

Cultural Assets And Barriers To Programs

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Children And Obesity

Obesity is today the most prevalent and serious health problem of US children, (Dietz, 1998; Rosner, 1998)

Prevalence rates vary greatly by ethnic and racial group: highest for Hispanic and Native American Indian children and for African American girls, (CDC, 1997; Ogden, 1997)

Prevalence Of Obesity* (% change) From NHES And NHANES I And II Data, 1963 To 1980

12-17 year-old children

	NHES ('63-'65)	NHANES I ('71-'74)	NHANES II ('76-'80)	NHANES III ('88-'94)
Black girls	12.8	20.0	25.1	29.9
White girls	16.6	24.4	25.6	20.3
Black boys	7.5	8.9	12.7	21.1
White boys	16.7	17.6	19.5	23.1

*Obesity= BMI 85th percentile

National Growth And Health Study (1987-1992)

NGHS was a 10 year, NHLBI-sponsored, multicenter longitudinal study of 2,379 Black and White girls, from 9 and 10 years old

Centers

- U. C. Berkeley, School of Public Health**
- Children's Hospital Medical Center, Cincinnati**
- Westat-Humana Health Group, Washington, D.C.**
- Maryland Medical Research Institute, Baltimore.**

Study Design

- To identify factors associated with appearance and development of obesity
- To follow cohort of black and white girls in order to determine when differences occur
- To determine factors that influence these changes

Study Population By Age And Race

Age (yrs)	White (%)	Black (%)
9	616 (53.3)	539 (46.7)
10	550 (44.9)	674 (55.1)
Total	1166 (49.1)	1213 (50.9)

Data Obtained At Baseline

- **Demographic and household information**
- **Medical history/health habits**
- **Clinical/anthropometric measurements**
- **Body composition**
- **Dietary information**
- **Physical activity information**
- **Biochemical determinations**
- **Psychosocial information**

Baseline Demographics Of NGHS Girls

White

n (%)

Black

n (%)

Household income

Under \$10,000

87 (7.8)

317 (27.9)

Under \$20,000

105 (9.5)

218 (19.2)

\$20,000-39,999

359 (32.3)

335 (29.5)

≥\$40,000

558 (50.3)

265 (23.4)

Parental education

≤High School

236 (20.2)

382 (31.5)

HS/college

519 (43.8)

679 (56.0)

College+

419 (36.0)

151 (12.5)

Number of parents

Two

946 (81.1)

683 (56.3)

One

220 (18.9)

530 (43.7)

Baseline Profile Of Black Cohort

- Higher maturation stage
- Lower triglycerides, higher HDL, Apo A₁
- Taller and heavier
- Greater subscapular skin folds
- Higher dietary intake:

Kcal

% Kcal/fat

Total fat

Sat. fat

- More TV/Video watching
- Lower parental income/education level
- Lower physical activity
- Higher one parent family

Race And Maturation Stage At Baseline

Maturation Stage	White (%)	Black (%)
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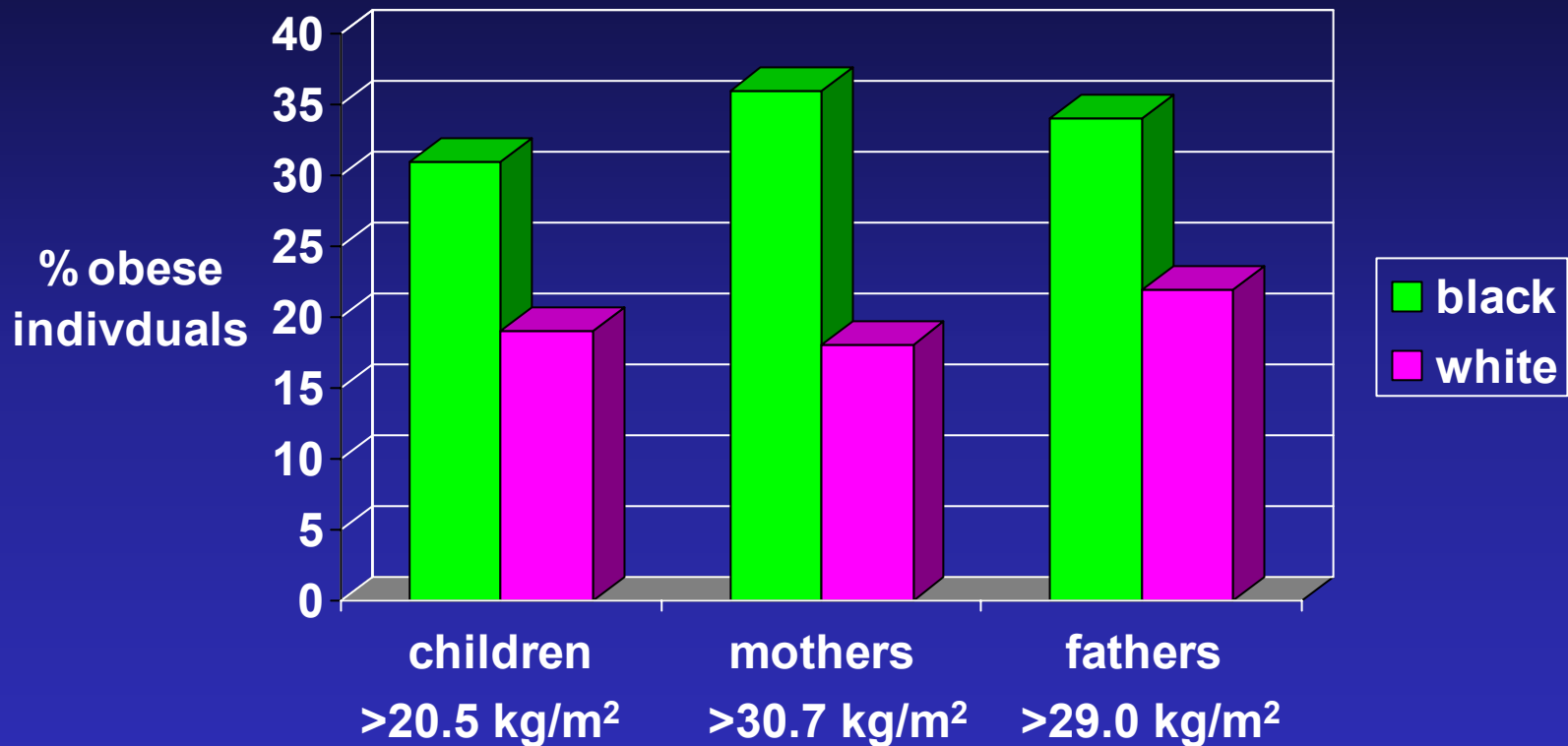
Areolar

--Stage 1	74.7	46.0
--Stage 2	22.9	40.8
--Stage 3+	2.4	13.2

Pubic Hair

--Stage 1	80.1	51.2
--Stage 2	14.8	24.5
--Stage 3+	5.1	24.3

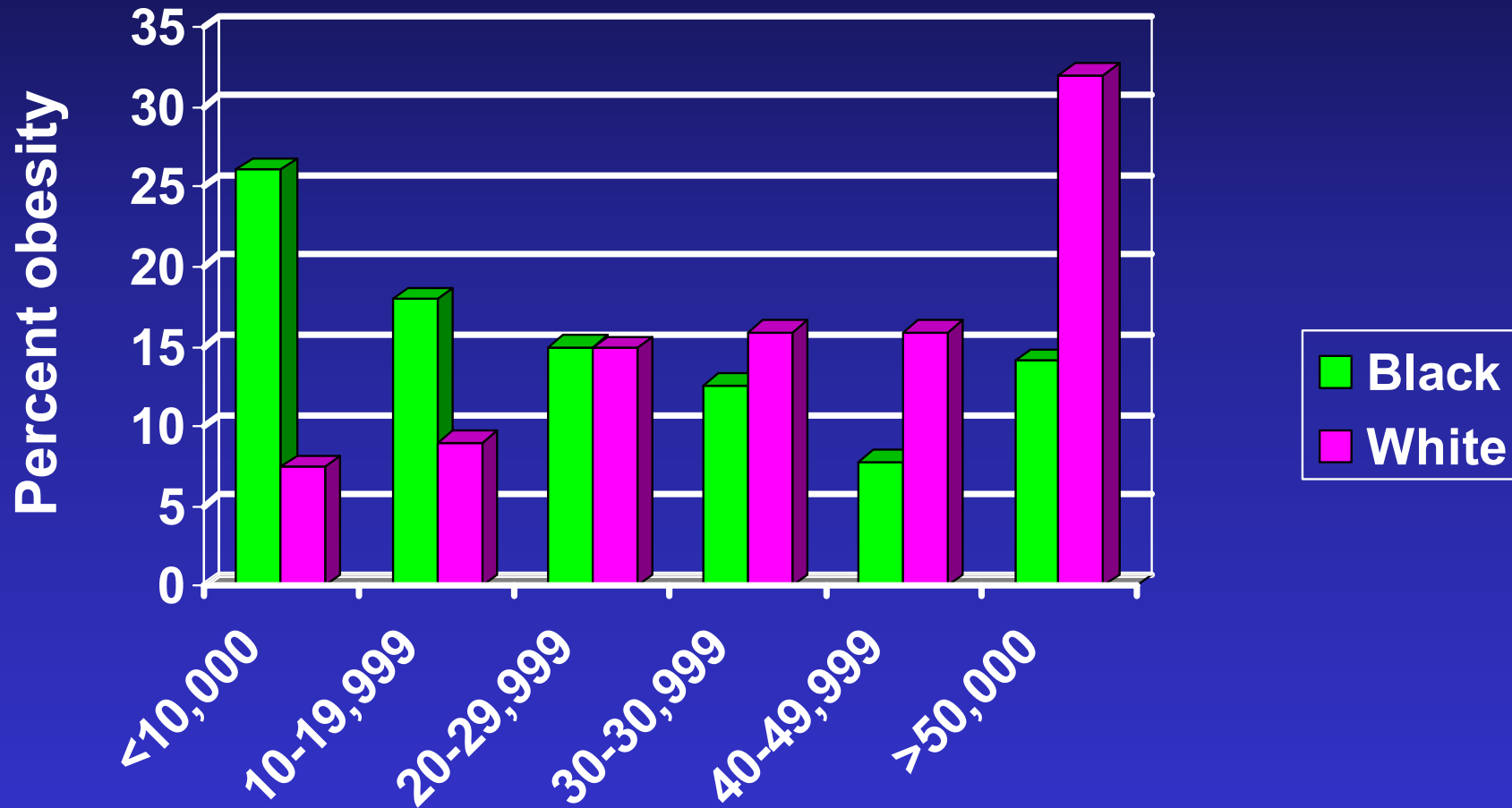
Prevalence Of Obesity¹ In NGHS Participants And Their Parents²



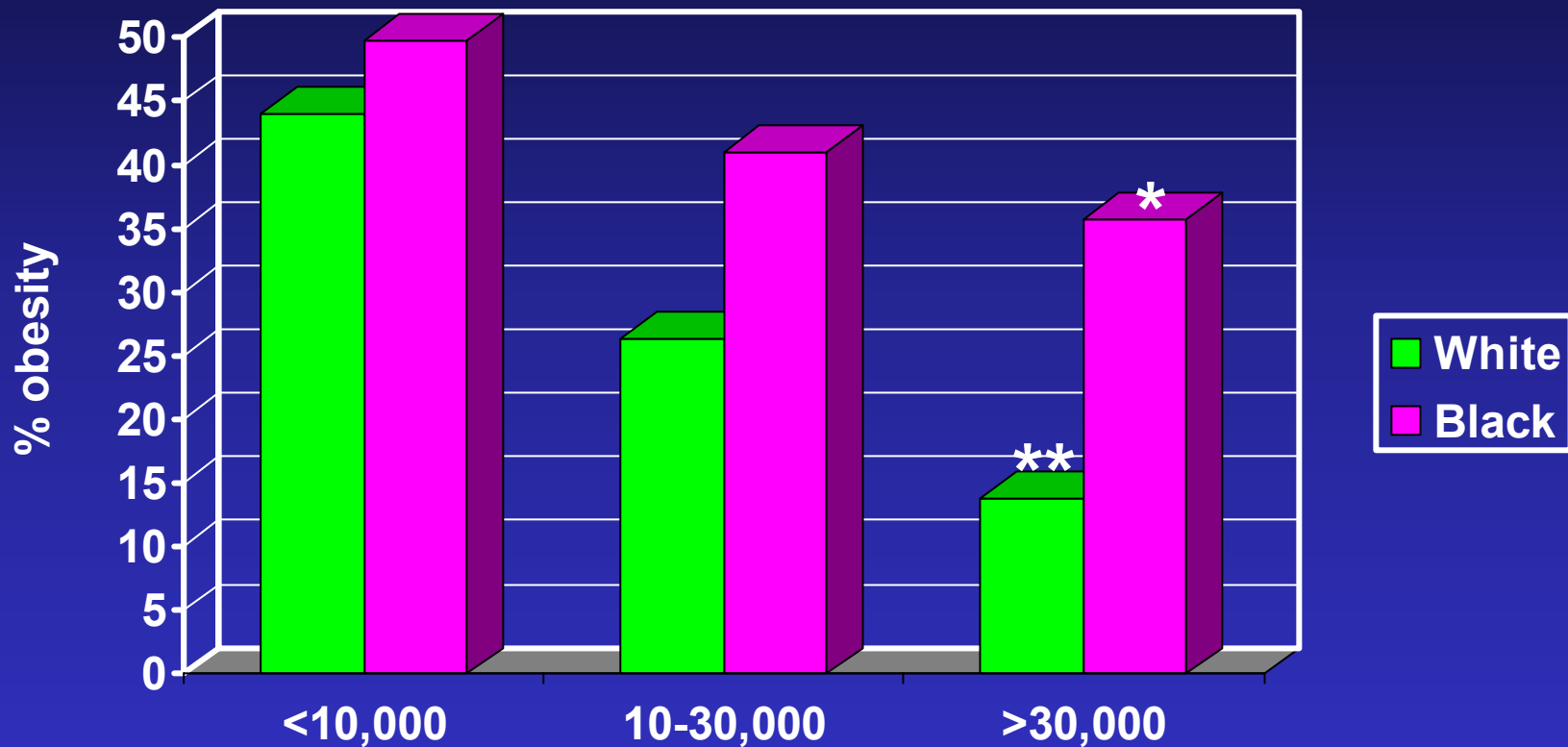
¹obesity defined as upper quartile BMI for category

² “ mothers” includes mothers and female caretakers; “fathers” includes fathers and male caretakers.

Race And Family Income

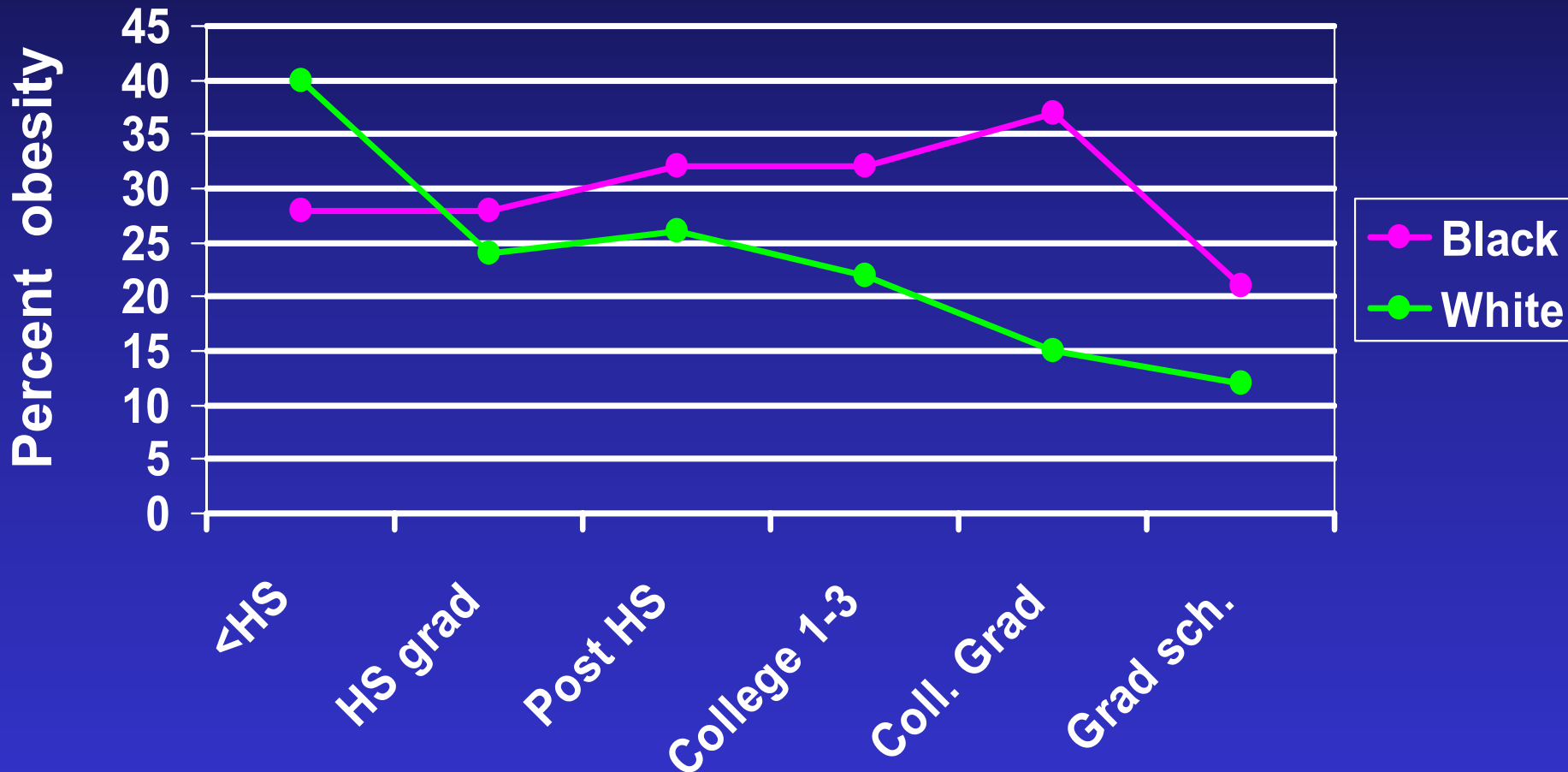


Income And Prevalence Of Obesity 10 Years From Baseline

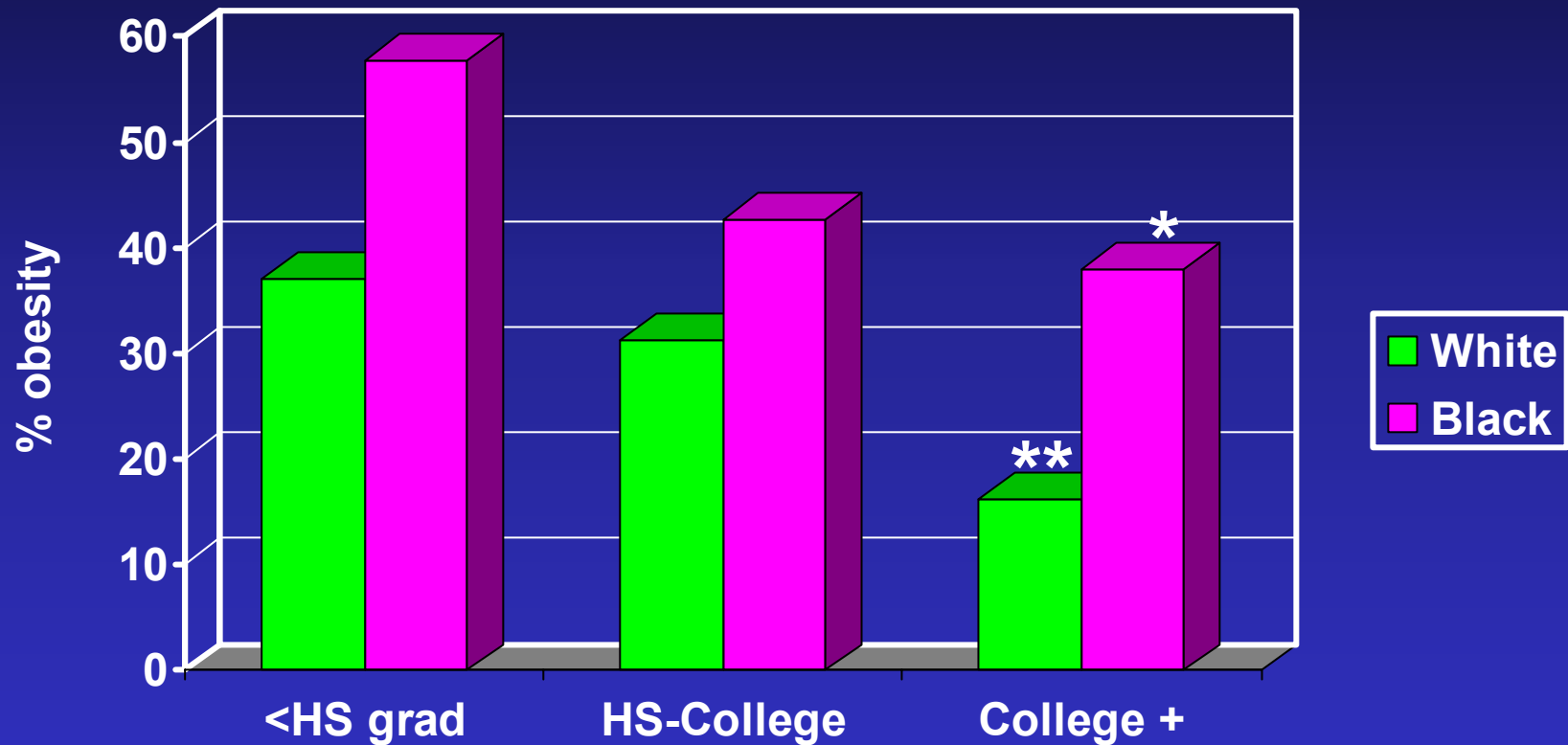


*P=.005; **P=.001

Race And Parent Education

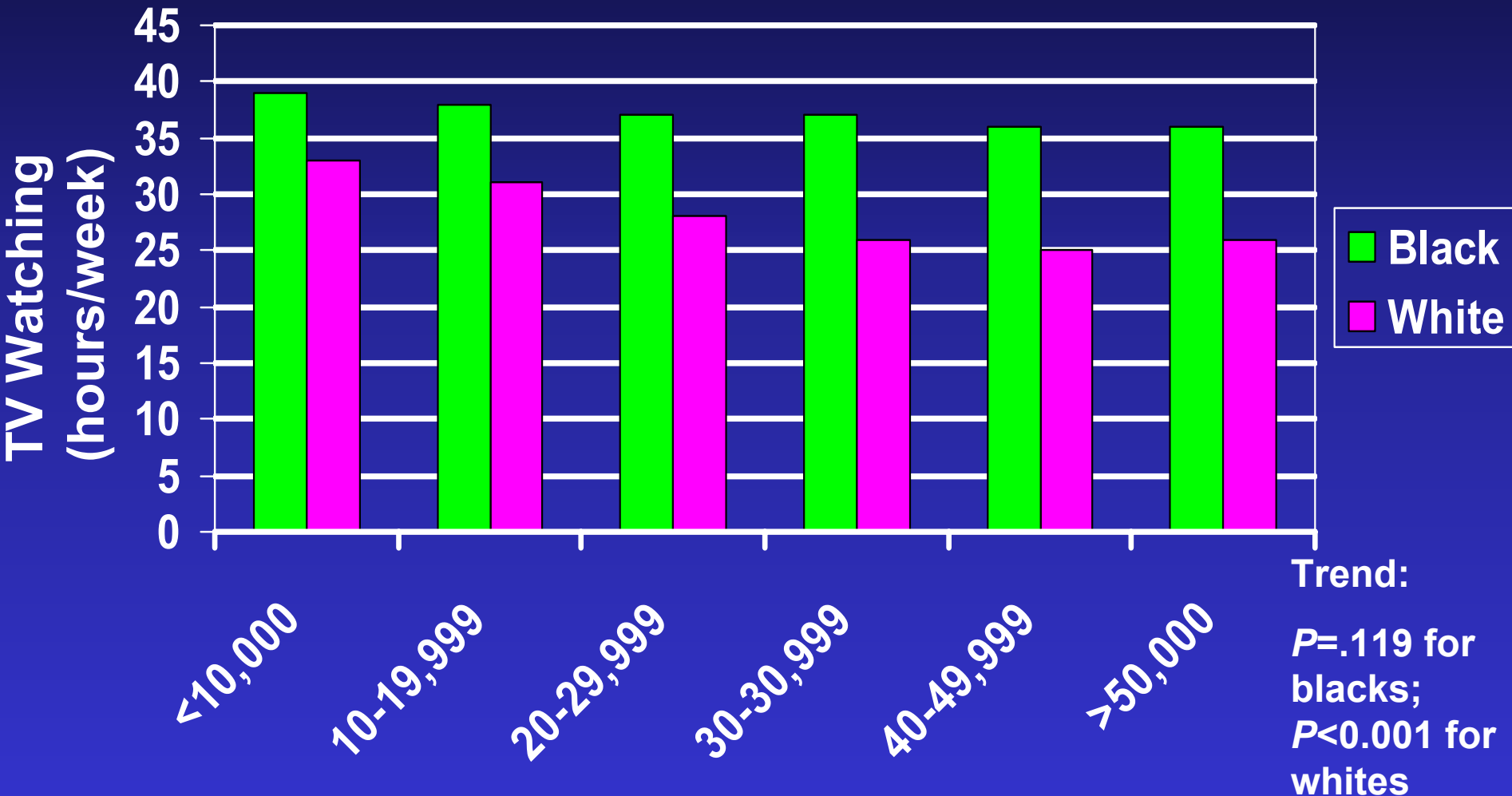


Education And Prevalence Of Obesity 10 Years From Baseline



*P<.005; **P<.001

TV Watching And Family Income



Assessment Of Weight-Related Dietary Practices*

- **Three day recall**
- **Survey of 11 targeted eating practices:**
 - 1) Eat while doing homework**
 - 2) Eat while in bedroom**
 - 3) Eat with TV watching**
 - 4) Eat alone**
 - 5) Eat big helpings**
 - 6) Eat when not hungry**
 - 7) Buy snack food**
 - 8) Sneak food**
 - 9) Eat snacks**
 - 10) Eat fast foods**
 - 11) Skip meals**

*** Eating practices targeted for modification in reduction programs.**

Findings In Dietary Practices (Years 1-5)

All Girls:

- Energy intake higher with targeted eating practices

Black girls:

- Twice as likely to buy and eat more snack food,
- Twice as likely to eat alone at age nine; less than whites at age 14,

Findings In Dietary Practices (Years 1-5)

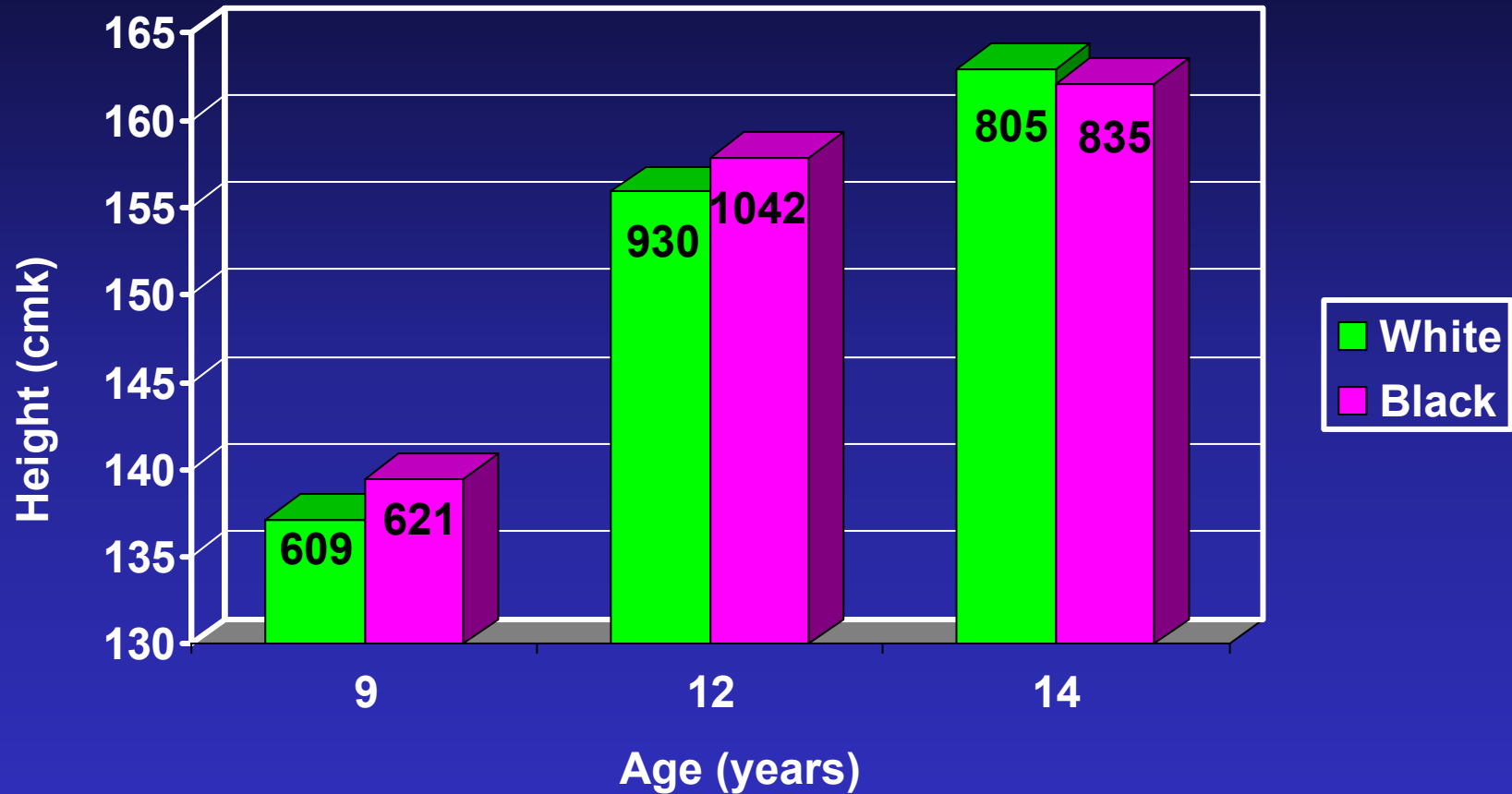
Black girls:

- do wt. related eating twice that of whites,
- eating unchanged when SES factors education controlled,
- obesity positively and significantly related to calorie intake

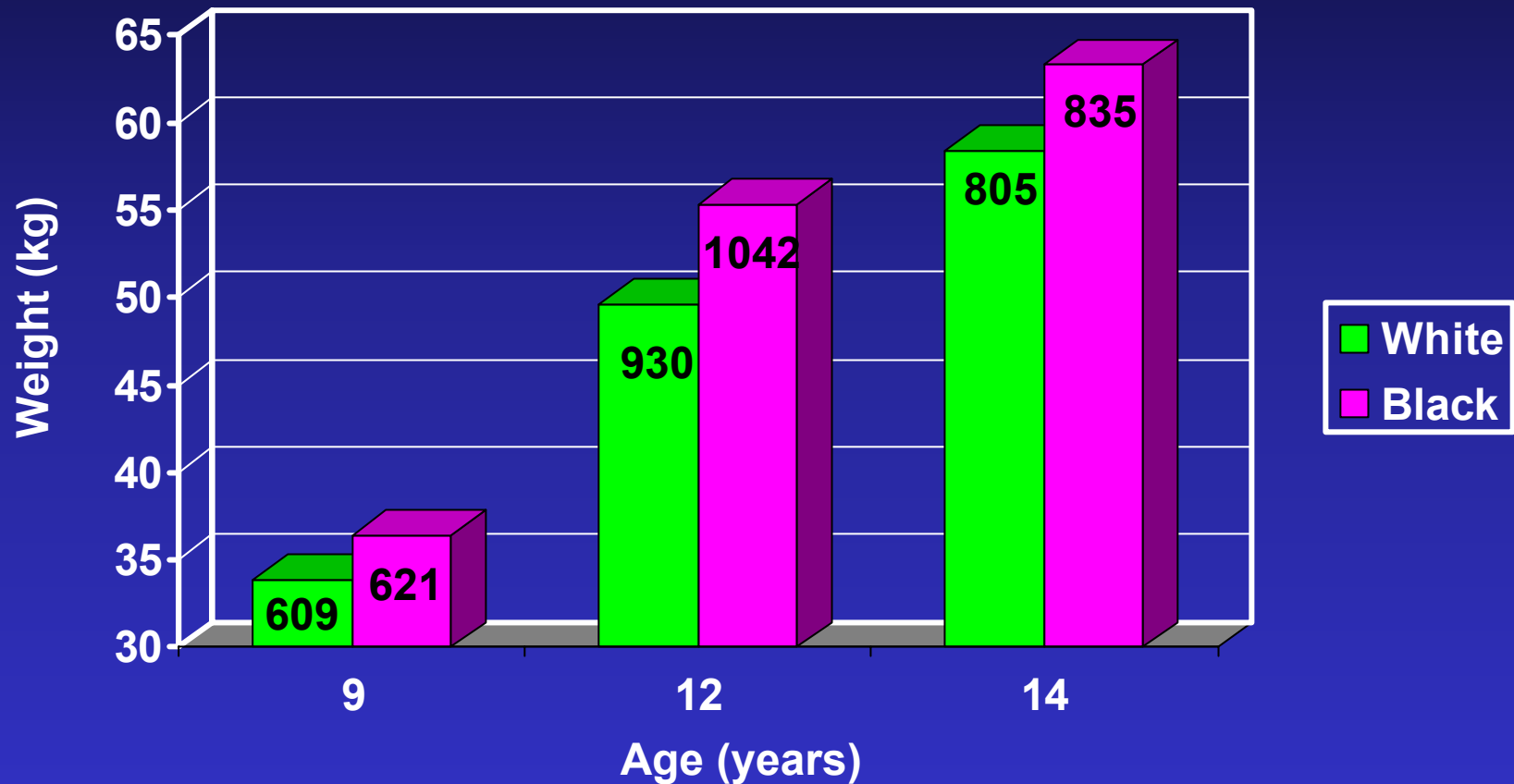
White girls:

- eating inverse to parental income and education

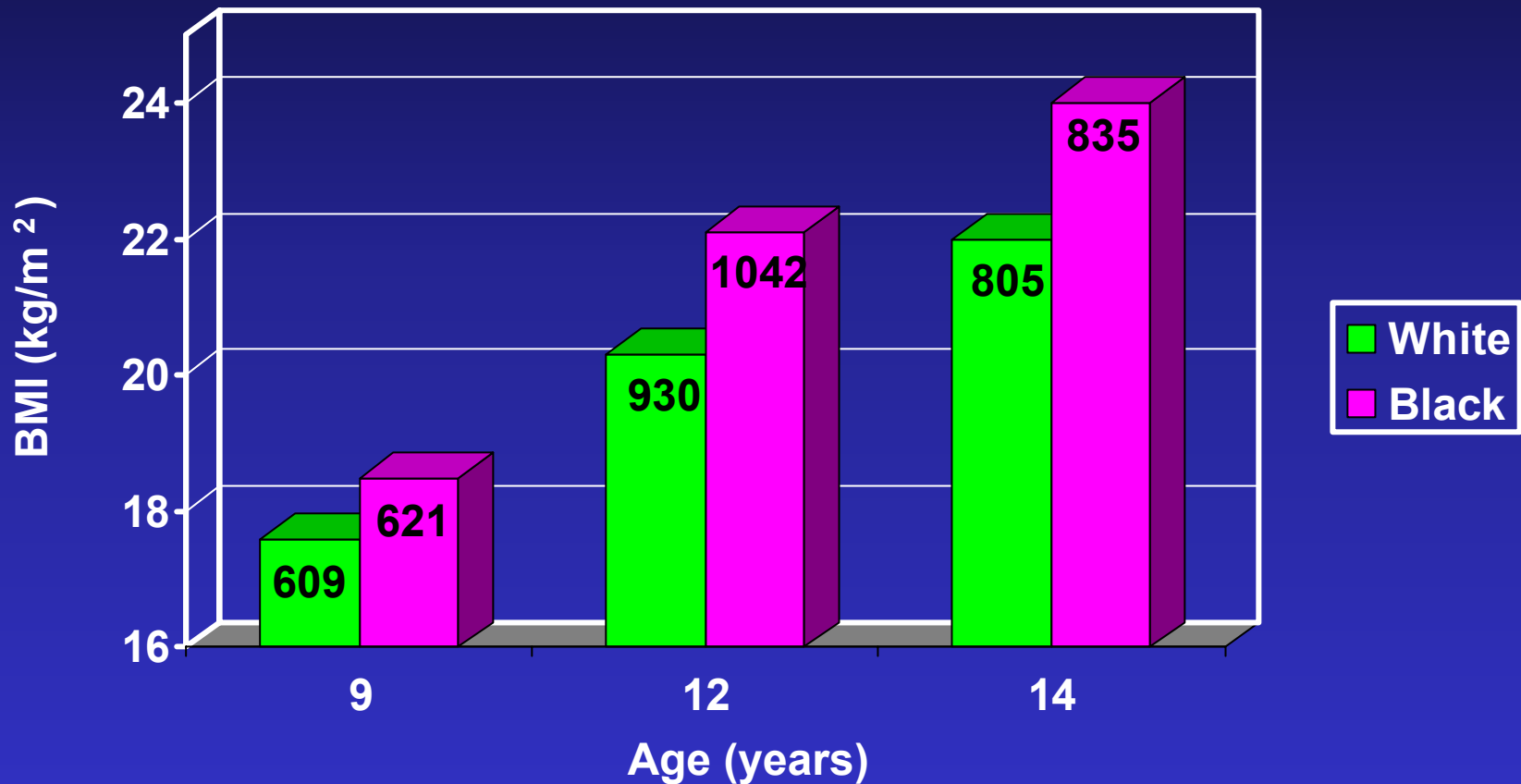
Mean Height By Age And Race



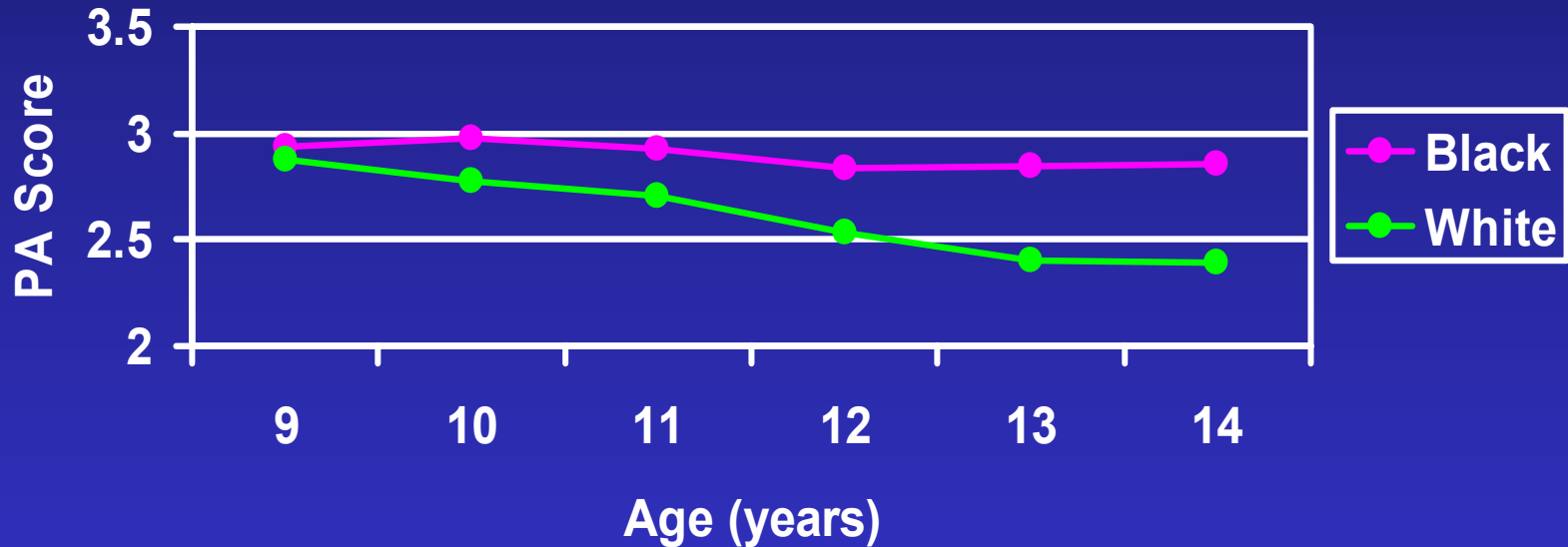
Mean Weight By Age And Race



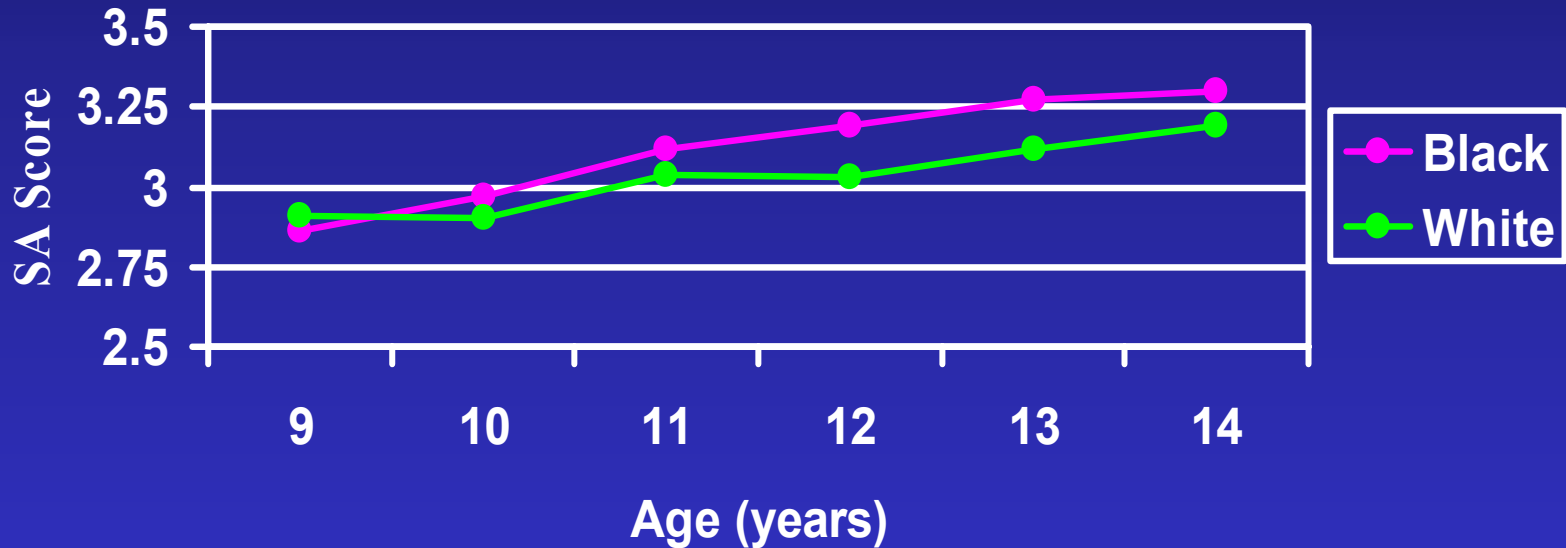
Mean BMI By Age And Race



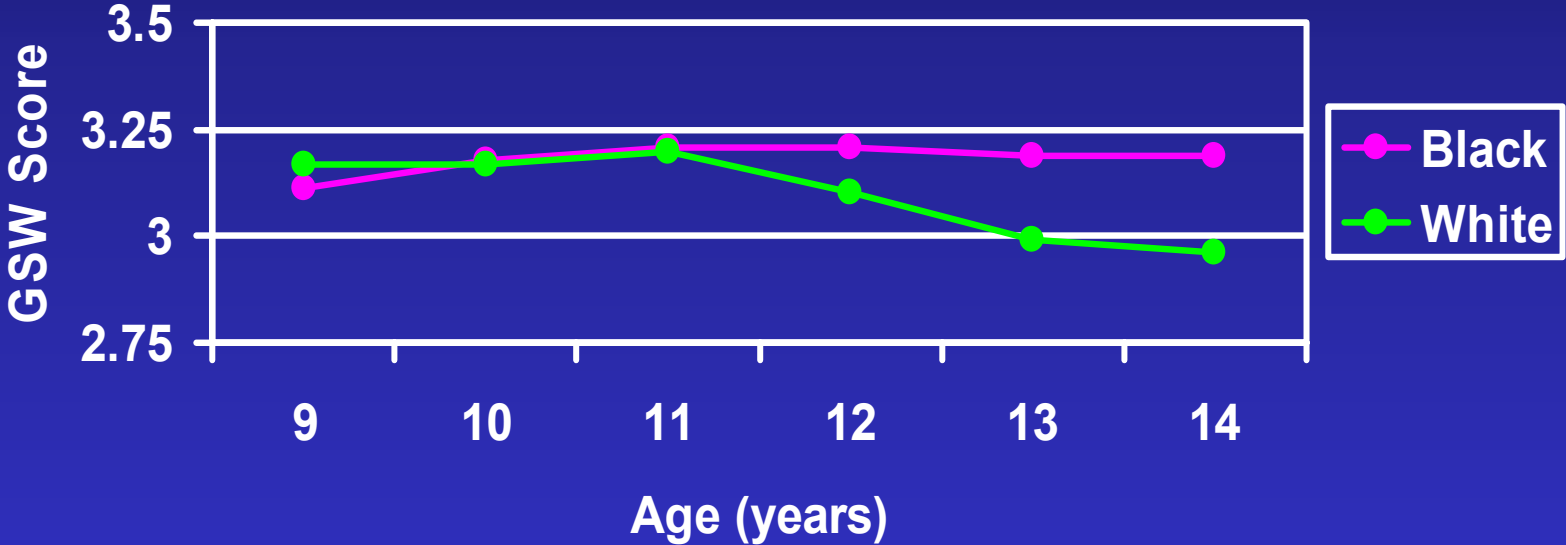
Physical Appearance Score By Race And Age



Social Acceptance Score By Race And Age



Global Self-Worth Score By Race And Age



Obesity In Cohort And Parents

Obesity, often explained as an imbalance between energy intake and output, has multiple causative genetic and non-genetic factors.

Environmental factors have influenced development of adaptive mechanisms which contribute to increased risk of obesity:

a) thrifty gene theory (O'Dea, 1995)

**b) thrifty phenotype theory
(Rosenbloom, 1999)**

SES And Obesity

Jeffery et al reported inverse association between prevalence of obesity in white European origin adults and the number of generations lived in the US:

a) # of generations in US and SES had independent associations with obesity prevalence,

b) Slimness attitudes appeared linked to acculturation: “acculturation phenomenon”.

Socioeconomic Status And Obesity

High prevalence of obesity is seen in Black women in the US.

Generally this has been attributed to greater poverty among Black Americans; Stunkard and Sobal, Fuchs and Reklis and others have revealed cultural as well as other SES factors.

Children are dependent, therefore SES and culture should affect childhood obesity as much as it affects adult obesity.

Conclusions And Questions

- **NGHS is the first longitudinal study to examine differential rate of development of obesity in Black and white girls, at a crucial age in their growth, while controlling for a wide range of SES and psychosocial factors and eating practices.**
- **The increased prevalence of obesity in Black girls and women was previously well known. One of the more interesting findings in NGHS was the prevalence of obesity in the Black cohort was independent of SES levels in contrast to the white group. This finding persisted through the entire study period.**

- **Higher SES levels provided significant protection from the alarming increase in prevalence of overweight and obesity for white girls only. What implications does this have for treatment of obese low SES white girls and racial/ethnic minority children and adolescent? What implications, if any, does this have for the identification and treatment of young 'at risk'/pre-obese children?**