

Childhood Obesity Starts with Mom: Local California Efforts in the Perinatal Period to Address Obesity Prevention

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Background: Early Life-Course Framework

A series of interacting risk factors over the life-course contribute to the problem of obesity. A life-course perspective can be used to develop comprehensive interventions that address the upstream multiple determinants of obesity¹. Given the detrimental influence of maternal overweight and obesity on reproductive and pregnancy outcomes for the mother and child, it is the position of the American Dietetic Association and the American Society for Nutrition that all overweight and obese women of reproductive age should receive counseling prior to pregnancy, during pregnancy and in the interconceptional period on the roles of diet and physical activity in reproductive health, in order to ameliorate these adverse outcomes. It is the position of the United States Breastfeeding Promotion Committee that “exclusive breastfeeding for the first six months of life and extended breastfeeding into the toddler years, may exert a small but positive influence in reducing the risk for obesity in childhood and later in life.”

1. Johnson D, Gerstein D, Evans A, Woodward-Lopez G. Preventing Obesity: A Life Cycle Perspective. JADA. 2006. Vol. 1: 97-102.

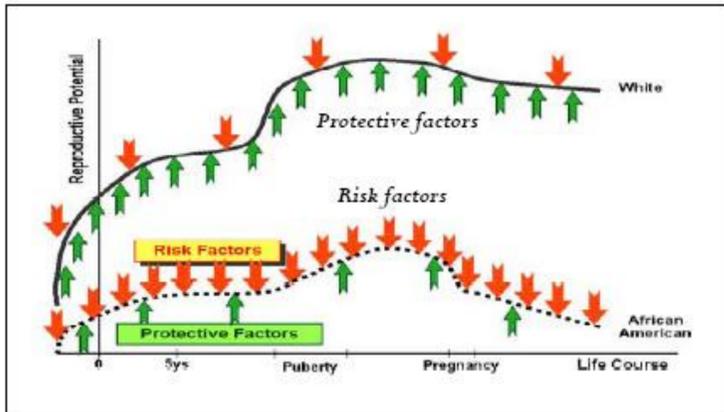
Addressing the Up-Stream Multiple Determinants of Obesity

The Maternal, Child and Adolescent Health (MCAH) Program of the California Department of Public Health implements comprehensive interventions that address up-stream multiple determinants of obesity via the California MCAH Local Health Jurisdictions (LHJ). Local interventions within the early life-course framework are highlighted in this poster. Example interventions which may reduce the risk of childhood obesity include encouraging women to enter pregnancy at an optimal weight, gain appropriate weight during pregnancy, return to a healthy postpartum weight, and breastfeed.

Local MCAH interventions presented are based on the premise that developmental processes are continuous throughout life, specifically²:

- sequences of life events for mothers and their children are interconnected and have reciprocal effects on one another
- efforts to optimize human development will be most effective if they are sensitive to developmental needs and capabilities of particular age periods in the life span

Figure 1. Life Course Perspective²



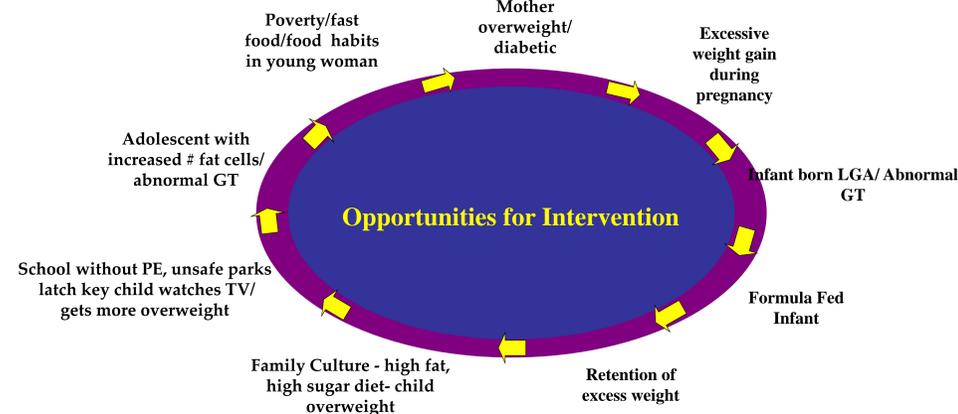
2. Lu M, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. *Maternal Child Health J* 2003;7: 13-30.

Accessed at: http://cchealth.org/groups/lifecourse/pdf/lci_fact_sheet.pdf on June 1, 2010.



Breaking the Life-Course Cycle of Obesity

The following diagram³ shows different risk factors for women during her life-course cycle. Implementing an intervention at different stages provides an opportunity to break the cycle of obesity.

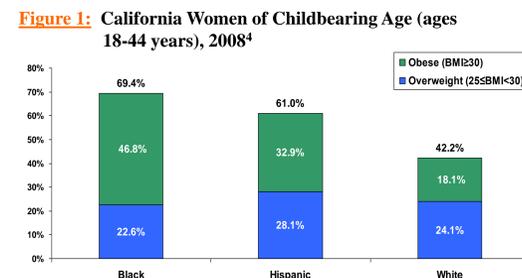


3. This model has been adapted from University of California, San Francisco's Family Health Outcomes Project.

Life-Course Weight Trends Among California Women

Data gathered by the California Maternal and Infant Health Assessment (MIHA) Survey from 1999-2008 show increasing prevalence of pre-pregnancy overweight and obesity in California. In 1999, 22.6% of women were overweight and 13.9% were obese prior to pregnancy; these figures grew to 25.1% overweight and 16.9% obese in 2008.

Many California women capable of becoming pregnant are overweight or obese.

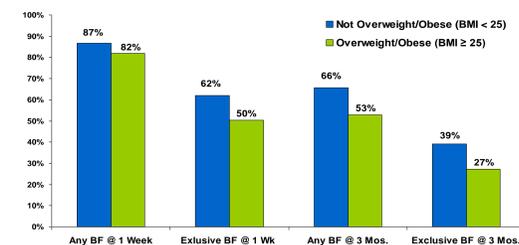


4. Source: California Women's Health Survey, 2008.

In 2008, Black (69.4%) and Hispanic (61.0%) women of child bearing age had the highest prevalence of overweight and obesity, followed by Whites (42.1%) (Figure 1).

Overweight and obese women are less likely to breastfeed, which predisposes their offspring to childhood obesity.

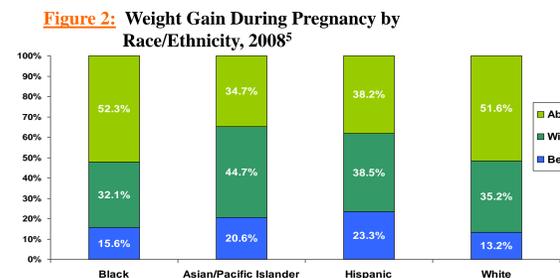
Figure 3: Infant Feeding Practices by Pre-pregnancy Weight Status, 2008⁵



5. Source: California Maternal and Infant Health Assessment (MIHA), 2008.

Overweight and obese women were less likely to breastfeed, any or exclusively at 1 week and at 3 months post-partum (Figure 3).

When pregnant, California women are likely to gain above the recommended weight.



5. Source: California Maternal and Infant Health Assessment (MIHA), 2008.

Based on the 2009 Institute of Medicine (IOM) recommended weight gain by pre-pregnancy weight status, nearly half (43%) of women gained weight in excess of the recommended total weight gain ranges for pregnant women. Black (52.3%) and White (51.6%) women had the highest prevalence of weight gain above the IOM recommendations (Figures 2). When pregnant, overweight and obese women are more likely to gain above the recommended weight.

Pre-pregnancy Weight Status	Recommended Total Weight Gain Range
Underweight (BMI < 18.5 kg/m ²)	28 – 40 lbs
Normal Weight (18.5 ≤ BMI < 25 kg/m ²)	25 – 35 lbs
Overweight (25 ≤ BMI < 30 kg/m ²)	15 – 25 lbs
Obese (BMI ≥ 30 kg/m ²)	11 – 20 lbs

6. IOM, May 2009. *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington, DC: National Academies Press.



Local Maternal, Child and Adolescent Health (Title V-funded) Interventions

Local MCAH Programs in California encourage women to enter pregnancy at an optimal weight, gain appropriate weight during pregnancy, return to a healthy postpartum weight, and breastfeed.

Since over 40 percent of births in California are unplanned¹⁰, MCAH encourages all women of reproductive age to maintain a healthy weight in order to minimize pregnancy-related health risks as well as minimize weight-related chronic illnesses.

Below are some examples of life course perspective strategies to reduce childhood obesity employed by California MCAH Local Health Jurisdictions during the pre-conception, conception and postpartum period to reduce childhood obesity.

Examples of Strategies to Reduce Childhood Obesity

Mother Overweight/ Diabetic

- ❖ Targeted African American women for pregnant and parenting classes about diabetes and proper nutrition. There was a focus on improving their diet by increasing fruits and vegetables intake and also provided a website: fruitsandveggiesmatters.org to access more information (*Riverside*).

Excessive Weight Gain During Pregnancy

- ❖ A PowerPoint presentation describing appropriate weight gain during pregnancy was created with cultural pictures to make it effective for the Oaxaca community. People from this community have a huge language barrier, so this pictorial presentation was effective (*Santa Barbara*).

Formula Fed Infant

- ❖ Home visitation program addresses obesity and provides breastfeeding support to mothers (*Yolo*).
- ❖ A county-wide workplace wellness campaign included a focus on breastfeeding. Brochures developed included: A Guide to Establishing a Breastfeeding-friendly Workplace (for employers and managers), and Women, Work and Breastfeeding: Steps to a Healthy Life (*Los Angeles*).
- ❖ Participated in a Baby/Children's Day by providing a lactation station so that moms could safely and privately breastfeed their babies (*Calaveras*).
- ❖ Assisted women to continue breastfeeding following return to work by providing free electric breast pump rentals (*Siskiyou*).
- ❖ Breastfeeding is promoted through California Birth and Beyond Project which improves hospital's breastfeeding rates by encouraging infant attachment in the first hour after birth (*Kern*).

Retention Of Excess Weight

- ❖ Interconception Care Project initiated in high risk obstetrical clinic to focus on women who had gestational diabetes or hypertension by providing lifestyle education classes (*Ventura*).

Family Culture – High Fat, High Sugar Diet

- ❖ Updated nutrition guidelines for local early Head Start Program. (*Los Angeles*).
- ❖ “Families of African-American Ancestry Manifesting Our Excellence” performed a fusion of creative dance focused on exercise and nutrition, e.g., planting and harvesting fruits and vegetables (*San Bernardino*).

School Without PE & Unsafe Parks

- ❖ Facilitated safe area to walk and exercise in neighborhoods and parks (*Monterey*).
- ❖ Assisted the school district's “Mileage Club” that encouraged walking at recess and lunch time. For this project, children who logged their number of “laps” won incentives and schools competed for the most “miles” walked (*Colusa*).
- ❖ Sponsored “Walk to School Day,” promoting the importance of safe routes to school and exercise (*Modoc*).
- ❖ As part of a “Health Collaborative,” presented the Second Annual School Wellness Recognition Awards to schools that focused on obesity prevention and nutrition (*Santa Cruz*).

Adolescents With Increased Number of Fat Cells/Abnormal Glucose Tolerance

- ❖ Organized an African American teen expo health and career fair to increase teenager awareness of the benefits of good nutrition and positive health behaviors (*Riverside*).

Poverty/Fast Food/ Food Habits in Young Woman

- ❖ Supported community gardens, developed a task force to create overall infrastructure for model gardens in West Sacramento (*Yolo*).
- ❖ Working with the *Council for Healthier Monterey County*, recognized seventeen worksites that promote a healthy and active environment. They are also expanding their worksite wellness promotion to include access to fresh and local produce, the built environments and joint use of recreational facilities (*Monterey*).
- ❖ Implemented a “Nutrition on the Go” event to promote healthier food choices in a festive and fun community-building atmosphere to reduce overweight and obesity. They provided fresh produce, cooking tips and recipes, diabetes screening and health education to low income families (*Kings*).

Conclusion

The life-course perspective has far-reaching policy implications for reducing childhood obesity. Public health interventions need to be integrated, and should include multiple factors interacting over the life course (biological, psychological, behavioral, and social determinants of women's health). Title V funded projects at the local level are an opportunity to reduce childhood obesity by applying the life-course perspective, especially before, during and after pregnancy.