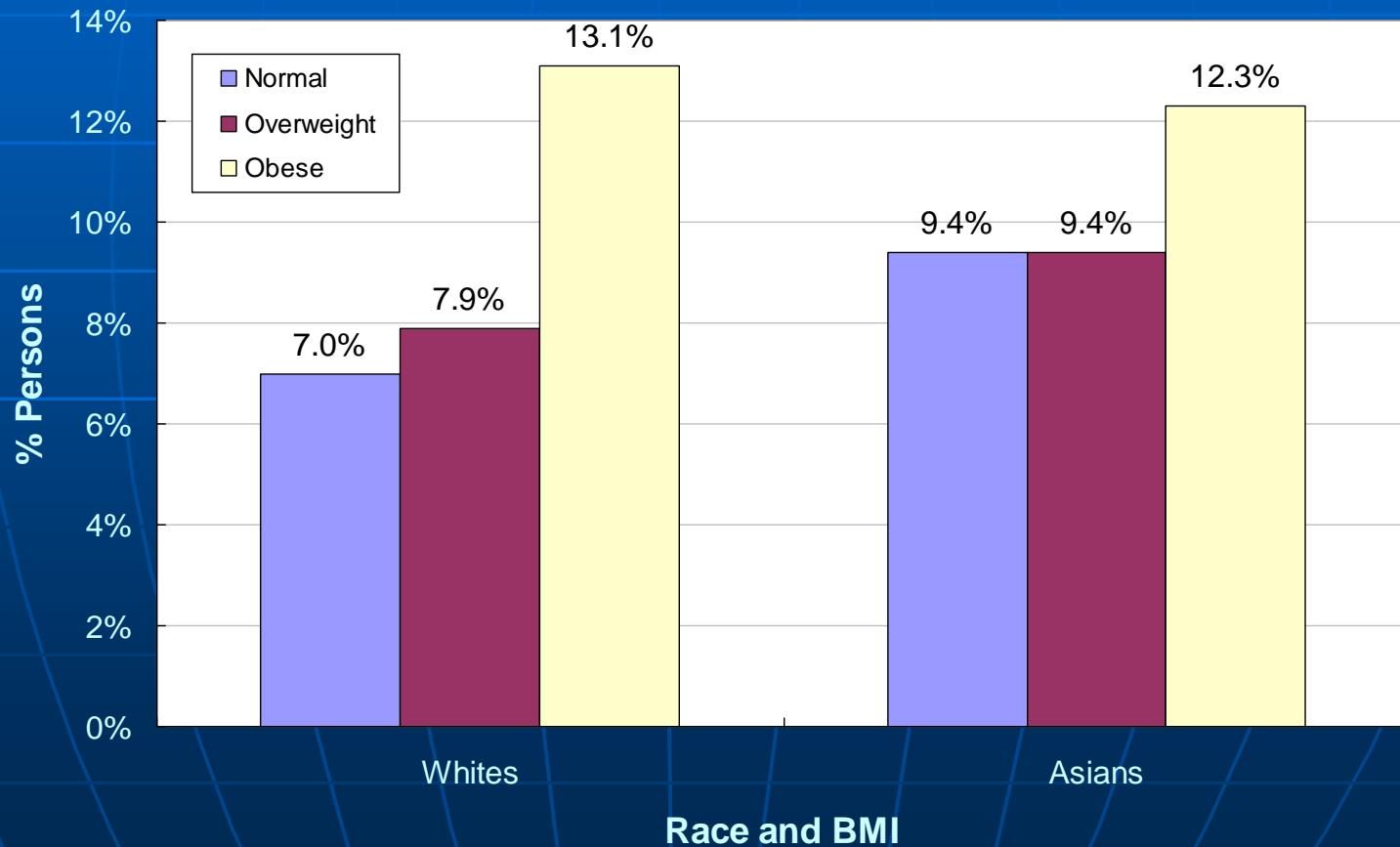
Results

- Percent Persons with Poor Health, Unadjusted

BMI Group	Whites	Asians
Normal	7.4%	6.4%
Overweight	8.9%	7.5%
Obese	15.1%	9.6%
All	9.8%	6.9%

Results

■ Percent Persons with Poor Health, Adjusted



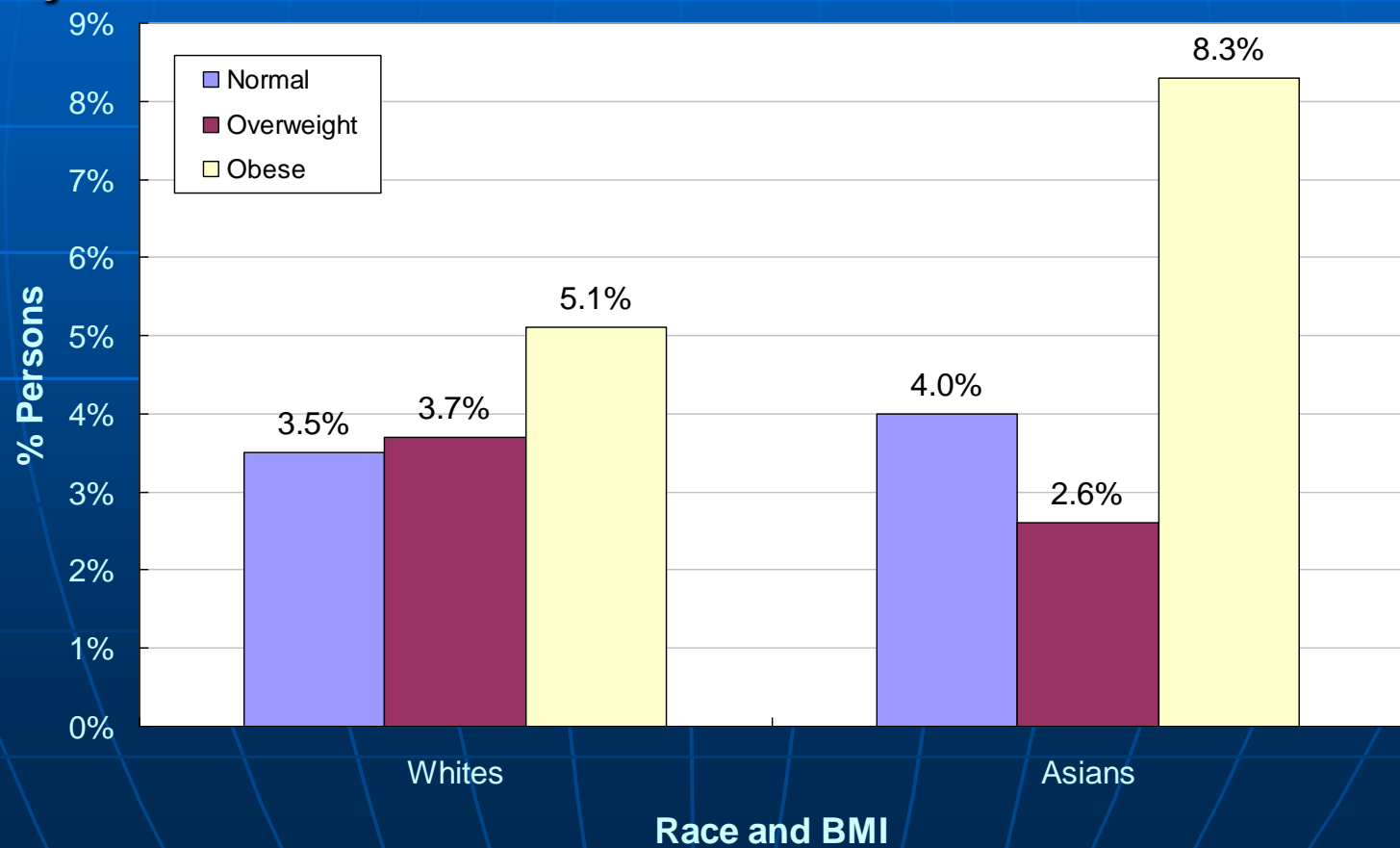
Results

- Percent Persons Not Satisfied with Life, Unadjusted

BMI Group	Whites	Asians
Normal	4.6%	3.9%
Overweight	4.4%	3.3%
Obese	7.1%	7.5%
All	5.1%	4.0%

Results

- Percent Persons Not Satisfied with Life, Adjusted



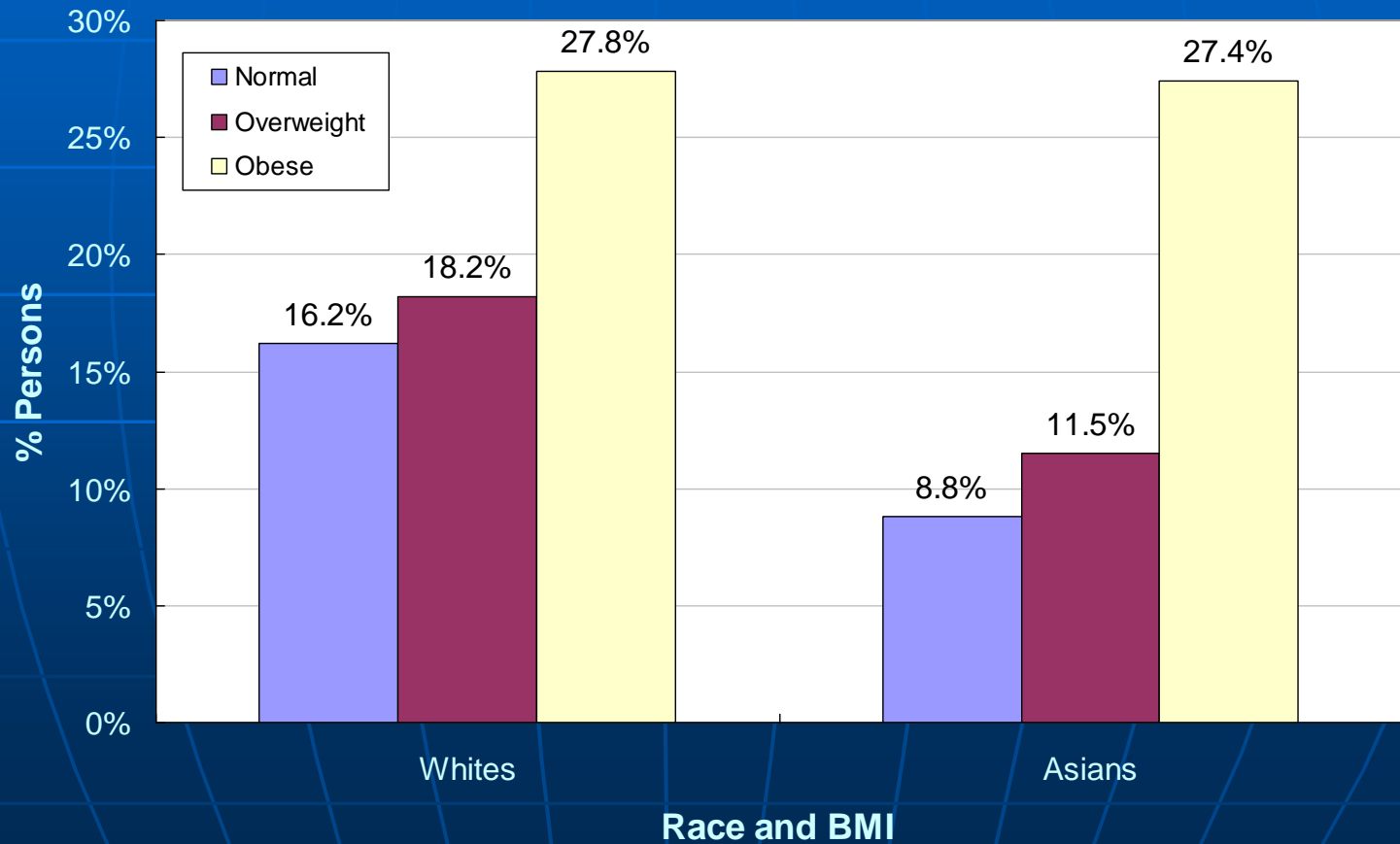
Results

- Percent Persons with Disability, Unadjusted

BMI Group	Whites	Asians
Normal	15.1%	6.8%
Overweight	17.6%	9.1%
Obese	27.9%	21.5%
All	19.0%	8.4%

Results

■ Percent Persons with Disability, Adjusted



Summary

- For most conditions, Asians experienced higher chronic condition with higher BMI
- However, increased BMI was not associated with increased prevalence of **asthma** and **heart attack** for Asians, unlike Whites

Summary

- BMI ≥ 25 was associated with significantly increased prevalence among Asians for
 - Diabetes
 - Hypertension
 - Cardiovascular Disease
 - High Cholesterol
 - Stroke

Summary

- BMI ≥ 30 was associated with significantly increased prevalence among Asians for
 - Arthritis
 - Disability
 - Poor health
 - Dissatisfaction with life

Conclusion

- Association between BMI and prevalence of chronic conditions was significantly different between Whites and Asians
- Asians may experience more chronic conditions at lower BMI than Whites
- Optimal BMI is different for different conditions

Conclusion

- Why did prevalence of diabetes, high cholesterol, and stroke decreased at BMI ≥ 30 compared with BMI 25 – 29.9?
 - Unreliable estimates due to small sample size for Asians (472)?
 - Are they fatal to obese Asians?