

**Racial-Ethnic Disparities
in Birth Outcomes:**
A New Perspective
08/11/2004

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Acknowledgment

- Support for this work was provided by
 - *National Institute of Health Women's Reproductive Health Career Development Fellowship #HD01281-03*
 - *Federal Maternal and Child Health Bureau for the National Center for Infant and Early Childhood Health Policy #5U93MC00099.*

**Racial & Ethnic Disparities
in Birth Outcomes**

***We hold these truths to
be self-evident, that all
men are created equal***
....

Declaration of Independence 1776

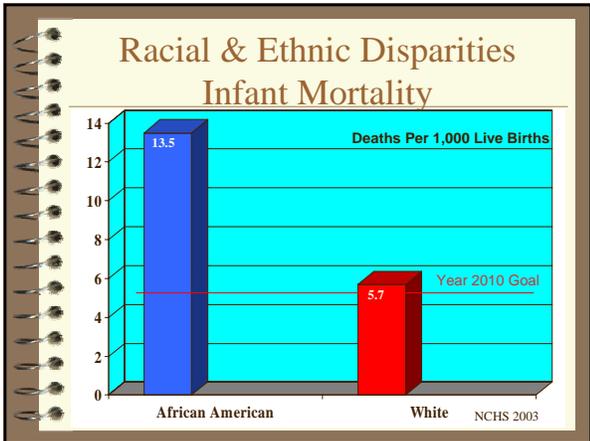
Racial & Ethnic Disparities in Birth Outcomes

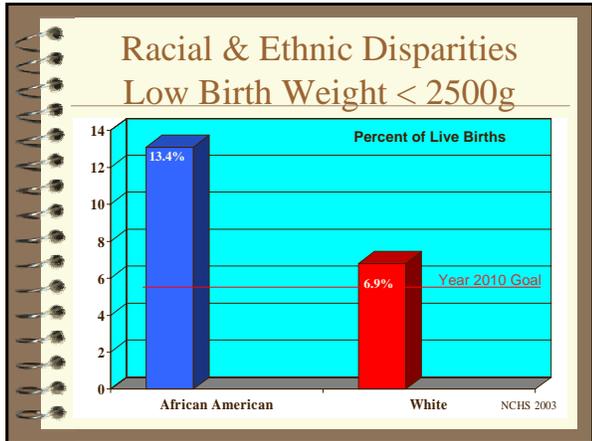
I have a dream that one day ... little black boys and black girls will be able to join hands with little white boys and white girls and walk together as sisters and brothers.

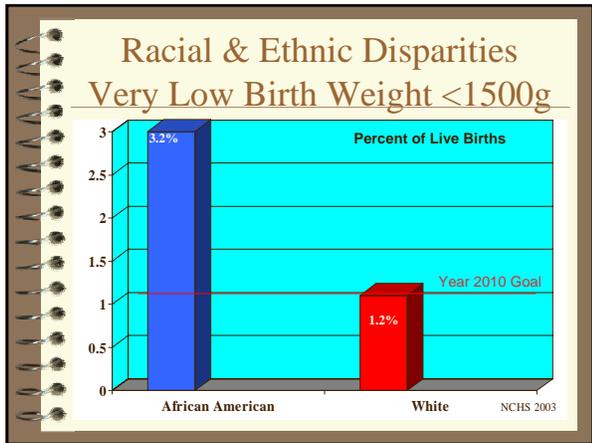
Martin Luther King, Jr (1963)

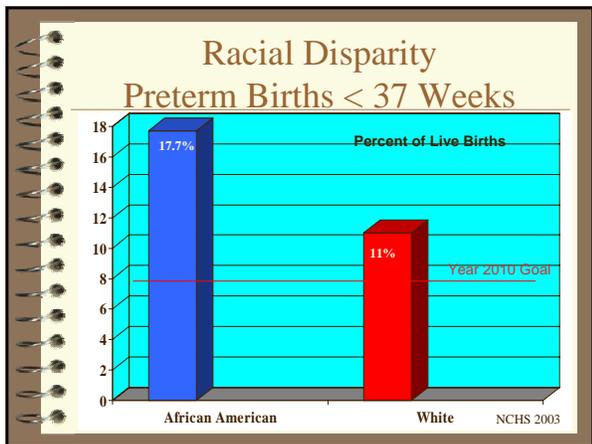
Healthy People 2010 Goals

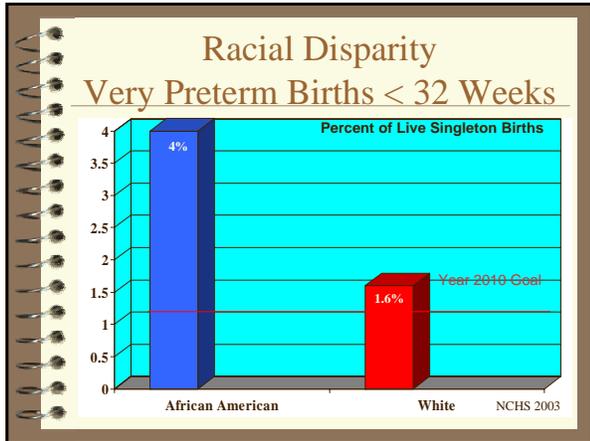
- Increase quality and years of healthy life
- Eliminate health disparities

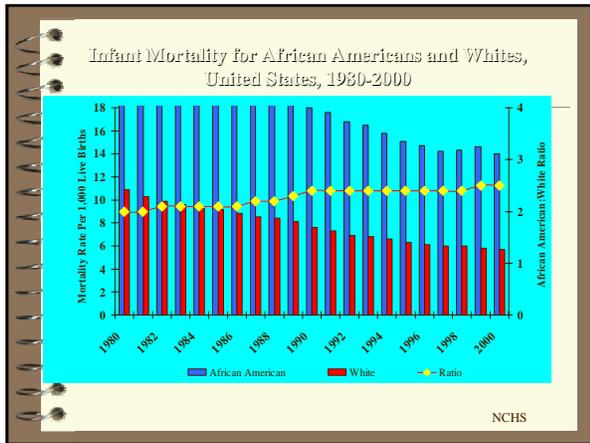


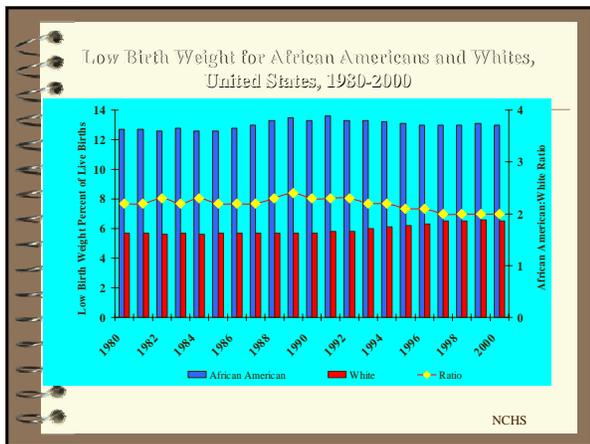




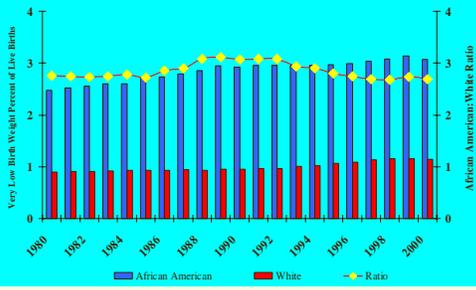






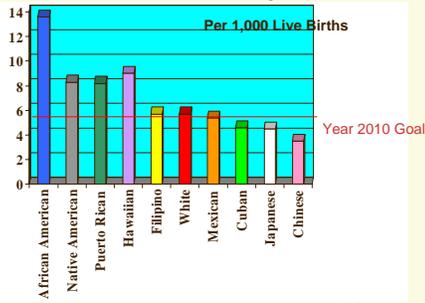


Very Low Birth Weight for African Americans and Whites,
United States, 1980-2000



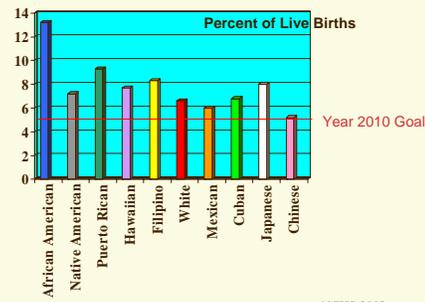
NCHS

Racial & Ethnic Disparities
Infant Mortality

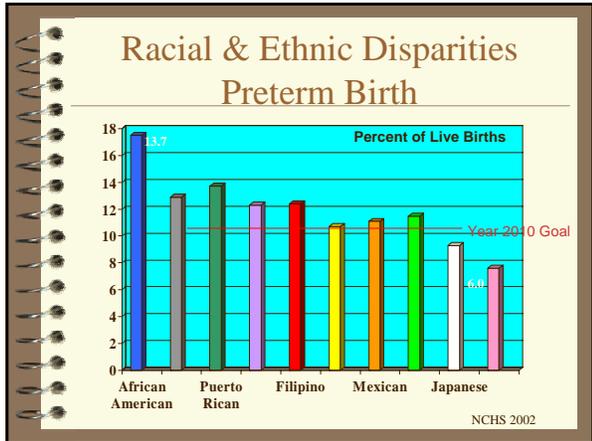


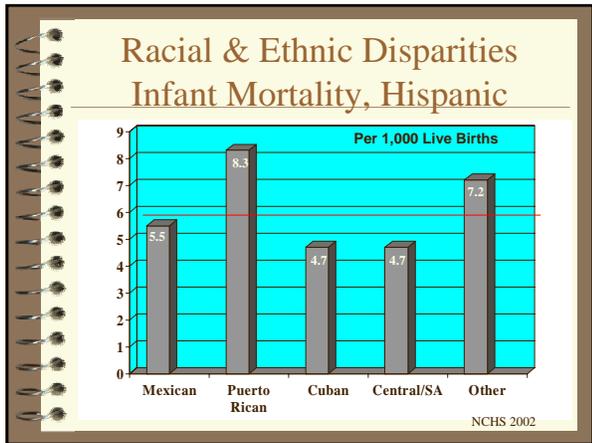
NCHS 2002

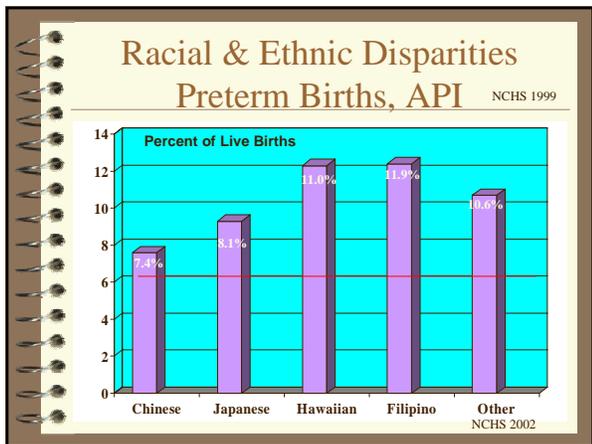
Racial & Ethnic Disparities
Low Birth Weight

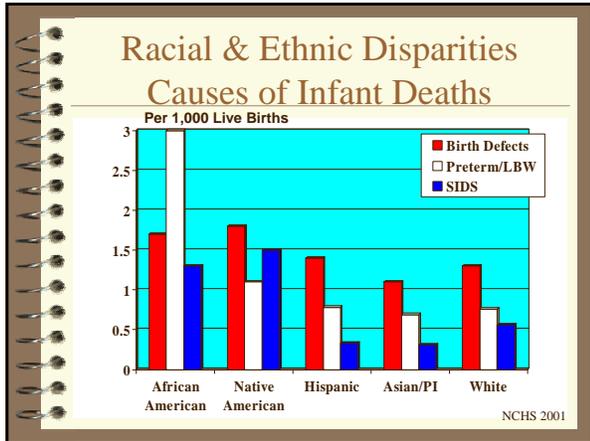


NCHS 2002









Racial & Ethnic Disparities Birth Outcomes

Why?

Racial & Ethnic Disparities Birth Outcomes

Race?

Racial & Ethnic Disparities
Birth Outcomes

- **Race has no clear biologic or genetic basis**

Genetic diversity appears to be a continuum, with no clear breaks delineating racial groups.

Science 1998

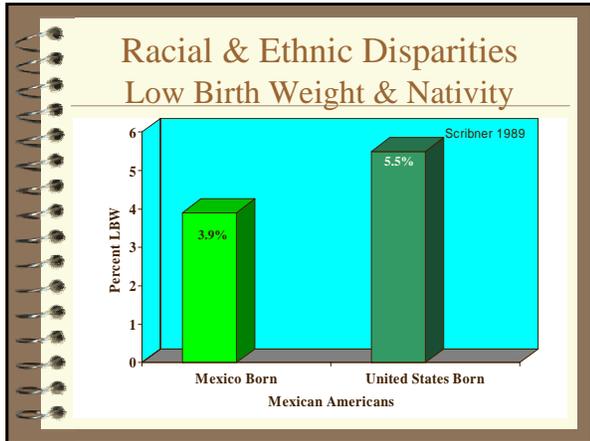
Racial & Ethnic Disparities
Birth Outcomes

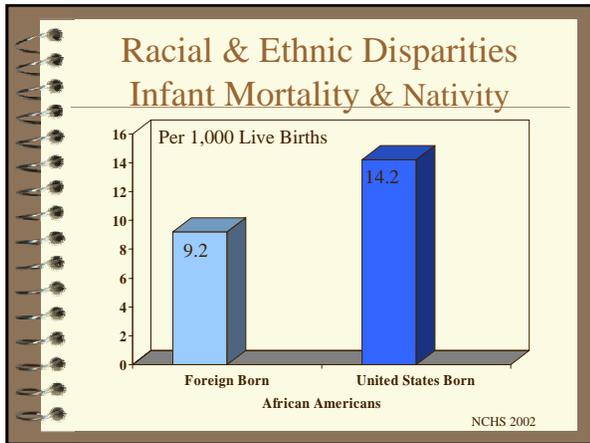
- **Many birth outcomes have no clear genetic basis**

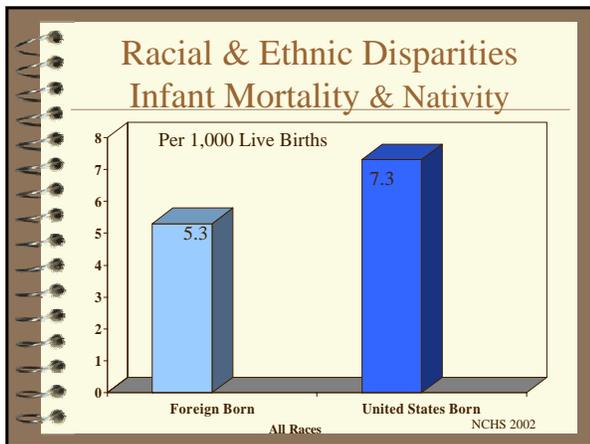
Racial & Ethnic Disparities
Birth Outcomes

Low birth weight genes?
CYP1A1
GSTT1

Wang 2000, 2002

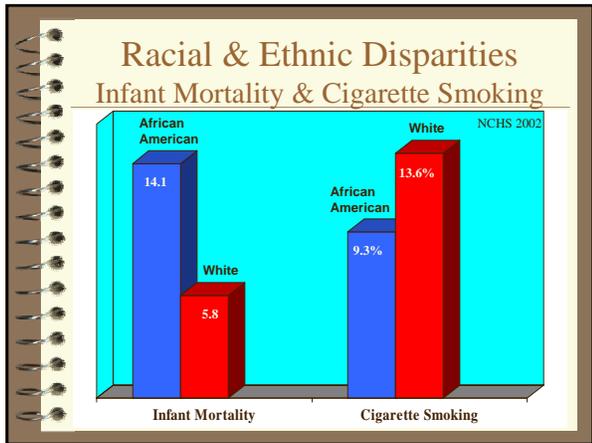


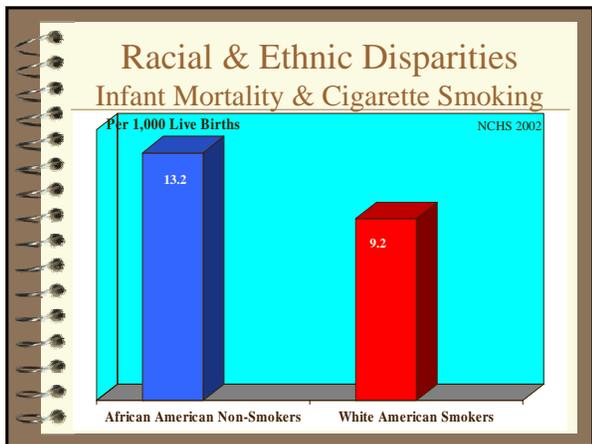




Racial & Ethnic Disparities
Birth Outcomes

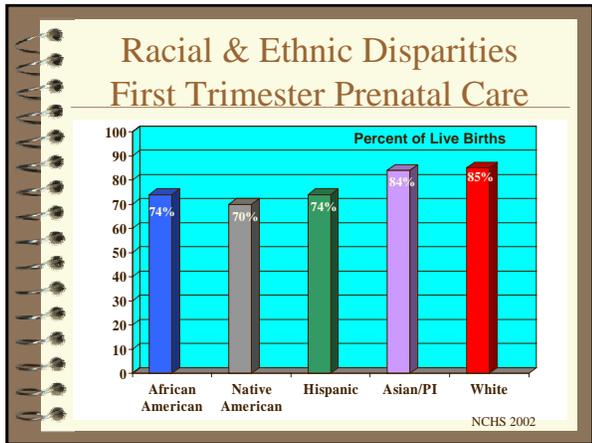
Behavior?

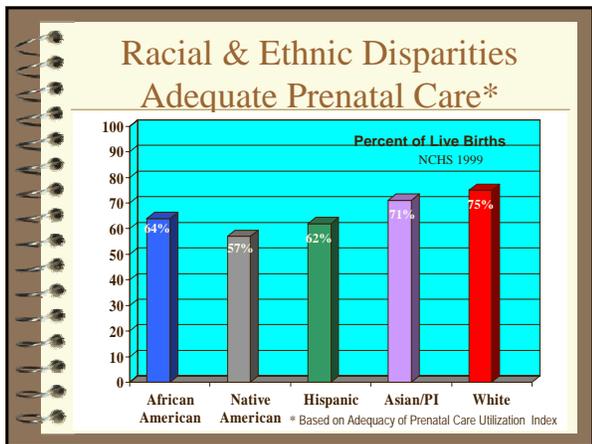


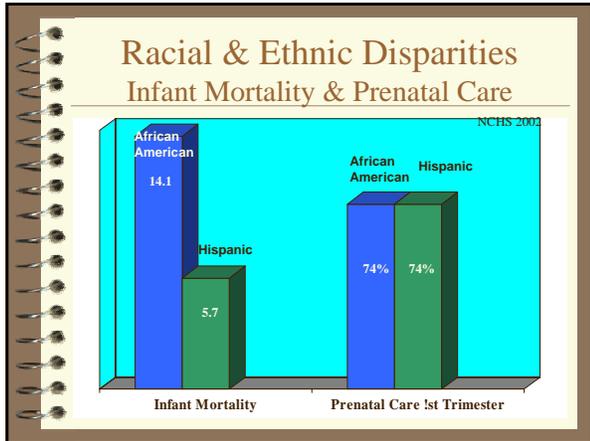


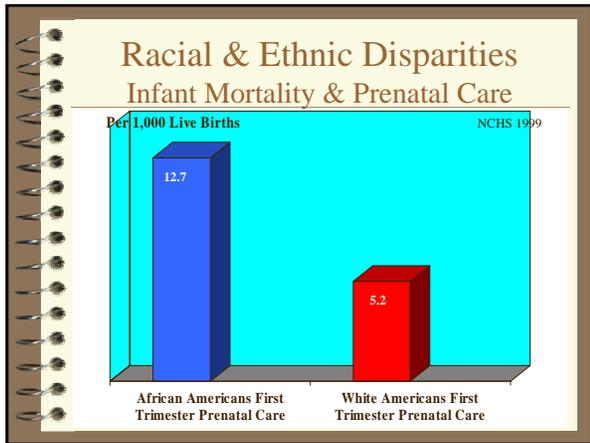
Racial & Ethnic Disparities
Birth Outcomes

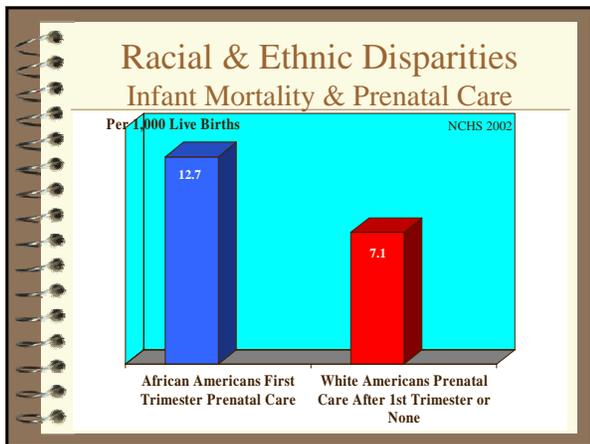
Prenatal Care?





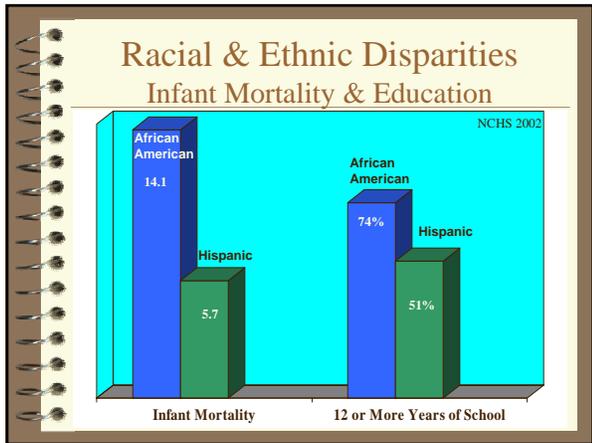


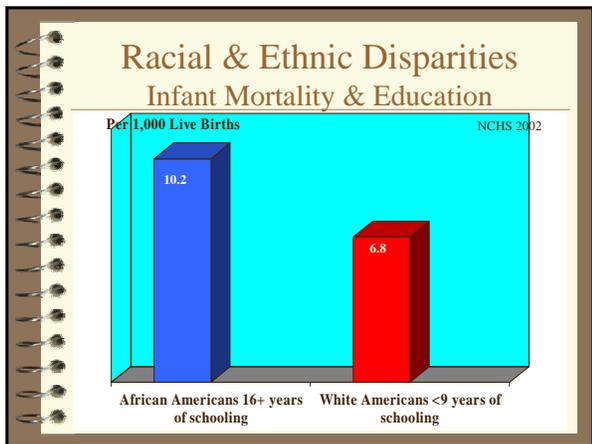


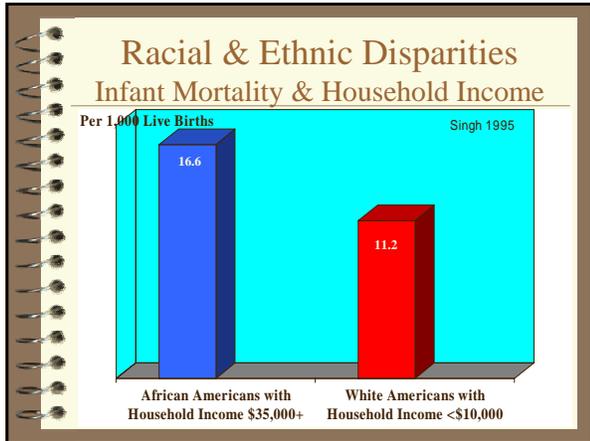


Racial & Ethnic Disparities
Birth Outcomes

SES?

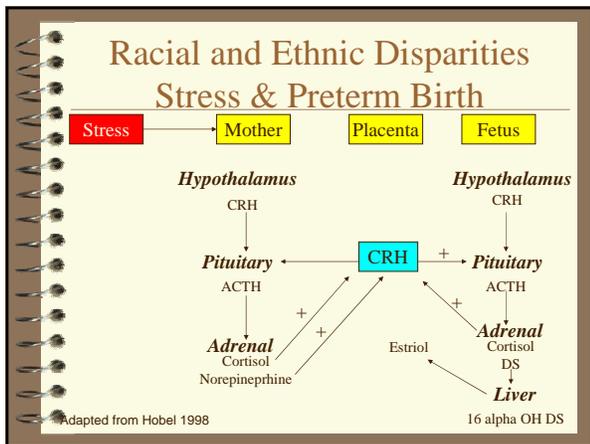


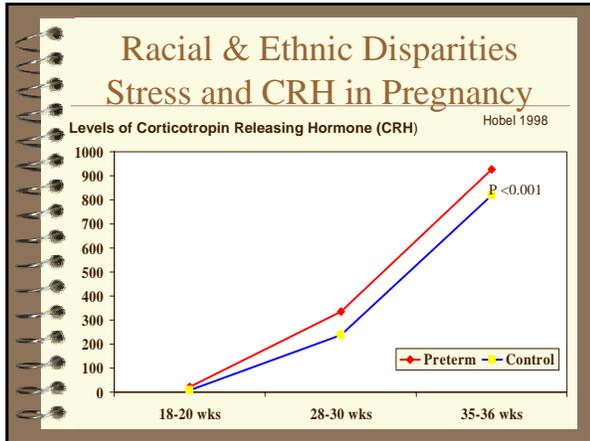


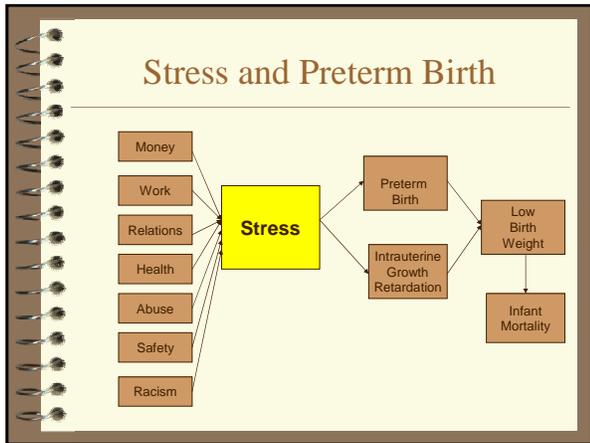


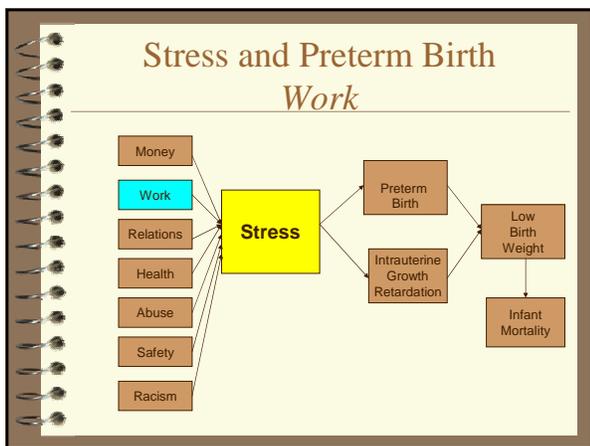
Racial and Ethnic Disparities Birth Outcomes

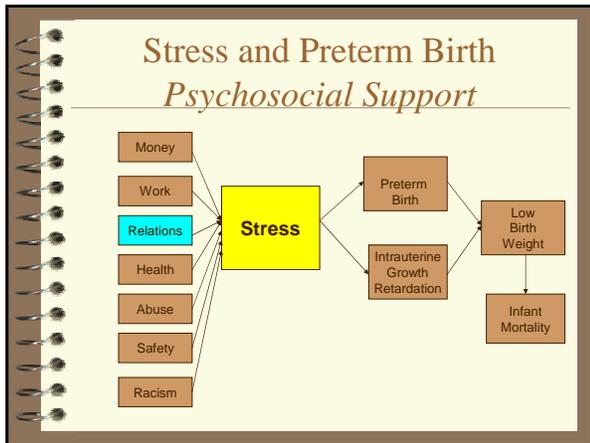
Stress?

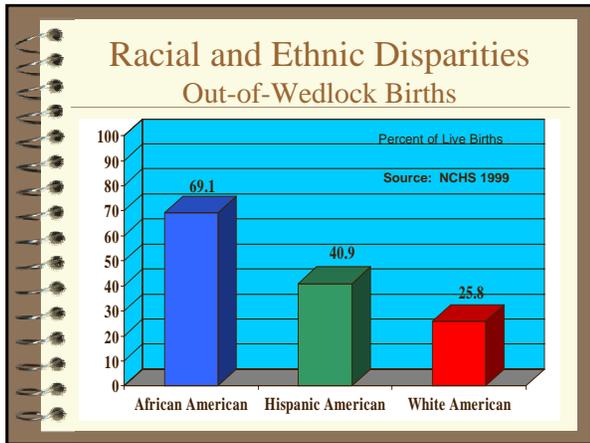


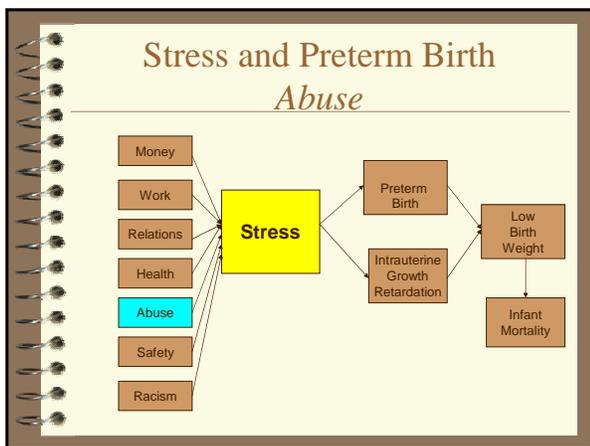


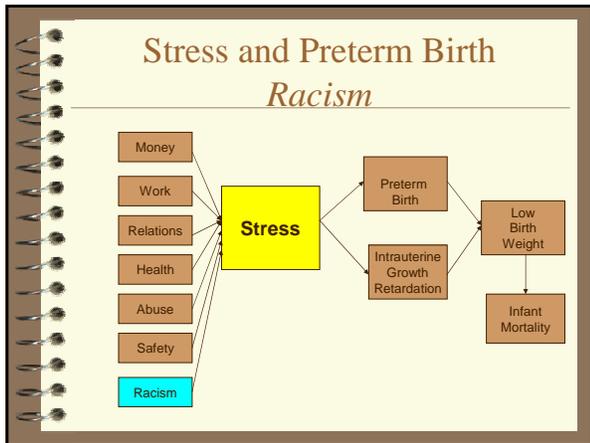


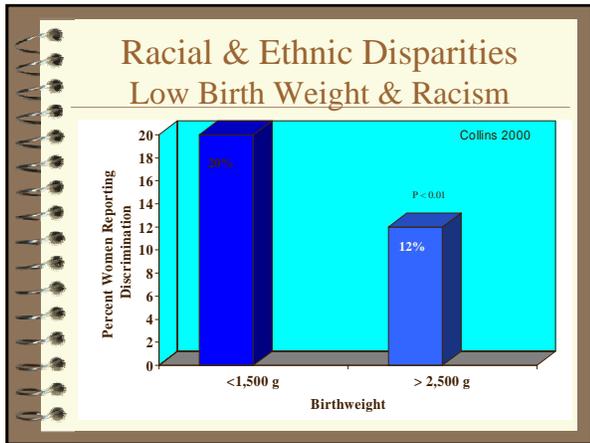


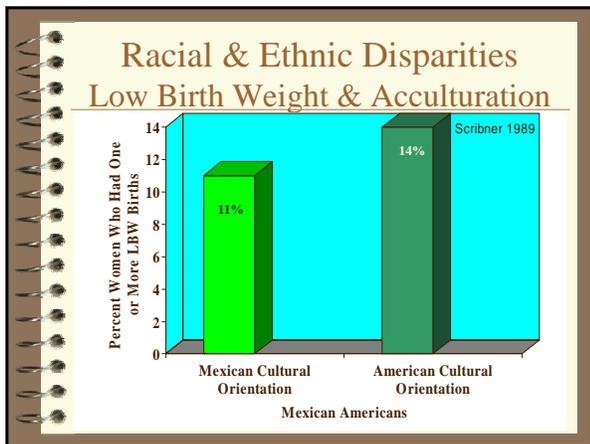


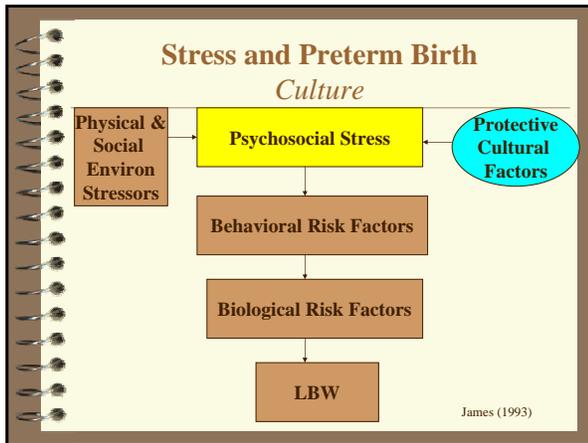












Racial and Ethnic Disparities

Culture and Racism

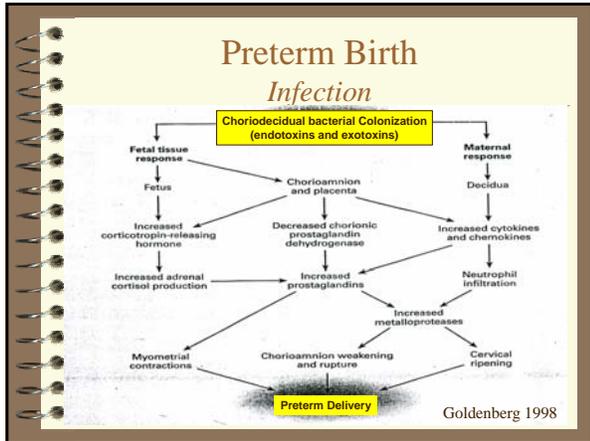
While it is true that other US racial and ethnic minorities have suffered economic and social discrimination, few, if any, have faced these exposures for as long as have African Americans, nor have they faced them standing on an economic and cultural base that was systematically undermined by the larger society.

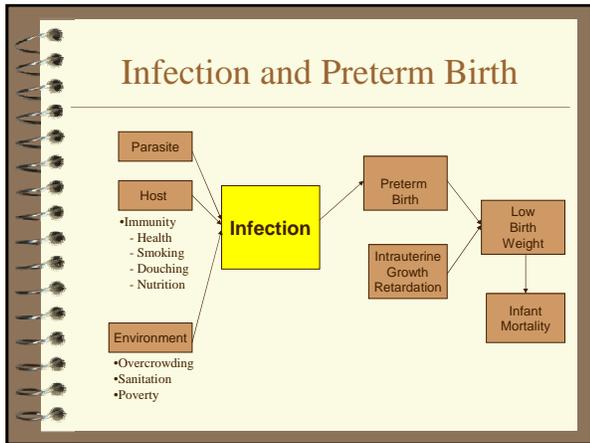
James (1993)

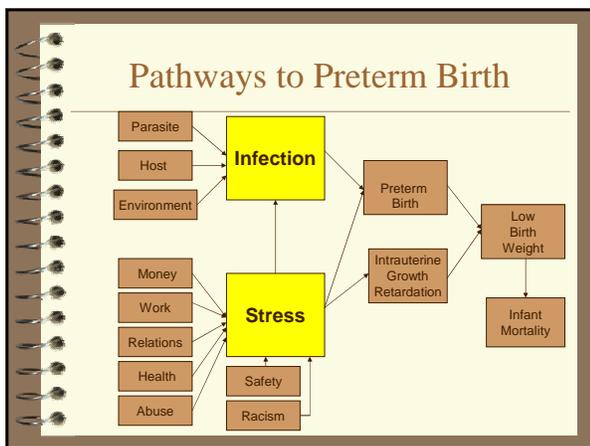
Racial and Ethnic Disparities

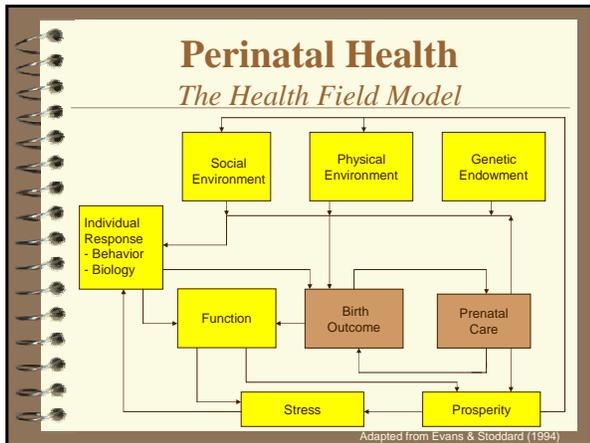
Birth Outcomes

Infection?

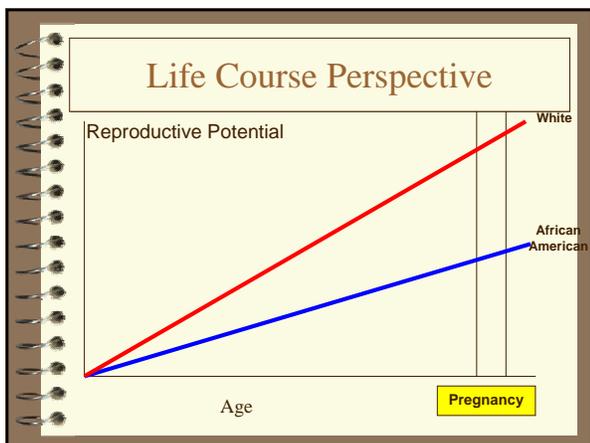


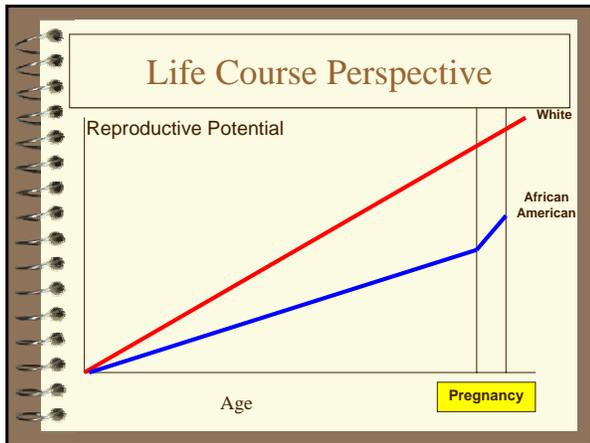


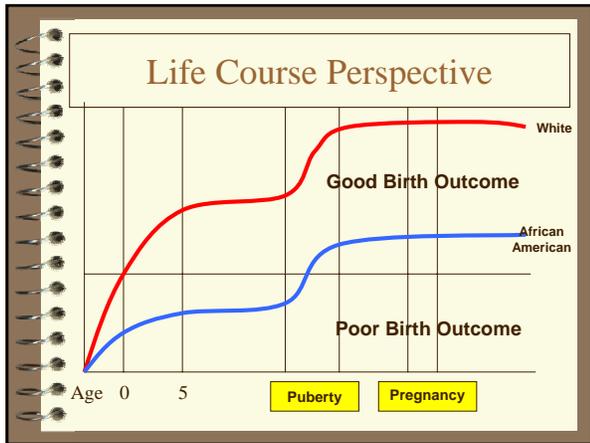


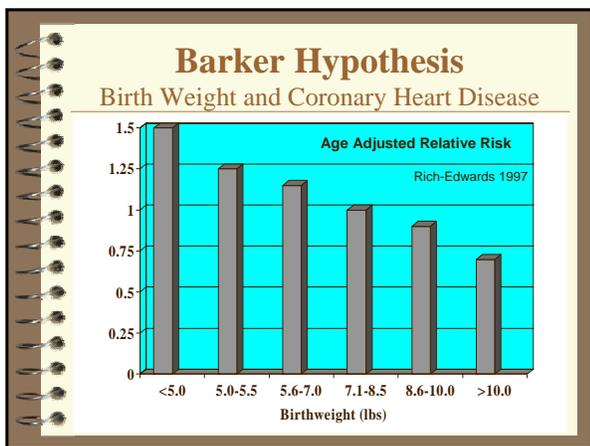


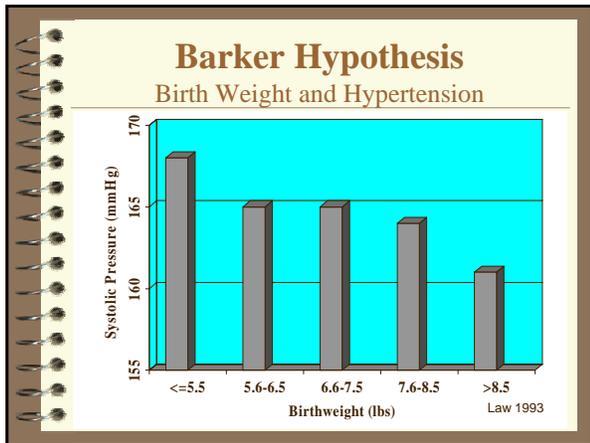
- ### Racial and Ethnic Disparities
- Multiple Determinants of Birth Outcomes
- Shiono et al 1997
 - Controlled for 46 risk factors (demographic characteristics, medical risks, level of living, psychological, social, exposures, “newly defined”)
 - 236 g mean birthweight difference between African Americans & whites remained
 - Maternal age, smoking, BMI, housing & locus of control only significant covariates
 - 46 risk factors explained less than 10% of variation in birthweight

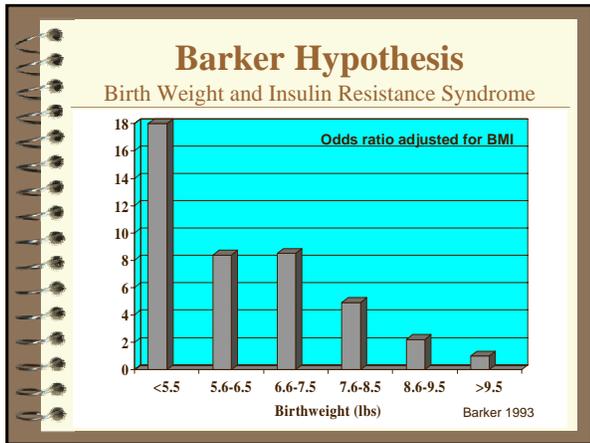


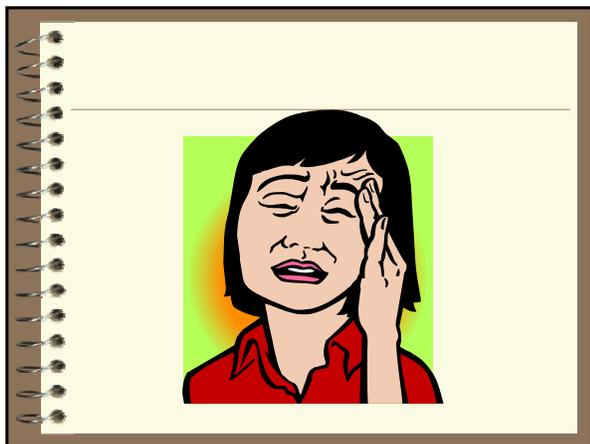


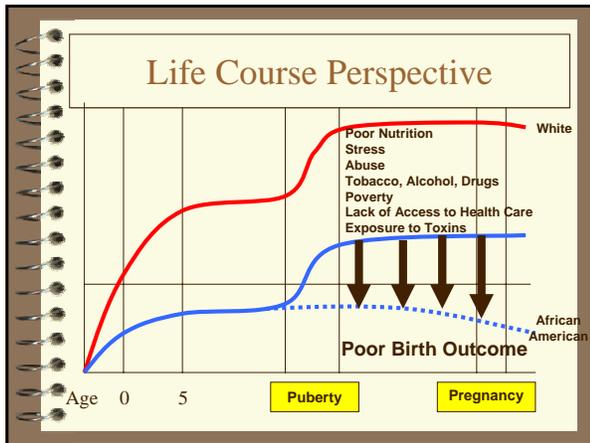


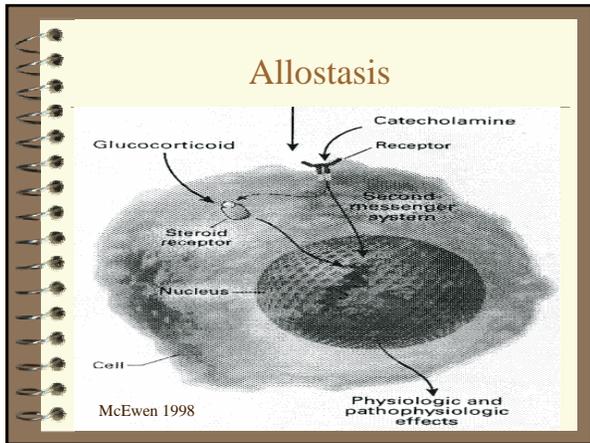


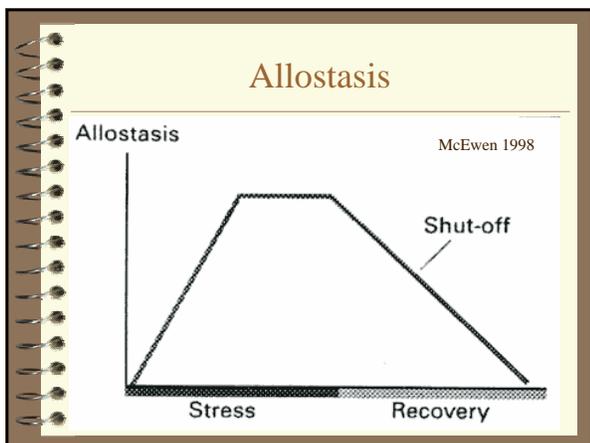




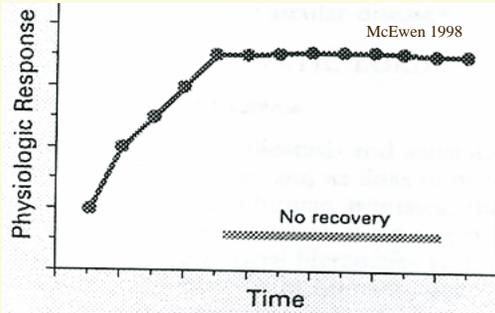




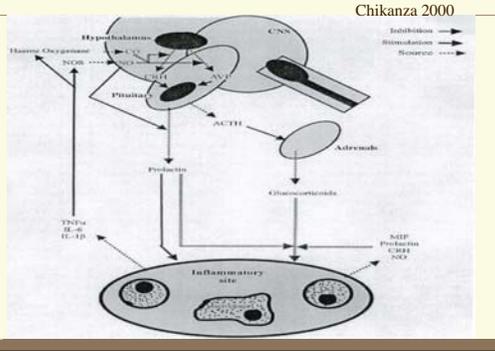




Stress and Allostatic Load



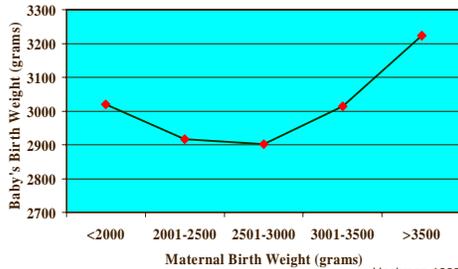
Allostasis



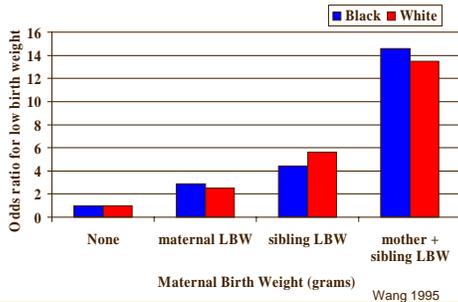
Racial and Ethnic Disparities Life Course Perspective

Intergenerational Factors

Maternal birth weight is associated with infant birth weight



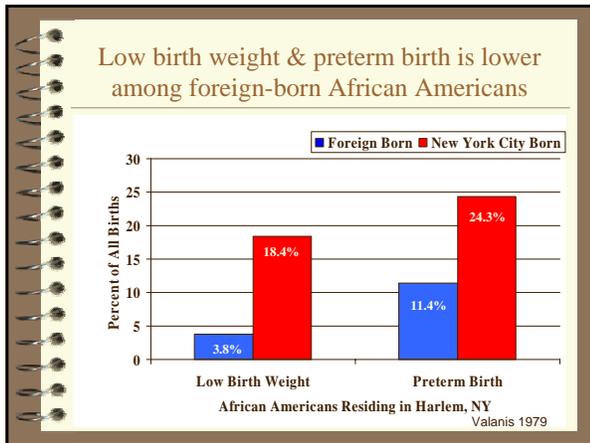
Infant birth weight is associated with maternal and sibling birth weight

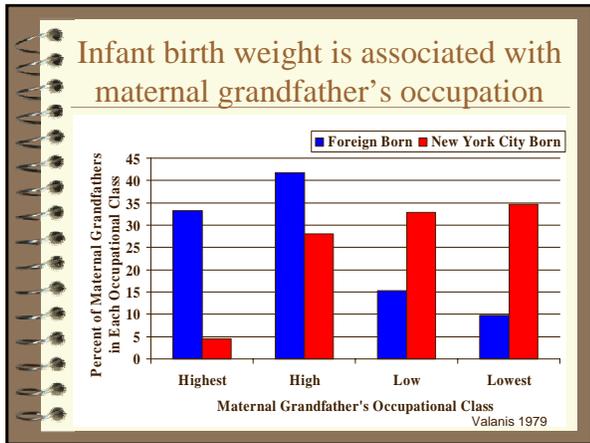


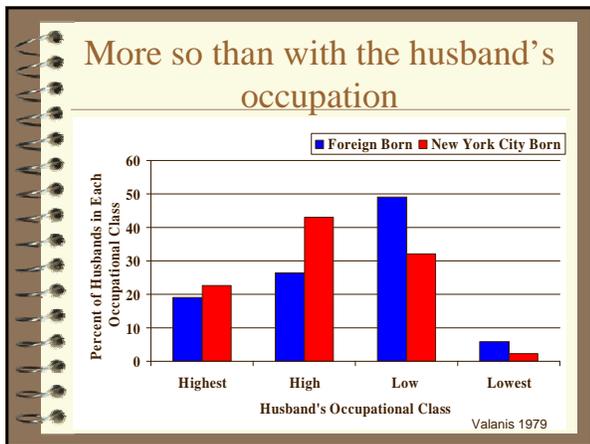
Racial and Ethnic Disparities Intergenerational Factors

- Perinatal mortality and LBW
 - related to social class of father & maternal grandfather
 - lowest among women born into the highest class & married within the highest class
 - highest among women born into the lowest class & married within the lowest class
 - upwardly mobile women (born low but marry high) had birth outcomes that were in-between

Illsley 1963

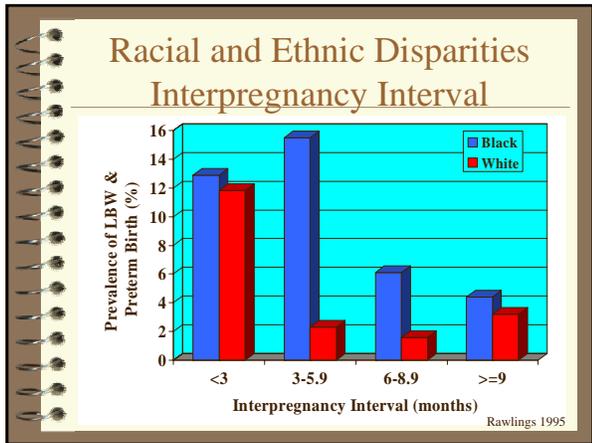


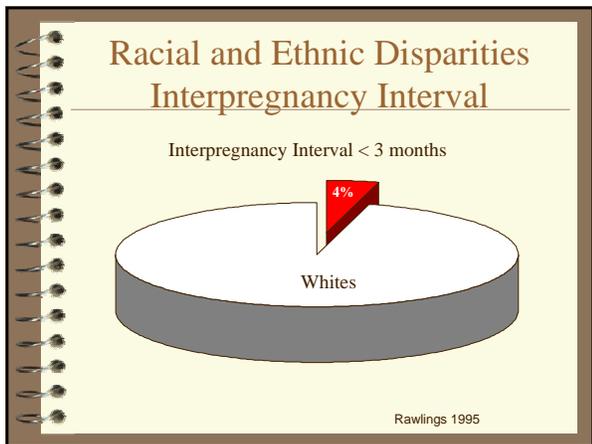


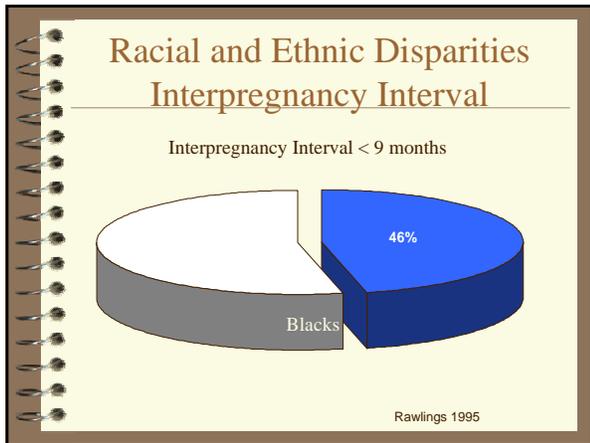


Racial and Ethnic Disparities
Life Course Perspective

Interpregnancy Interval







Racial and Ethnic Disparities Life Course Perspective

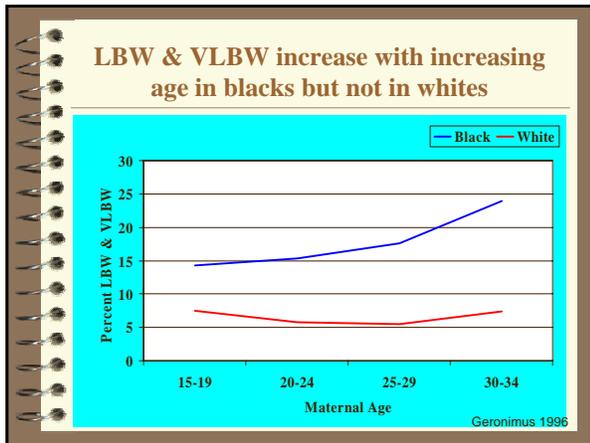
Weathering Hypothesis

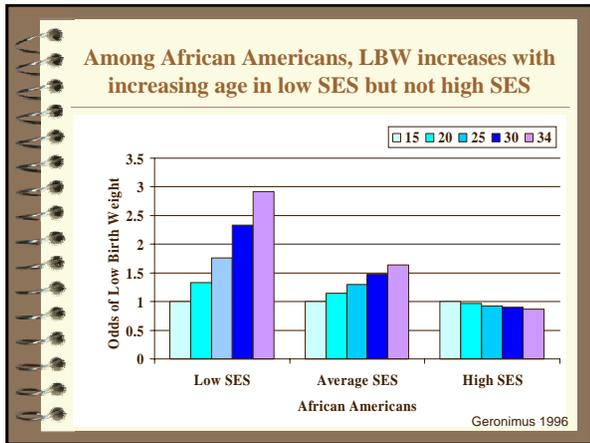
Racial and Ethnic Disparities Life Course Perspective

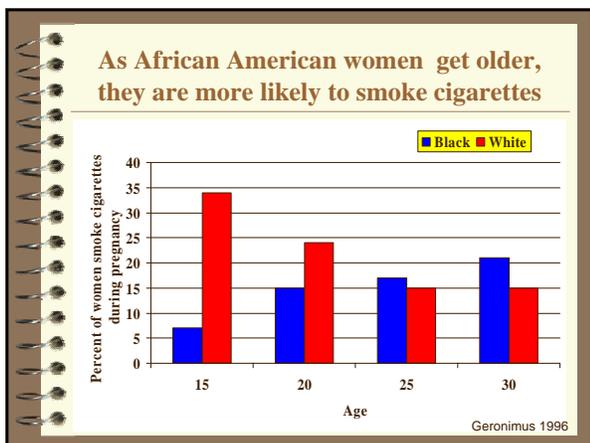
Weathering Hypothesis

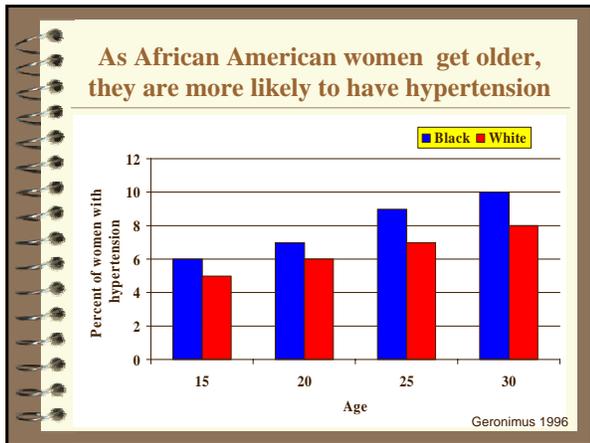
The effects of social inequality on the health of populations may compound with age, leading to growing gaps in health status through young and middle adulthood that can affect fetal health.

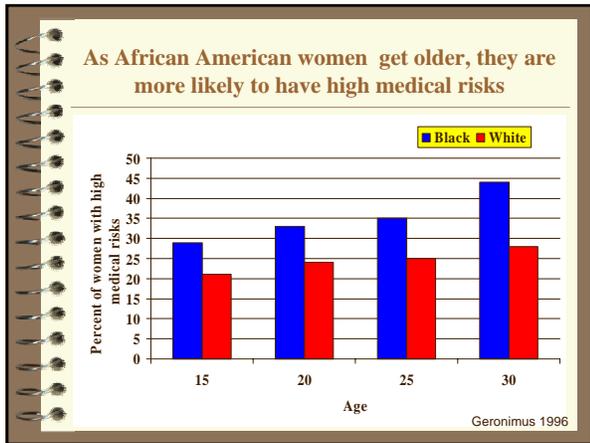
Geronimus AT (1996)

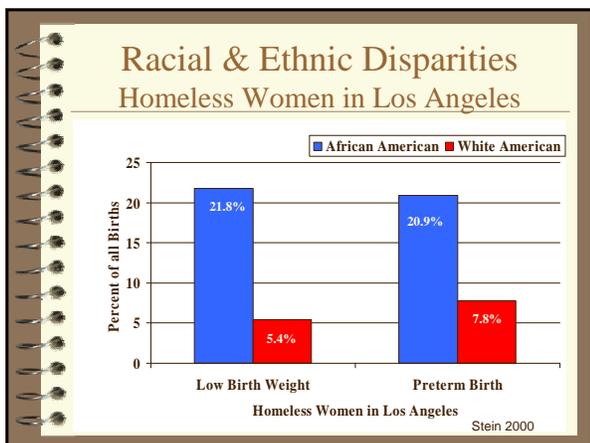


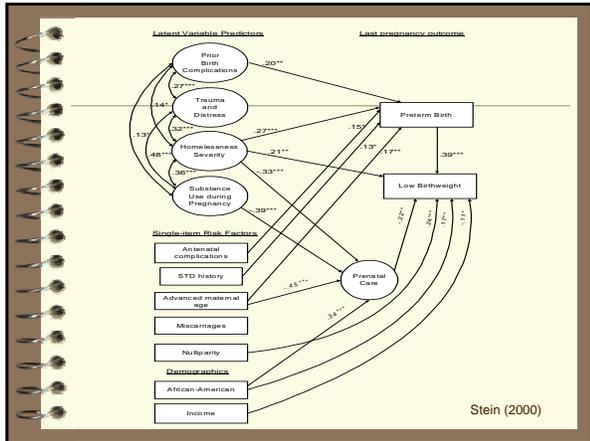








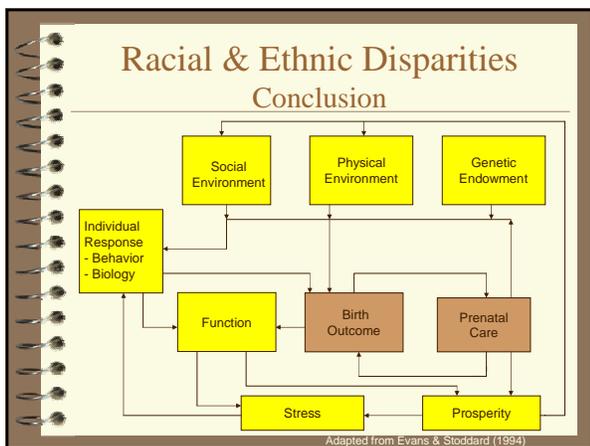




Racial and Ethnic Disparities Weathering Hypothesis

The percent of life one spends being homeless had a more powerful relationship with adverse birth outcomes than whether or not one was homeless during pregnancy.

Stein 2000



Racial and Ethnic Disparities
Conclusion

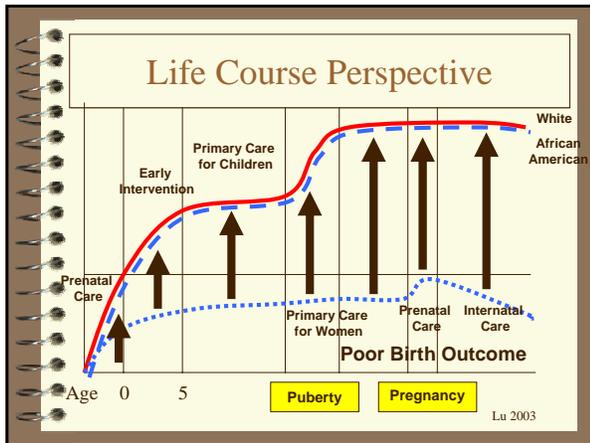
Racial and ethnic disparities in birth outcomes are the consequences of disadvantages and inequities carried over a life course of differential exposures.

Racial and Ethnic Disparities
Implication for Research

- *Research needs to examine differential exposures not only during pregnancy, but over the life course.*

Racial and Ethnic Disparities
Implication for Program & Policy

- *Don't look for a quick fix.*





- ### Closing Black-White Gap in Birth Outcomes
- A Life-Course Approach
- 1. Provide interconception care to women with prior adverse pregnancy outcomes
 - 2. Increase access to preconception care to Black women
 - 3. Improve the quality of prenatal care
 - 4. Expand healthcare access over the life course
 - 5. Restore Black fathers to Black families
 - 6. Enhance coordination and integration of family support services
 - 7. Create reproductive social capital in Black communities
 - 8. Invest in community building and urban renewal
 - 9. Close the education gap
 - 10. Reduce poverty among Black families
 - 11. Support working mothers and families
 - 12. Undo racism

Interconception Care

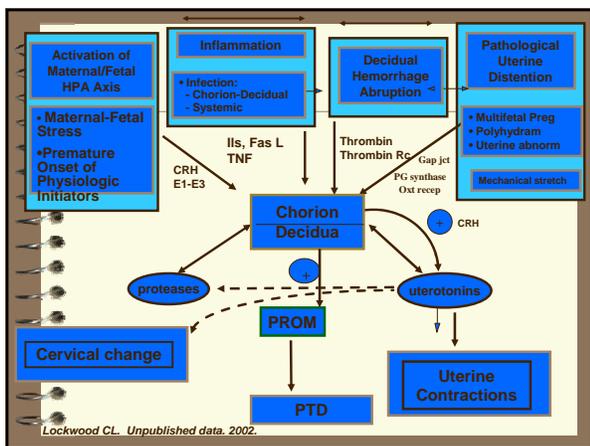
Goal

- To reduce the number of poor pregnancy outcomes by providing access to interconceptional health care and by reducing or eliminating medical complications, poor personal behaviors, or negative environmental conditions.

Interconception Care

Content

- Outreach & case management
- Risk assessment
- Health promotion
- Medical & psychosocial interventions
- Community interventions



Risk Assessment

- **Infection (ascending), 40%**
 - Review medical record, placental pathology
 - Screen for UTI, RTI, STI, periodontal infections
- **Stress (maternal/fetal), 25%**
 - Review of psychosocial stressors
- **Vascular (decidual hemorrhage, abruption), 25%**
 - Review placental pathology
 - Screen for thrombophilias (Factor V Leiden, MTHFR, prothrombin gene mutations)
- **Stretching (uterine distention), 10%**

Health Promotion

- Nutrition education & intervention
- Smoking cessation, treatment for substance use
- Encouragement of breastfeeding
- Preventive & primary care
- Parenting & Back-to-Sleep
- Family planning

Healthy Eating Pyramid

The diagram is a pyramid divided into several horizontal layers. From top to bottom, the layers are:

- Top (smallest):** Red Meat, Butter, White Rice, White Bread, Potatoes and Pasta, Sweets. A bracket on the left indicates "Use Sparingly".
- Second:** Dairy or Calcium Supplement, 1-2 times/day. A small icon of a pill bottle is shown to the left with the text "Multiple Vitamins for Most".
- Third:** Fish, Poultry, Eggs, 0-2 times/day. A small icon of a wine glass is shown to the left with the text "Also in Moderation (unless contraindicated)".
- Fourth:** Nuts, Legumes, 1-3 times/day.
- Fifth:** Vegetables (in abundance) and Fruits, 2-3 times/day.
- Sixth:** Whole Grain Foods (at most meals) and Plant oils, including olive, canola, soy, corn, sunflower, peanut and other vegetable oils.
- Bottom (largest):** Daily Exercise and Weight Control.

Willet WC. Eat, Drink, and Be Healthy. Simon & Schuster 2001

What You Need to Know about Mercury in Fish & Shellfish

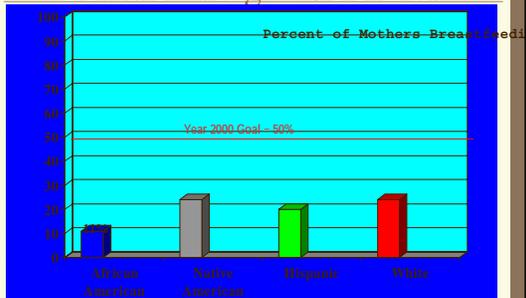
- 2004 EPA/FDA Joint Advisory for
 - Women who might become pregnant
 - Women who are pregnant
 - Nursing mothers
 - Young children
- Do not eat Shark, Swordfish, King Mackerel, or Tilefish
- Eat up to 12 ounces (2 average meals) a week
 - Shrimp, canned light tuna, salmon, pollock, catfish are low in mercury
 - Albacore ("white") tuna has more mercury than canned light tuna
- Check local advisories about locally caught fish
 - www.epa.gov/ost/fish

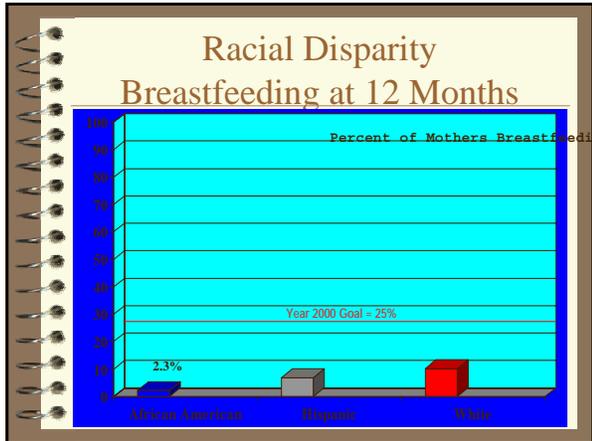
www.epa.gov/mercury

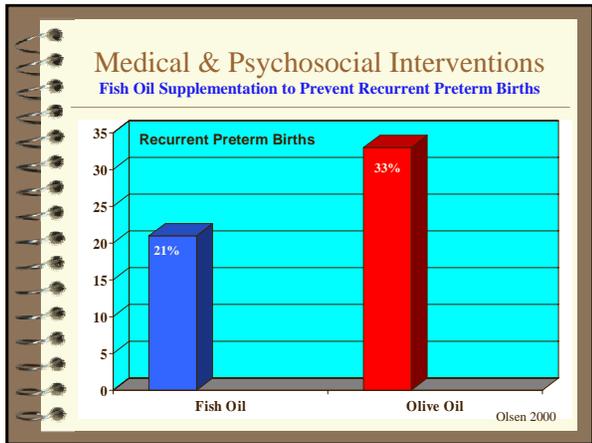
Health Promotion

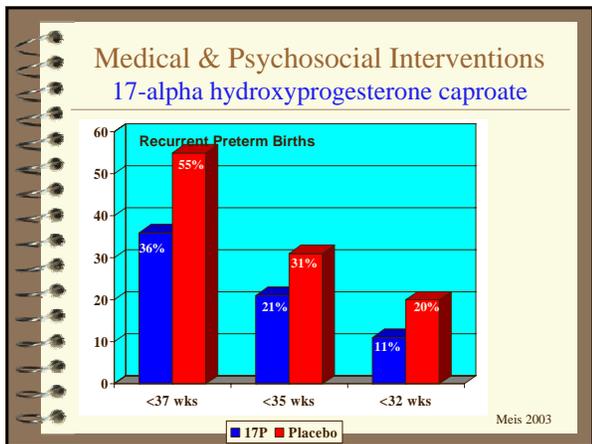
- Nutrition education & intervention
- Smoking cessation, treatment for substance use
- Encouragement of breastfeeding
- Preventive & primary care
- Parenting & Back-to-Sleep
- Family planning

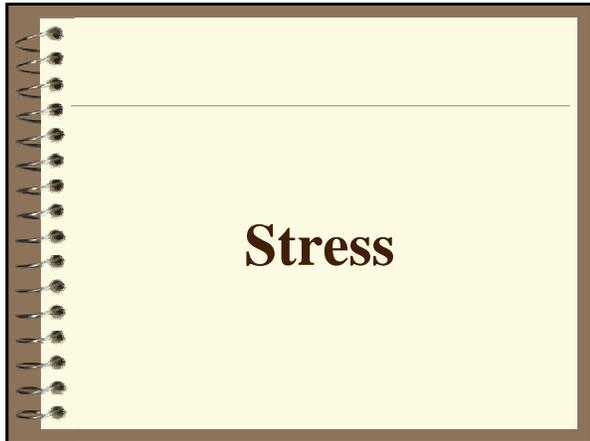
Racial Disparity Breastfeeding at 6 Months



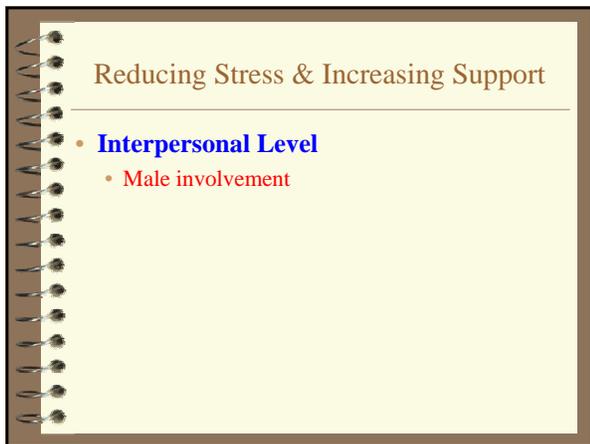


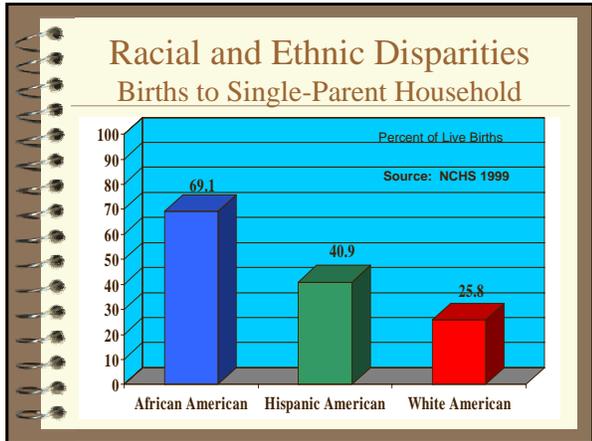


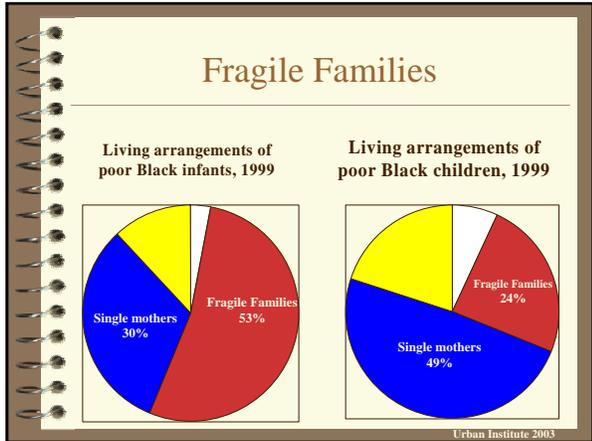


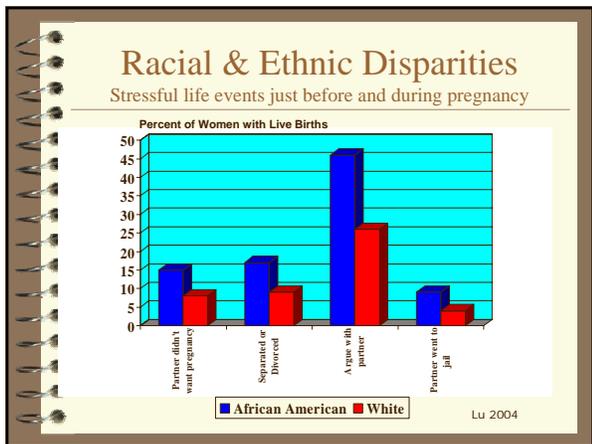












Male Involvement

- **Individual Level**
 - Educational programs
 - Employment services
 - Legal & social services
- **Interpersonal Level**
 - Gender relations
- **Community Level**
 - Norms, values, expectations
- **Institutional & Policy Level**
 - Temporary Assistance for Needy Families
 - Earned Income Tax Credit
 - Child support

Reducing Stress & Increasing Support

- **Neighborhood & Community Level**
 - 100 Intentional Acts of Kindness toward a Pregnant Woman

Reproductive Social Capital

- Features of social organization (e.g. networks, norms, and social trust) that facilitate coordination and cooperation to promote reproductive health within a community.

Reducing Stress & Increasing Support

- **Neighborhood & Community Level**
 - Community Building

Reducing Stress & Increasing Support

- **Policy & Institutional Level**
 - Working conditions
 - Parental leave
 - Child care

Work Stress & Preterm Birth

- Increased risk for preterm birth
 - Physically-demanding work
 - OR 1.22, 95% CI 1.16, 1.29
 - Prolonged standing
 - OR 1.26, 95% CI 1.13, 1.40
 - Shift and night work
 - OR 1.24, 95% CI 1.06, 1.46
 - High cumulative work fatigue score
 - 1.63, 95% CI 1.33, 1.98

Mozurkewich 2000

Work Stress & Preterm Birth

- One preterm birth prevented for
 - 36-65 women who discontinue physically demanding work
 - 27-80 women who discontinue prolonged standing
 - 23-171 women who discontinue shift or night work
 - 12-32 women who modify cumulative work fatigue factors

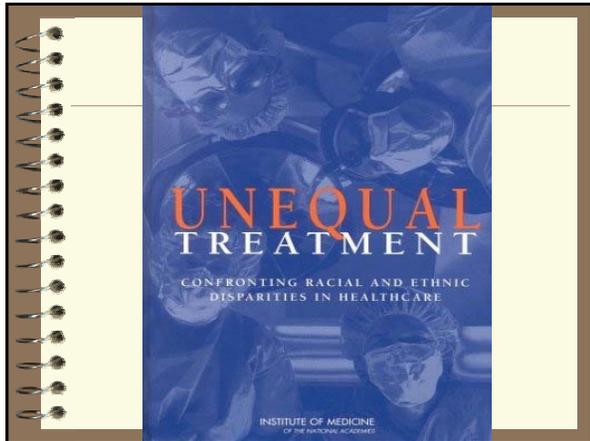
Mozurkewich 2000

Reducing Stress & Increasing Support

- Policy & Institutional Level
 - Working conditions
 - Parental leave
 - Child care

Reducing Stress & Increasing Support

- **Undo racism**



**Racial & Ethnic Disparities
in Birth Outcomes**

***We hold these truths to
be self-evident, that all
men are created equal***

....

Declaration of Independence 1776
