

# Childhood Obesity: A Psychologist's View of the Way Forward



<http://www.healthjockey.com/2010/04/07/world-health-day-childhood-obesity-is-more-serious-than-thought/>

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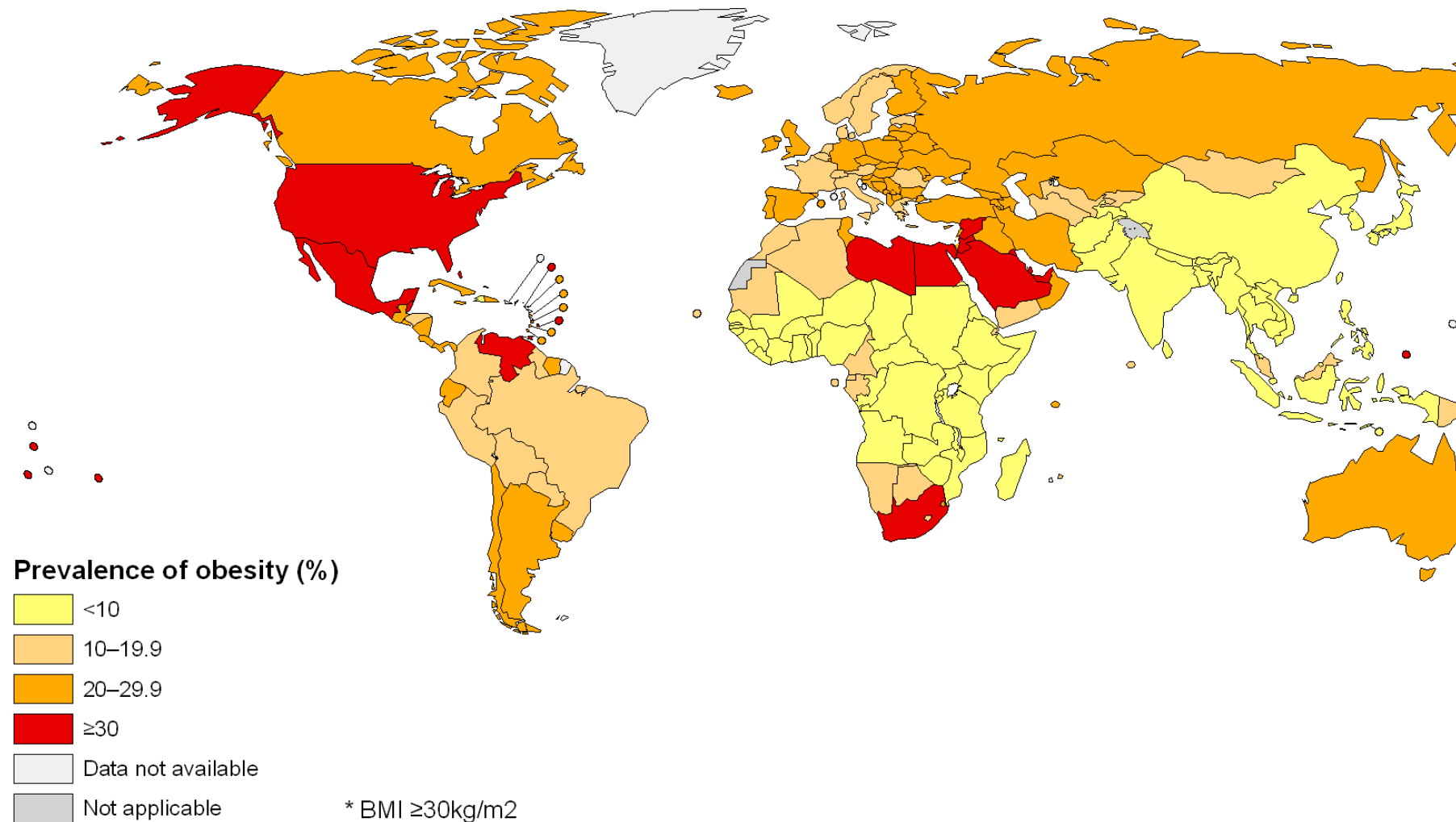


# Presentation Overview

- ⦿ Epidemiology of childhood obesity
- ⦿ Intergenerational escalation of childhood obesity
- ⦿ Consequences of childhood obesity
- ⦿ Factors underlying the childhood obesity epidemic: Lessons learned from the US
- ⦿ Health provider response: Lessons learned from the US
- ⦿ Thoughts on the way forward



# Prevalence of obesity\*, ages 20+, age standardized Both sexes, 2008



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization  
Map Production: Public Health Information  
and Geographic Information Systems (GIS)  
World Health Organization



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# Obesity: U.S. Leads the World

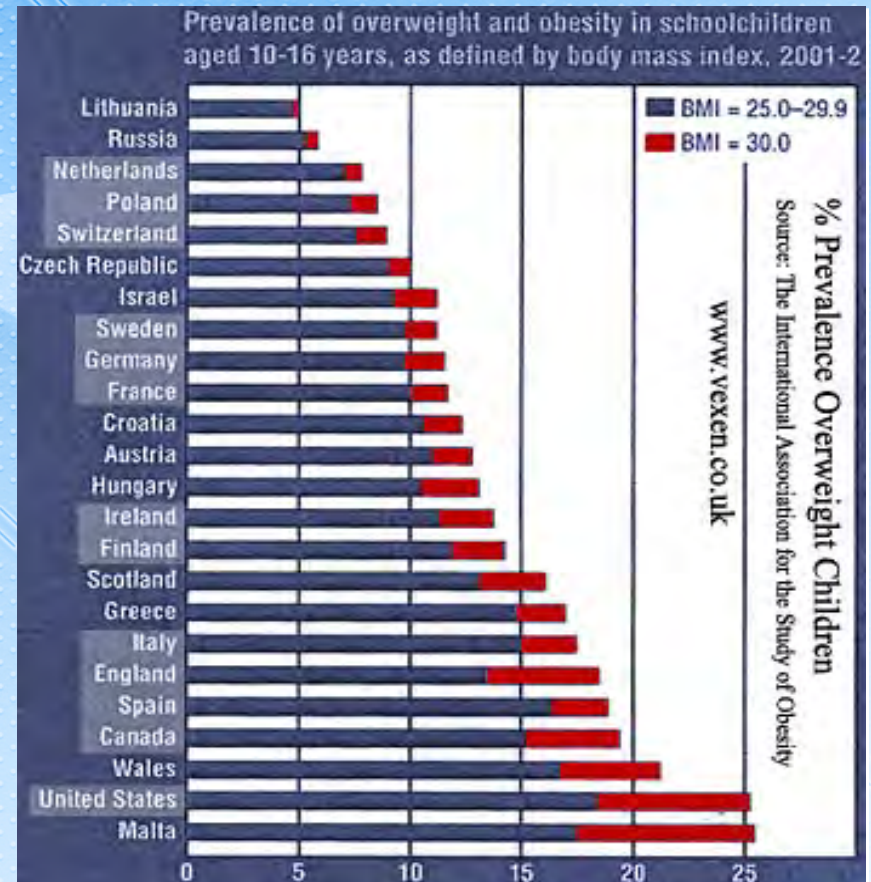
## Adult Obesity



**Figure 1.** Percentage of obese and overweight population by country.

Source: OECD Health Statistics, 2004.

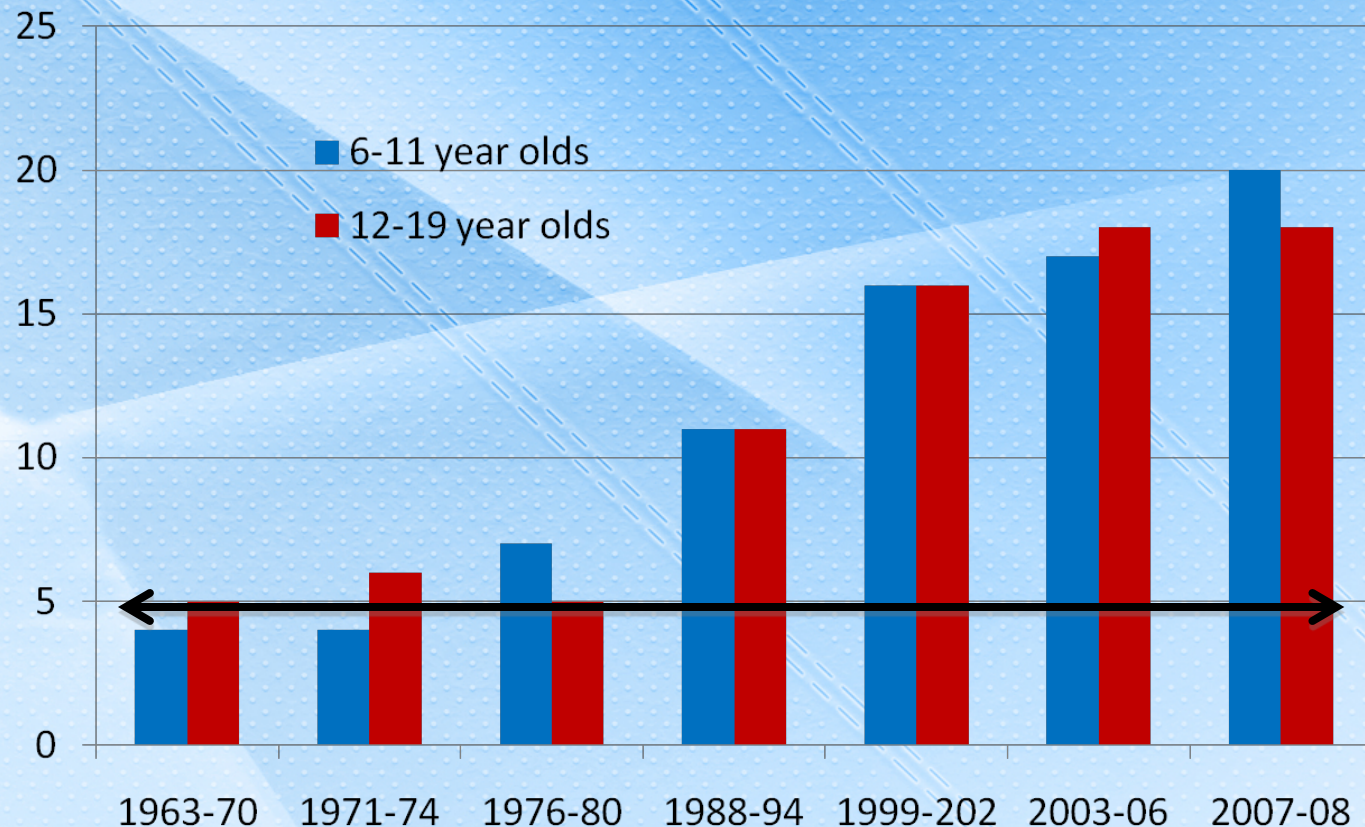
## Childhood Obesity



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# Obesity Trends in U.S. Children



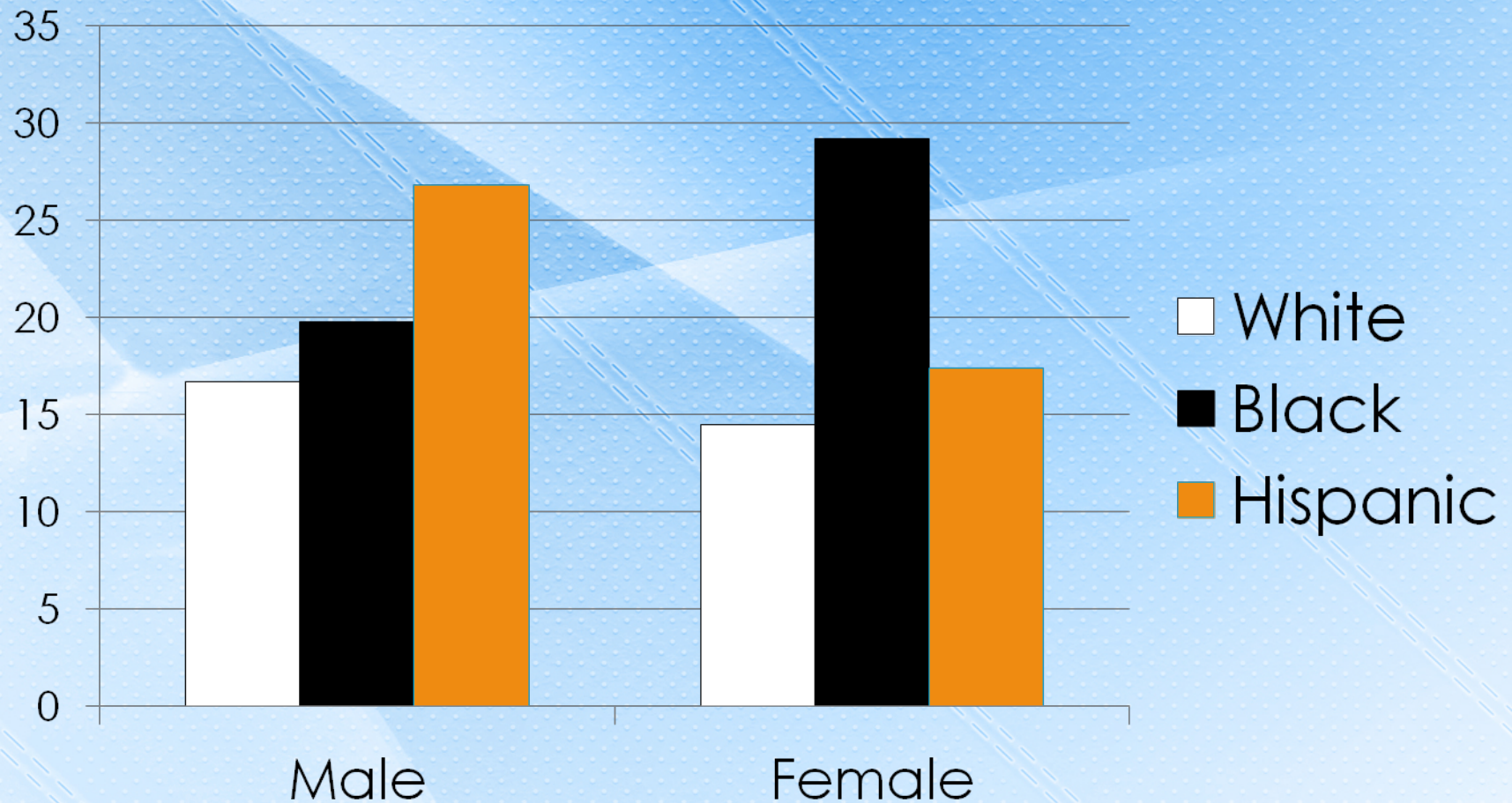
Source: C. Ogden & M. Carroll. (2010). *Prevalence of Obesity Among Children and Adolescents: United States, Trends 1963-1965 Through 2007-2008* [Division of Health and Nutrition Examination Surveys]. CDC:  
[http://www.cdc.gov/nchs/data/hestat/obesity\\_child\\_07\\_08/obesity\\_child\\_07\\_08.htm](http://www.cdc.gov/nchs/data/hestat/obesity_child_07_08/obesity_child_07_08.htm)







# U.S. Adolescent Obesity: Gender and Ethnicity



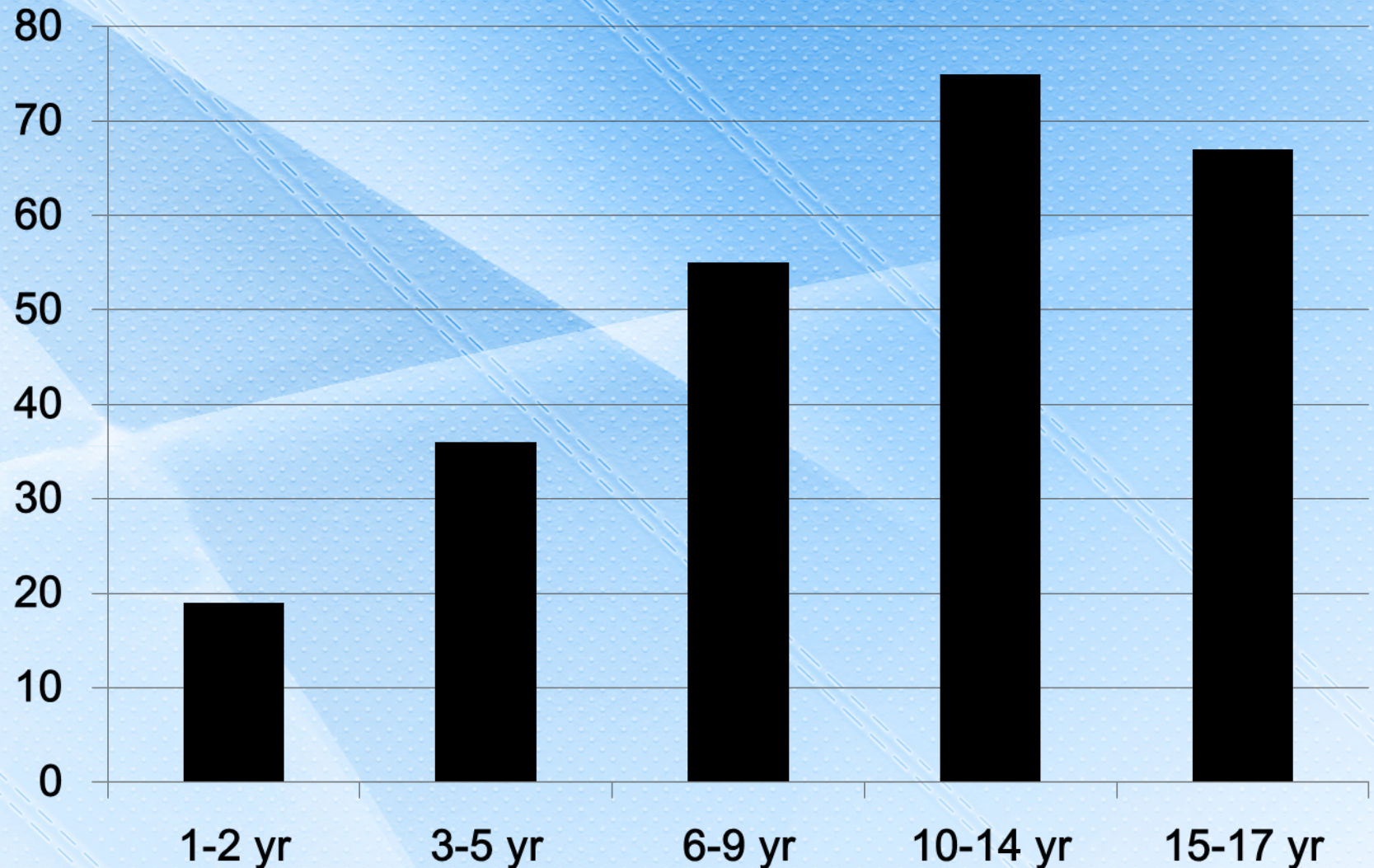
NHANES 2007-2008



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# Childhood and Adult Obesity are Linked: Percent of Obese Children Who Become Obese Adults by Age

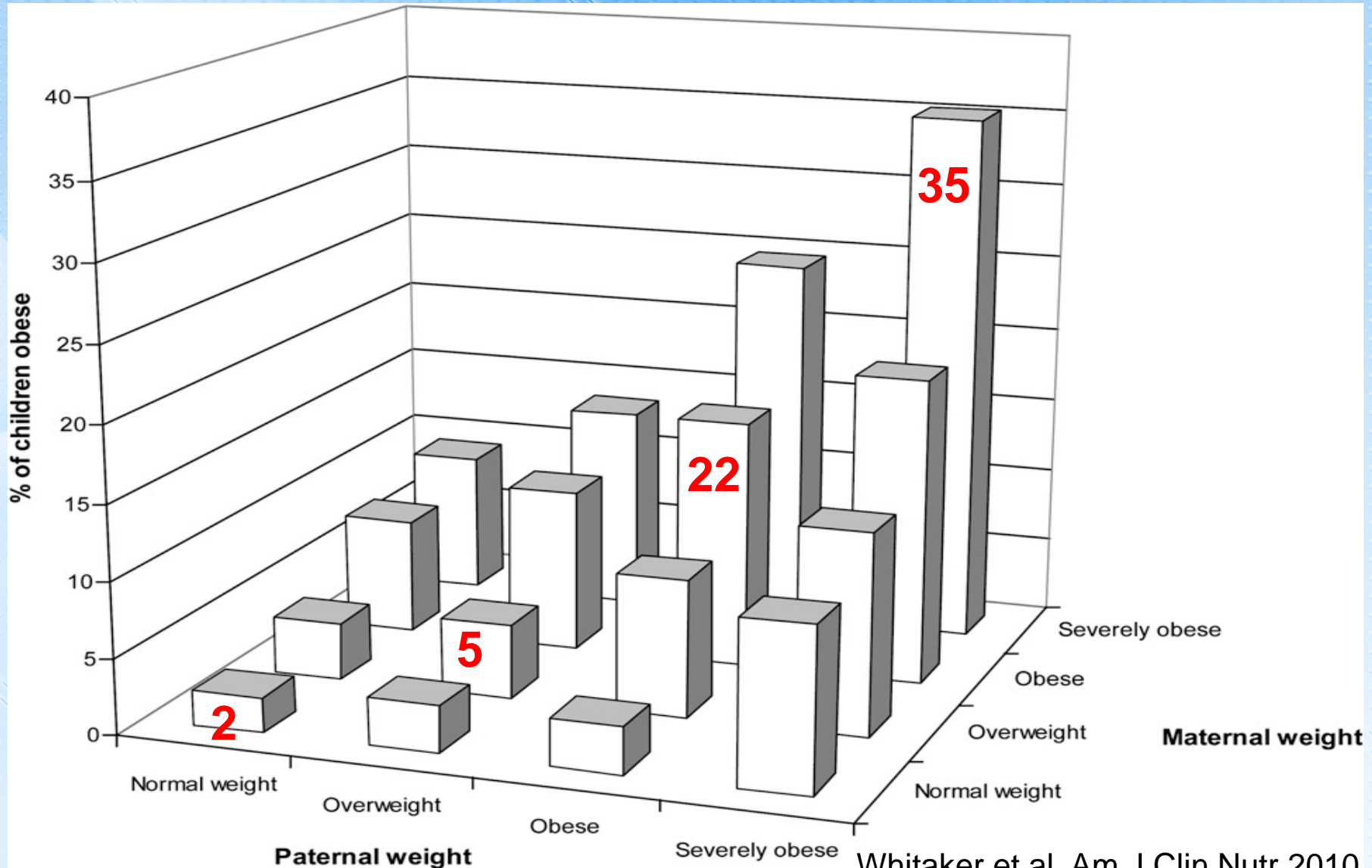


Whitaker et al, NEJM, 1997



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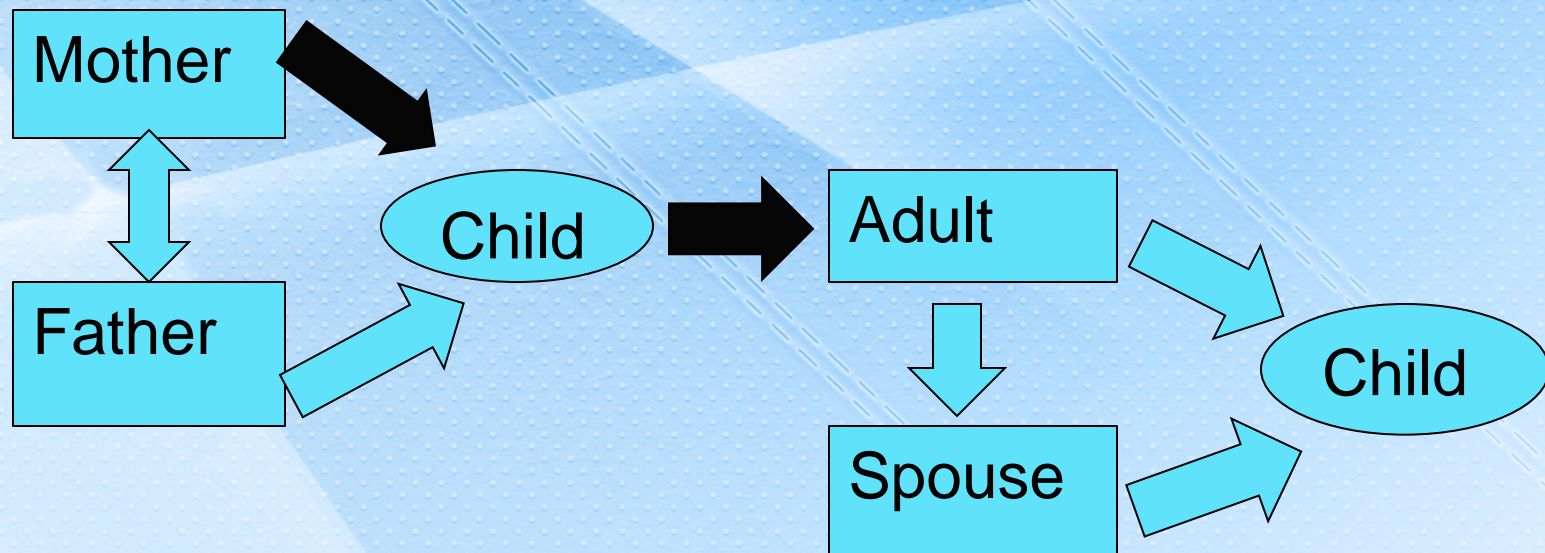
# Childhood and Adult Obesity are Linked: Percent of Obese Children by Parent Weight Status



Whitaker et al, Am J Clin Nutr 2010



# Intergenerational Escalation of Obesity



Whitaker et al NEJM 1997

Whitaker et al Am J Clin Nutrition 2010

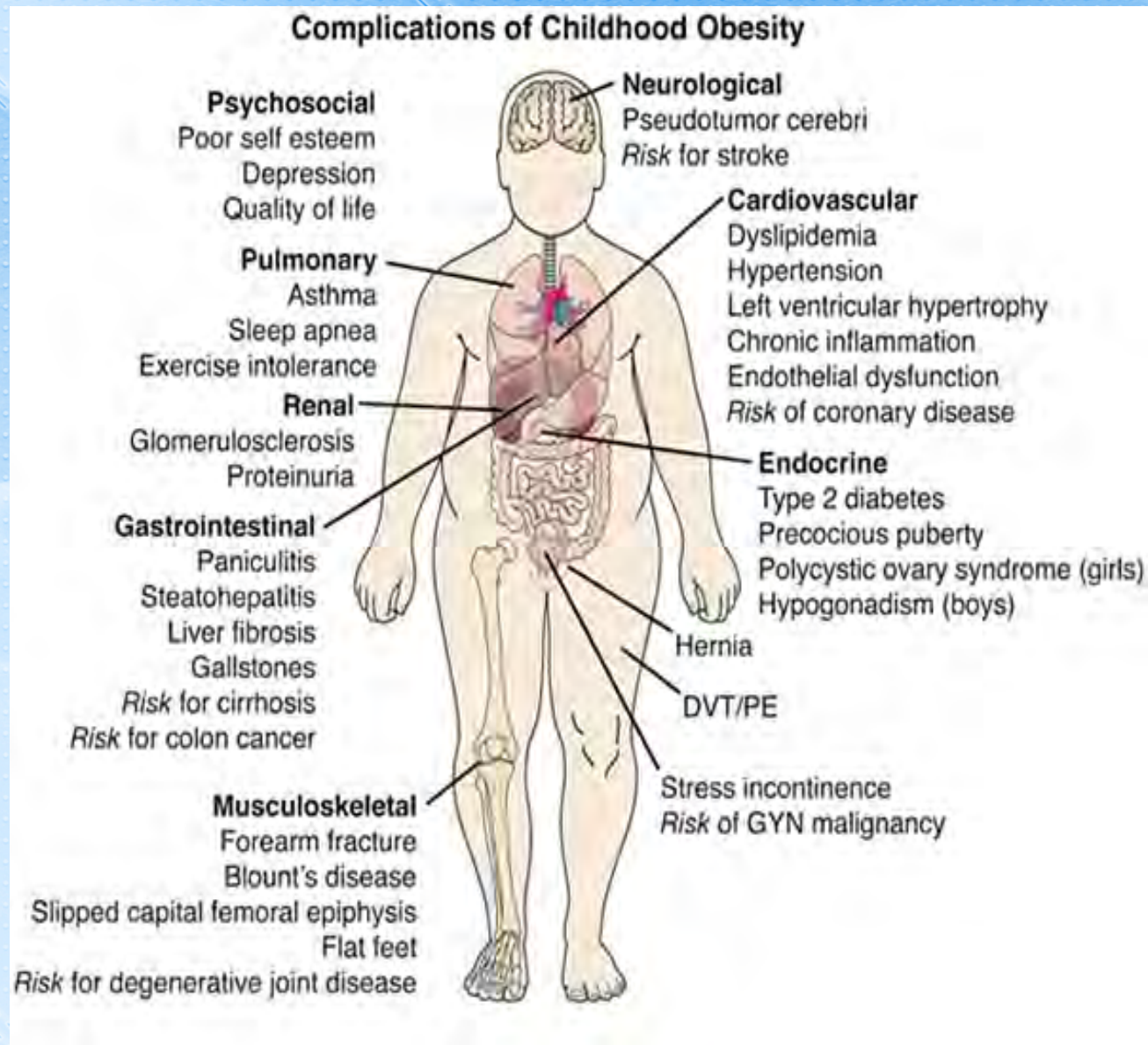
Murrin et al BMC Public Health 2012



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# Health Consequences of Obesity in Childhood





# Health Consequences of Obesity

- ◎ 65% of the world's population live in countries where overweight and obesity kills more people than underweight
- ◎ Obesity is the fifth leading cause of death worldwide
- ◎ Obesity account for
  - 44% of the diabetes burden
  - 23% of the ischaemic heart disease burden
  - 7% - 41% of certain cancer burdens

<http://www.who.int/mediacentre/factsheets/fs311/en/>



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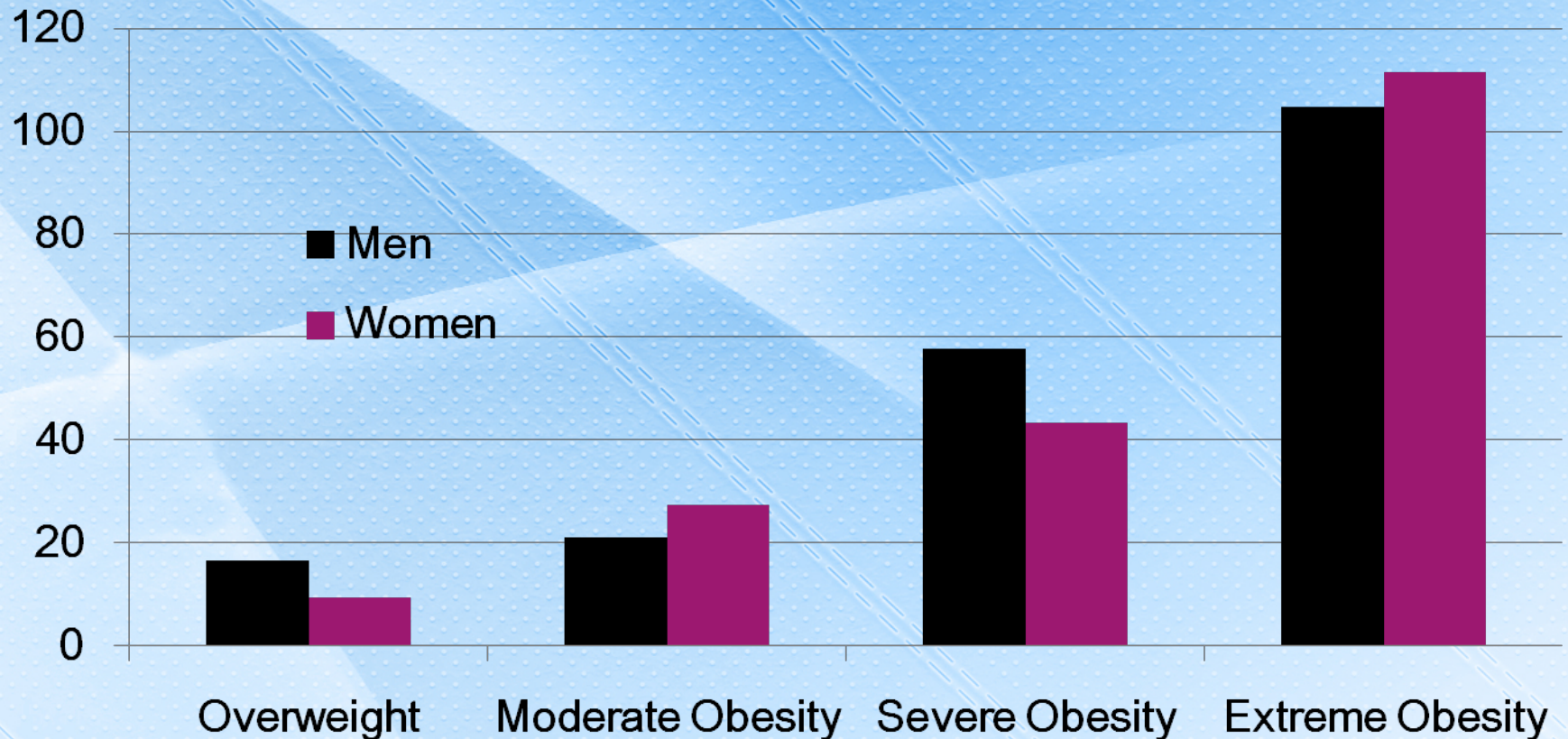
# Health Consequences of Obesity in the U.S.

- ⊙ Obesity is the second leading cause of death and is expected to become the leading cause
- ⊙ Will result in a decreased life expectancy for first time in a century
- ⊙ Is causing a diabetes epidemic
  - ⊙ 33% of boys & 39% of girls born in 2000 will develop diabetes in their lifetime
  - ⊙ 50% of African-American girls born in 2000 will develop diabetes in their lifetime
- ⊙ Is expected to bankrupt the U.S. health care system



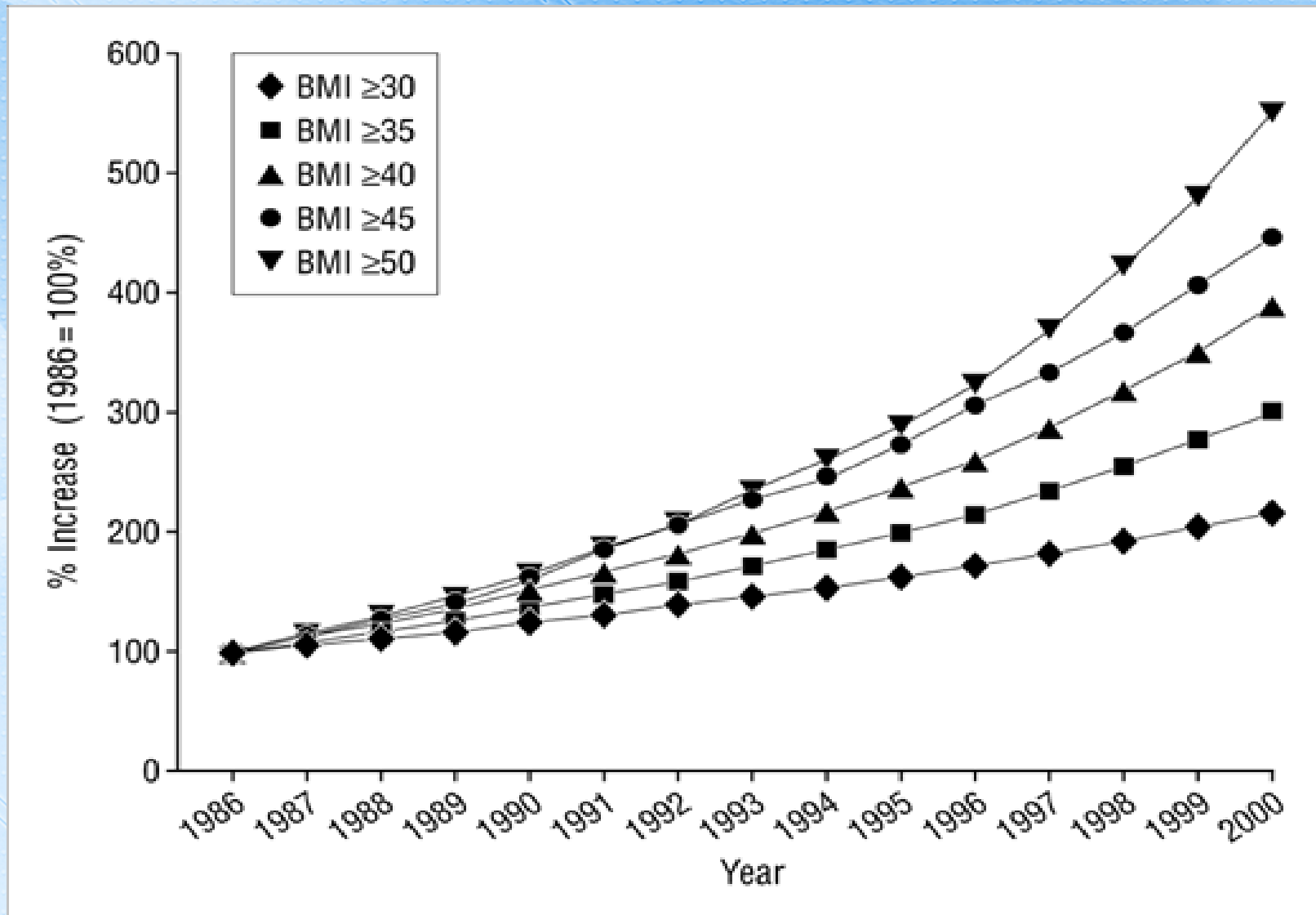


# Percent Above Normal Weight Individuals' Annual US Health Care Costs by Obesity Status and Gender



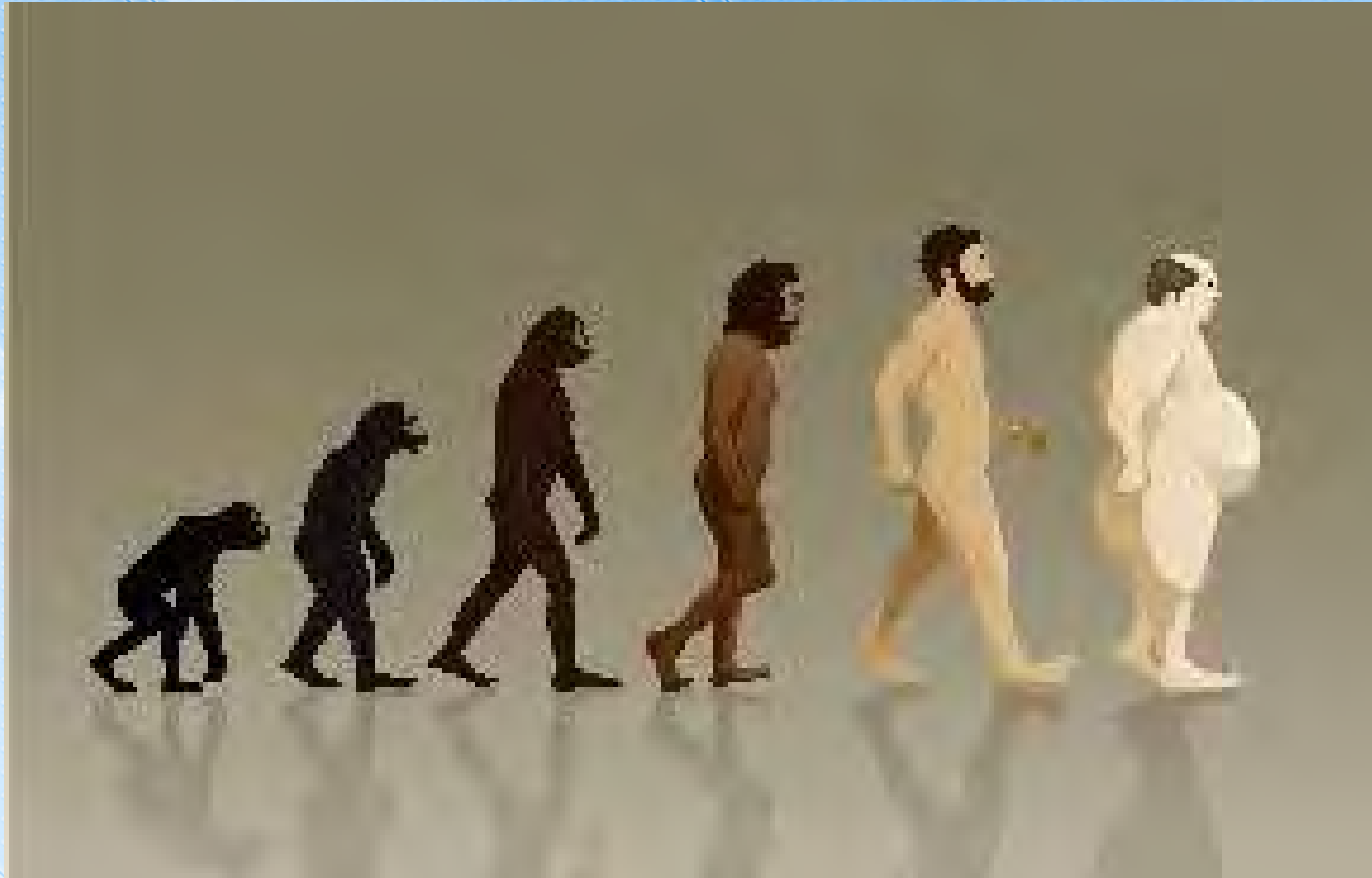


# Severe Obesity in the U.S. is Escalating



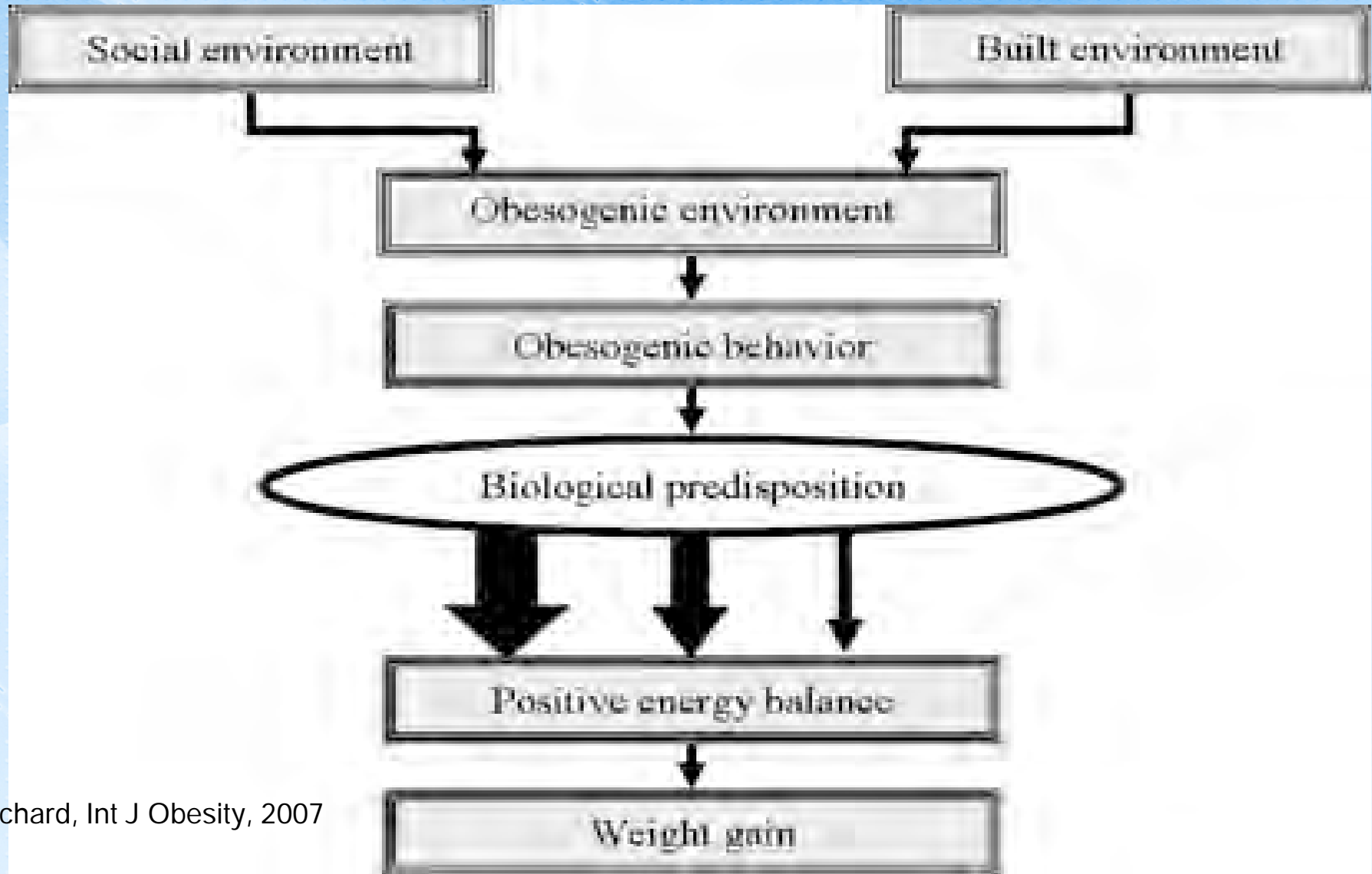


# The Obesity Epidemic : Biologic Evolution or Environmental Revolution?



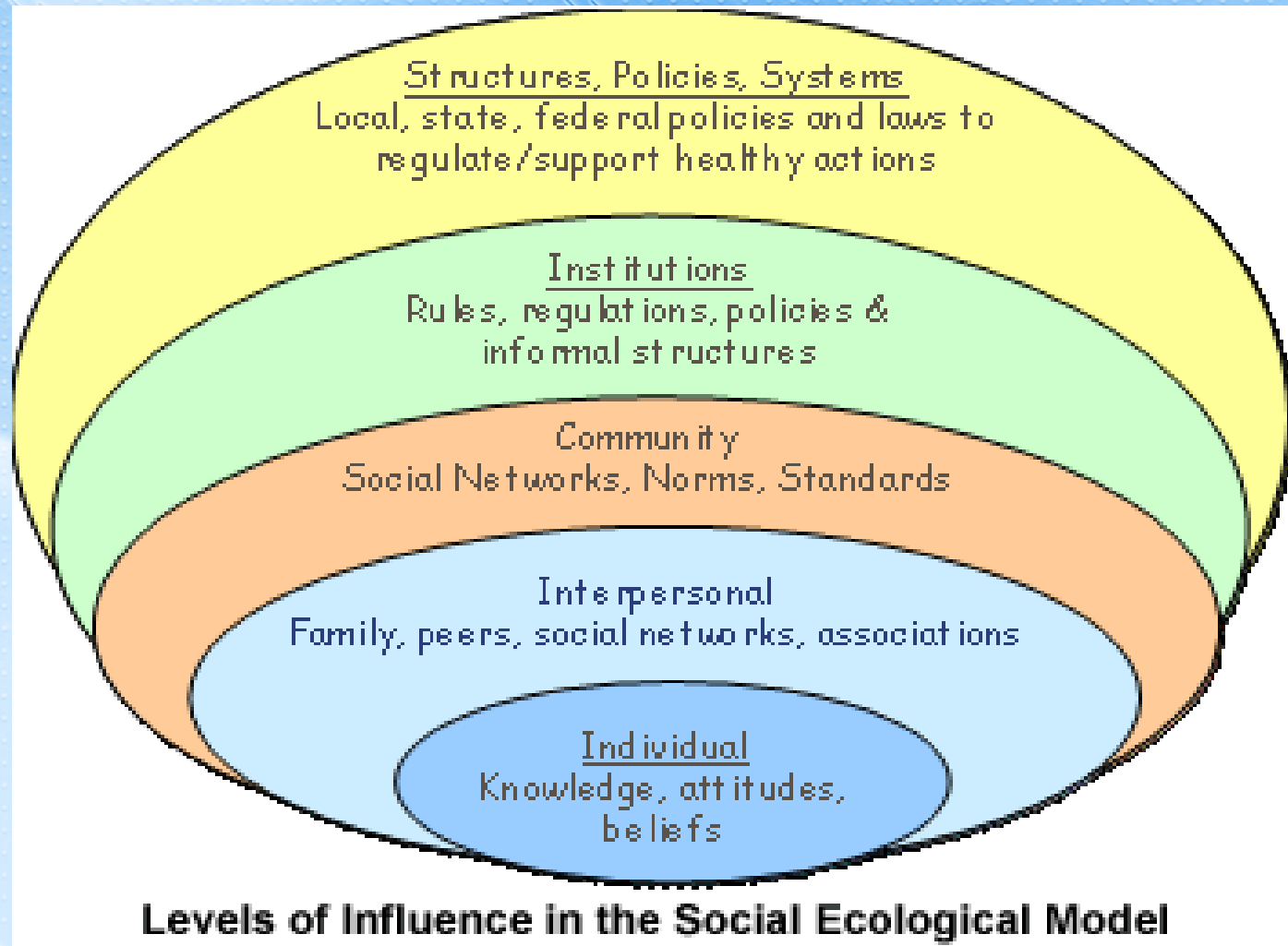


# Rapid Socio-environmental Changes Created an Obesogenic Environment





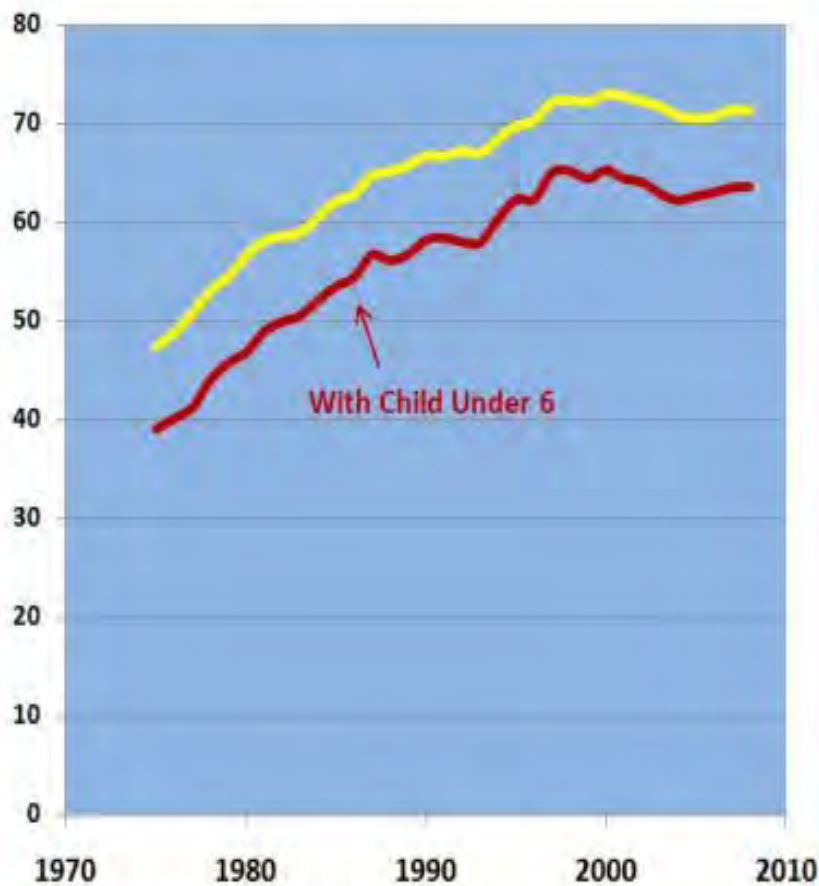
# The Obesogenic Environment: A Socio-Ecological Perspective





# Factors Promoting Increased US Calorie Consumption: Increase in Working Mothers

PERCENT OF WOMEN WITH CHILDREN IN THE PAID LABOR FORCE, 1975-2008

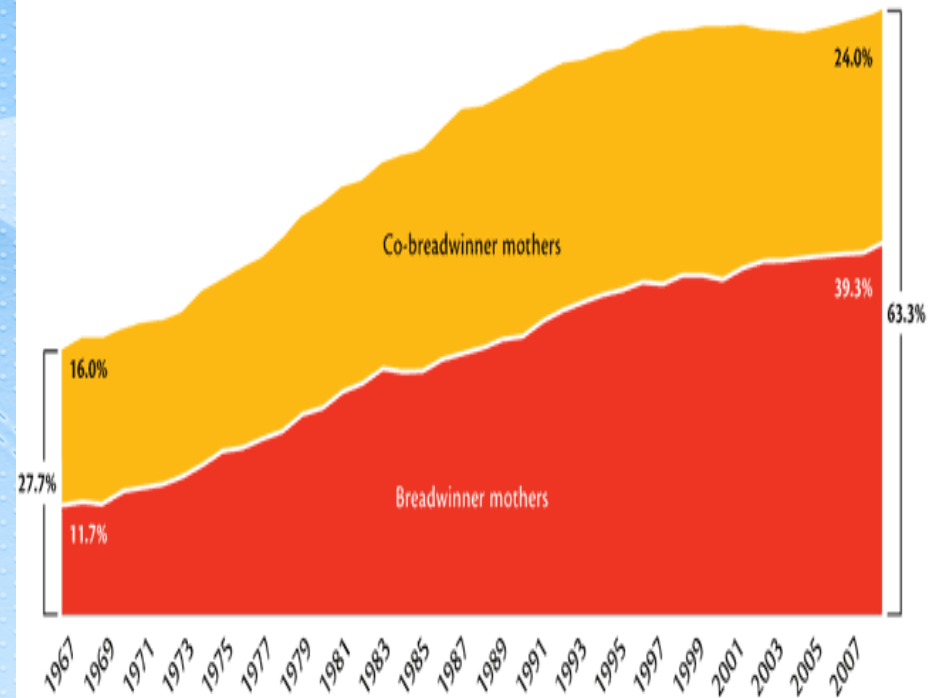


Source: [http://www.bls.gov/opub/ted/2009/ted\\_20091009\\_data.htm#b](http://www.bls.gov/opub/ted/2009/ted_20091009_data.htm#b)

FIGURE 2

## The new workforce


Share of mothers who are breadwinners or co-breadwinners, 1967 to 2008



Source: See Table 1.

Notes: Breadwinner mothers include single mothers who work and married mothers who earn as much as or more than their husbands. Co-breadwinners include all breadwinners as well as wives who bring home at least 25 percent of the couple's earnings. The data only include families with a mother who is between the ages of 18 and 60 and who has children under age 18 living with her.





# Factors Promoting Increased US Calorie Consumption: Rise of the Fast Food Industry

- ⊙ Number of per capita fast food restaurants doubled between 1972 and 1997 in the U.S.
- ⊙ % family's food budget spent on dining out:
  - 1960's: 21%
  - 2008: 42%
- ⊙ 30% of US children eat fast food every day
- ⊙ Per capita calories in the U.S.
  - 1970: 3250 per day
  - 1997: 3800 per day

<http://www.bls.gov/news.release/cesan.nr0.htm>

<http://www.bls.gov/mlr/1990/03/art3full.pdf>

Chou et al, J of Health Economics, 2004

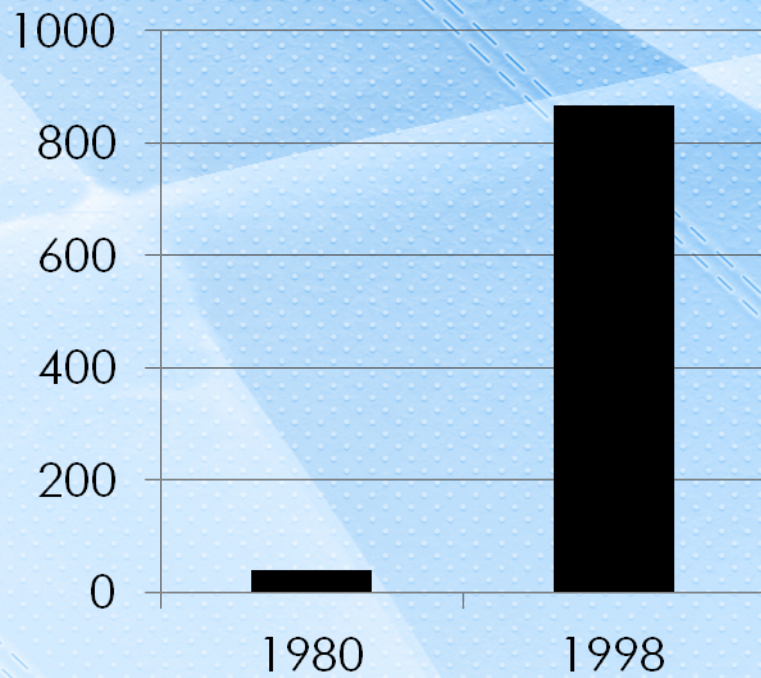
Bowman et al, Pediatrics, 2003



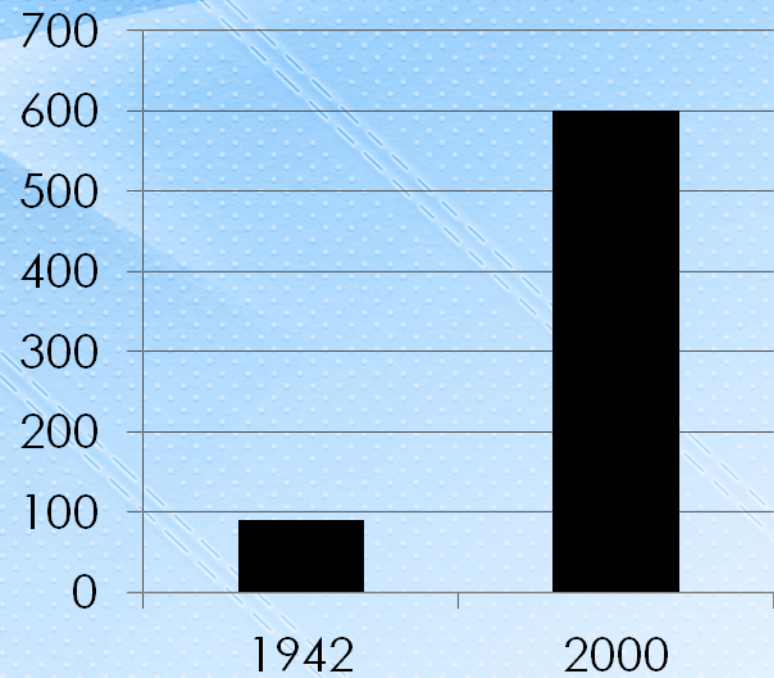


# Factors Promoting Increased US Calorie Consumption: Rise of the Soda Industry

**Per Capita Consumption of High Fructose Corn Syrup (lbs)**

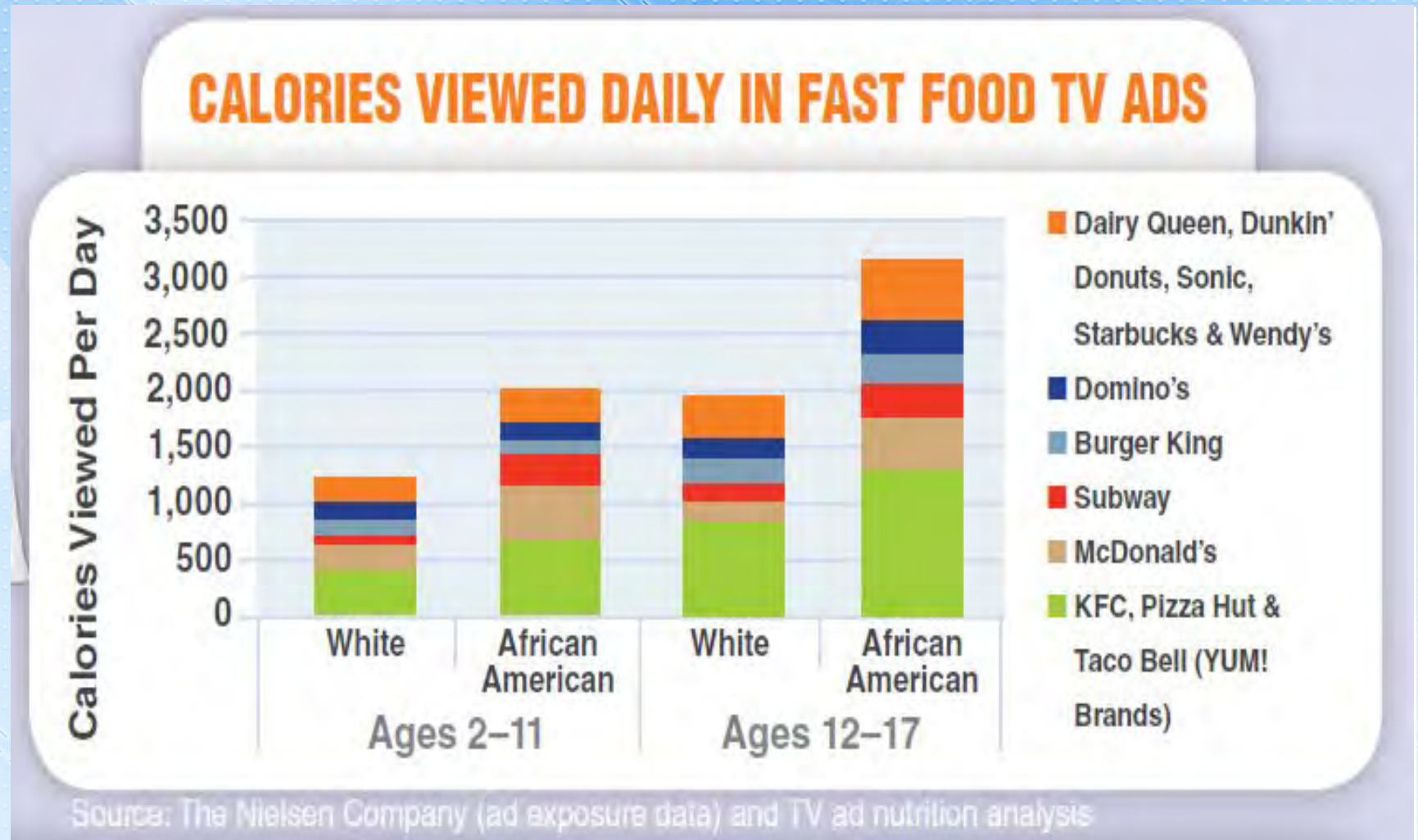


**Annual Per Capita Production of 8 oz Servings of Soft Drinks**





# Factors Promoting Increased US Calorie Consumption: Marketing Fast Food to Youth







# Factors Promoting Increased Calorie Consumption: US Farm Subsidies

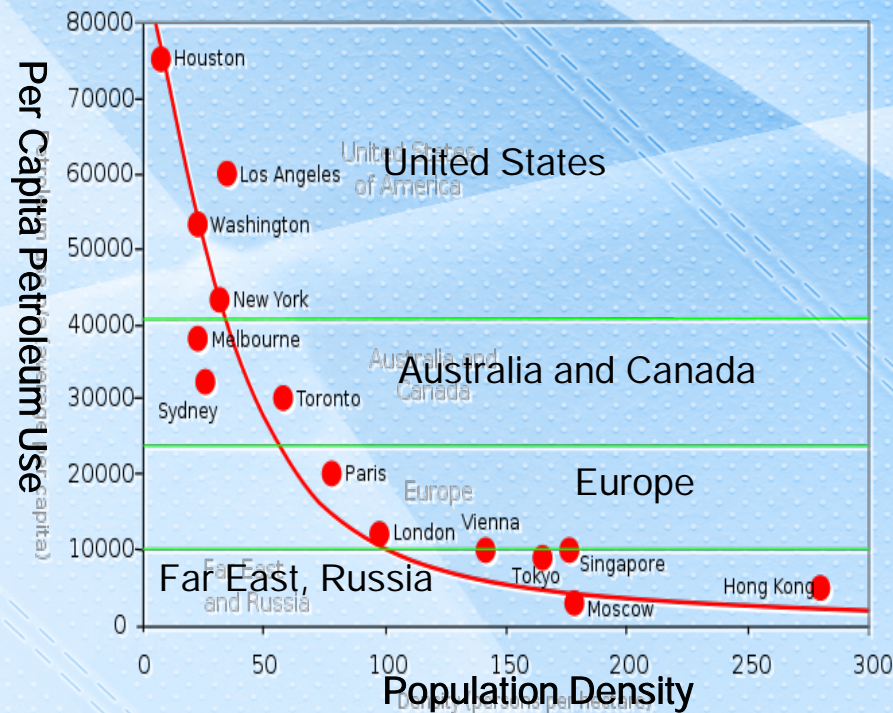
- ◎ US farm subsidies result in mega farms producing so much corn and soybeans that pricing of high fructose corn syrup, hydrogenated fats from soybeans, and corn-based feed is kept artificially low, resulting in low prices for fast food, corn-fed beef and pork, and soda
- ◎ No such subsidies exist for fresh fruits and vegetables which are produced in much lower quantities at higher cost to the public



# Factors Associated with Decreased Physical Activity in the U.S.: Suburban Living

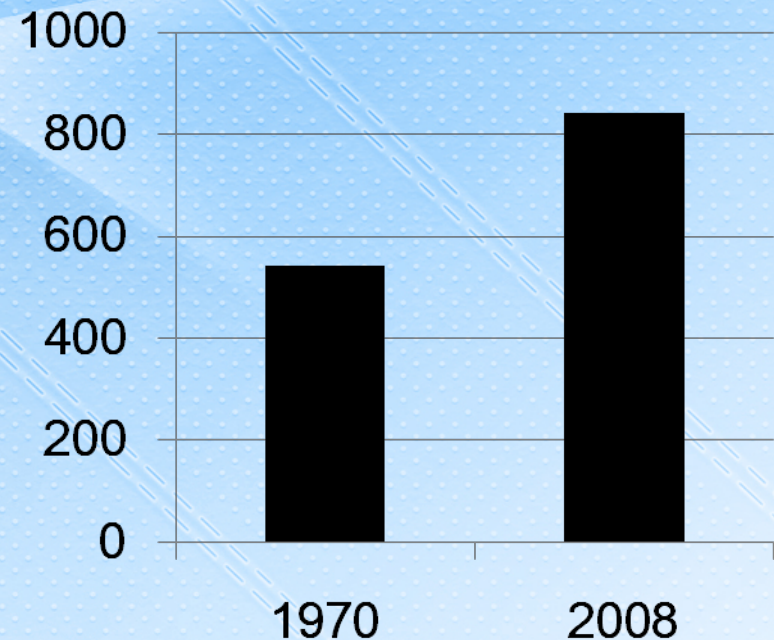
## Relationship between Transport and Land Use

A commonly used study of 32 cities by Newman & Kenworthy in 1989 concluded that there was a strong link between urban development densities and petroleum consumption.



Urban Task Force Partnership: Toward an Urban Renaissance, 1999  
Annual petroleum use per capita adjusted to US \$1 (1990)  
 After Andrew Wright Associates, final section taken from 'Towards an Urban Renaissance',  
 1999

## US Vehicles per 1000 people



US Dept of Transportation, 2008

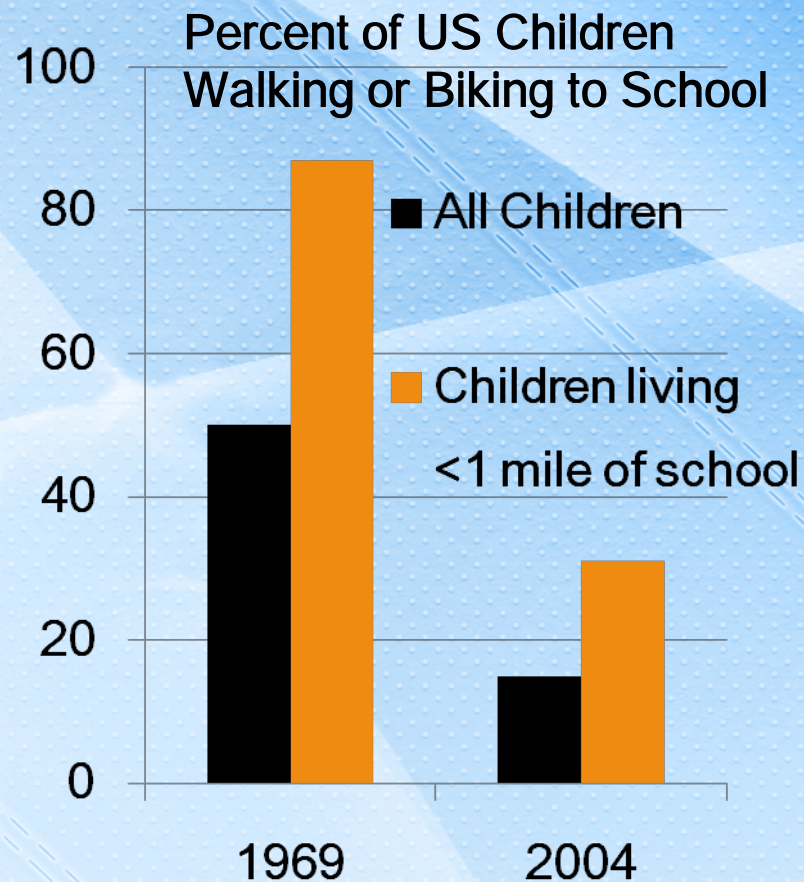


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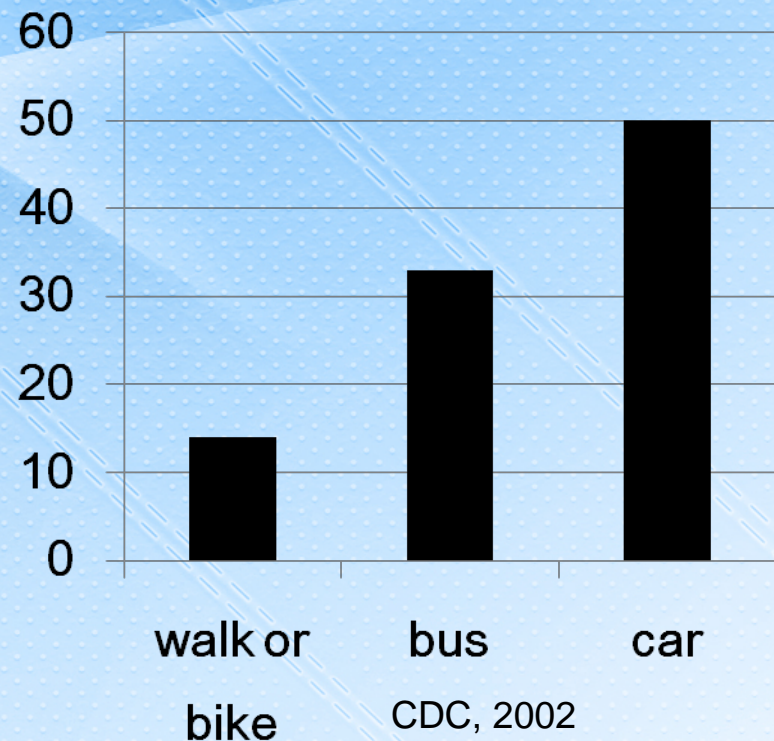


# Factors Associated with Decreased Physical Activity: US School Transportation



CDC, 2005

US School Transportation (1999): Percent of Children



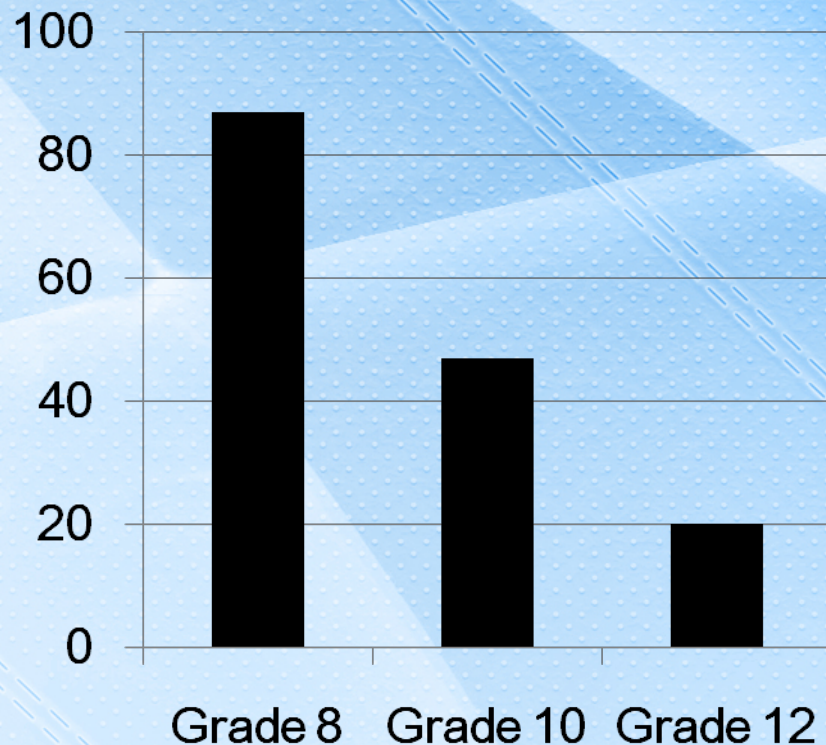
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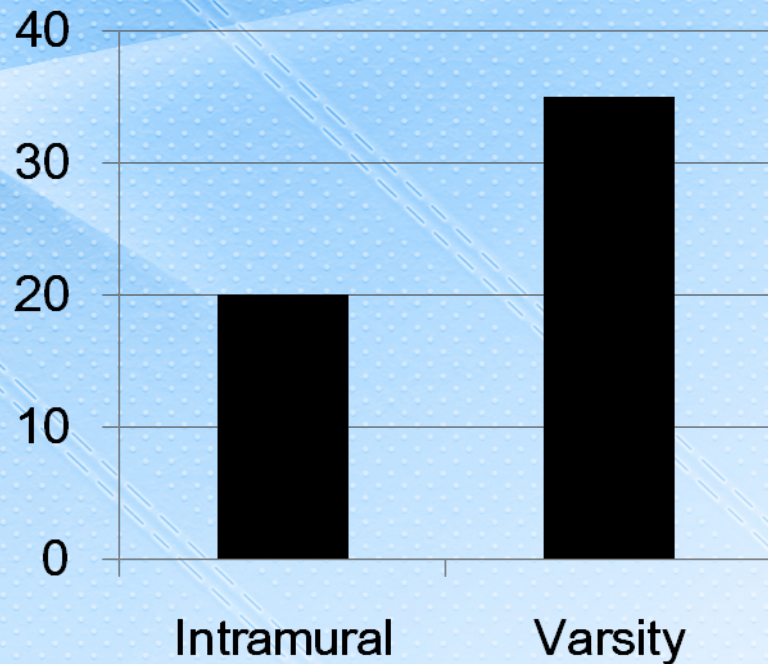


# Decreased Physical Activity in US Schools

**Percent of US Schools  
Requiring Physical  
Education by Grade**



**Percent of US High  
School Students  
Participating in School  
Sports**







# Factors Associated with Decreased Physical Activity: US Policies

- ◎ US Department of Transportation spends most of its money on highways
- ◎ Traffic concerns are one of the primary reasons parents do not allow their children to walk or bike to school
- ◎ No Child Left Behind policy resulted in decreased access to physical education and recess as schools focus on high stakes testing

<http://www.dot.gov/budget/2012/fy2012budgethighlights.pdf>

<http://unstats.un.org/unsd/pocketbook/Pocketbook%202006.pdf>

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5132a1.htm>

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5438a2.htm>

[http://www.bus.lsu.edu/mcmillin/seminars/anderson\\_accountability.pdf](http://www.bus.lsu.edu/mcmillin/seminars/anderson_accountability.pdf)



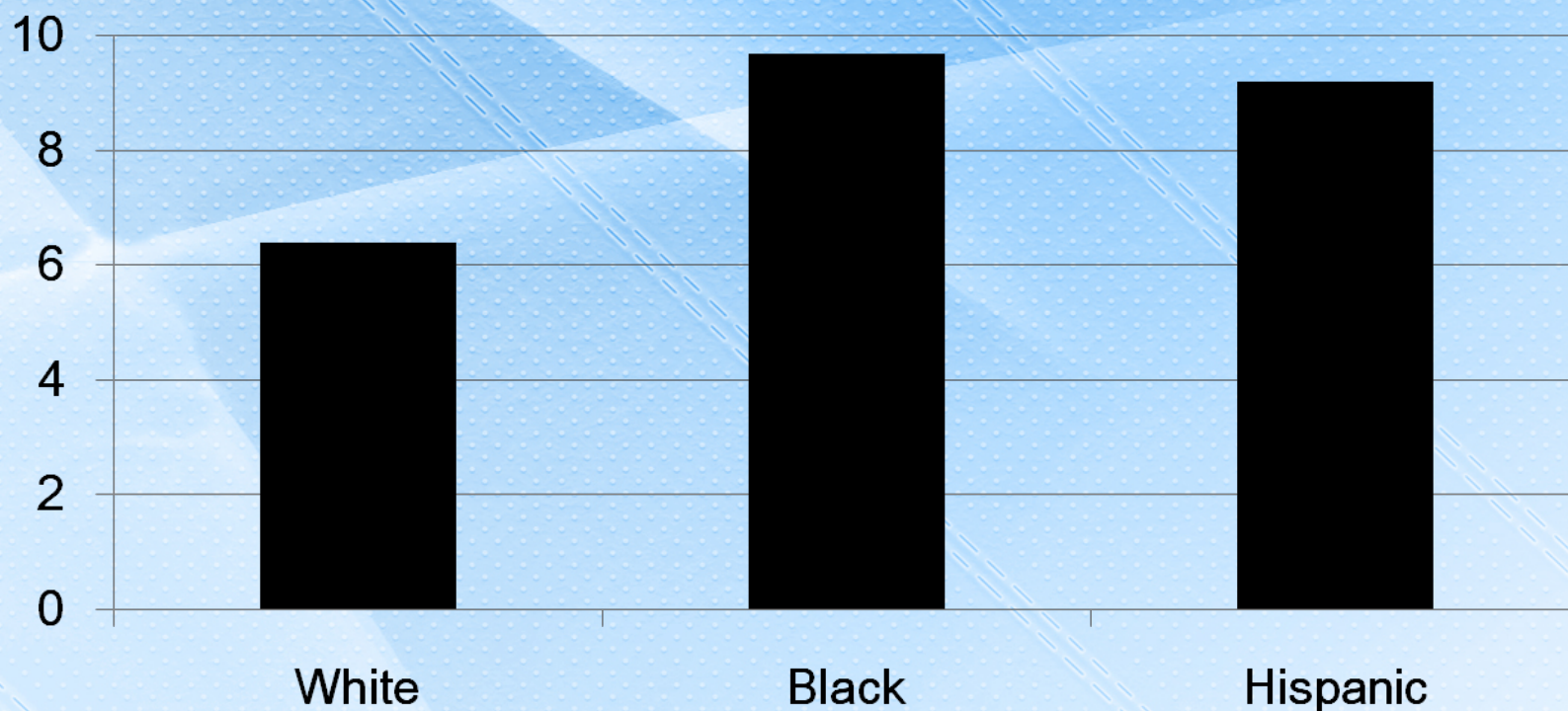
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# Factors Associated with Decreased Physical Activity: Escalating Leisure Time Media Use in the U.S.

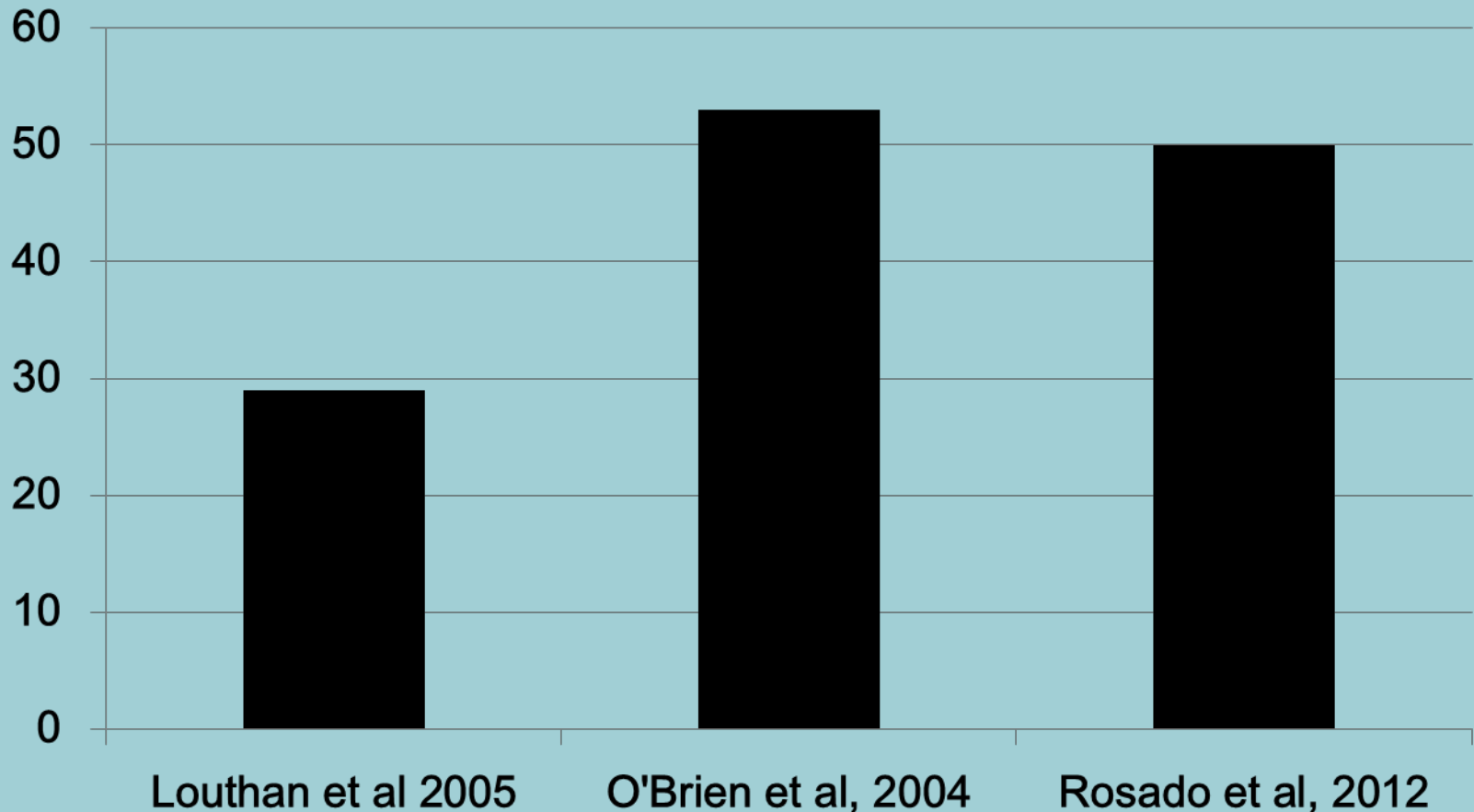
**Hours Per Day Among 8-18 Year Olds**





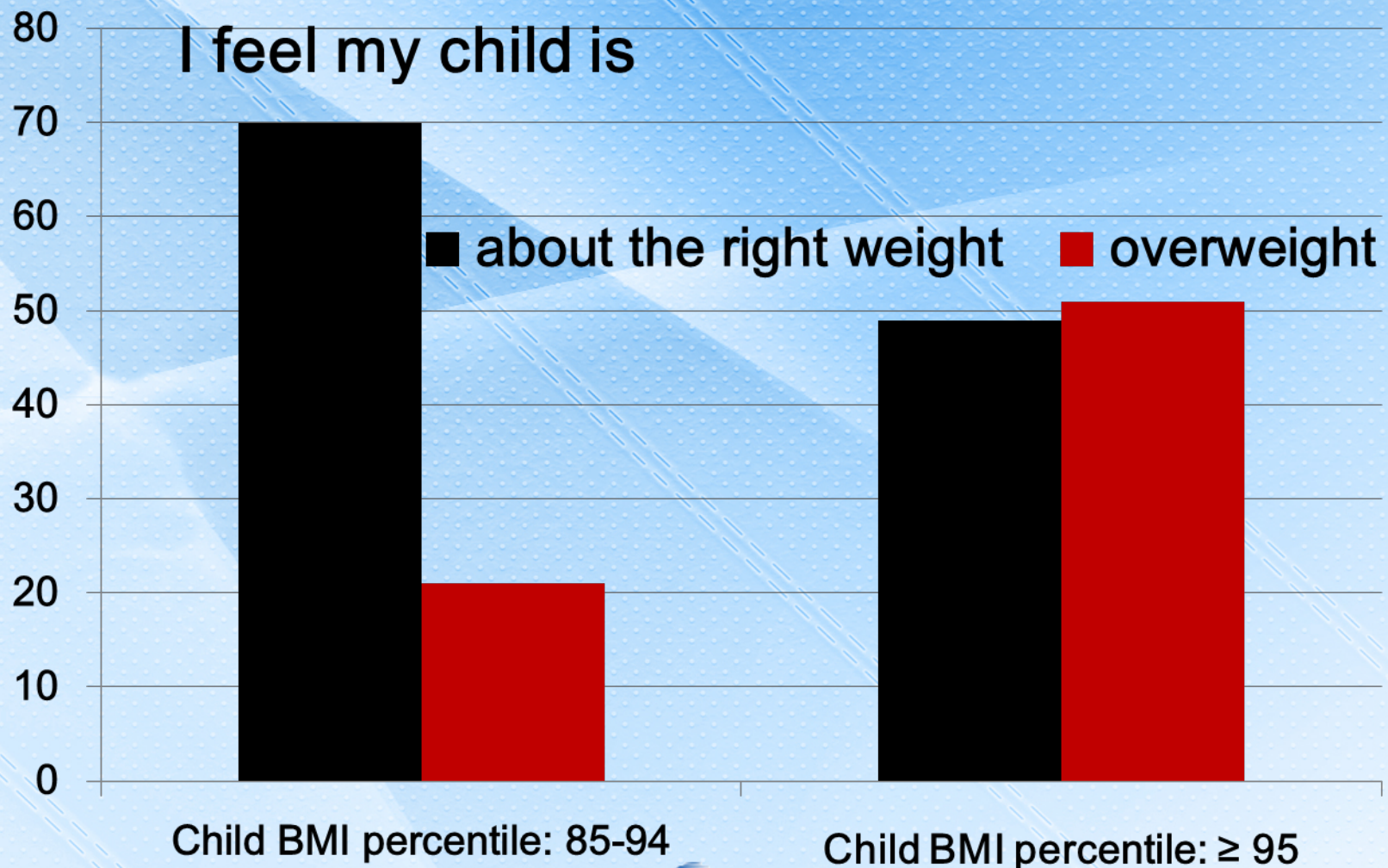
# US Health Providers Have Been Slow to Respond: Many Fail to Monitor Child BMI

**% of obese children identified by provider in a well-child visit**





# Many US Parents Fail to Recognize Their Child is Overweight







# Informing Parents of Their Child's Overweight May Make a Difference

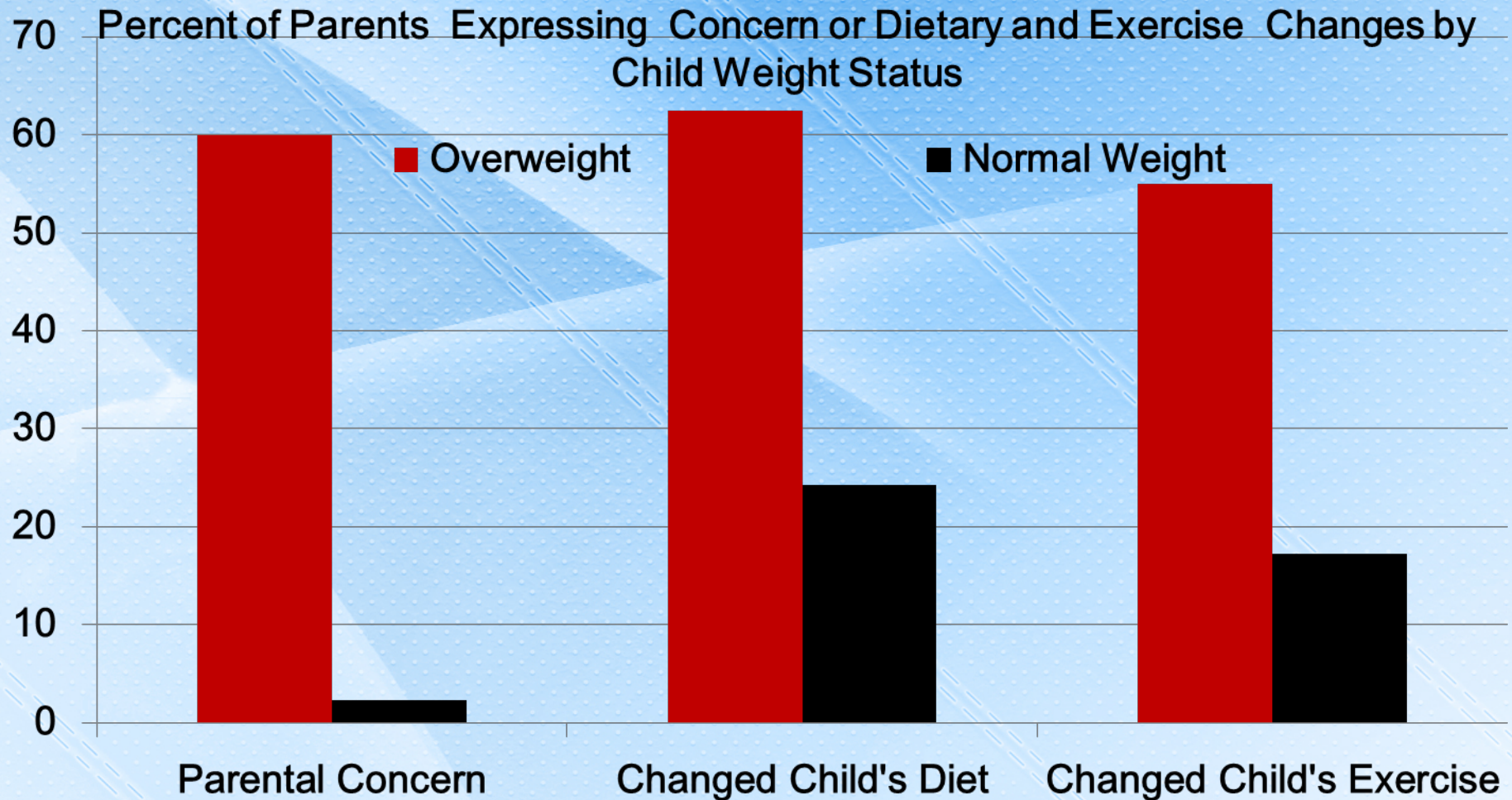
	Child's Weight Classification			
% of Parents Who Recalled their Child as	Overweight (BMI %: $\geq 95$ )	At-risk for Overweight (BMI %: 85-94)	Normal (BMI %: 5-84)	Underweight (BMI %: $<5$ )
Overweight	64.9	28.6	3.7	6.4
At-risk for Overweight	13.5	40.5	11.1	2.1
Normal	10.8	23.8	74.1	21.3
Underweight	2.7	0	7.4	68.1
Don't know	8.1	7.1	3.7	2.1







# Informing Parents of Their Child's Overweight May Make a Difference







# Informing Parents of Their Child's Overweight May Make a Difference

Predictors of Parent Intent to Take Action		P value
Child age	Older the child, more likely the parent was to take action	0.014
Child weight	When the child was overweight or obese, the parent was more likely to take action	0.001
Parent concern	Parents concerned about the child's weight are more likely to take action	0.001
Provider discussed child's weight	Parents who reported the provider discussed the child's weight were more likely to take action	0.010





# Childhood Obesity Can Be Prevented & Treated

- ◎ 2011 Cochrane Review found “strong evidence to support beneficial effects of child obesity prevention programmes on BMI, particularly for programmes targeted to children six to 12 years”
- ◎ Particularly promising are interventions that:
  - increase physical activity and improve quality of food at school
  - target environments and cultural practices to increase healthier food consumption and daily physical activity
  - support parents to increase activity, decrease screen time, and eat healthier foods





# American Academy of Pediatrics Recommendations

- ◎ Prevention (all patients): promote breastfeeding, family meals, limited screen time, regular physical activity, yearly BMI monitoring
- ◎ Prevention Plus (children with BMI percentiles of 85-94): 5 fruits/vegetable servings, 0 sugary drinks,  $\leq 2$  hours of screen time,  $\geq 1$  hr physical activity, healthy breakfast, home food preparation and limited eating out





# American Academy of Pediatrics Recommendations

- ◎ **Structured Weight Management** (children with BMI percentiles of 95-98 or children for whom Prevention Plus has not been effective): more frequent follow-up, written diet/exercise plans
- ◎ **Comprehensive Multidisciplinary Intervention** (if 3-6 months of Structured Weight Management has been ineffective): team based intervention including dietary and behavioral specialists.





# Thoughts on the Way Forward: Individual and Family Level Challenges

- ◎ The “normalization” of obesity
- ◎ The intergenerational escalation of obesity
- ◎ Development of food and physical activity preferences begins in childhood
- ◎ The promoting healthy weight – obesity stigmatization conundrum
- ◎ The agency - personal responsibility – person blaming conundrum





# Thoughts on the Way Forward: Cultural and Community Level Challenges

- ◎ Cultural norms and beliefs about weight (e.g. overweight babies are “healthier”; larger women are more beautiful; weight is a sign of prosperity)
- ◎ Food and sharing of food may be an important coping response particularly in high stress populations and environments





# Thoughts on the Way Forward: Health Care Level Challenges

- ⊙ Prevention is key –promote healthy eating and physical activity from birth
- ⊙ Regularly monitor child's BMI
- ⊙ Communicate with parents about an overweight child in ways the promote provider-parent partnership and healthy behavior change
- ⊙ Avoid child & parent blaming – acknowledge that this is a systems problem
- ⊙ Serve as a role-model and community leader – the obesity epidemic will not be solved solely in the confines of the health provider's office







# Thoughts on the Way Forward: Policy Challenges

- ⊙ Promote healthy food, not just food safety
- ⊙ Address transportation within the larger health context, not just transportation safety
- ⊙ Promote physical activity as a health issue, not just "recreation" or an "amenity"
- ⊙ Promote healthy work and school environments
- ⊙ Consider the health consequences of zoning regulations, government taxes and subsidies
- ⊙ Obesogenic environments are huge money-makers; the US fast food, soda, auto, leisure time media industries will oppose any policies that reduce their profits and are expanding worldwide



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[www.apa.org/president](http://www.apa.org/president)**



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