

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

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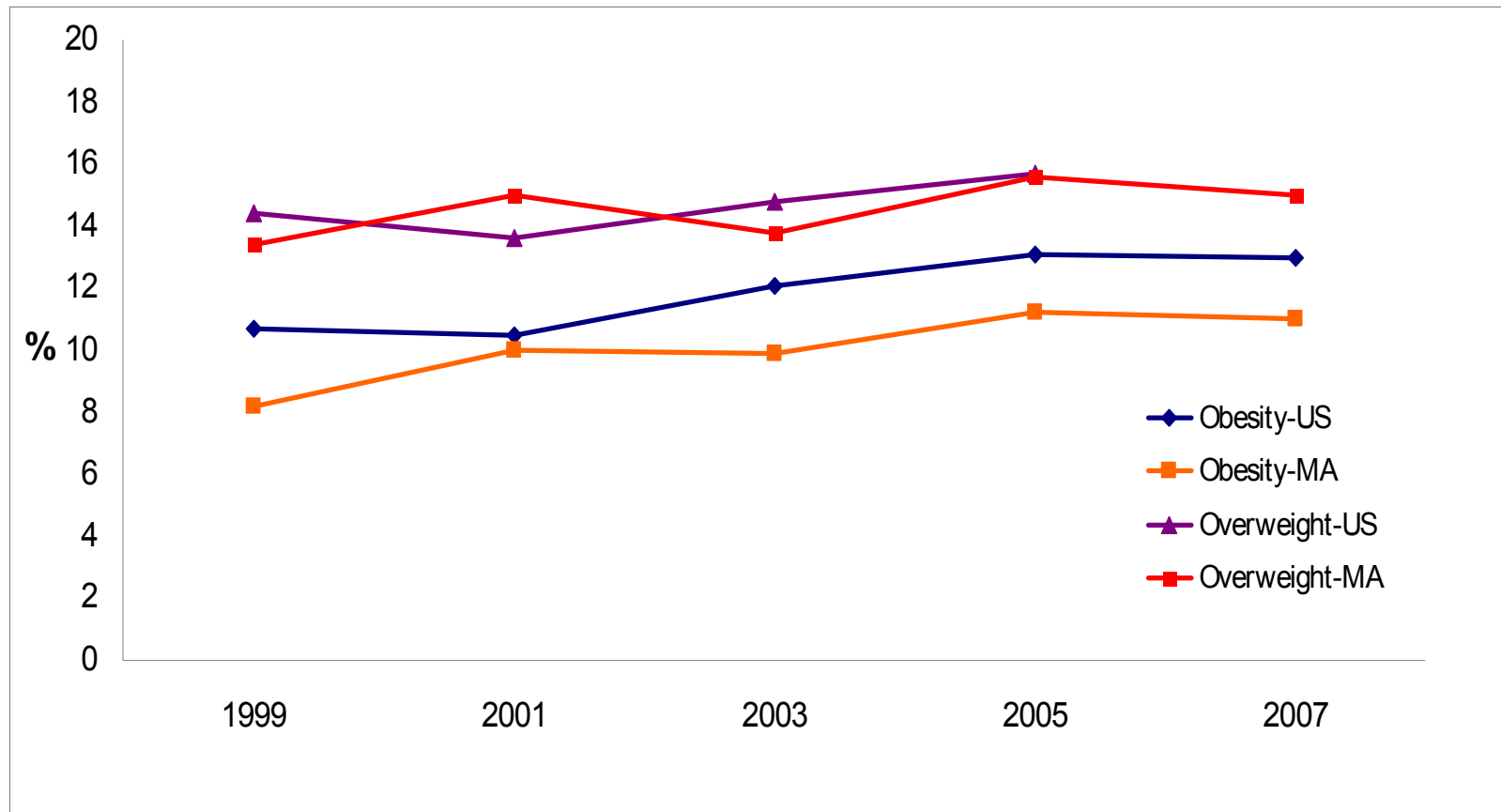
# What I Am Going to Talk About.....

- 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”

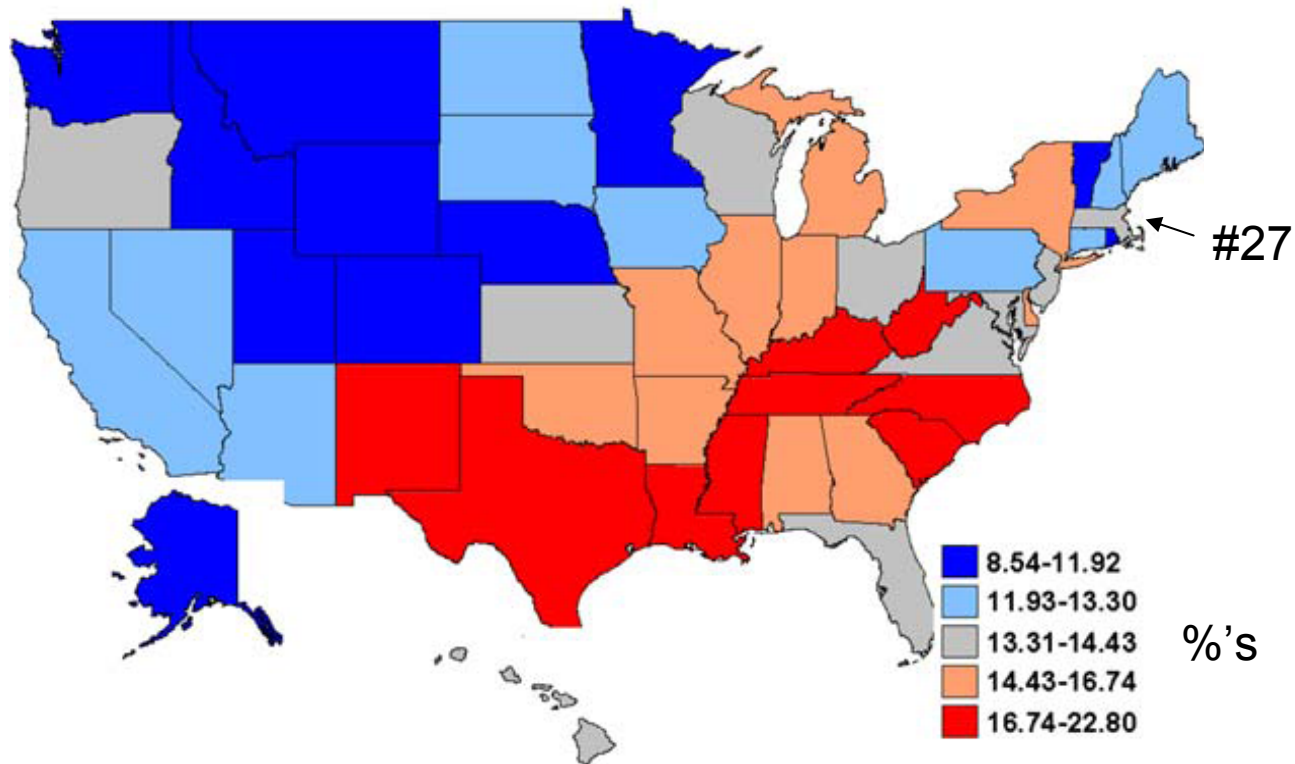


# Childhood Obesity Prevalence & Trends

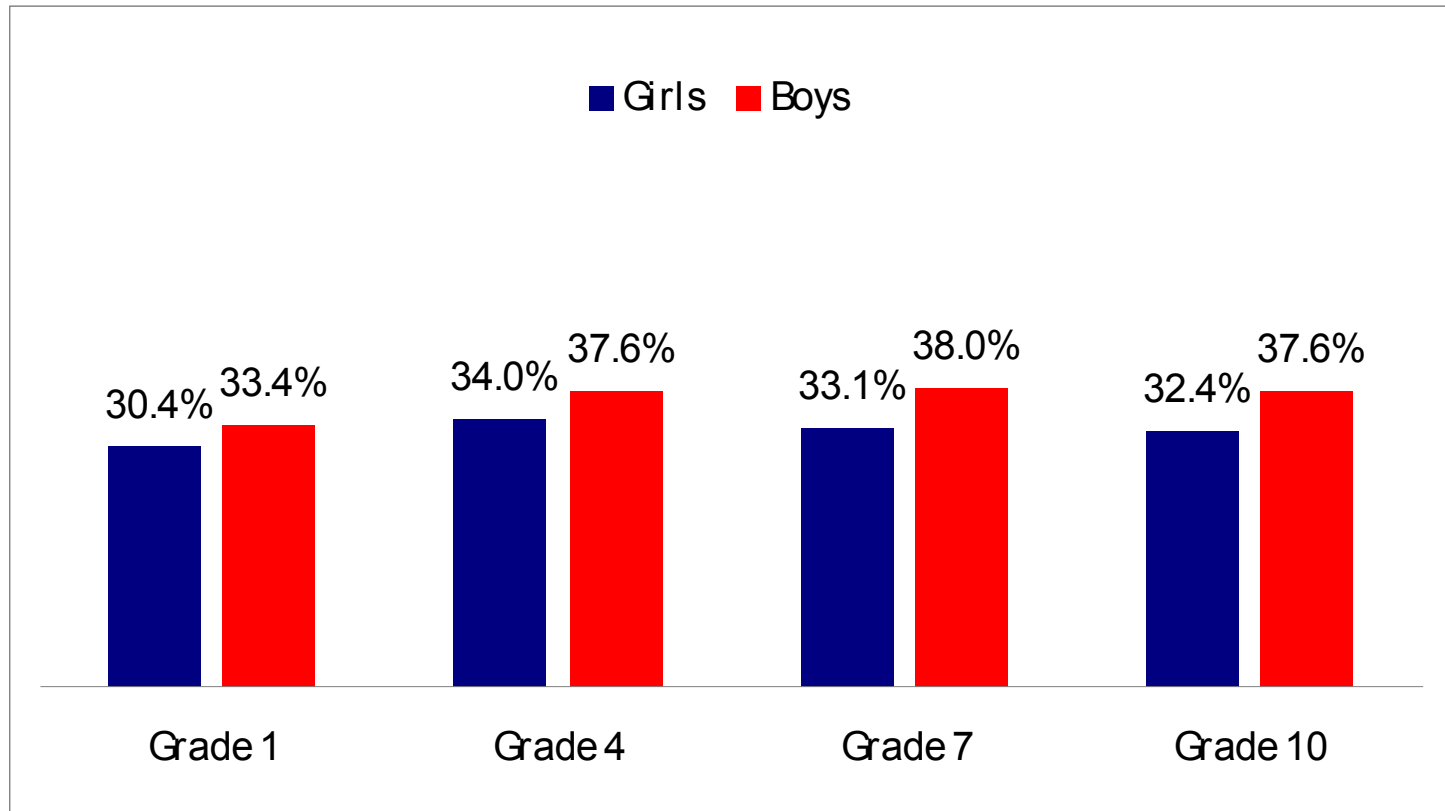
# 1999-2007 Trends for Adolescent Overweight and Obesity in Massachusetts and the U.S



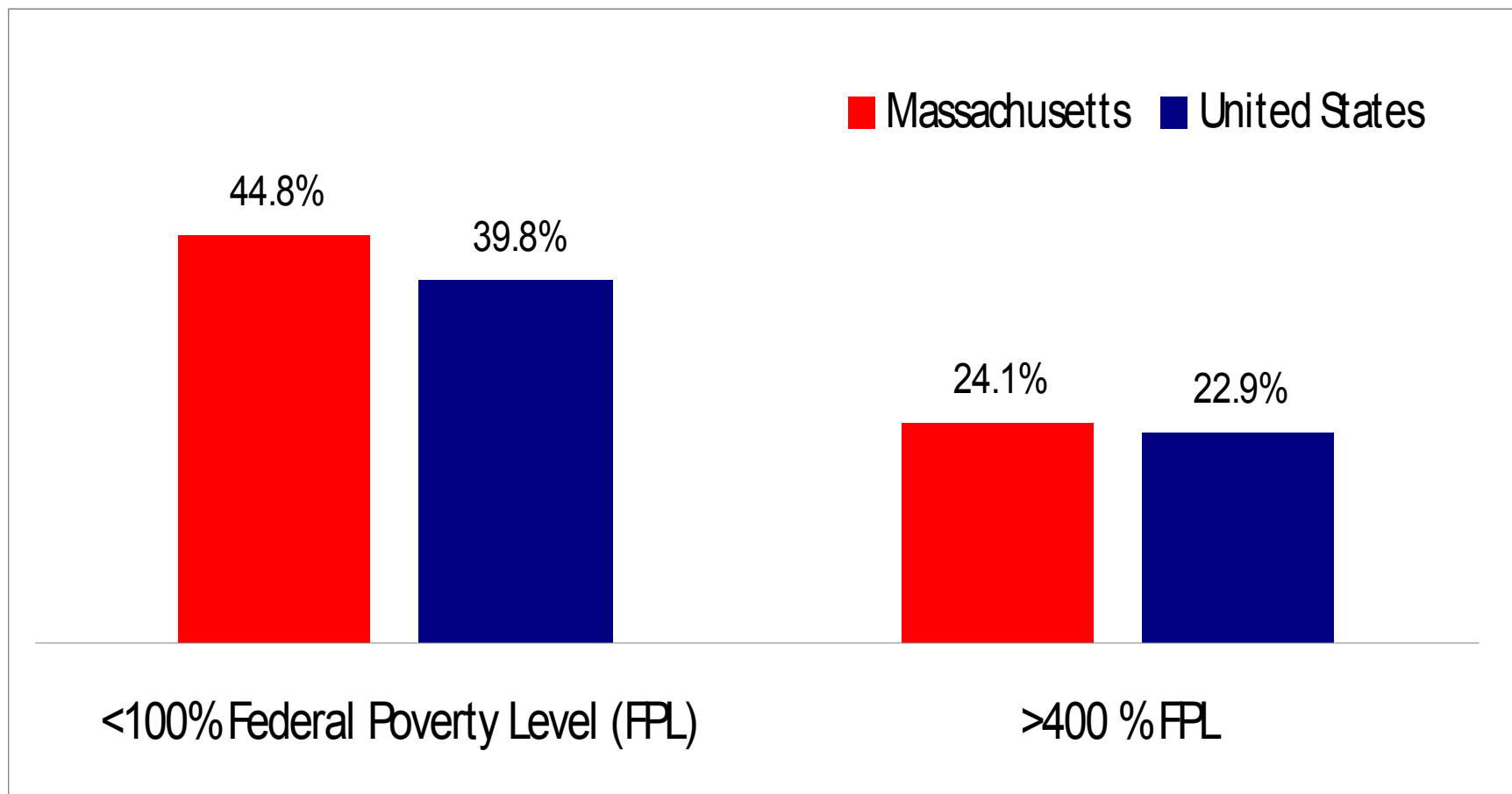
# Obesity Prevalence by State in US Children Aged 10-17 yrs



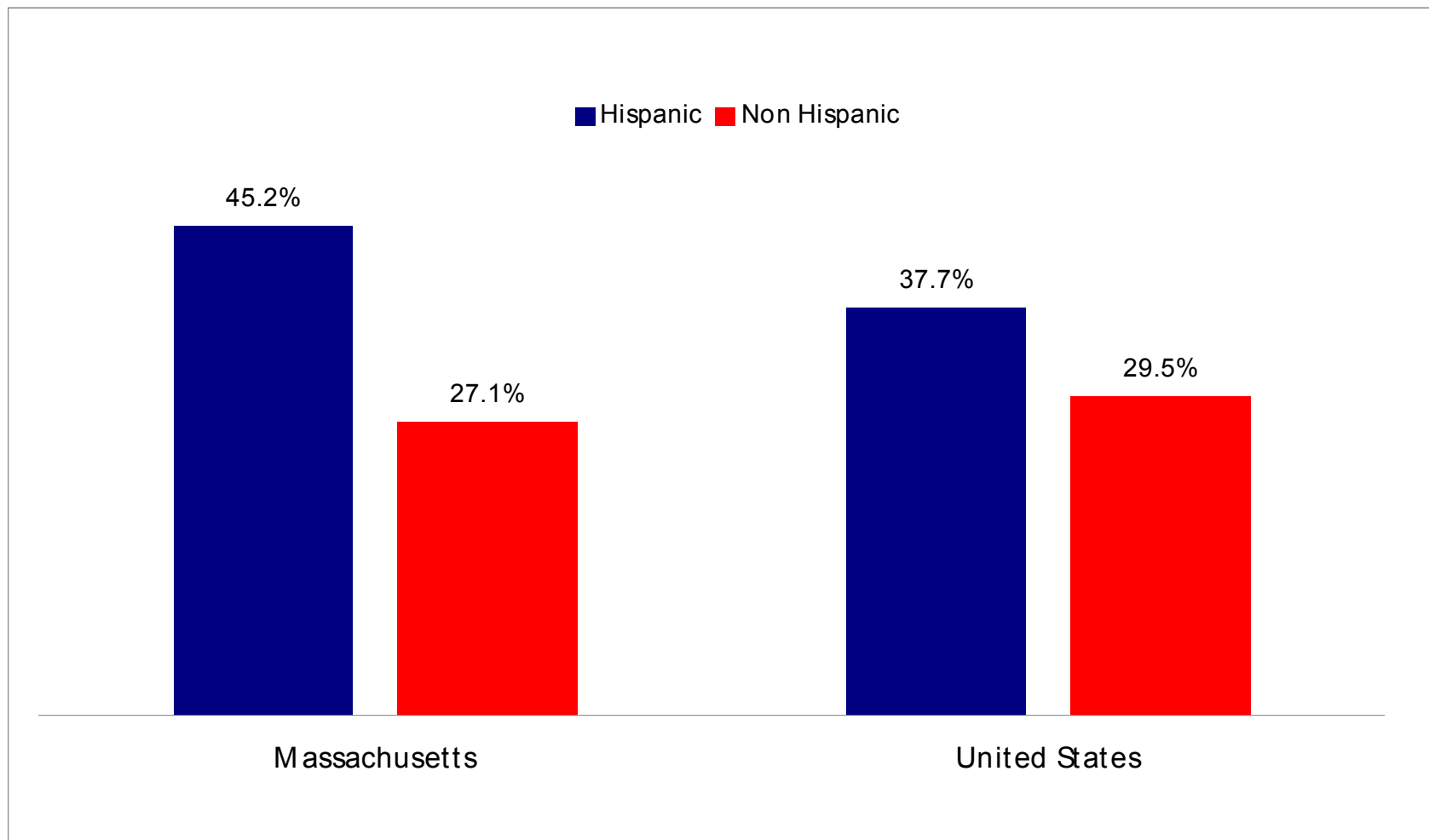
# Prevalence of Overweight by Grade & Gender in MA



# % Overweight or Obese Children by Family Income



# % of Overweight or Obese Hispanic Children

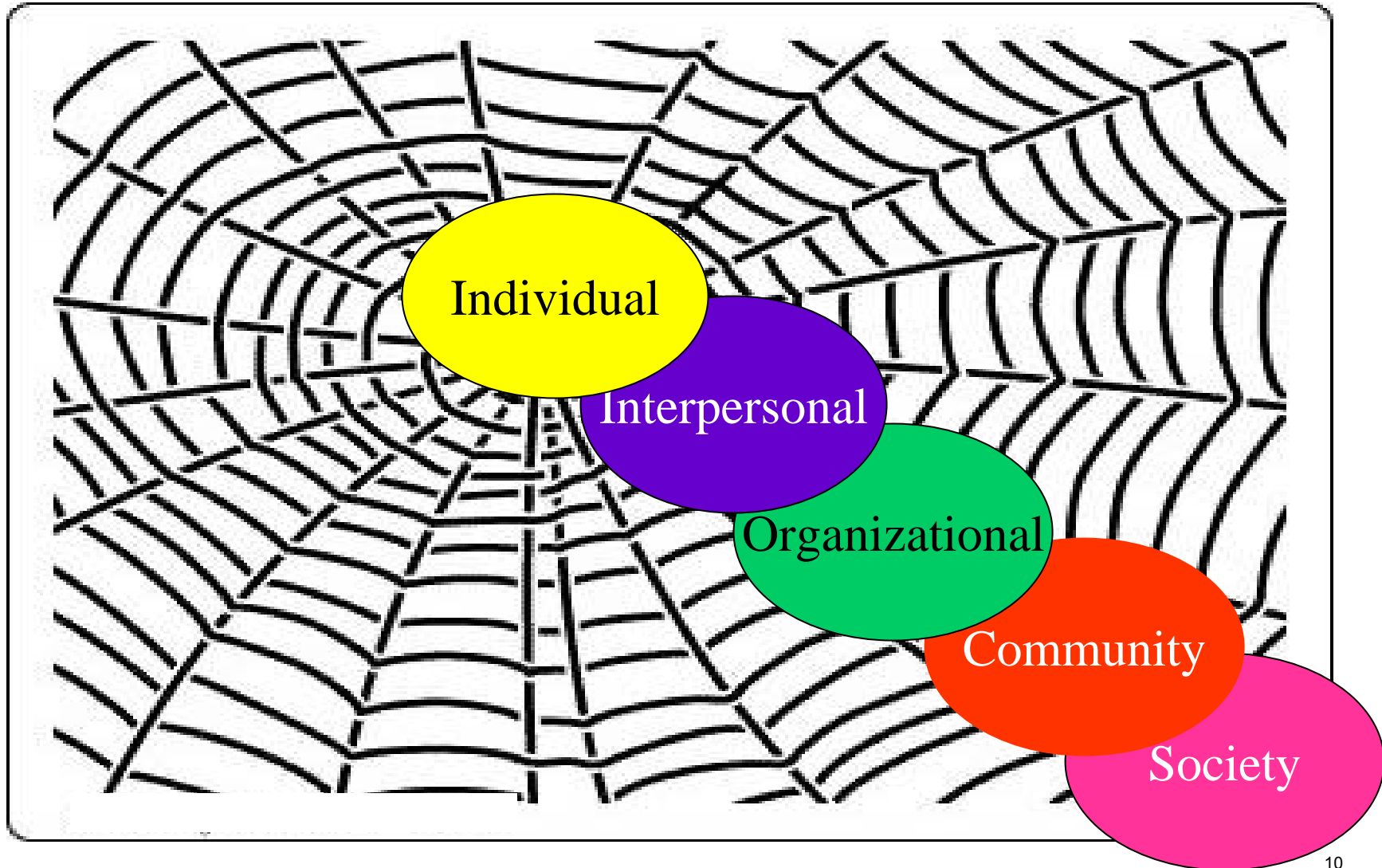







# Causes of Childhood Obesity

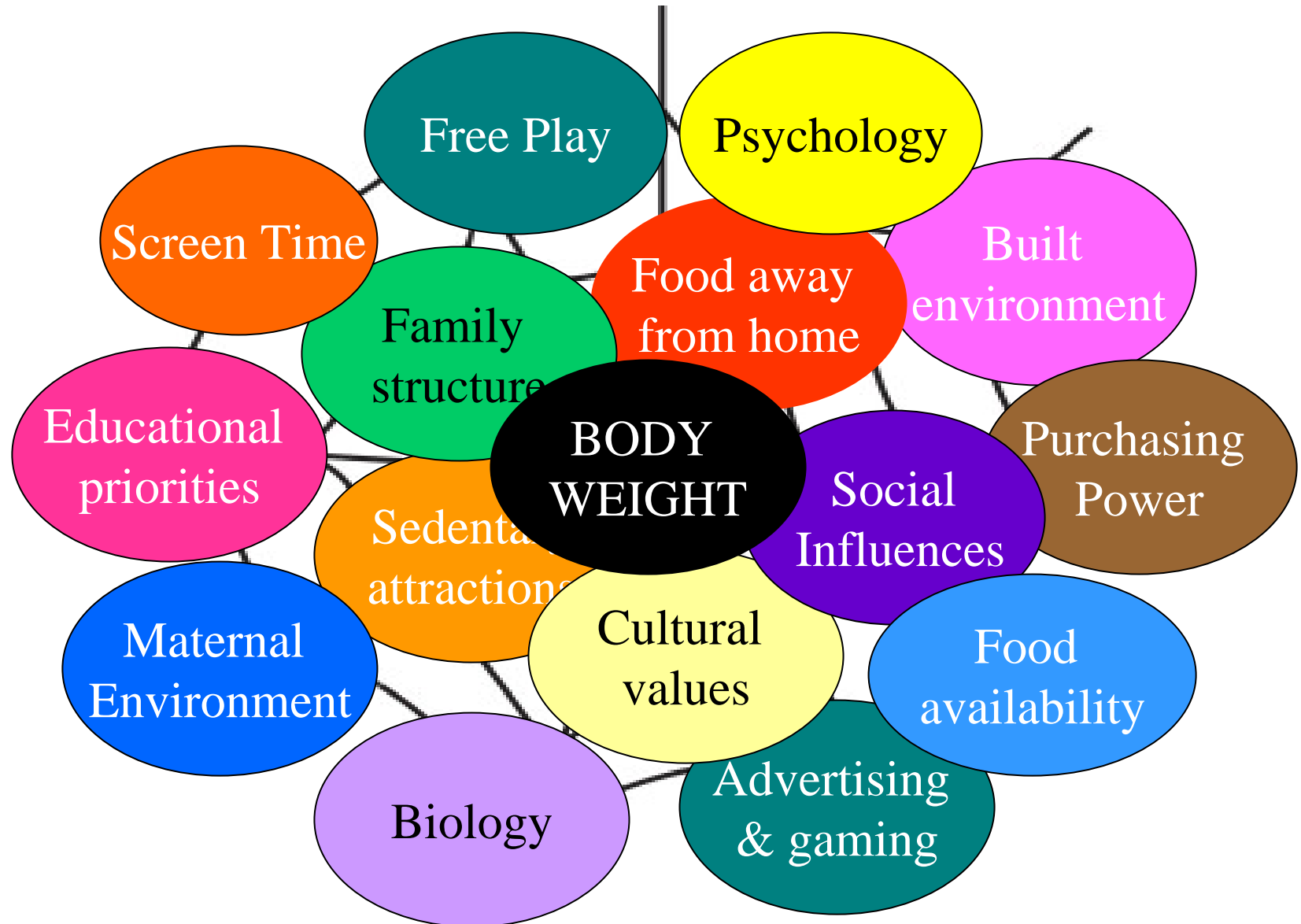
# Social Ecological Model of Obesity





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

# Determinants of Obesity



# 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

# Closing the Energy “Gap”

- ↓ 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)

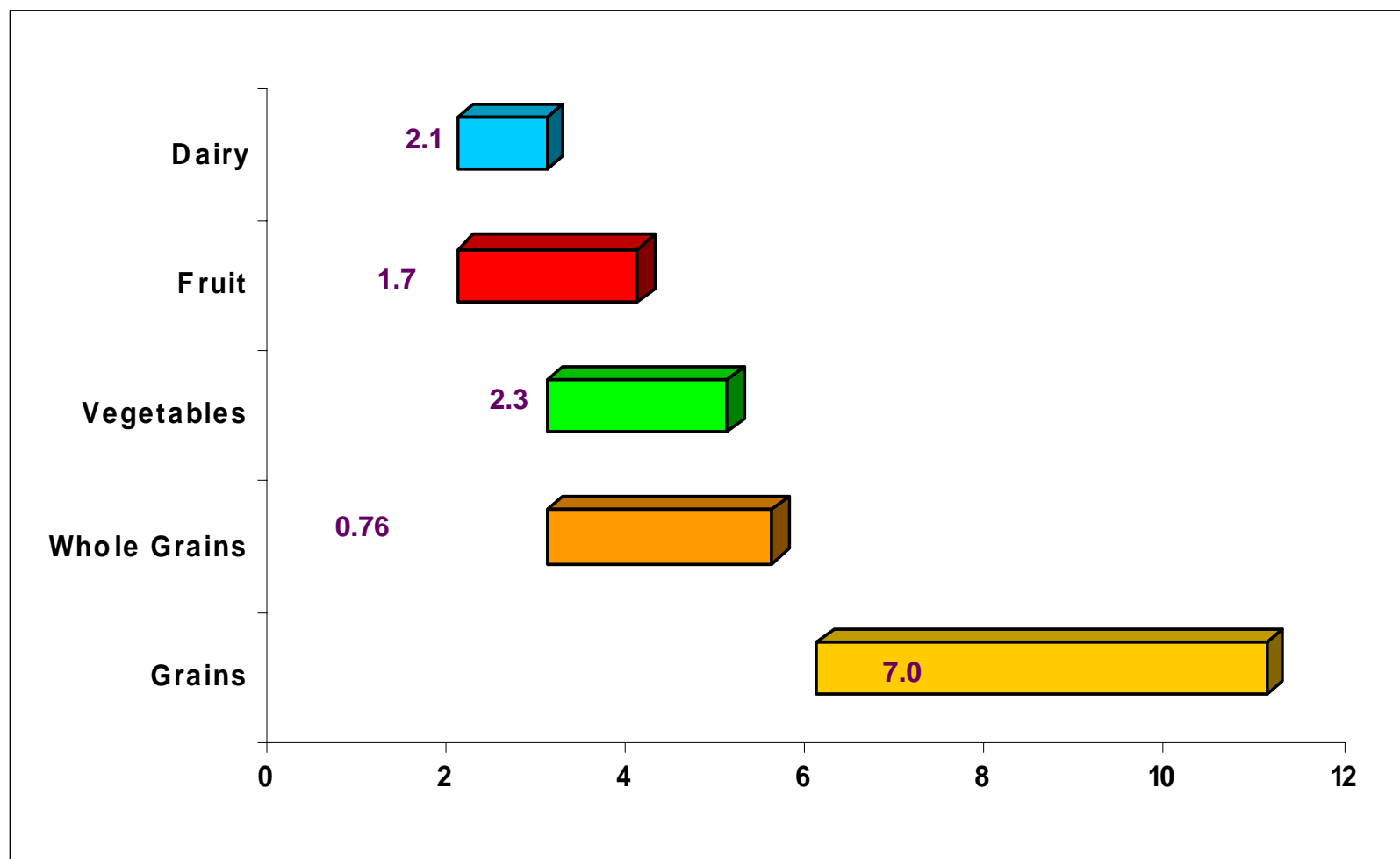
Removed sodas from Boston high schools

– ↓ consumption = 34 kcal/day



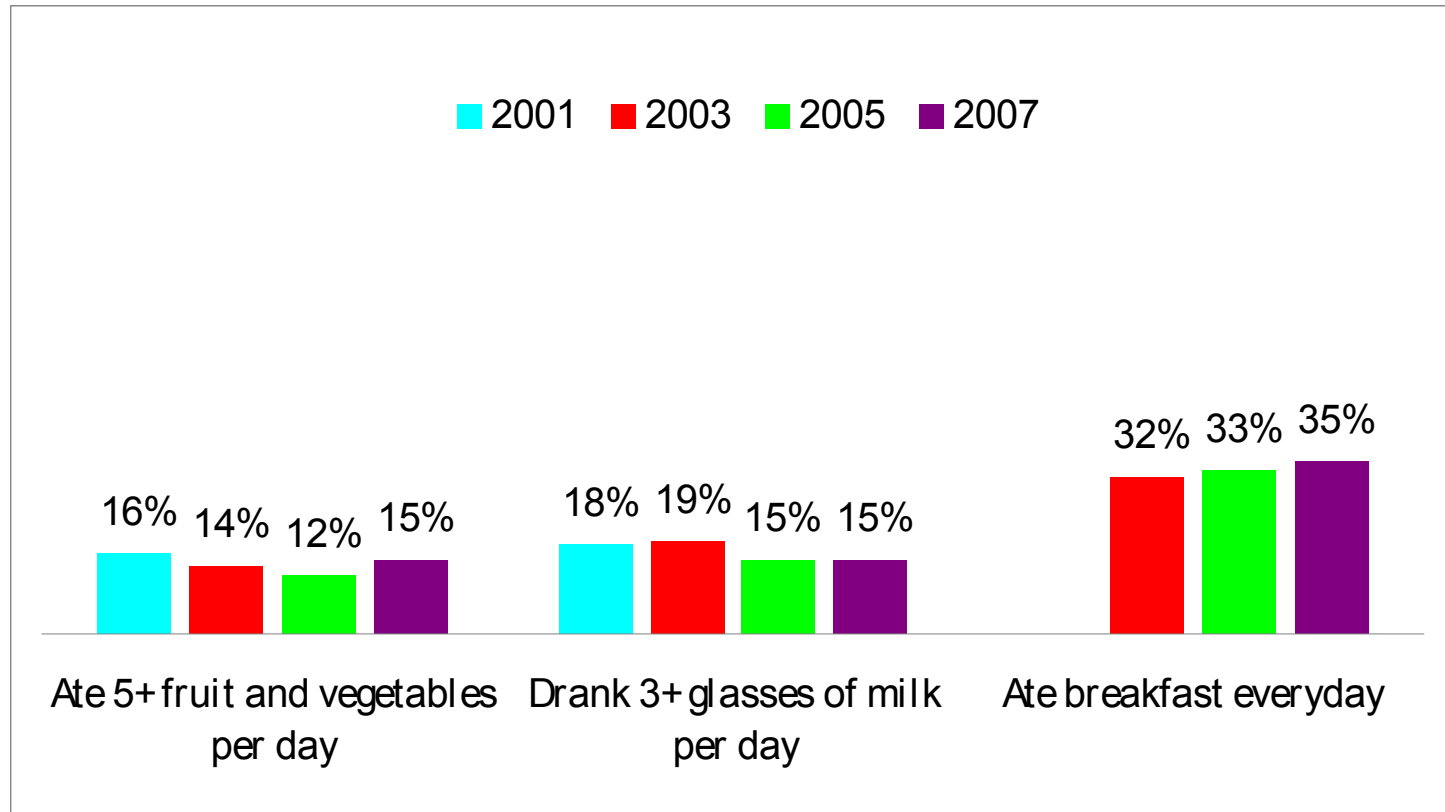
# Poor Nutrition

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

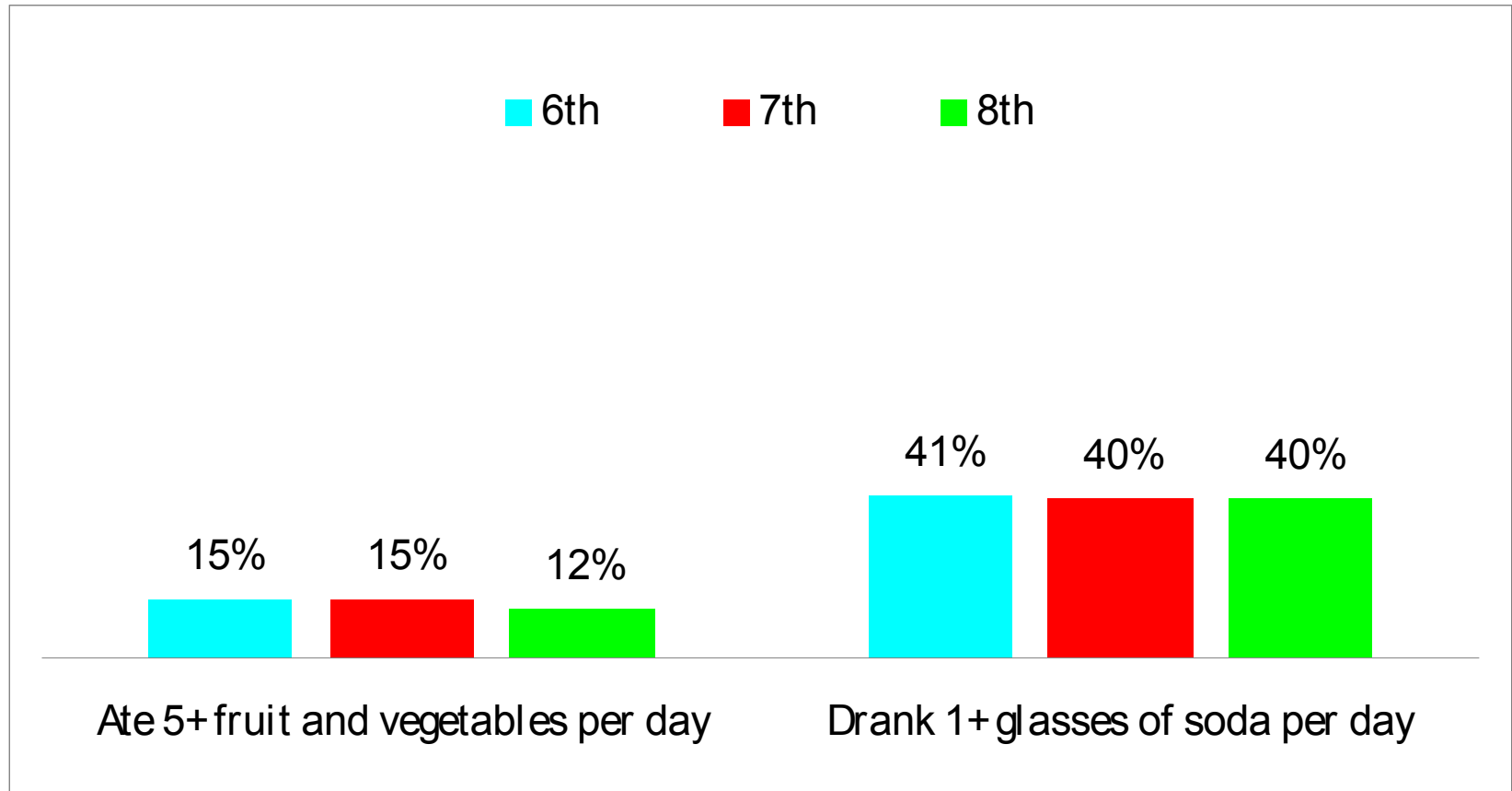




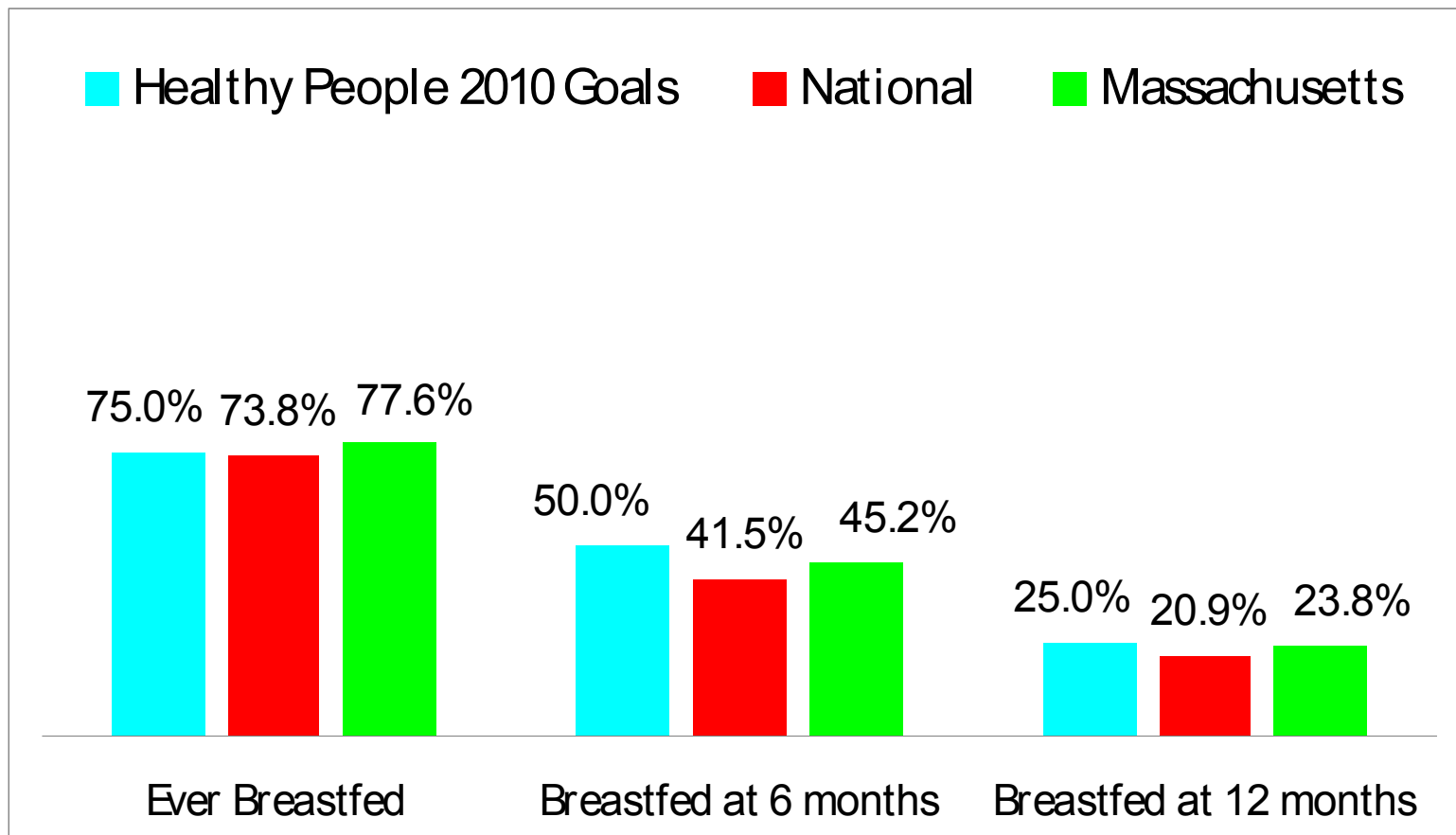
# Food Consumption of Massachusetts High School Students



# Food Consumption of Massachusetts Middle School Students



# Comparison of Breastfeeding Rates

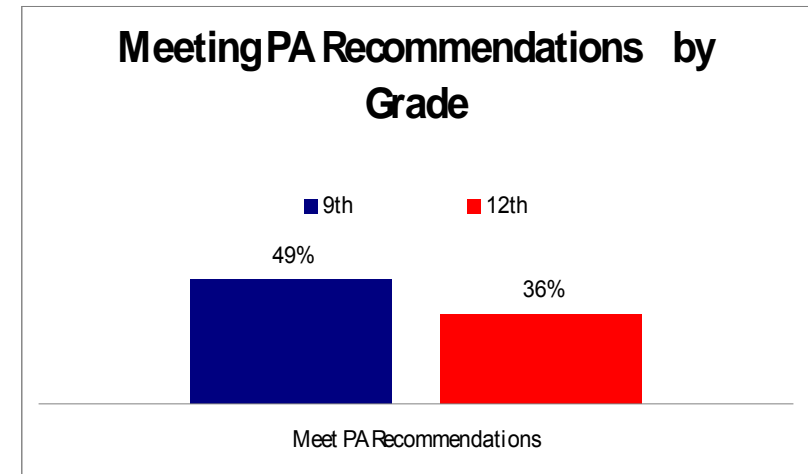
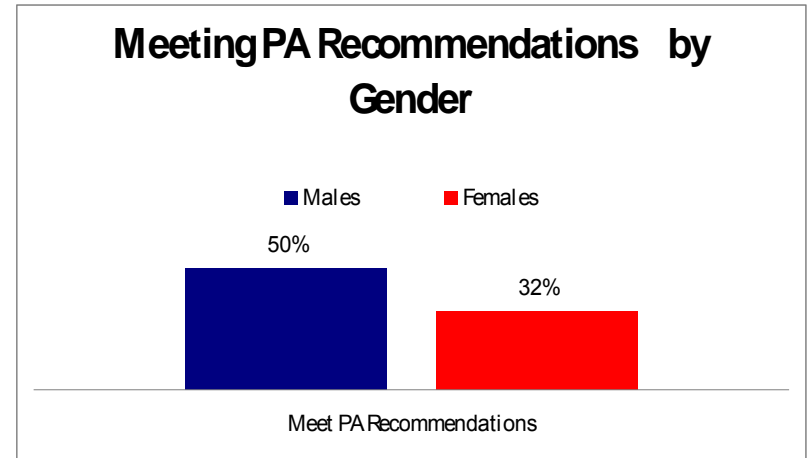




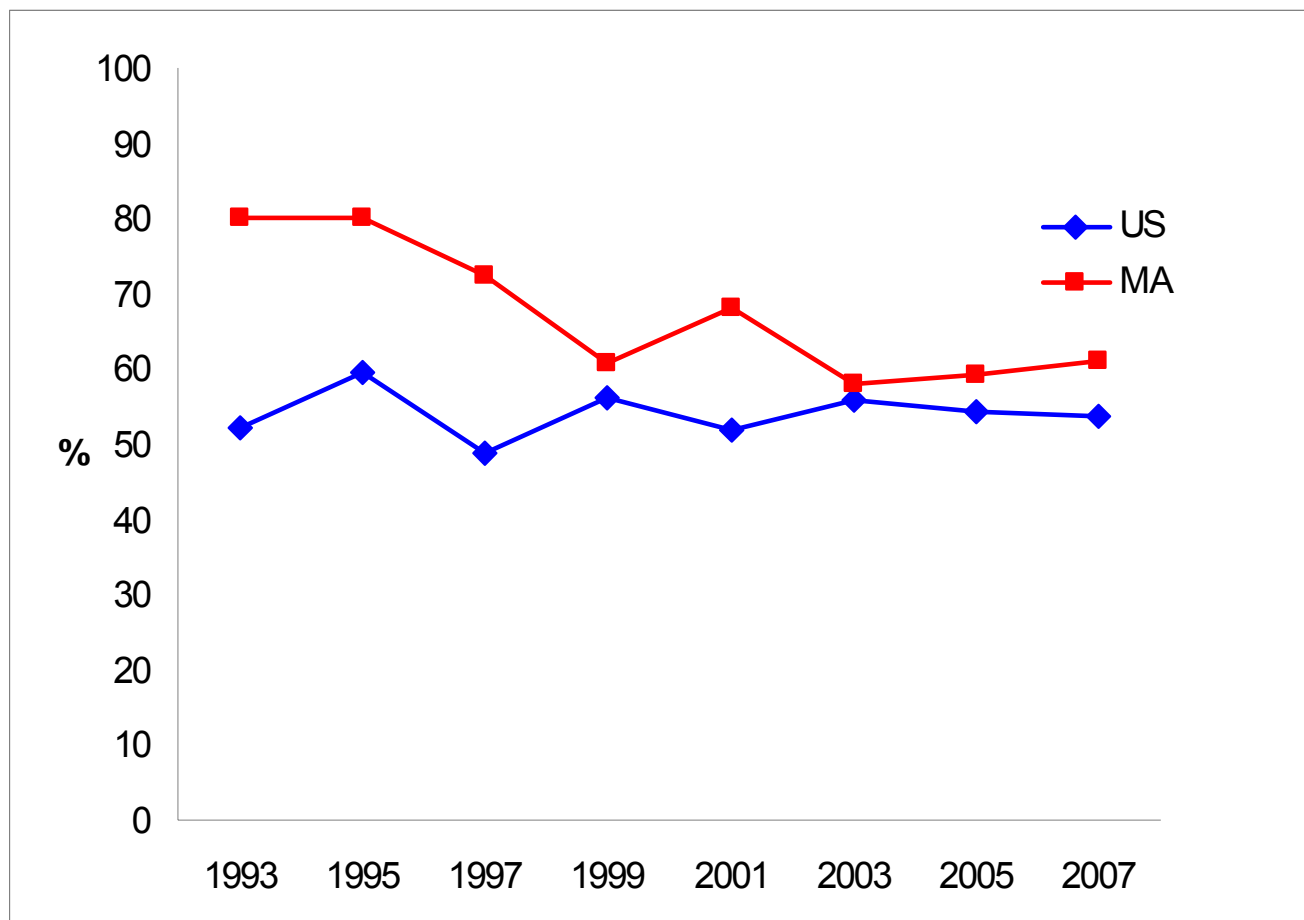
# Lack of Physical Activity

# 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



# 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
- ↑ rates of diabetes and cardiovascular disease
- Sleeping problems, social stigmas, teasing

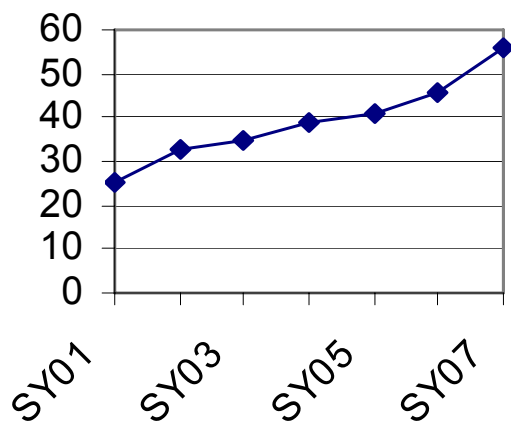
## Productivity

- Greater levels of school absenteeism → *decreased academic performance?*

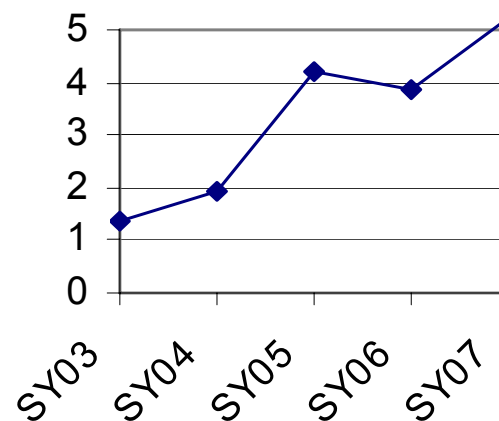
# MA Childhood Diabetes Prevalence

Procedures Per  
1,000 Students Per  
Month

### Blood Glucose Testing



### Insulin Pump Care

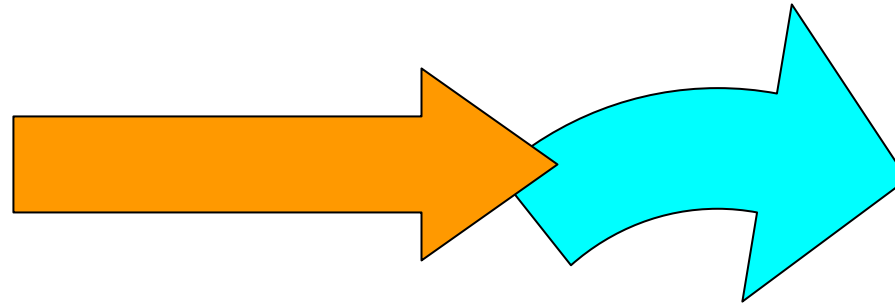


# Costs

- 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

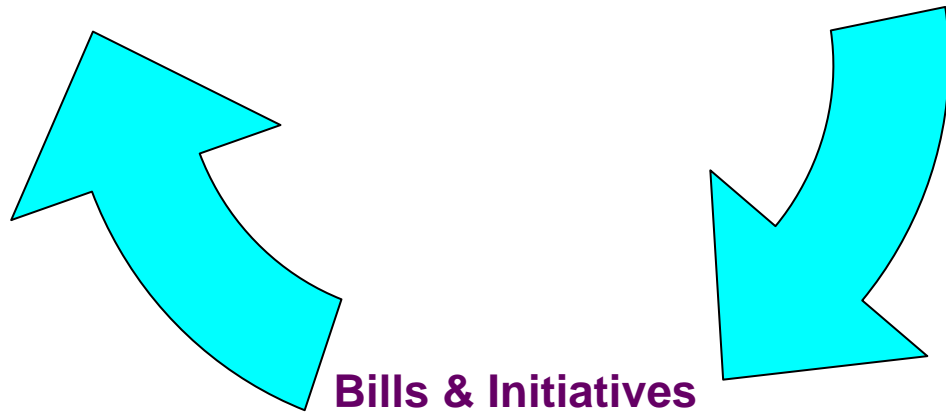
# Integrating Science and Policy

**New  
Scientific  
Evidence**



**Enacted Policy  
Combating the Obesity Epidemic**

**Activism to  
Stop the Epidemic**



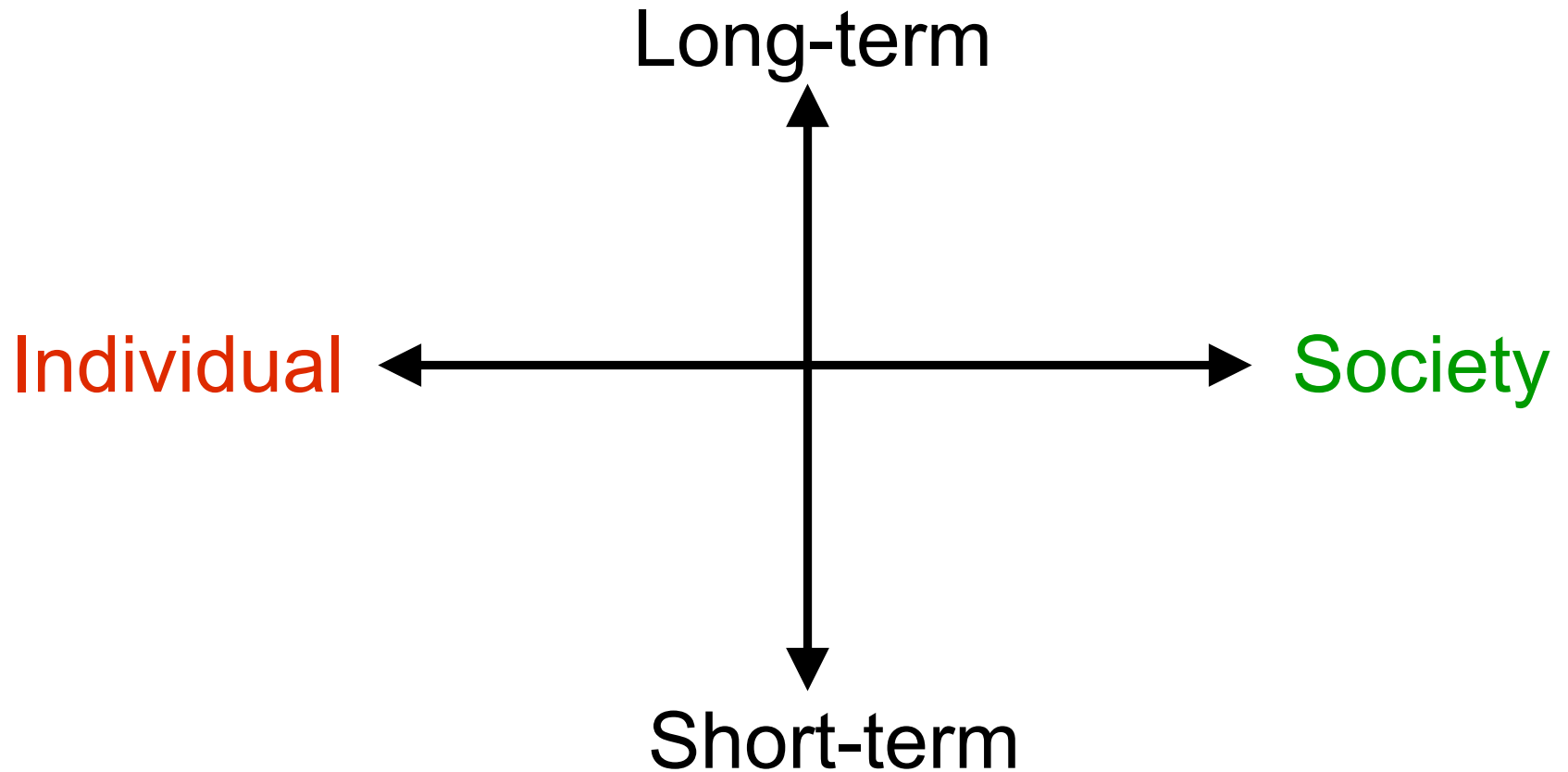
**Bills & Initiatives  
Proposed**

# Policy: Individual vs. Society



# POLICY SOLUTIONS

## Individual vs. 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	

# Most Promising *Nutrition* Policy Options

1. ↑ 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
5. ↑ Promotion and public acceptance of breast-feeding

# 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
  - ↑ healthy foods in the home
  - ↓ screen time
  - Promote safe, outdoor play

# Need For A Coordinated Strategy





# Acknowledgements

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*Thank You*

