PHILIP R. NADER

# Legacy *of* Health

LECTURESHIP

October 11, 2017

UTHealth®
The University of Texas
Health Science Center at Houston
School of Public Health

MICHAEL & SUSAN DELL
CENTER *for* HEALTHY LIVING

# WELCOME ADDRESS

Deanna M. Hoelscher, PhD, RDN, LD, CNS, FISBNPA

*Director, Michael & Susan Dell Center for Healthy Living*

# KEYNOTE ADDRESS

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Presented by

Shreela Sharma, PhD, RD, LD

*Associate Professor, UTHealth School of Public Health*

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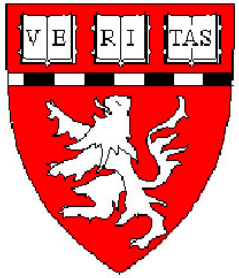
# Eliminating Disparities in Childhood Obesity: The Importance of The First 1000 Days

Elsie M. Taveras, M.D., M.P.H

Division Chief, General Academic Pediatrics; MassGeneral Hospital *for* Children; Professor of Pediatrics, Harvard Medical School

*Philip R. Nader Legacy of Health Lectureship*
*The University of Texas Health Science Center at Houston*
*October 11, 2017*

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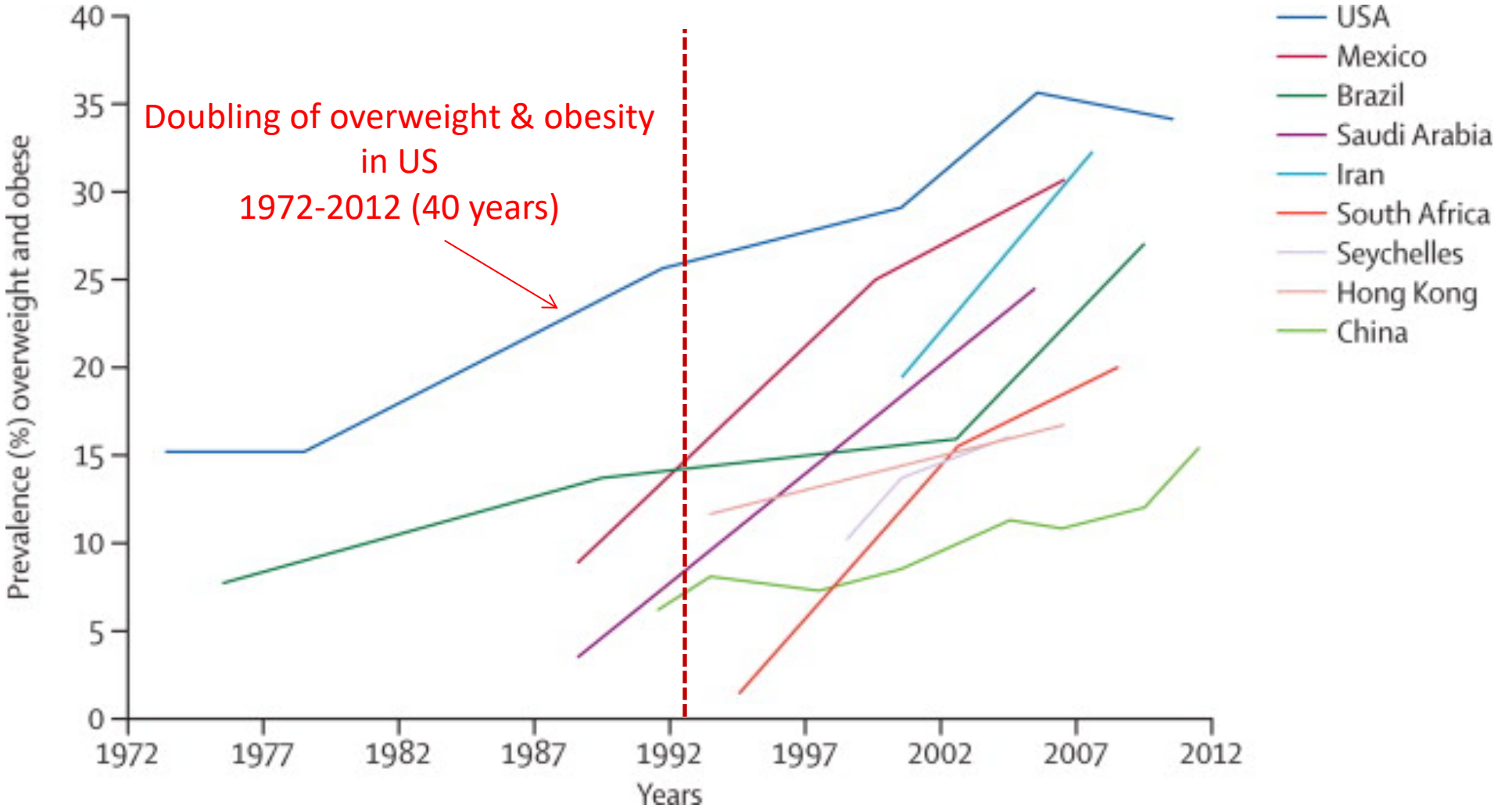
# Childhood Overweight & Obesity Prevalence in Selected Countries




Lobstein et al., Lancet 2015

# Tribute to Dr. Phil Nader:
## *A Timeline & Reflections*

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### Interventionist

1994-1999: CATCH Trial - elementary school cardiovascular health education field trial

### Socio-Contextual & Behavioral Epidemiologist

2003: Characterizing diet, physical activity, sedentary behavior and eating behaviors among Mexican-American children

2005-2008: Moderate-to-vigorous physical activity from ages 9 to 15 years

# Tribute to Dr. Phil Nader:
## *A Timeline & Reflections*

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### Lifecourse & Systems Science Researcher

2012: Next steps in obesity prevention: altering early life systems to support healthy parents, infants, and toddlers.

### Community & Public Health Practitioner

2013: San Diego Healthy Weight Collaborative: a systems approach to address childhood obesity

*Generous, Supportive Thought-Leader, Colleague, & Friend*

# *Main Points for Discussion*

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1. Obesity and related, preventable chronic diseases, have their origins early in life.

2. Racial/ethnic differences in obesity (and other chronic health & development problems) emerge because of risk factors during pregnancy, infancy, and early childhood.

3. Solutions lie in effectively enhancing, leveraging, and linking early life systems to change children's health trajectories.

# *Main Points for Discussion*

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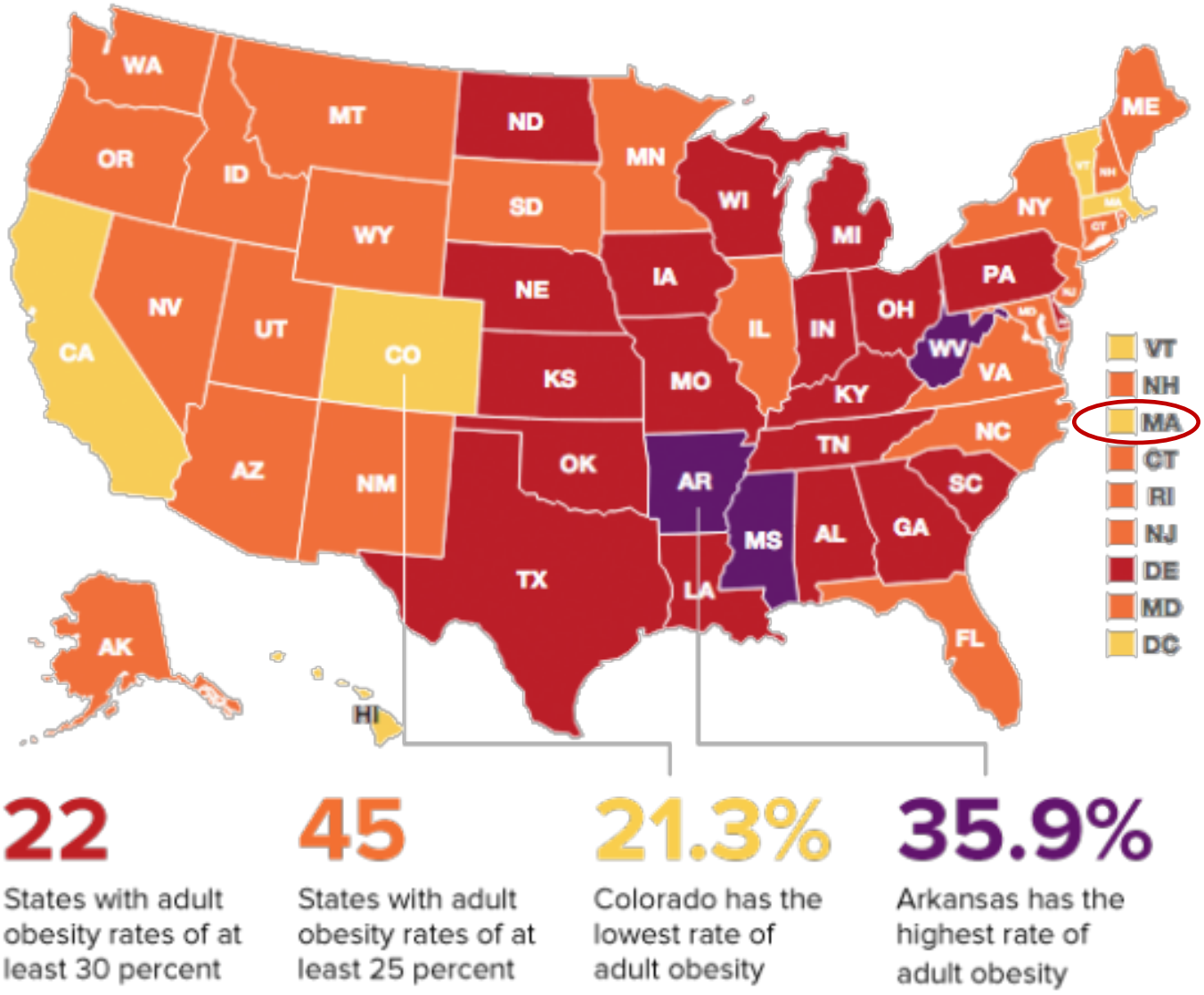
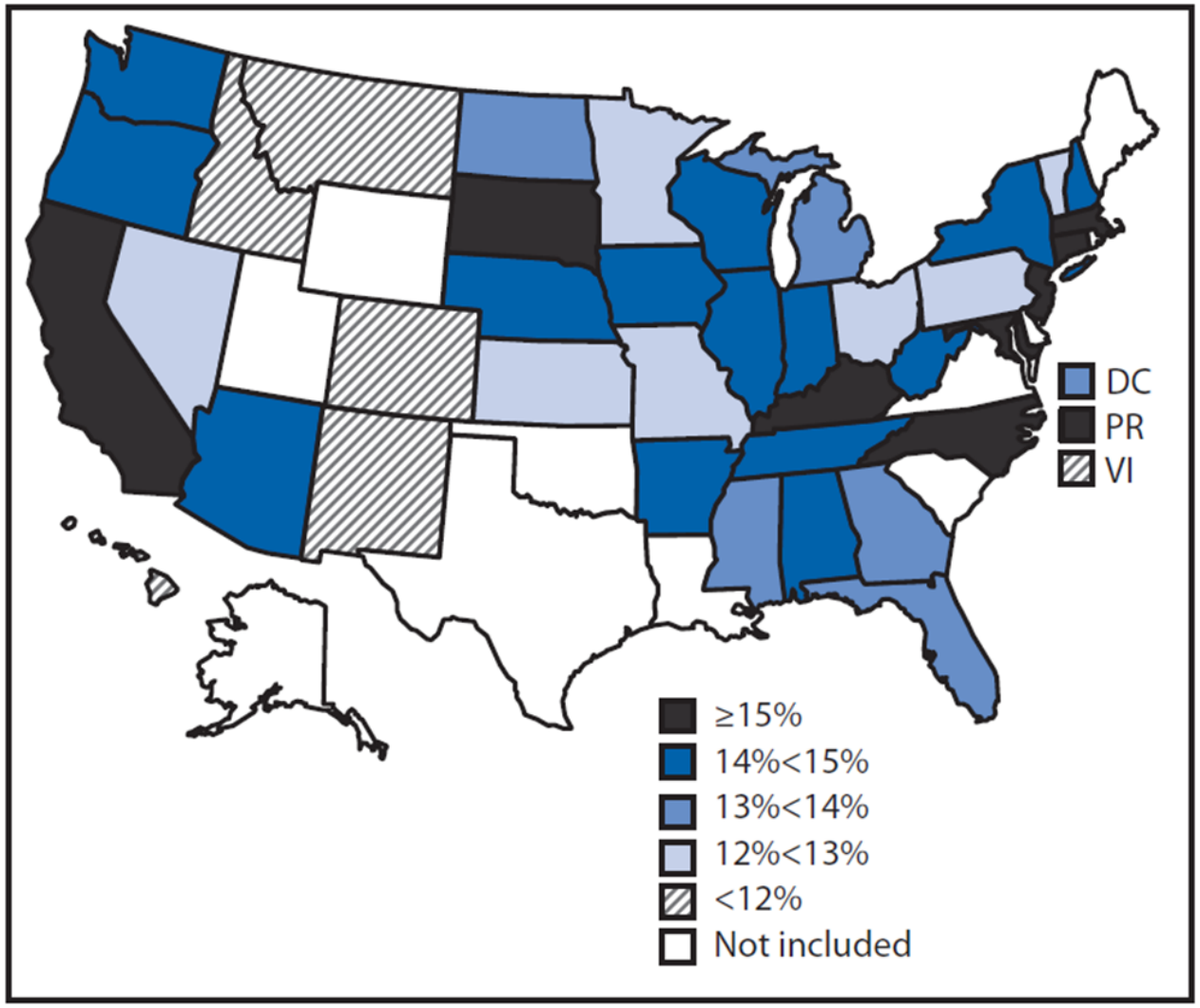
Obesity and racial/ethnic disparities have their origins early in life.

# State of Adult Obesity in the US




- MA is one of only 4 states with the ***lowest*** rates of adults with obesity.

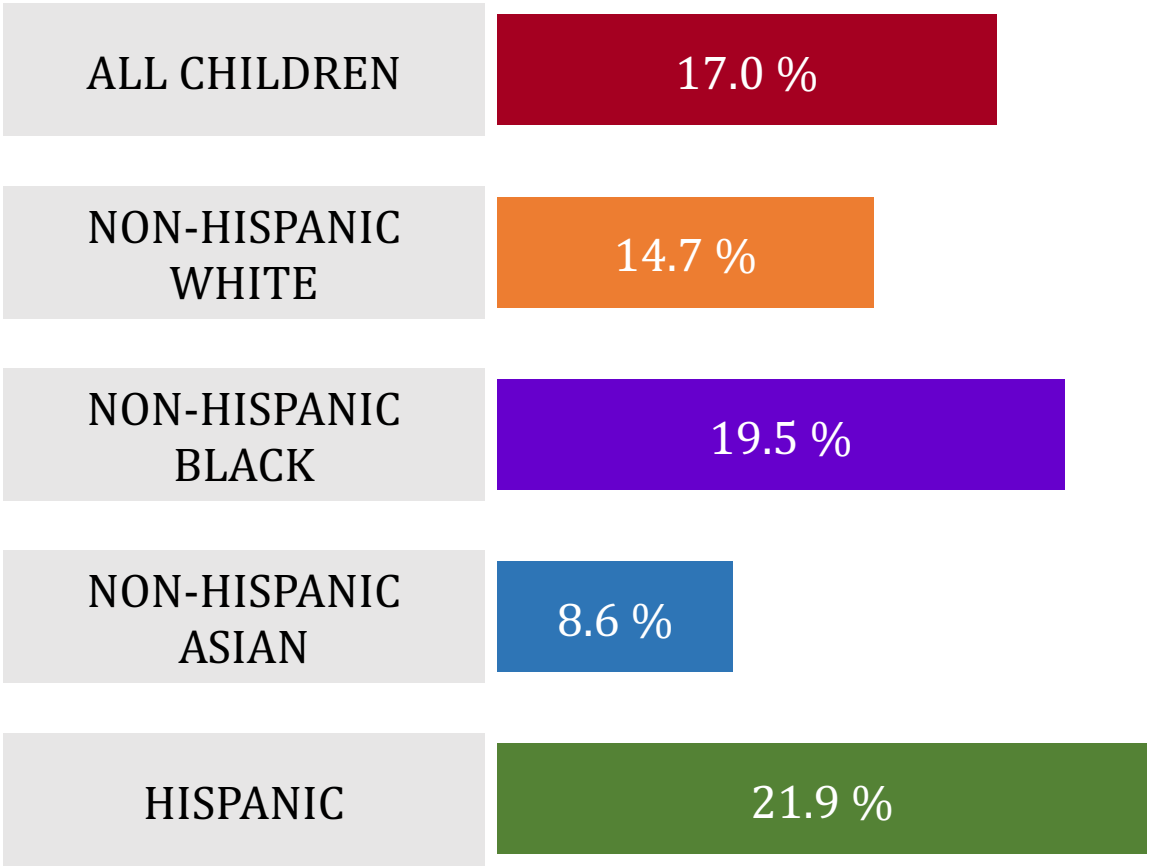
# Yet…MA is ranked 4th in the nation for having the ***highest*** prevalence of childhood obesity among its low-income children ages 2-4 years.




Obese Low-Income 2-4 yr-olds (2011)

| Rank | | Rate |
|---|---|---|
| 1 | California | 16.8% |
| 2 | Rhode Island | 16.6% |
| 2 | New Jersey | 16.6% |
| 4 | Massachusetts | 16.4% |
| 5 | Connecticut | 15.8% |
| 6 | Kentucky | 15.5% |
| 7 | North Carolina | 15.4% |
| 8 | Maryland | 15.3% |
| 9 | South Dakota | 15.2% |
| 10 | Oregon | 14.9% |

# Weighted Prevalence of Obesity in US Children and Adolescents Aged 2 to 19 Years by Race Origin: NHANES 2011-2014




Children 2-19 Source: Ogden CL, Carroll MD, Lawman HG, Fryar CD, Kruszon-Moran D, Kit BK, Flegal KM. Trends in Obesity Prevalence Among Children and Adolescents in the United States, 1988-1994 Through 2013-2014. JAMA 2016;315(21):2292-2299.

# Childhood obesity disproportionately affects racial/ethnic minorities

- Highest prevalence of obesity at all age groups is found among Hispanic children:
  - 0-2 years: 9.4% (national average 8.1%)
  - **2-5 years: 16.7% (8.4%)**
  - **6-11 years: 26.1% (17.7%)**
  - 12-19 years: 22.6% (20.5%)

- Prevalence among non-Hispanic Black children also high but improvements seen in most recent NHANES report

***Racial/ethnic differences emerge early in life and persist throughout childhood***

# *Main Points for Discussion*

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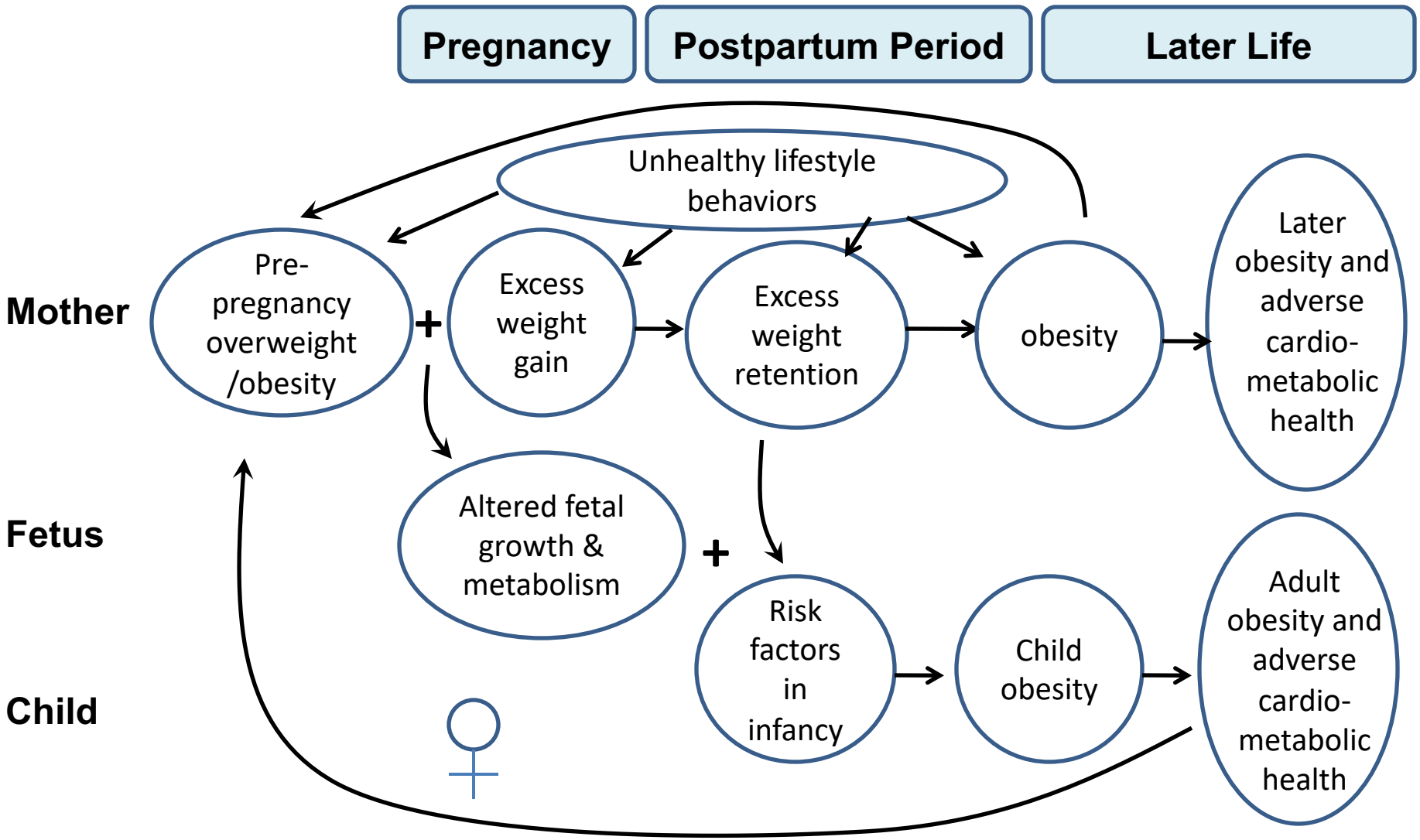
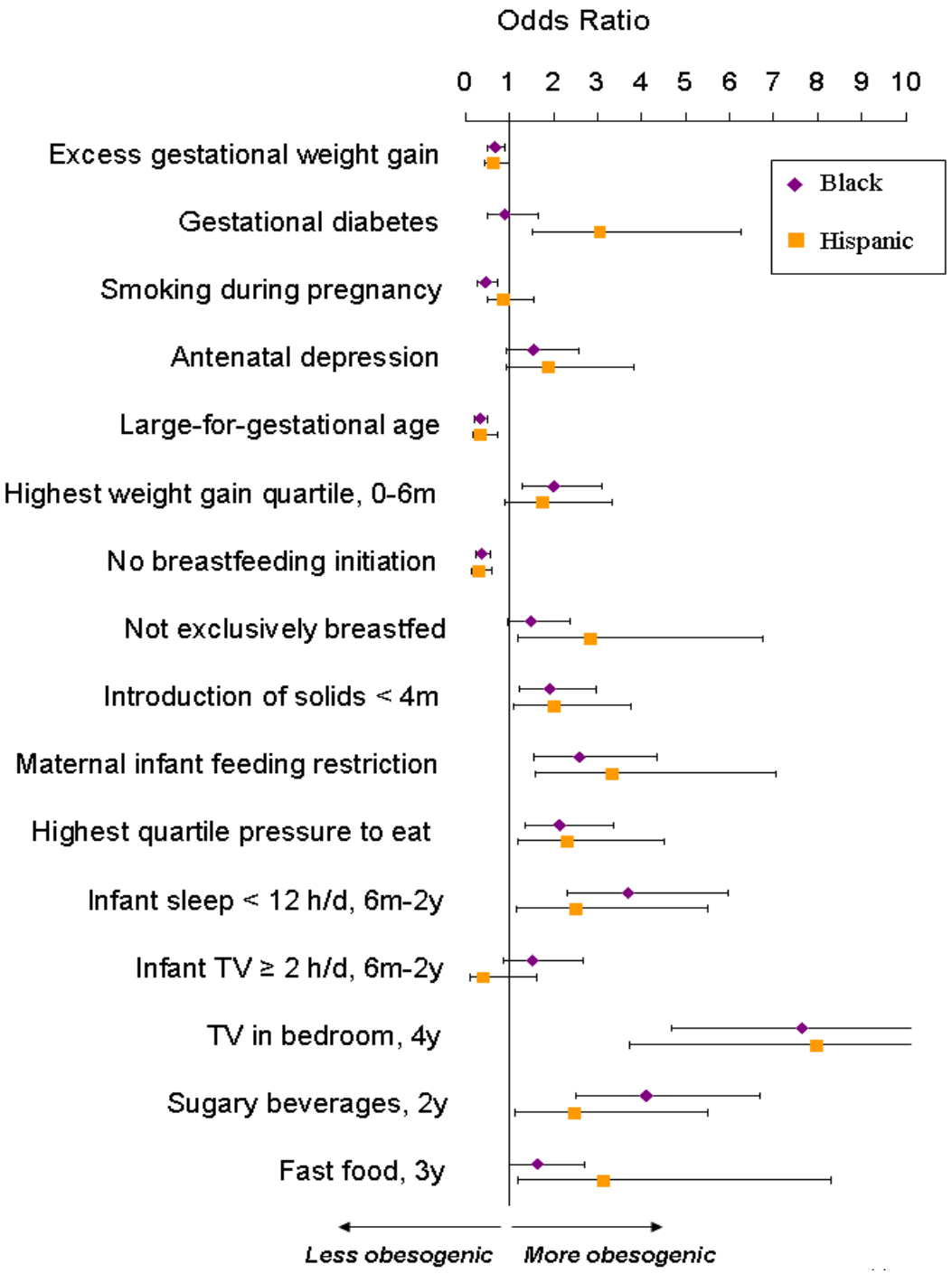
Racial/ethnic differences in obesity emerge because of risk factors during pregnancy, infancy, and early childhood.

# Selected Determinants of Childhood Obesity

- Gestational weight gain (Oken, et al. 2006) and GDM
- Maternal smoking during pregnancy (Oken et al. 2006)
- Microbiome alterations
- Gene-environment interactions
- Rapid infant weight gain (Taveras et al. 2009)
- Breastfeeding (Gillman et al. 2001, Taveras et al. 2005)
- Sleep duration and quality (Taveras et al. 2008)
- Television viewing (Taveras et al. 2007) & TV sets in bedrooms
- Responsiveness to infant hunger and satiety cues (Hodges and Fisher, 2008)
- Parental feeding practices, eating in the absence of hunger (Taveras, 2006, Fisher and Birch, 1998 & 2009)
- Portion sizes (Fisher et al. 2008)
- Fast food intake (Taveras et al. 2006)
- Sugar-sweetened beverages
- Physical inactivity
- Socio-cultural, recreation, & transport environments
- Food & marketing environments

# Vicious cycle of obesity and chronic disease among mother-child pairs

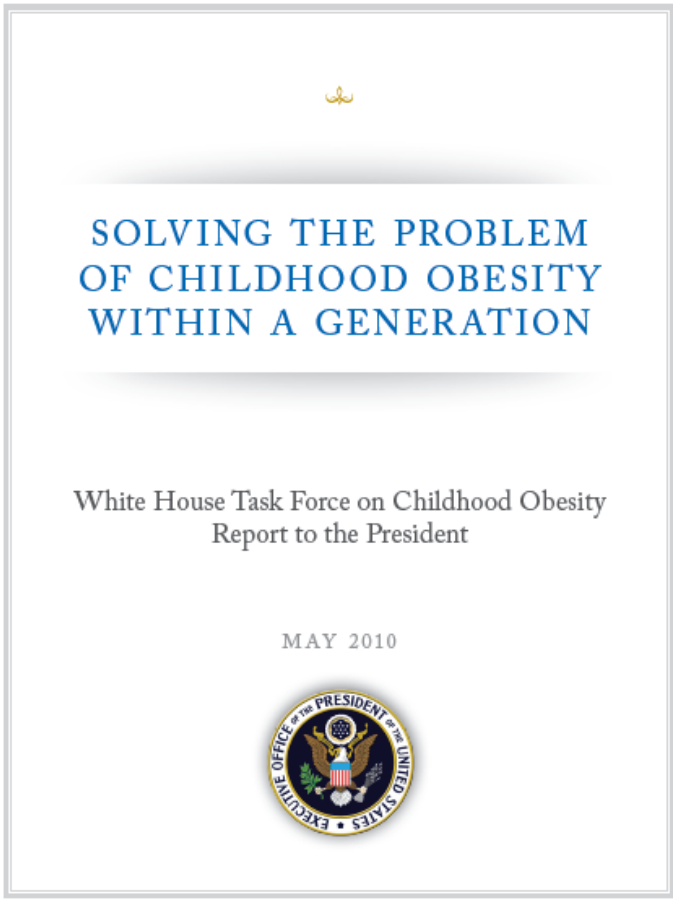





- Racial/ethnic differences exist in many early life risk factors for childhood obesity

Taveras, et al. *Pediatrics; 2010*

# White House Task Force Report on Childhood Obesity, May 2010




"Racial and ethnic differences in obesity may be partly explained by differences in risk factors during the prenatal period and early life."

# Summary of Evidence & Recent Trends

- Obesity prevention in the First 1000 Days can lead to reduced incidence and prevalence of obesity;

- First 1000 Days may also be critical for prevention of known racial/ethnic and socioeconomic disparities in childhood obesity

# The First 1000 Days – Preconception to 2 years

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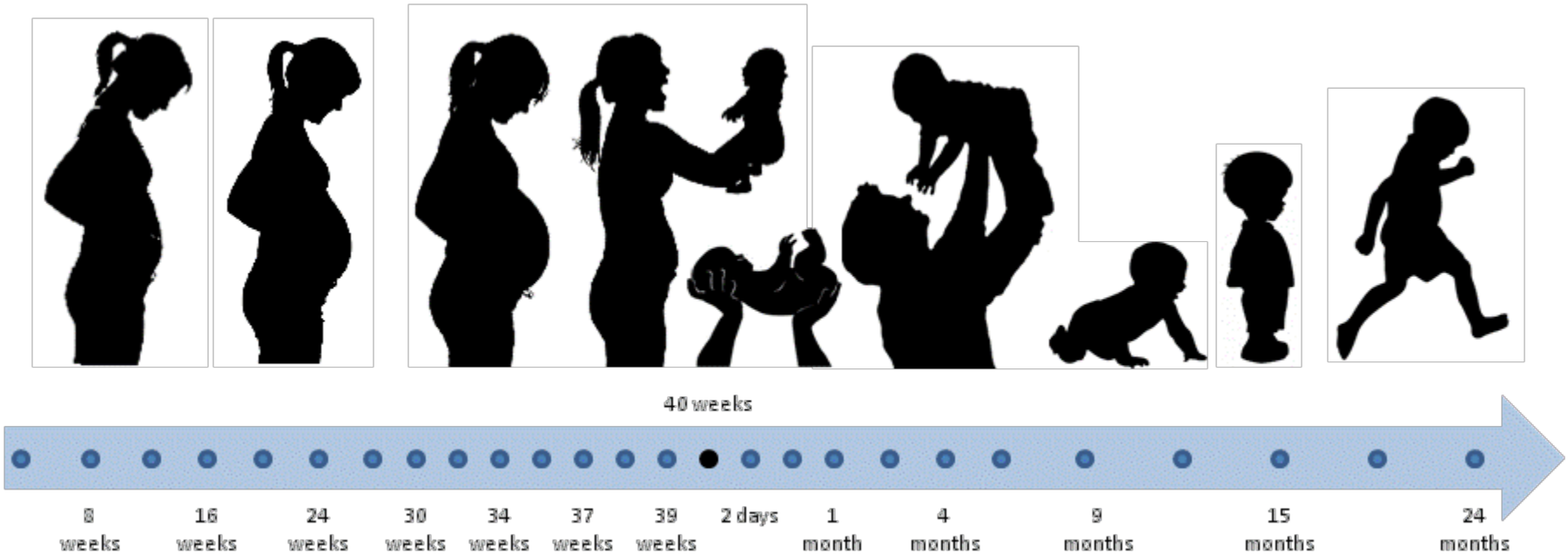
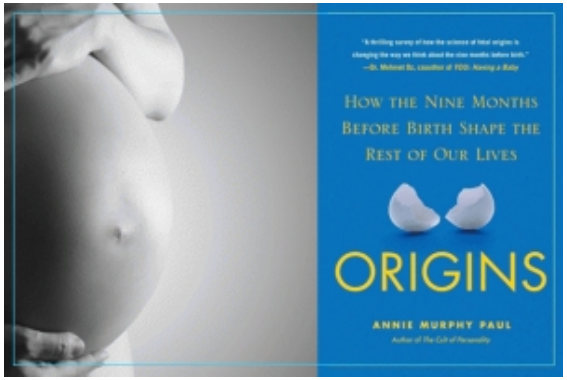
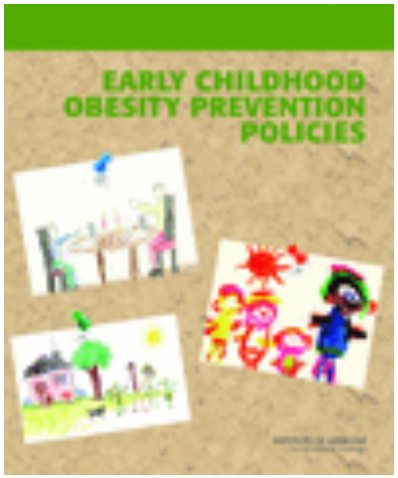
- Unique window of opportunity between preconception and age 2 that can help shape a child's future



# Prenatal period and early childhood are important for development of obesity and chronic disease throughout life






There is a unique window of opportunity between pregnancy & age two where

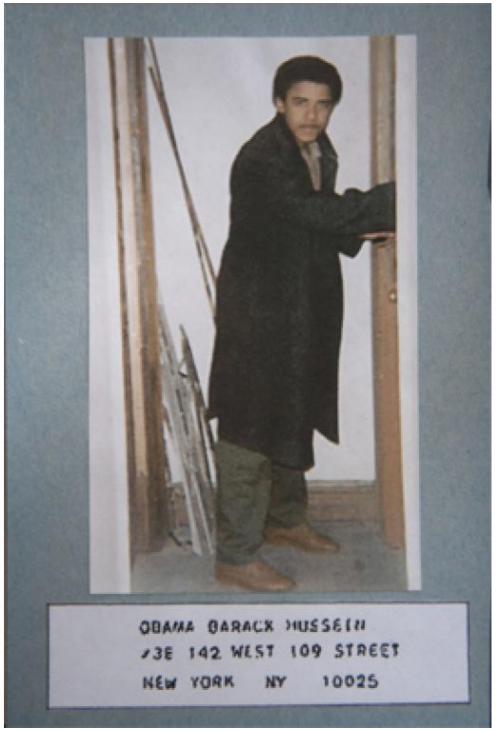
**1,000 DAYS CAN SHAPE A CHILD'S FUTURE**

# Contextual Influences on Obesity Disparities

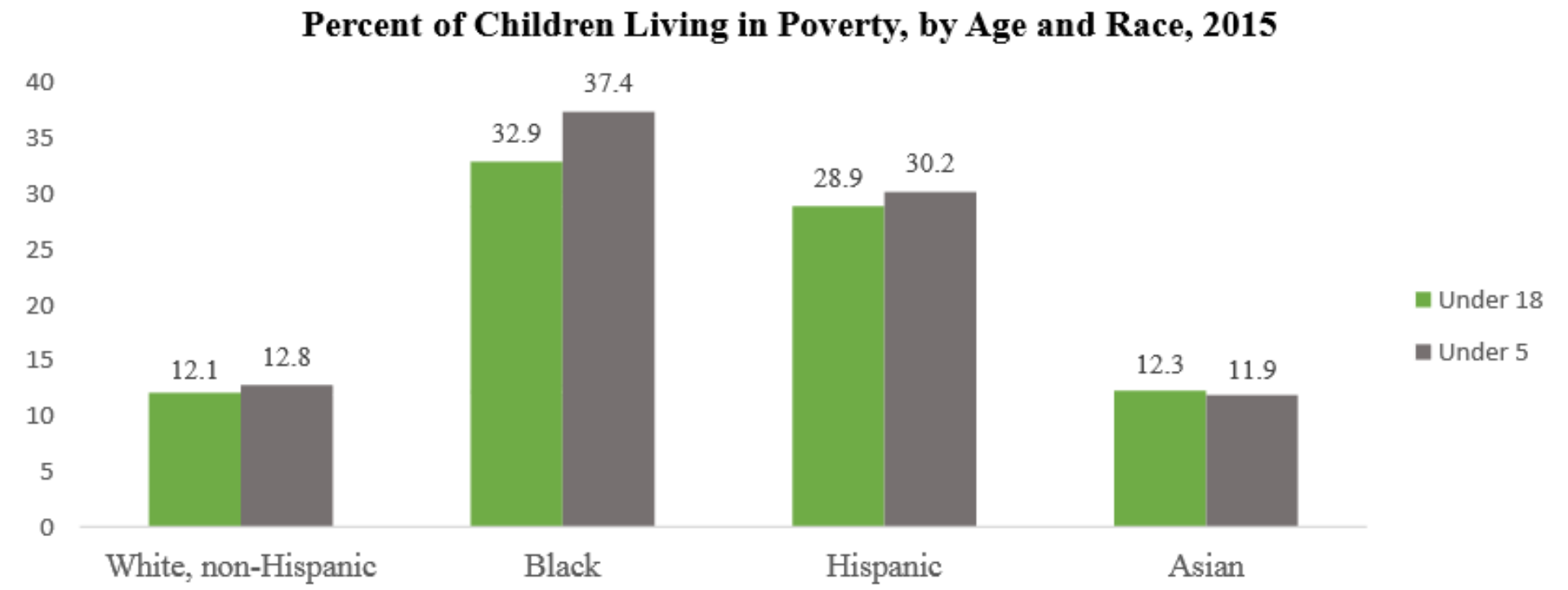
# DOMINICAN REPUBLIC

Go Red Sox!!

# Economic Migration to the US



# Percentage of Children who are Poor or Low-Income, by Race and Hispanic Origin, 2015

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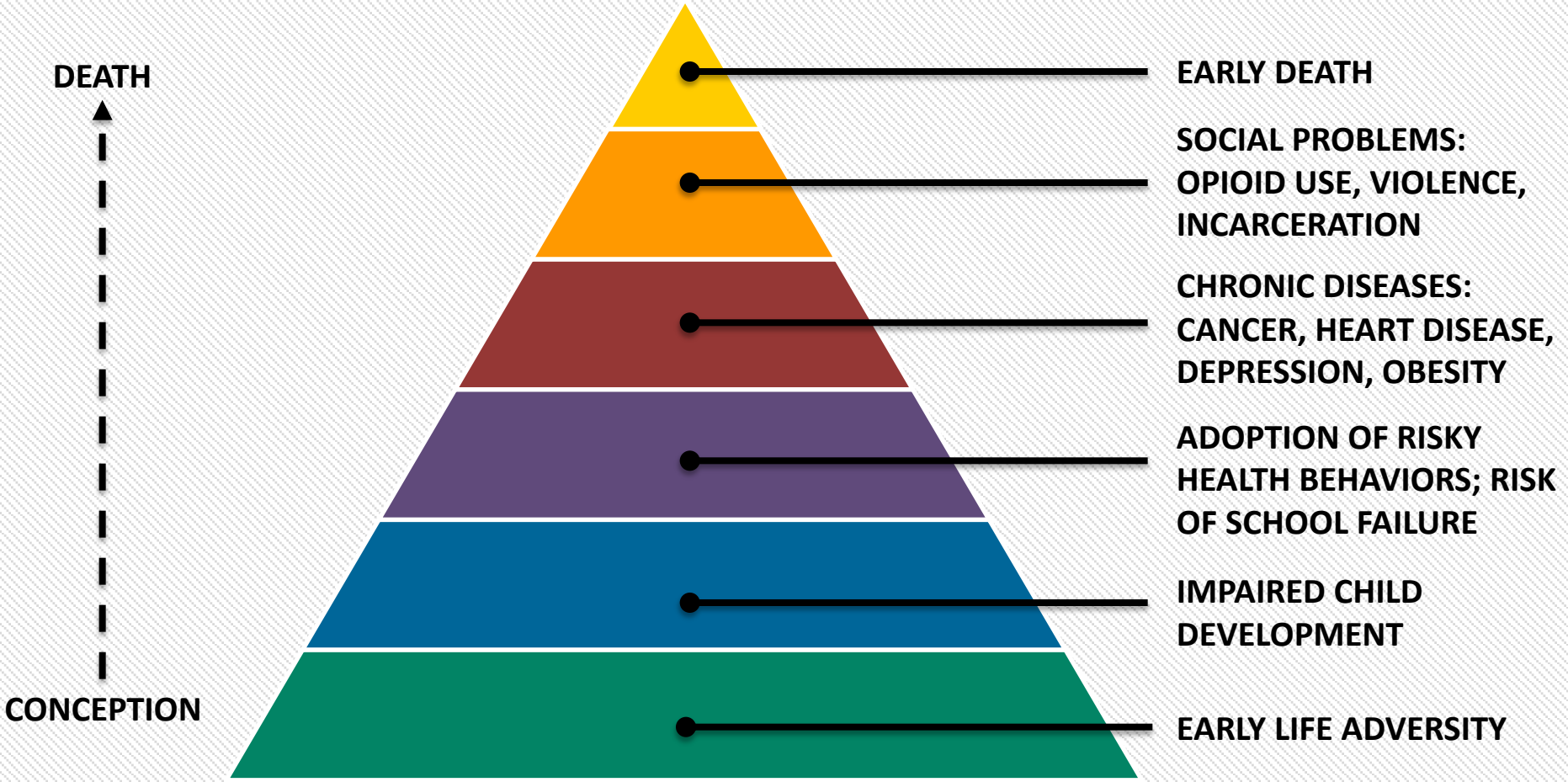
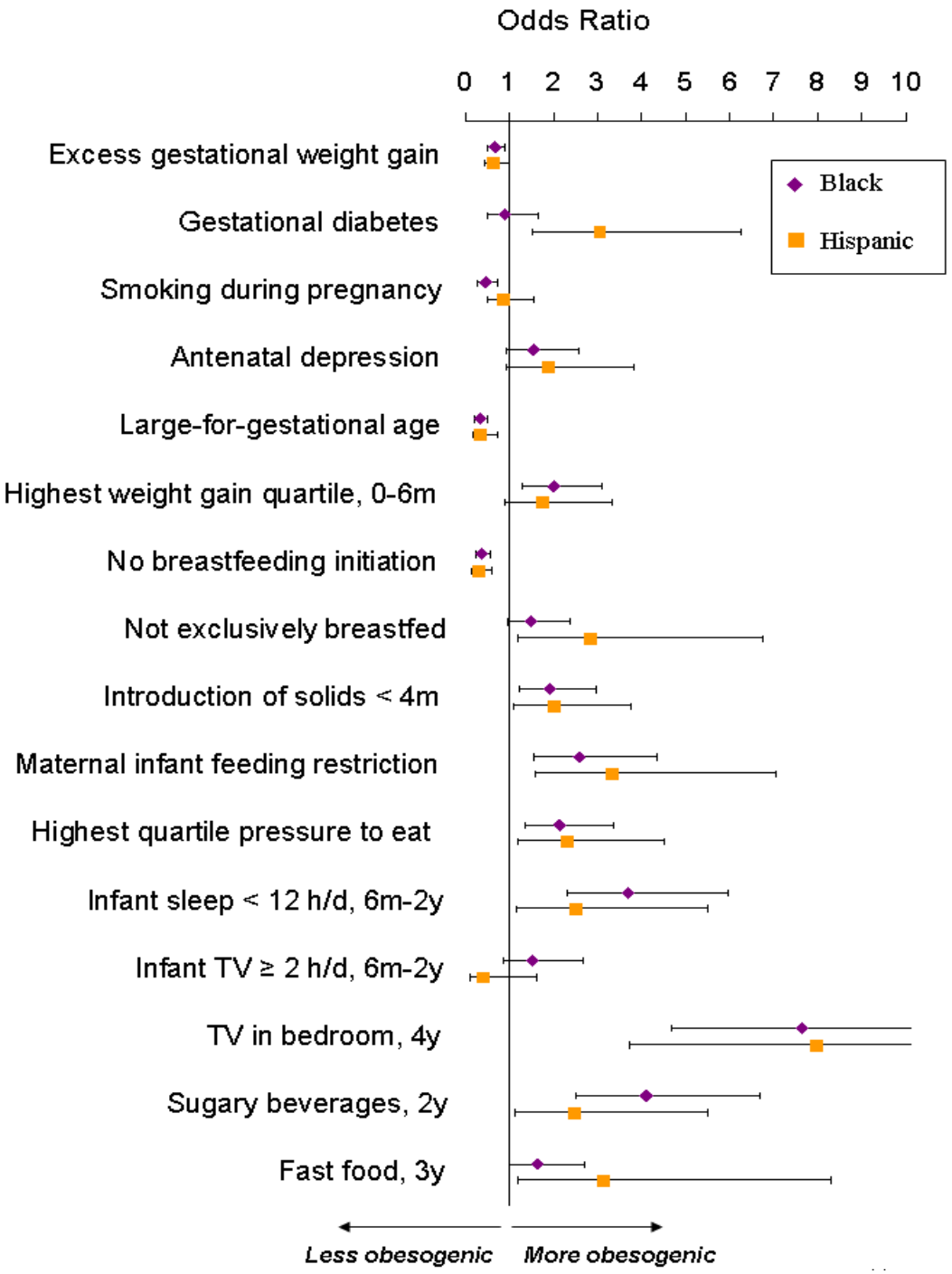
American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

# How Early Life Adversity Influences Health Throughout Life






- Among Hispanic families:
  - Higher levels of GDM
  - Low breastfeeding rates
  - Rapid infant weight gain
  - Early introduction of solid foods
  - Less infant sleep
  - More sugary beverages
  - More TV viewing

# *Contextual Influences*

- Maternal obesity
- Higher levels of GDM
- Rapid infant weight gain
- Early introduction of solid foods

- Low breastfeeding rates
- More sugary beverages

- More TV viewing

- *High infant mortality; malnutrition, diarrheal and respiratory diseases;*
  - "Eating for two"
  - Chubby=healthy

- *Poor water quality;*

- *Perception of TV educational*

# *Main Points for Discussion*

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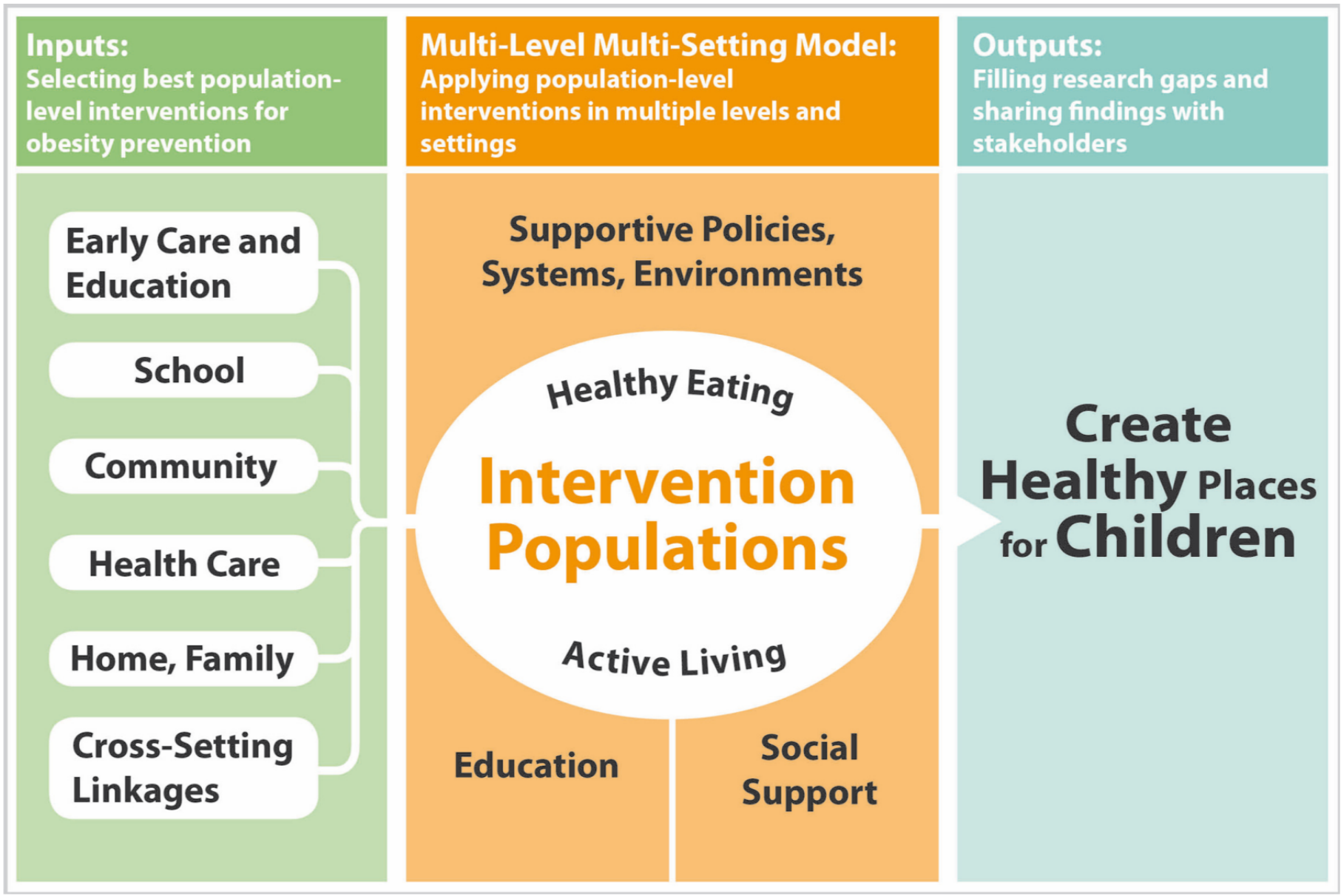
Solutions lie in effectively enhancing, leveraging, and linking early life systems to change children's health trajectories.

# Solutions lie in enhancing, leveraging, and linking early life systems



# Clinical-Community Programs for Healthy Weight









## A program in partnership with:

The Boston Foundation
INNOVATION. INFORMATION. IMPACT.

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THE KRAFT CENTER for Community Health
*Empowering a new generation of community health leaders*

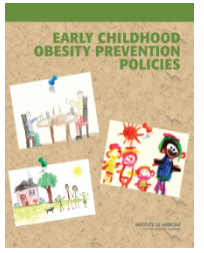
# Targets for Interventions in Pregnancy

Pregnancy:

- Good pre-, post-, and inter-conception care
- Enter pregnancy at a healthy weight;
- Gestational weight gain based on IOM recommendations;
- Appropriate management of GDM;
- No smoking;
- Prepare to breastfeed

Systems, Policies, & Contexts:

- Healthcare system: Obstetrics, Hospitals, and Women's Health
- Public health system:
  - Women, Infants, and Children Program and Supplemental Nutrition Assistance Program
  - Maternal, Infant, Early Childhood Home Visitation Program
- Community:
  - Safe, walkable environments
- Family systems:
  - Fatherhood Initiatives
- Individual & Home



# Leveraging Early Life Systems:
# What would an effective system look like?


- OB provider trained in IOM/ACOG GWG policies;
- OB uses electronic records to track GWG & GDM;
- Referred to WIC for nutrition counseling;
- Provided a referral to local YMCA;
- Population health manager enrolls family in Text4Baby, Fatherhood support, Home Visiting;
- Local supermarket has healthy food endcaps;
- Local community policies support safety, walkability, access to Farmer's markets and water, and active transportation;
- Community health center offers group support classes and parenting preparation;
- Mother delivers in a Baby Friendly hospital;
- EHR automatically links family units after delivery

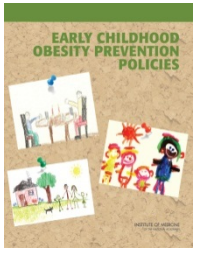
# Targets for Interventions in Infancy

Infancy:

- Prolonged breastfeeding;
- Responsive feeding;
- Appropriate timing of introduction of complementary foods;
- High quality sleep;
- Avoid accelerated crossing of growth percentiles;
- Allow ability to develop motor skills;
- Avoid exposure to food marketing

Systems, Policies, & Contexts:

- Healthcare system: Pediatrics
- Public health system:
  - WIC
  - Home Visitation Program
- Early Care & Education
  - Nutrition, physical activity, screen, and sleep policies
- Worksite:
  - Lactation policies
- Family systems:
  - Fatherhood Initiatives
- Individual & Home



# Postpartum & Infancy

- Mother re-connected with primary care for inter-conception care and screening;
- Lactation support offered in hospital, Pediatric primary care, and community;
- Pediatrician trained to use WHO growth charts and knows red flags for accelerated weight gain;
- Referred to WIC; Home Visiting Program;
- Early care and education provider has policies in place that support healthy feeding, activity, screen time, and sleep behaviors

# *First 1,000 Days Program*

- Cross-sector collaborations in the First 1000 Days to prevent obesity and address disparities among children and families
- First 1000 Days Partners at MGH Chelsea and Revere:
  - Obstetrics, Pediatrics, and Adult Primary Care
  - Women, Infants and Children Program (WIC)
  - Maternal, Infant, Child Home Visiting Program
  - Fatherhood Programs
  - Behavioral Health
  - Nutrition
  - Community Partnerships

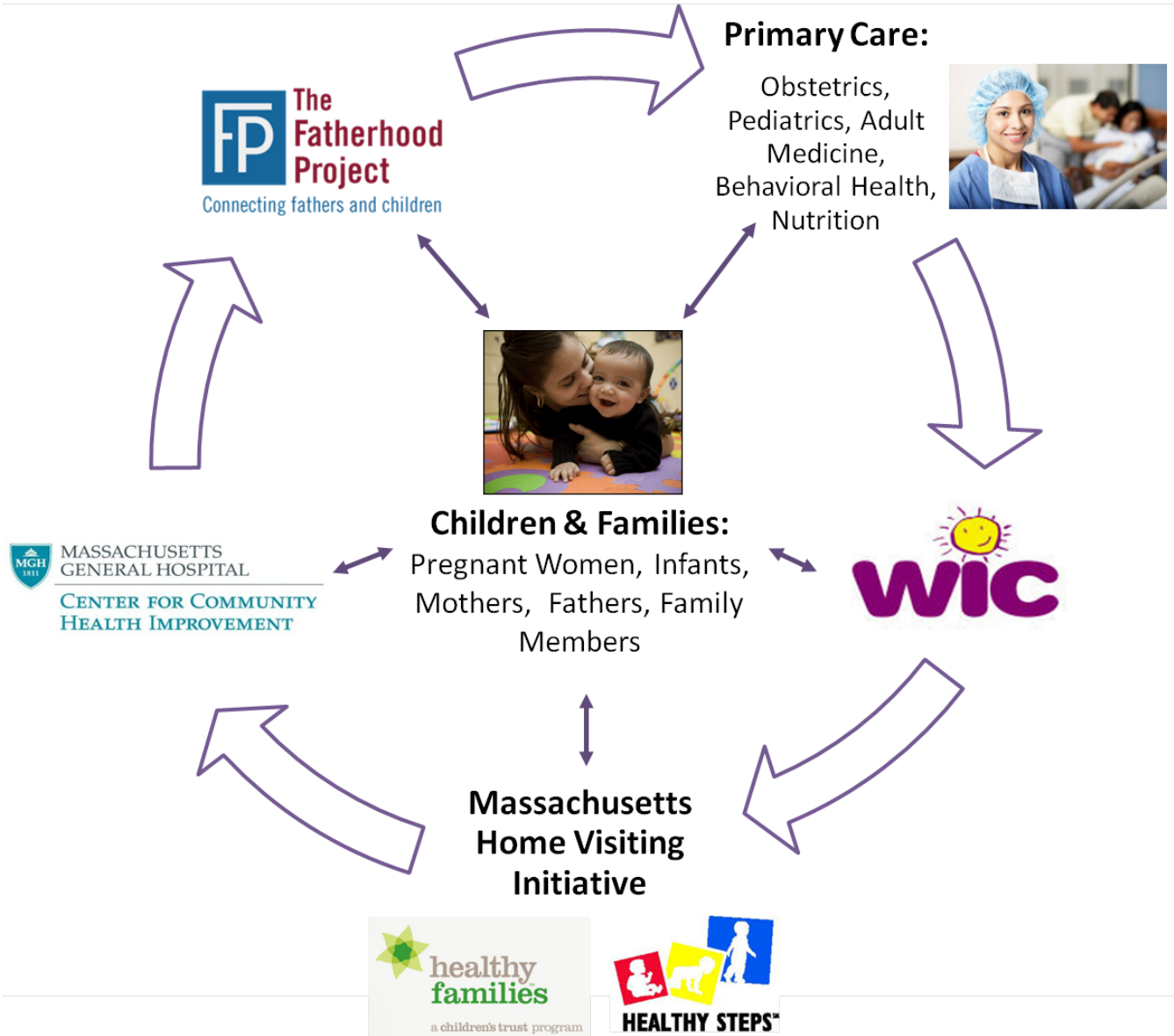
# *Collective Impact Framework*

- System-wide changes to achieve improved outcomes do not occur as a result of good will alone!

- Large scale problems such as obesity and health disparities require a highly structured, collaborative effort to achieve substantial "Collective Impact."

- Collective Impact has been loosely defined as "the commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem."

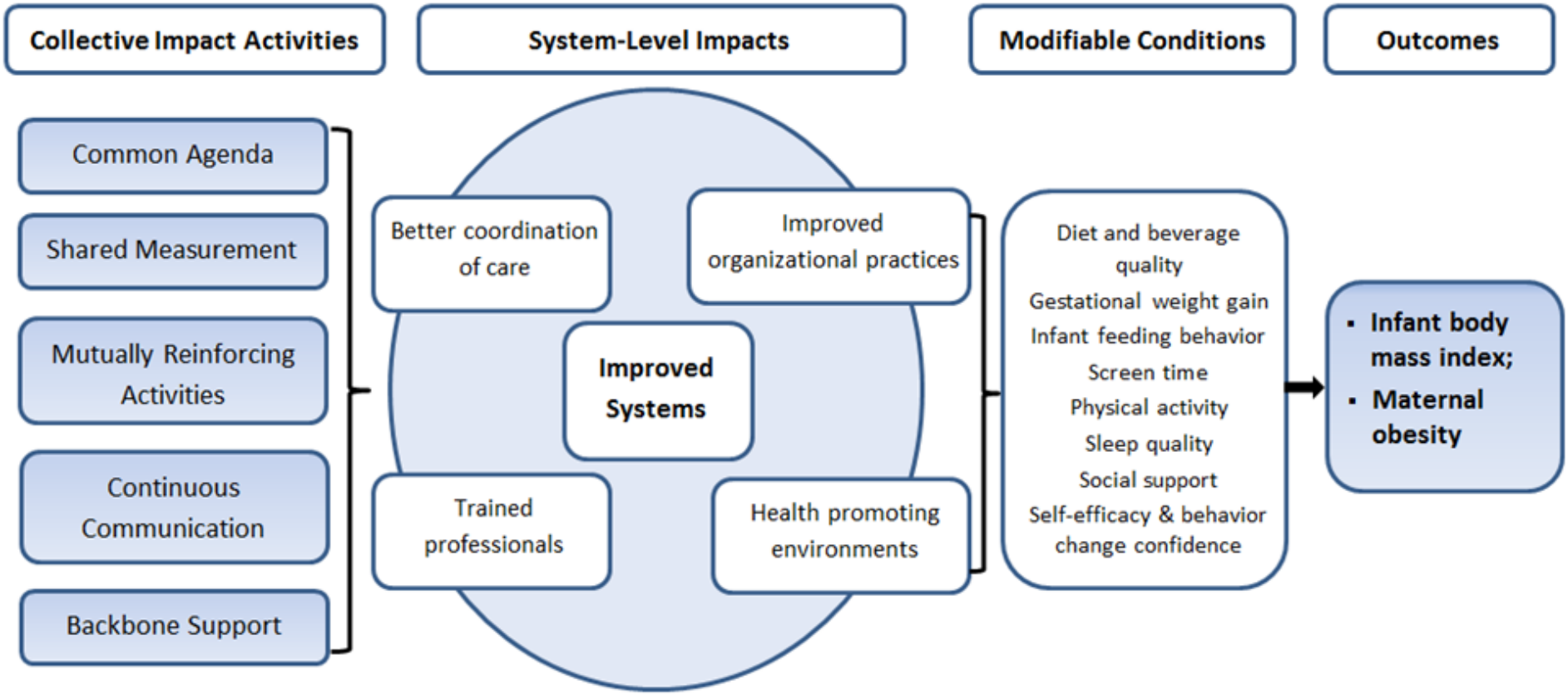
# The First 1000 Days Program Model




HEALTH STARTS AT HOME
A BOSTON FOUNDATION INITIATIVE

# Systems Change Intervention

***Figure A. Conceptual framework for the proposed First 1000 Days study.***



# Summary

- Childhood obesity spares no age group, is of consequence, and disproportionately affects racial/ethnic minority children.
- Life course exposures, including factors during pregnancy, infancy and early childhood, trans-generational obesity, and social conditions in childhood, are important to understanding disparities in childhood obesity.
- Efforts to eliminate racial/ethnic disparities in childhood obesity should focus on preventing early life risk factors.

# There is still work to be done.....

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- Evidence suggests a widening of racial/ethnic disparities in the US – future work must focus on prevention among the populations that need it most.
- Childhood obesity is a societal issue and we need to advocate to make all environments healthier as we also work to change individual behaviors.
- Obesity is a global health issue – nutrition transition has led to decreased malnutrition and stunting in exchange for obesity and non-communicable diseases. We need to take evidence of what works to the international community.

# Acknowledgements


- Grant support from the Centers for Disease Control & Prevention, the National Institutes of Health, the Patient-Centered Outcomes Research Institute, the Robert Wood Johnson Foundation, and The Boston Foundation

- Mentors, trainees, and research staff in:
  - Department of Pediatrics, MGH
  - Department of Nutrition, Harvard School of Public Health

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# AUDIENCE QUESTIONS

Alexandra Evans, PhD

*Associate Director, Michael & Susan Dell Center for Healthy Living*

# MEMORIAL FOR
# Philip R. Nader, MD

Guy Parcel, PhD

*Dean Emeritus, UTHealth School of Public Health*

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*"Dr. Phil Nader excelled in and then transformed the field of school health.* He recognized early in his career that being a school physician was not about providing direct services. Rather, Dr. Nader recognized how school health was a vital form of population health as well as an inroad to investigating and meeting the public health needs of families from multiple cultures."

Howard Taras, MD

Professor of Pediatrics, University of California – San Diego



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"I could never repay Dr. Nader directly for all of his mentoring and support over the years, all I could do was try to provide similar support for students and younger colleagues as they pursued their educations and careers. I feel very blessed to have had Phil Nader as a boss, mentor, and friend. He was a great role model and I will never forget him."

Nathalie A Bartle, EdD

Professor, Drexel University School of Public Health

"Phil was a kind and gentle person and a great colleague. He was an excellent model for research, community, engagement, and inclusiveness."

Thom L. McKenzie, PhD, FACSM, FNAK

Investigator, Institute for Behavioral and Community Health

Professor Emeritus, School of Exercise and Nutritional Sciences,

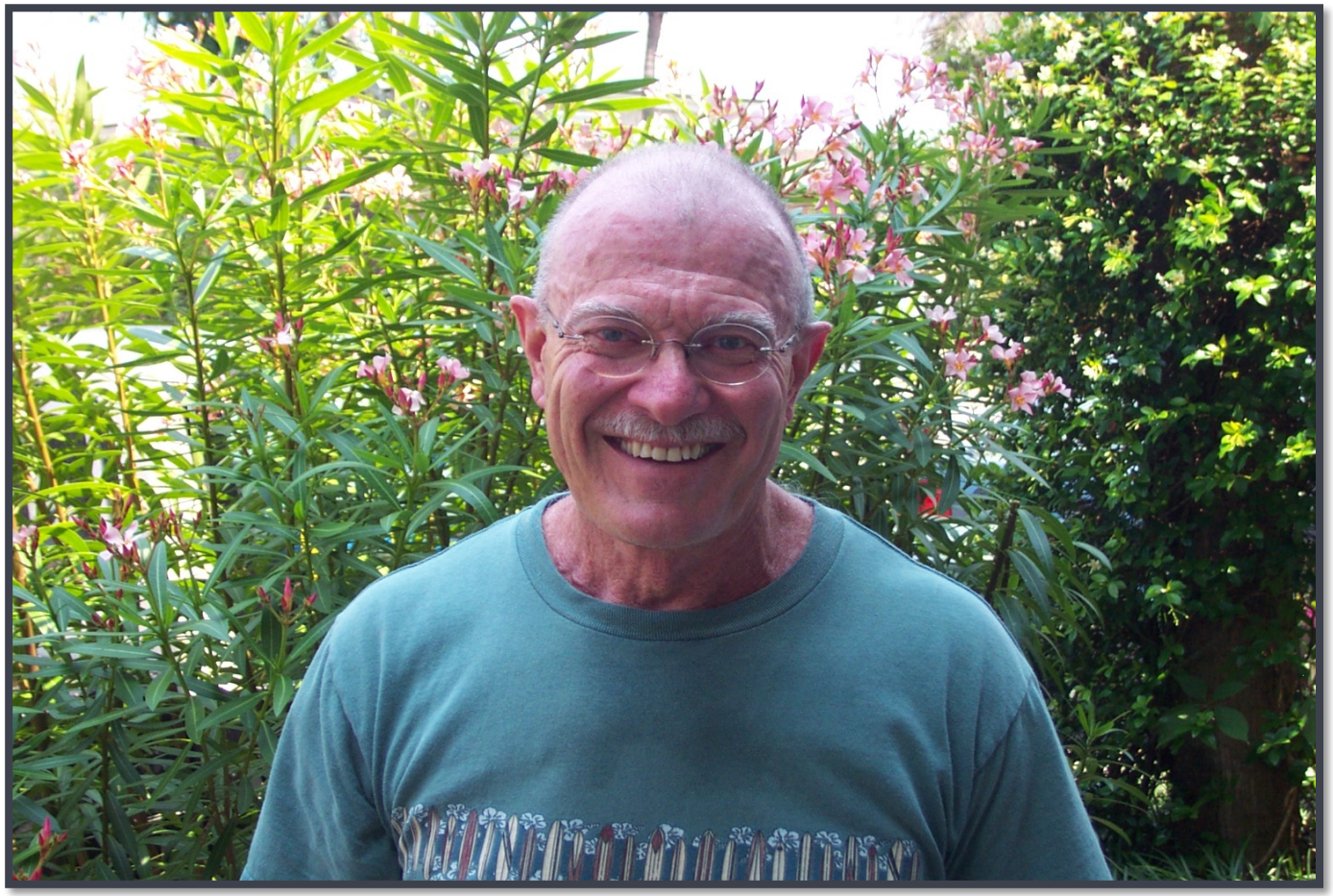
San Diego State University

"Phil worked on a family based intervention with the Five City Study and came back committed to family based health promotion interventions. We jointly developed a family based diet and physical activity chronic disease prevention intervention among young children in the early 80s, just before he left for UCSD. He always had a gleam, a sparkle in his eyes when it came to community based family research."

Tom Baranowski, PhD

Professor of Pediatrics, Children's Nutrition Research Center,

Baylor College of Medicine



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"I was very fortunate to literally run into Phil Nader at Stanford University in 1979. He liked that I was carrying a box of supplies for our school-based research program, and that the box (to him) was bigger than I was. When the RFP for CATCH came out, Phil, Guy and I collaborated as we wrote our grant proposals, so the original CATCH was a combination of our three groups from the beginning.

Phil was a strong advocate for family health, and as a pediatrician was committed to kids' health too. He was a pioneer in developing behavioral programs that impacted child and parent behaviors. Through this, we maintained our friendship over these nearly 4 decades.

He does leave a legacy!"

Cheryl L. Perry, PhD

Professor and Regional Dean, UTHealth School of Public Health in Austin

"In remembering Phil Nader, I think about a man who was passionate about children and their health and well-being. I was fortunate to work with Phil on what was one of the leading research studies in improving children's cardiovascular risk behaviors. He provided insight from his experiences as a pediatrician and as a father. That CATCH exists today after 25 years is testimony to his hard work and dedication.

I am proud that I could call Phil Nader my colleague and my friend."

Larry Webber, PhD

Professor Emeritus, Tulane University School of Public Health and Tropical Medicine

"My dear friend Phil Nader was my mentor, my confidant, my father-figure, and most importantly my caring friend. I was hired by Phil for the Community Pediatrics Division in 2001 and he was my supervisor, as well as a role model of the type of researcher I hoped to become. Although I moved to a new division at UCSD I remained ever loyal to our friendship and his advice in my emerging career. His passing has left an emptiness in my heart but the memories I have of our professional and personal time together will stay with me for my life."

Samantha Hurst, PhD, MA

Associate Project Scientist, UCSD, Department of Family Medicine and Public Health


Let it Flow
HAWAI'I

"Phil gave me my first 'real' job. I began my career as a nutritionist who collected 24-dietary recalls for Phil's NHLBI Family Health Project. Over the next few years, I became the Assistant Director for CATCH and the Director of SCAN. Back then, and even over the next 25+ years, I had no idea I worked for *the* Dr. Phil Nader. I had no idea I worked for one of the pioneers of school health and childhood obesity prevention. To me, Phil was my friend. He was my mentor. He was a father figure who encouraged me to get my PhD, to co-author Legacy of Health, and to believe HEALTH HAPPENS HERE and that we should strive for health equity regardless of where you live. I miss Phil dearly but find some peace in knowing Phil's legacy continues."

Michelle Murphy Zive, PhD, MS, RD

University of California, San Diego, Center for Community Health

# Thank you for attending the Philip R. Nader Legacy of Health Lectureship