U.S. ranks a 41st in infant mortality
Low ranking largely due to high rates of infant mortality in racial/ethnic minority populations

Infant Death Rates per 1,000 Live Births

The rate of SIDS in 2005
- Black (99 per 100,000 live births)
- American Indian/Alaska Native (112 per 100,000 live births)
- White infants (55 per 100,000 live births)
- Asian and Hispanic have “nearly half” of the rates for whites

Percentage of Preterm Births

CDC national survey of new mothers
- 59% of African American mothers initiated breastfeeding compared to 75% of white mothers and 80% of Hispanic mothers

MMWR 2013, 62(5); 77-80

MMWR Feb 8 2013/62(5); 90

• What is related to ethnic-group disparity in infant mortality?
  – Preterm birth
  – Lower breastfeeding rates
  – Cumulative adversities
  – Unsafe sleep practices

U.S. Obesity Rates by Ethnicity


U.S. Obesity Rates by Income

National Center on Health Statistics 2011

• The Physiology of Discrimination

• Stress Response

Psychoneuroimmunology
Insulin is the principle regulator of fat metabolism

Taubes, 2011, *Why we get fat*: Knopf

Insulin resistance precedes weight gain

Bacon 2008, *Health at every size.*

Social Rejection

Throughout our evolutionary history, being socially connected increased our chances of survival

Being part of a group provided resources, protection, and safety

Panksepp, 2011. Social pain (11-51). *Amer Psycholog Assn*

Perceived discrimination African Americans

- You are treated with less courtesy other people
- You are treated with less respect than other people
- You receive poorer service than other people at restaurants and stores
- People act as if they think you are not smart

Lewis et al. *Brain Behav Immun* 2010; 24(3): 438-443

296 African Americans (M age=73), self-reported experiences of discrimination were associated with elevated C-reactive protein levels

- This association remained even after controlling for depression, smoking, chronic health conditions, such as heart disease, diabetes, and hypertension.

Lewis et al. *Brain Behav Immun* 2010; 24(3): 438-443
• Low social status related to elevated CRP
  – 3-year longitudinal study of 188 middle-aged and older adults
• African Americans, women and those with low education had highest CRP
  
  McDade et al., Psychosom Med 2006; 68: 376-381

• Low parental education predicted metabolic and CVD risk factors in high school students
  – Higher insulin levels
  – Higher glucose
  – Greater insulin resistance
  – Higher-LDL, lower HDL
  – Higher waist circumference
  – Higher BMI
  

The Pima Indians of the Gila River

Prevalence 50%
Prevalence 8%

Taubes, 2008; Good calories, bad calories. Knopf

U.S. Diabetes Prevalence by Ethnic Group

Men and Women, Age 45-74 Years

European  |  Cuban American  |  Japanese American  |  African American  |  Mexican American  |  Puerto Rican  |  Pima Indian

% with Diabetes

Meta-analysis of sleep duration and obesity (36 studies, N=634,511)

- Children and adults
- Short sleep duration (< 5 hours) related to obesity worldwide

Cappuccio et al. Sleep 2008: 31; 619-626

Short sleep duration related to metabolic syndrome in middle-aged adults
- Short sleep duration was related to abdominal obesity, elevated fasting glucose, and hypertriglyceridemia

Hall et al., Sleep 2008, 31(5): 635-643

The Role of Sleep
• Subclinical sleep disorders also increase risk for CVD, hypertension, Type-2 diabetes, metabolic syndrome and all-cause mortality

Suarez & Goforth. 2010 In Psychoneuroimmunology of Chronic Disease. American Psychological Association

• Even short periods of sleep deprivation can elevate cortisol and glucose levels, and increase insulin resistance

McEwen, Biological Psychiatry 2003; 54: 200-207

• Study of Black and White adults (N=187)
  - Blacks had shorter sleep duration and lower sleep efficiency
    - 25 minutes to fall asleep (vs. 16 minutes)
    - 3.6% SWS (vs. 6.8%)
  - Difference persisted even after controlling for SES

Mezick et al. Psychosom Med 2008; 70: 410-416

• Study of 97 Black and White adults
  - Perceived unfair treatment (or both groups) was associated with
    - Poorer sleep quality
    - More daytime fatigue
    - Shorter sleep duration
    - Small proportion of REM
  - Blacks had lower sleep time and poorer sleep efficiency

Beatty et al. Health Psychol 2011; 30(3): 351-359

• The Role of Psychological Trauma


• Data from Nurses’ Health Study II shows physical and sexual abuse in childhood/teens increased the risk of Type 2 diabetes
  - Adjusted for age, race, body type at 5, parental education, and parental history
• Severity of abuse increased symptoms
• 50% increase in risk for severe physical abuse
• 69% increase in risk for repeated forced sex


• BMI also influenced by past abuse
  – Physically and sexually abuse girls had higher BMIs
  – Trajectories grew wider as the girls grew
  – Particularly for those who experienced repeated forced sex


• Data from Black Women’s Health Study (N=33,298)
• Measured waist circumference and BMI
• Early life sexual and physical abuse was related to overall and central obesity
  – Relationship existed even after controlling for lifestyle factors

Boynton-Jarrett et al. Pediatrics 2012; 130: 245-253

• National survey of 1,581 pregnant women (709 Black)
• More lifetime PTSD and trauma exposure for Black women
• Current prevalence of PTSD was 4 times higher for Black women
  – Rates did not differ by SES
  – Explained by greater trauma exposure
  – Child abuse was the most common cause of PTSD for both groups


• Listening to Mothers Survey II
  – 18% had some PTS
  – Non-Hispanic black mothers had the highest rates (26%)
  – Hispanic mothers (14%)


• Prospective 3 cohort sample first-time pregnant women
  – 255 PTSD+
  – 307 trauma-exposed, resilient
  – 277 non-trauma exposed
• PTSD+ babies birthweight 283 g less than resilient women; 221 g less than non-exposed women
• PTSD also associated with shorter gestation

Seng et al. BJOG 2011; 118(1): 1329-1339
- Increased IL-6, TNF-α in stressed and depressed moms
- IL-6, IL-8, TNF-α ripens cervix
- Levels increase in pre-eclampsia and infection
- CRH triggers parturition


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City of Milwaukee Ad Campaign Unveiled
November 9, 2011

“Co-sleeping deaths are the most preventable form of infant death in this community,” Barrett said.

“Is it shocking? Is it provocative?” asked Baker, the health commissioner.
"Yes. But what is even more shocking and provocative is that 30 developed and underdeveloped countries have better (infant death) rates than Milwaukee."

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- Milwaukee's infant mortality rate in 2009 was 10.4 deaths for every 1,000 live births, according to the health department
- For white babies, it was 5.4. The rate for black babies was nearly three times as high: 14.1
Do campaigns such as these keep babies safe?

– Unfortunately, the answer is “no”

One-month-old infant dies in co-sleeping incident

Medical Examiner’s report says baby was sleeping on floor with three other children

WITI-TV, MILWAUKEE—The Milwaukee Medical Examiner reports a one month, 28 day old infant died in a co-sleeping incident on New Year’s Eve, while sleeping on two crib mattresses on the floor of a living room with three other children……


The topic of safe infant sleep is considerably more complex than it is frequently portrayed

Not all “bedsharing” is created equally

• What we are referring to:
  – Breastfeeding mother
  – Non-smoking mother
  – No substances that can impair maternal responsiveness
    • Including prescription medications
  – Baby on back on non-fluffy, safe surface
  – Mom between baby and anyone else in bed

PEDIATRICS

• SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment
  – POLICY STATEMENT
  – TECHNICAL REPORT
• Published November, 2011
• AAP 2011 Policy Statement Level A Recommendations
  – Back to sleep for every sleep
  – Use a firm sleep surface
  – Room-sharing without bedsharing is recommended
  – Keep soft objects and loose bedding out of the crib
  – Pregnant women should receive regular prenatal care
  – Avoid smoke exposure during pregnancy and after birth

• Bedsharing and SIDS Risk
  – Review of previous findings

Meta-analysis that AAP cited to make their “no bedsharing” recommendation

- Avoid alcohol and illicit drug use during pregnancy and after birth
- Breastfeeding is recommended
- Consider offering a pacifier at nap time and bedtime
- Avoid overheating
- Do not use home cardiorespiratory monitors as a strategy for reducing the risk of SIDS

Summary OR for Bedsharing and SIDS was 2.89
- 2404 cases
  - 710 cases bedshared 28.8%
- 6495 controls
  - 863 bedshared 13.3%

“some heterogeneity in the analysis”

“Our recent studies have disentangled infants sleeping with adults in a parental bed from infants sleeping with an adult on a sofa.”

“This is certainly a limitation of the individual studies and hence of the meta-analysis.”
Risk of SIDS and bedsharing with smoking mothers (4 studies)

Smoking Mothers
OR=6.27

Non-smoking Mothers
OR=1.66


Bedsharing with infants <12 weeks old (3 Studies)

<12 weeks,
OR=10.37

Older infant,
OR=1.02


Bedsharing varied by ethnicity ("Always" bedshare)
- 41.1% Hispanic
- 43.1% Black
- 23.8% Asian/Pacific Islander
- 26% American Indian/Alaska Native
- 15.7% White


Risk of SIDS for routine bedsharing (OR=1.42)

Risk of bedsharing on the last night when not routine (OR=2.18)


• Ethnic Group Differences in Sleep Location


• "Non-economic factors [in bedsharing] are also important, particularly among blacks and Hispanics.
- Campaigns to decrease bedsharing by providing cribs may have limited effectiveness if mothers are bedsharing because of cultural norms."

• “Among Hispanic and black women, bedsharing did not vary significantly by income level”


Bedsharing Rates by Ethnicity
Survey of Mothers’ Sleep and Fatigue, U.S. Sample

X²(10)=27.39, p<.002

Where Mother Thinks Baby Should Sleep

Where Partner Thinks Baby Should Sleep

It’s the Right Way to Do It

Doctor Told Them To
Only Thing That Worked

- Longitudinal study of 97 initially breastfed infants
- All measures of bedsharing frequency are strongly correlated with breastfeeding rate
  - 70% of infants were involved in bedsharing in the first month, falling to 44% at 6 months

Survey of Mothers’ Sleep and Fatigue

- Longitudinal study of 14,062 families in Avon, UK
- All bedsharing patterns were related significantly to higher rates of breastfeeding at 12 months

Breastfeeding Only by Sleep Location

- Study from Germany of 333 infant deaths, 998 age-matched controls
- Breastfeeding reduced the risk of sudden infant death syndrome by 50% at all ages throughout infancy

“Advice on whether bed sharing should be discouraged needs to take into account the important relationship with breastfeeding.”
• What can help?

1. Acknowledge discrimination and take steps to counter its physiological effects

2. Lower inflammation in pregnancy
   • Be proactive with depression and PTSD

3. Encourage and support breastfeeding within communities at risk
   • A More Excellent Way
   • ROSE
   • Free to Breastfeed

• Randomized trial with DHA-enriched vs. regular eggs
  • 291 low-income moms in last trimester of pregnancy
  • Increased gestation length by 6 days (+2.3)

Smuts et al., Obstet Gyn 2003; 101: 469-479

• In a study of 32 U.S. baby-friendly hospitals had breastfeeding initiation rates of 83.8% compared to the national average of 69.5%
  • Exclusive breastfeeding rates in the hospital were 78.4% compared to a national rate of 46.3%
  • Rates were similar even for hospitals with high proportions of black or low-income patients

4. Support safe sleep practices for all families

- Office of Child Services policy
  - Use the least intrusive possible measure while still mitigating the threat
  - Changes that are the least disruptive preserve the integrity of a family and are more likely to be followed

Angie, Mothering 2009; Jan-Feb: 48-49

- Parents can be taught to create a safe sleeping environment
  - Remove bulky covers, not allowing other children in the bed
  - Asking mom and dad to stop bedsharing, buy a crib, and change their entire nighttime routine is highly intrusive; A request more likely to be ignored or only appeared to be followed

Angie, Mothering 2009; Jan-Feb: 48-49

- We can make a difference in infant mortality

USLCA’s journal
www.ClinicalLactation.org

www.PraeclarusPress.com
www.UppityScienceChick.com
www.BreastfeedingMadeSimple.com
www.KathleenKendall-Tackett.com