# Childhood Overweight and Obesity in Massachusetts: *Trends, Problems & Solutions*

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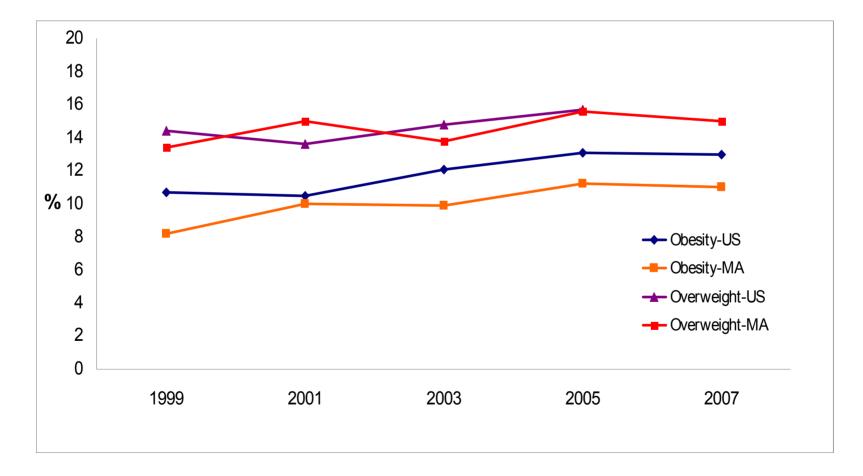
Tufts University Friedman School of Nutrition Science & Policy John Hancock Center on Physical Activity and Nutrition

# What I Am Going to Talk About....

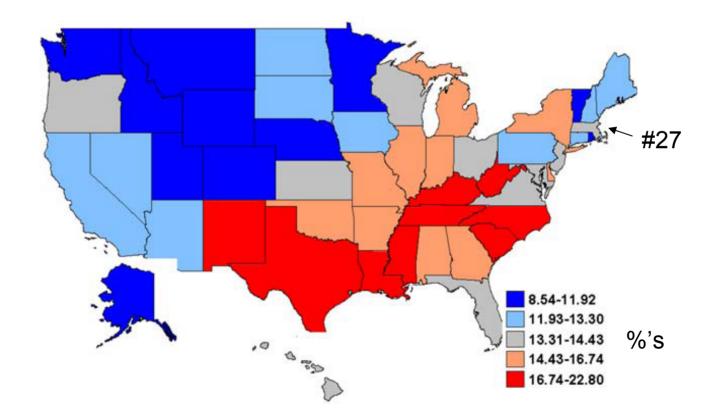
- We can use "science" to guide "policy"
   Science spans biological → sociological
- Often there are no "quick" answers with science & sometimes the science is not "exact"
- Will not make "recommendations" but just some "key suggestions"

### Childhood Obesity Prevalence & Trends

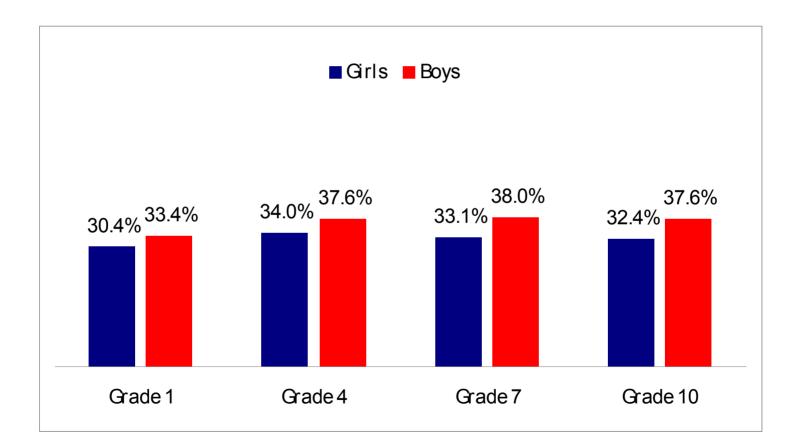
### 1999-2007 Trends for Adolescent Overweight and Obesity in Massachusetts and the U.S



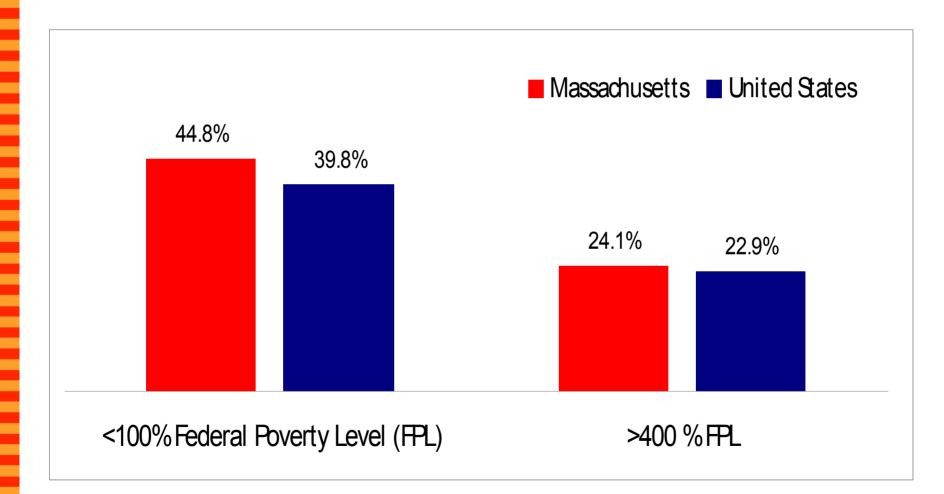
### Obesity Prevalence by State in US Children Aged 10-17 yrs



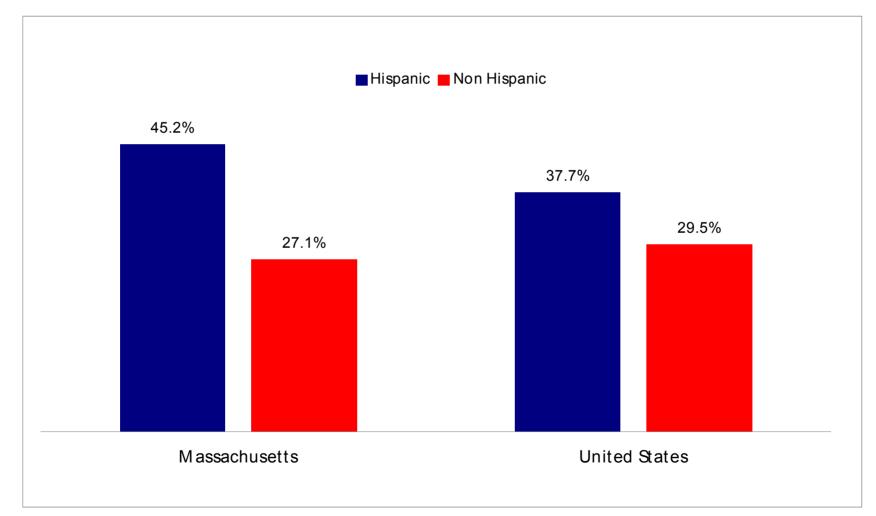
# Prevalence of Overweight by Grade & Gender in MA



### % Overweight or Obese Children by Family Income

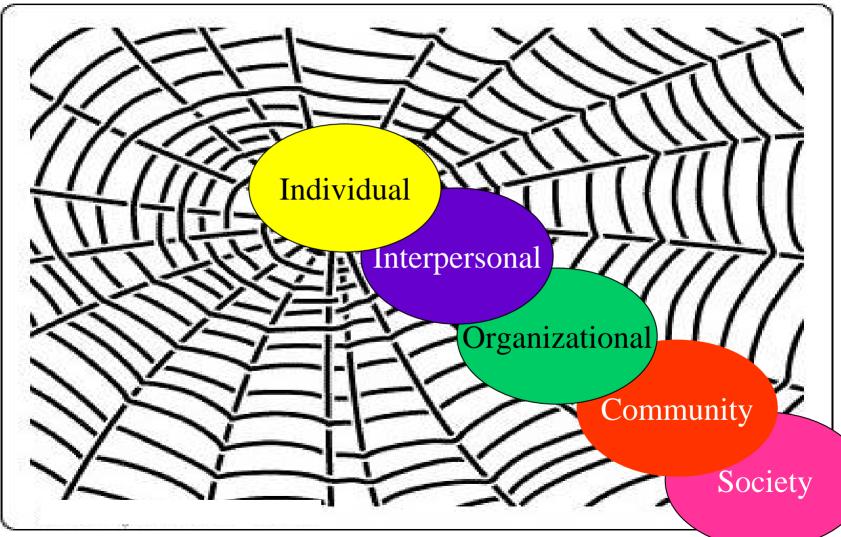


# % of Overweight or Obese Hispanic Children



# **Causes of Childhood Obesity**

### Social Ecological Model of Obesity



# Rise in obesity....the inability to control our *individual* energy intake/expenditure vs. the *environmental* stimuli that influences intake/expenditure



# Energy "Gap"

- It has been calculated that the energy gap needed to produce weight gain is between 110 - 165 calories per day
  - -~1 can of soda
  - 1 oz bag of chips
  - 1 ice cream bar

Wang et al, Pediatrics, 2006 Plachta-Danielzik et al, Obesity, 2008

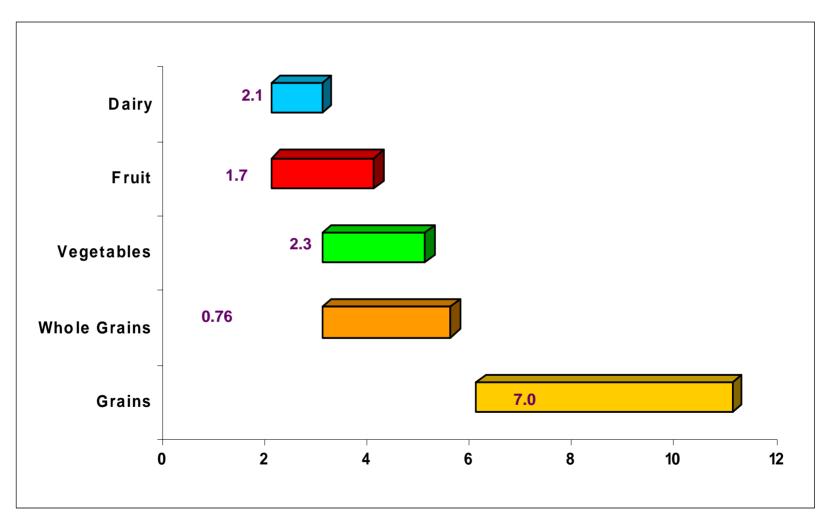
# Closing the Energy "Gap"

- $\downarrow$  TV viewing by 1.4 hours (106 kcal/hr)
- Walk 1.9 hrs vs. sitting (30 kg boy)
- ↑ PE from 1x → 3x per week (+240 kcal/wk)

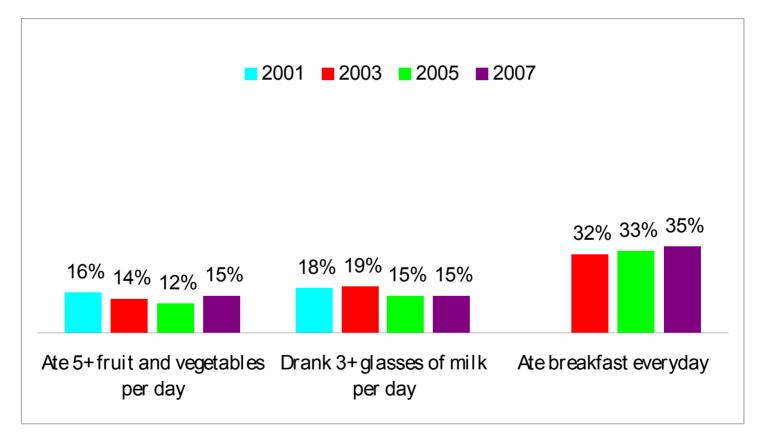
Removed sodas from Boston high schools  $-\downarrow$  consumption =34 kcal/day

# **Poor Nutrition**

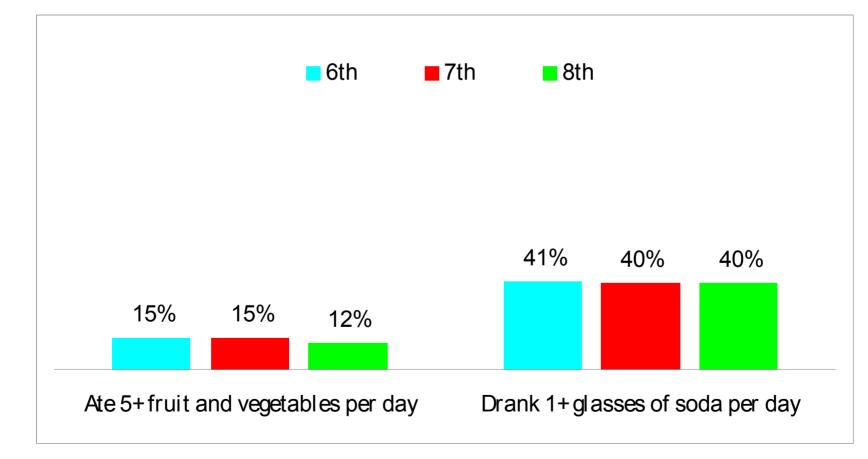
# Recommended Daily Servings vs. Reality (2-19 yrs)



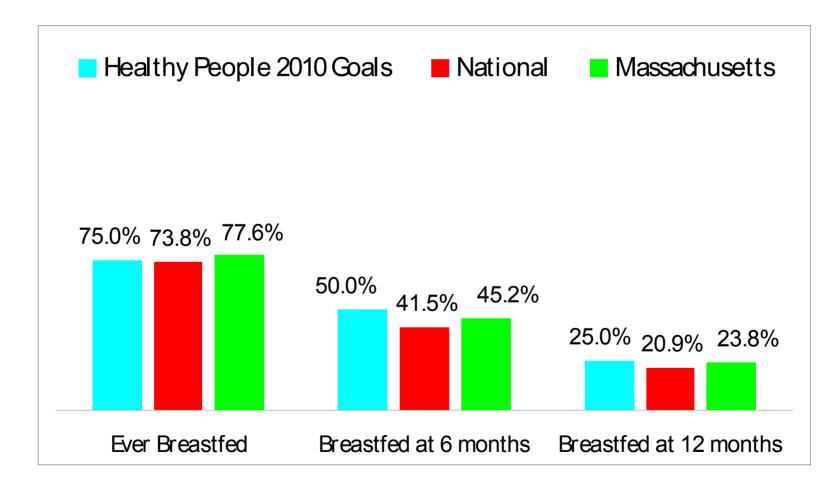
# Food Consumption of Massachusetts High School Students



# Food Consumption of Massachusetts Middle School Students



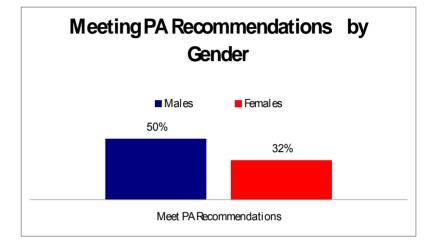
# Comparison of Breastfeeding Rates



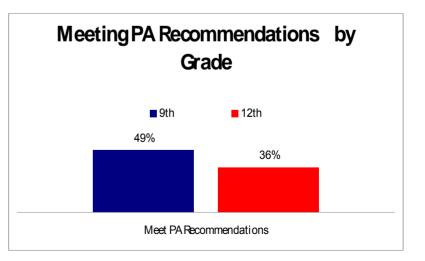
# Lack of Physical Activity

# **Physical Activity**

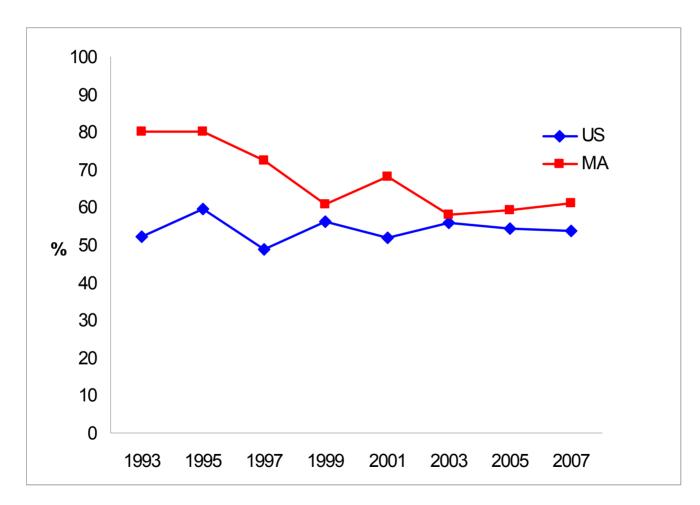
41% of students are physically active (60 min/day)



 9th grade students were more likely than 12th grade students to meet recommendations (60 min/day)



### Adolescents Who Attend PE Class in an Average Week



Youth Risk Behavior Survey, 1993-2007

# TV & Screen Time

#### High School

- 30% reported 3+ hrs/day of non-school related computer usage
- 28% reported 3+ hrs/day of TV viewing

#### Middle School

 – 18% reported 3+ hrs/day of Internet use on an average school day

### **Costs & Consequences**

## Consequences

#### **Biological and Social Health**

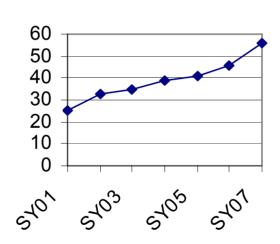
- Overweight and obese children are more likely to become obese adults
- Sleeping problems, social stigmas, teasing

#### Productivity

 Greater levels of school absenteeism → decreased academic performance?

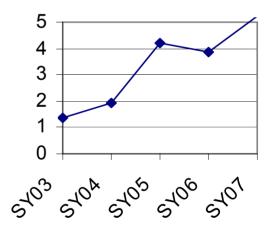
# MA Childhood Diabetes Prevalence

Procedures Per 1,000 Students Per Month



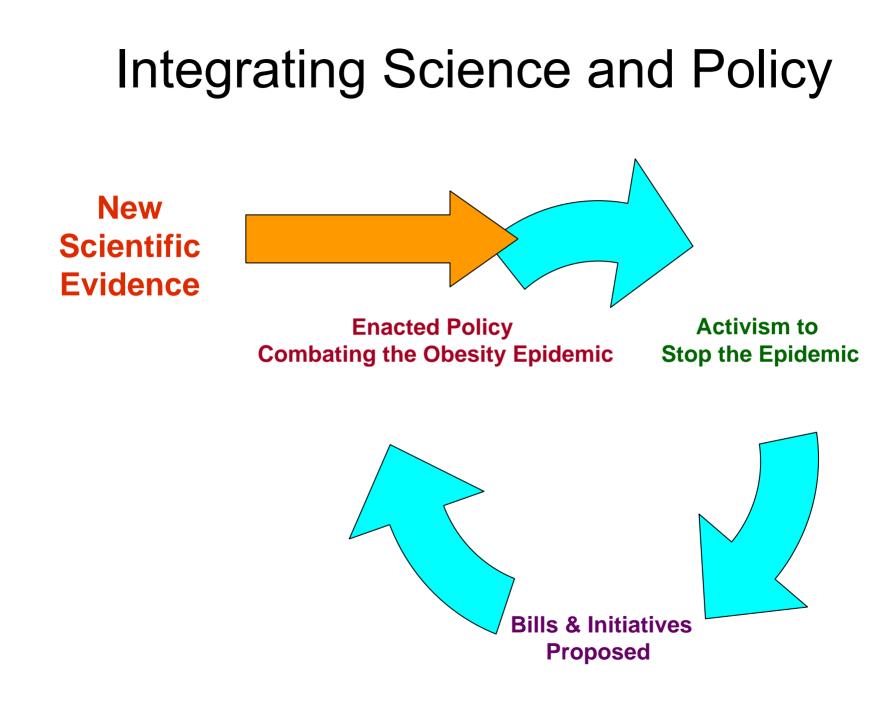
**Blood Glucose Testing** 

**Insulin Pump Care** 

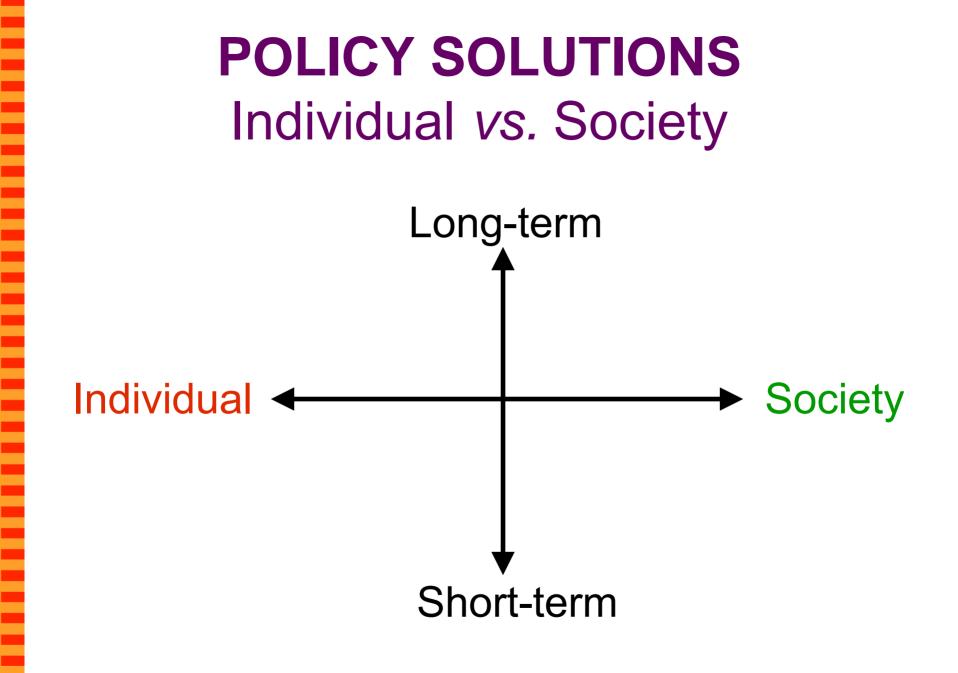


### Costs

- State medical expenses associated with obesity:
  Massachusetts 4.7% (\$283 per capita)
- Decrease of just 5% prevalence of overweight and obesity and an increase in physical activity would save Massachusetts \$9.6 billion over four years
- Per child medical expenditures for overweight & obese children are ~\$200 more than for healthy weight children



# Policy: Individual vs. Society Values Individual Society



### Massachusetts Policy & Program Landscape

# MA Department of Public Health Initiatives

- Statewide Taskforce on Obesity (2008): Formed to both complement and coordinate several groups around the state to fight obesity
- Workplace Wellness Initiative (2008): Conceptual framework for worksite wellness initiatives
- Wellness Grants (2007): Awarded \$1 million in grants across the state to support healthy eating and increased physical activity

# **Other MA Initiatives**

- Jump Up & Go!
- Growing Up Healthy
- MA Action For Healthy Kids
- Project Bread: Better Breakfast & Better Summer Meals
- Farm to School Project

### Massachusetts Legislative Environment

# **School Wellness Policies**

Only 30% of MA school wellness policies meet minimum federal requirements

 Only 70% of the policies included plans for evaluation and communication of those findings to school administration

#### 2007 Obesity-Related Standards in Schools & State Initiatives

Type of Legislation	Massachusetts
Nutritional Standards for School Meals	X
Nutritional Standards for Competitive Foods	
Limited Access to Competitive Foods	
Physical Education Requirements	X
BMI or Health Information Collected	X
Non-invasive screening for diabetes	
Health Education Requirements	X
Trans Fat Restrictions	x
Snack Taxes	

Trust for America's Health, 2007

# Most Promising *Nutrition* Policy Options

- ↑ Participation of schools in school breakfast programs
- 2. Changes in nutritional standards at schools
  - limit access to junk foods in cafeterias and vending machines
- 3. Regulation of marketing of foods to children
- 4. Zoning changes in the built environment around access to healthy and affordable food
- ↑ Promotion and public acceptance of breastfeeding

# Most Promising *Physical Activity* Policy Options

- 1. Increased physical education and recess time in schools
- 2. Administration of annual fitness testing in schools
- 3. Increase walkability and cyclability of built environment
  - design attractive sidewalk networks
  - create schoolyards, playgrounds, and trails that are safe and accessible
  - convert areas to be bike-friendly within communities to promote active living

# Most Promising Universal Approaches

- Recognize that we have a problem
- Collect Data
- Life course approach
- Teaching of health professionals about "prevention"
- Increase business and organization care for health of employees
- Parents serve as "role models" for healthy lifestyle behaviors
  - $\uparrow$  healthy foods in the home
  - $\downarrow$  screen time
  - Promote safe, outdoor play

### **Need For A Coordinated Strategy**



# Acknowledgements

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# Thank You



