

# Turning the Tide on the Obesity Epidemic

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**Presentation to Seattle City Council**

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**Public Health**  

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**Seattle & King County** 

# Acknowledgements

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- **Jerry DeGrieck, Mayor's Staff**

# Where this presentation is heading

- What is the extent of the obesity problem?
- Why care about obesity?
- What is causing the obesity epidemic?
- What can be done to reverse the epidemic?

**What is the extent  
of the problem?**

# Age-adjusted Percentage of U.S. Adults Who Were Obese or Who Had Diagnosed Diabetes

## Obesity (BMI $\geq 30$ kg/m<sup>2</sup>)

1994



2000



2009



No Data  
  <14.0%  
  14.0-17.9%  
  18.0-21.9%  
  22.0-25.9%  
   $\geq 26.0\%$

## Diabetes

1994



2000



2009



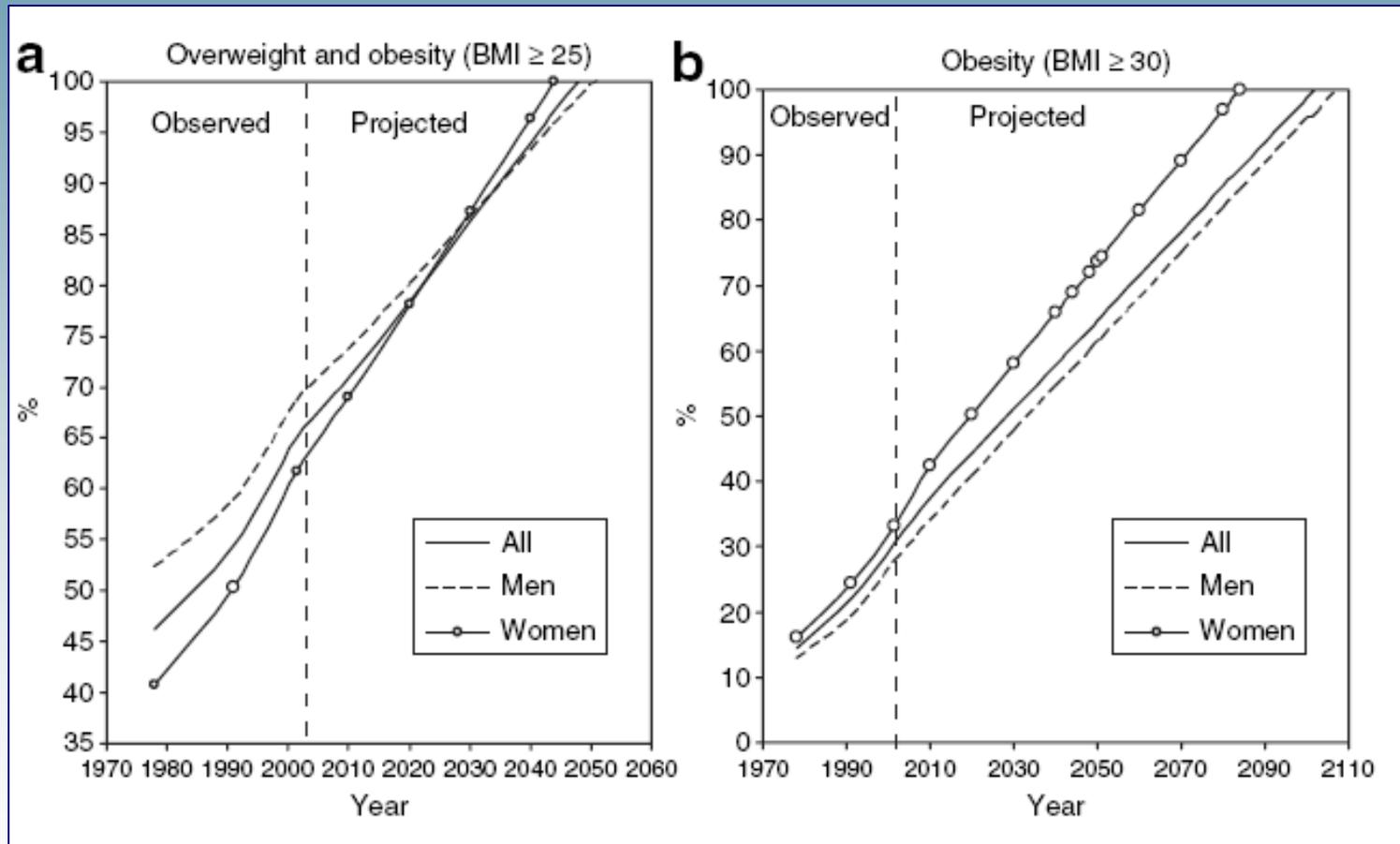
No Data  
  <4.5%  
  4.5-5.9%  
  6.0-7.4%  
  7.5-8.9%  
   $\geq 9.0\%$



CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at <http://www.cdc.gov/diabetes/statistics>



# Projected US overweight and obesity rates



# Obesity in early childhood: What do we know?

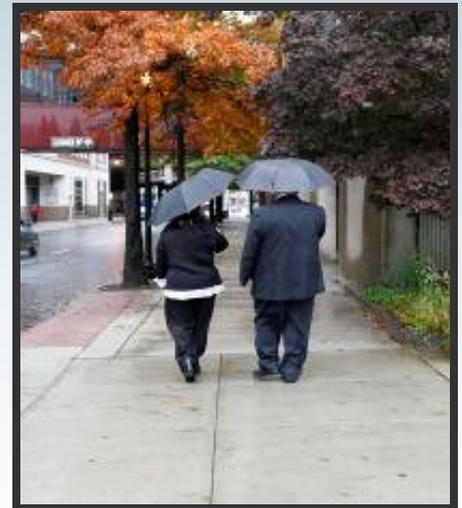
- **The very young: age 0-2**
  - 1 in 10 children are overweight
- **The young: age 2-5**
  - 1 in 5 are overweight/obese
  - Rate has doubled over the past 30 years
- **The rate of overweight increases most rapidly in elementary school-age kids**
- **The “child will grow out of it with time” is a myth.**
  - If overweight during preschool, 5 times higher risk of being overweight at age 12



# The challenge in Seattle

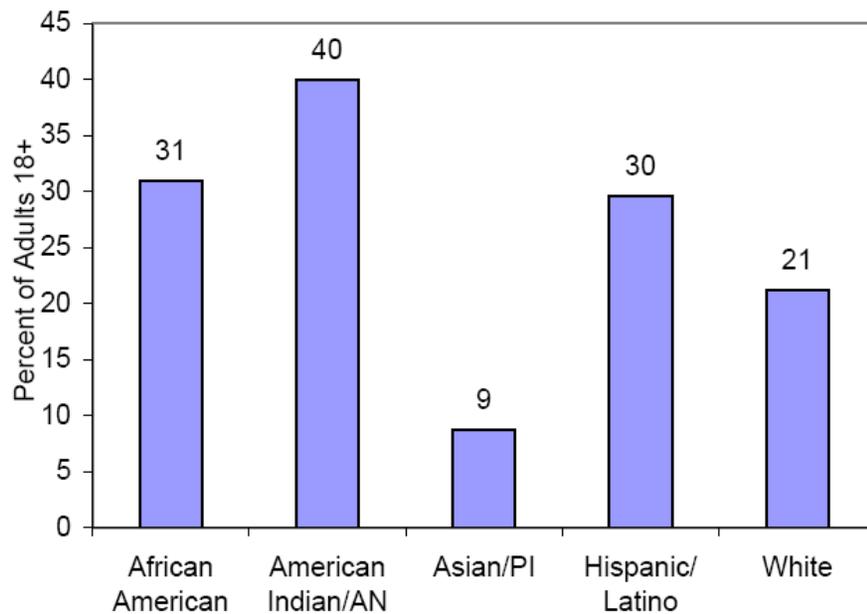
- **50% adults are overweight or obese**
- **19% adults are obese**
- **22% of youth are overweight or obese**
- **9% of youth are obese**

Sources: 2006-2010 Behavioral Risk Factor Surveillance System  
2010 Washington State Healthy Youth Survey

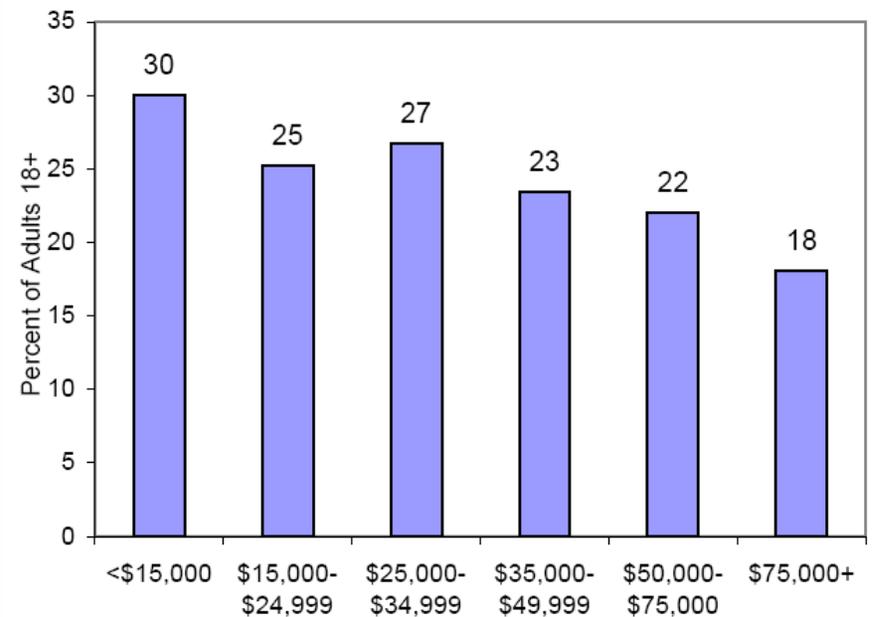


# Adult obesity: Race and income

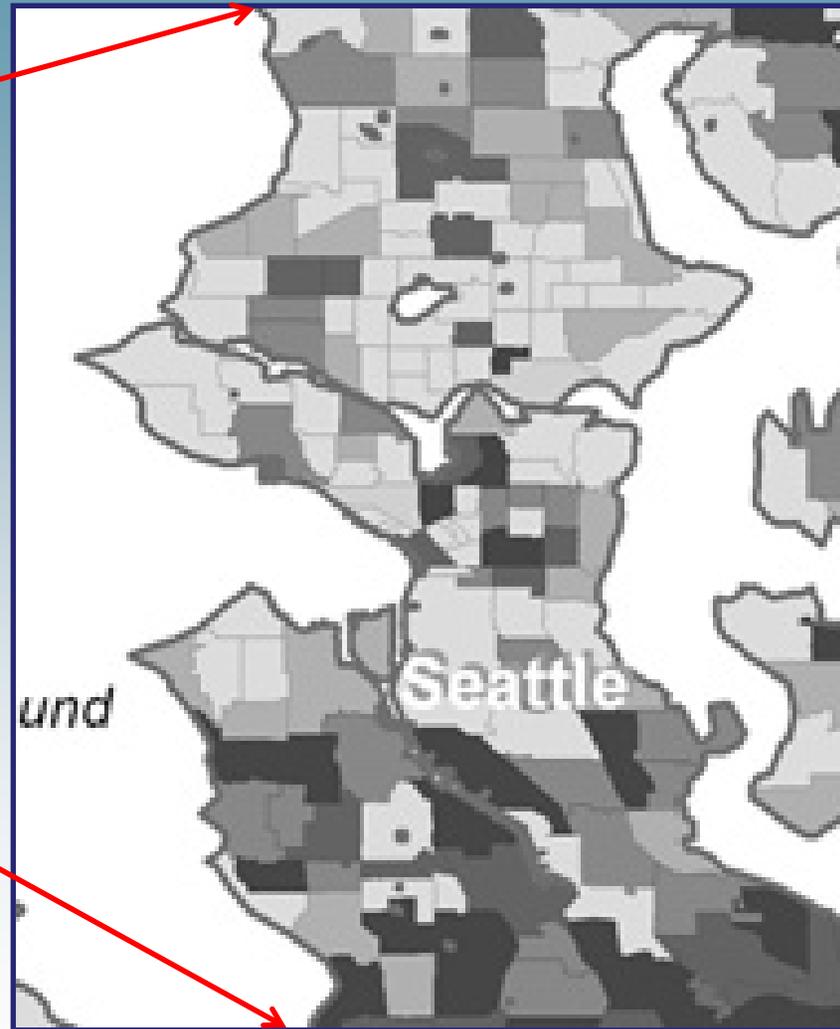
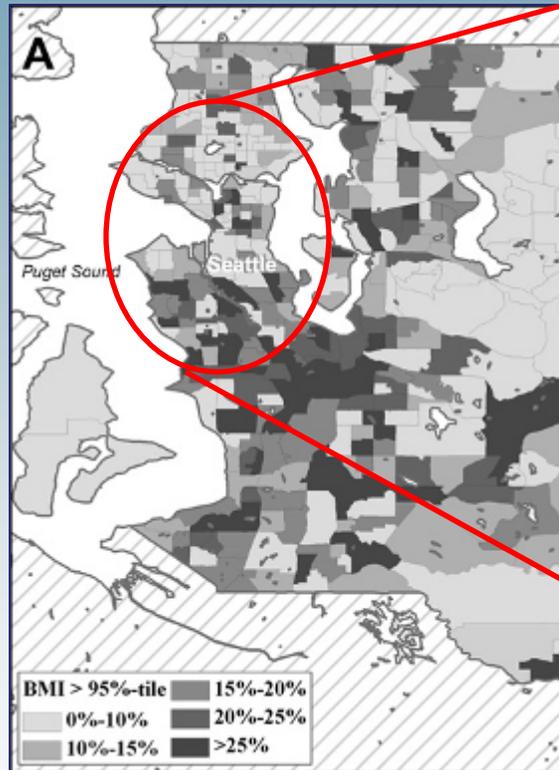
Obesity, Adults 18+, by Race/Ethnicity, King County, WA 2006-2010



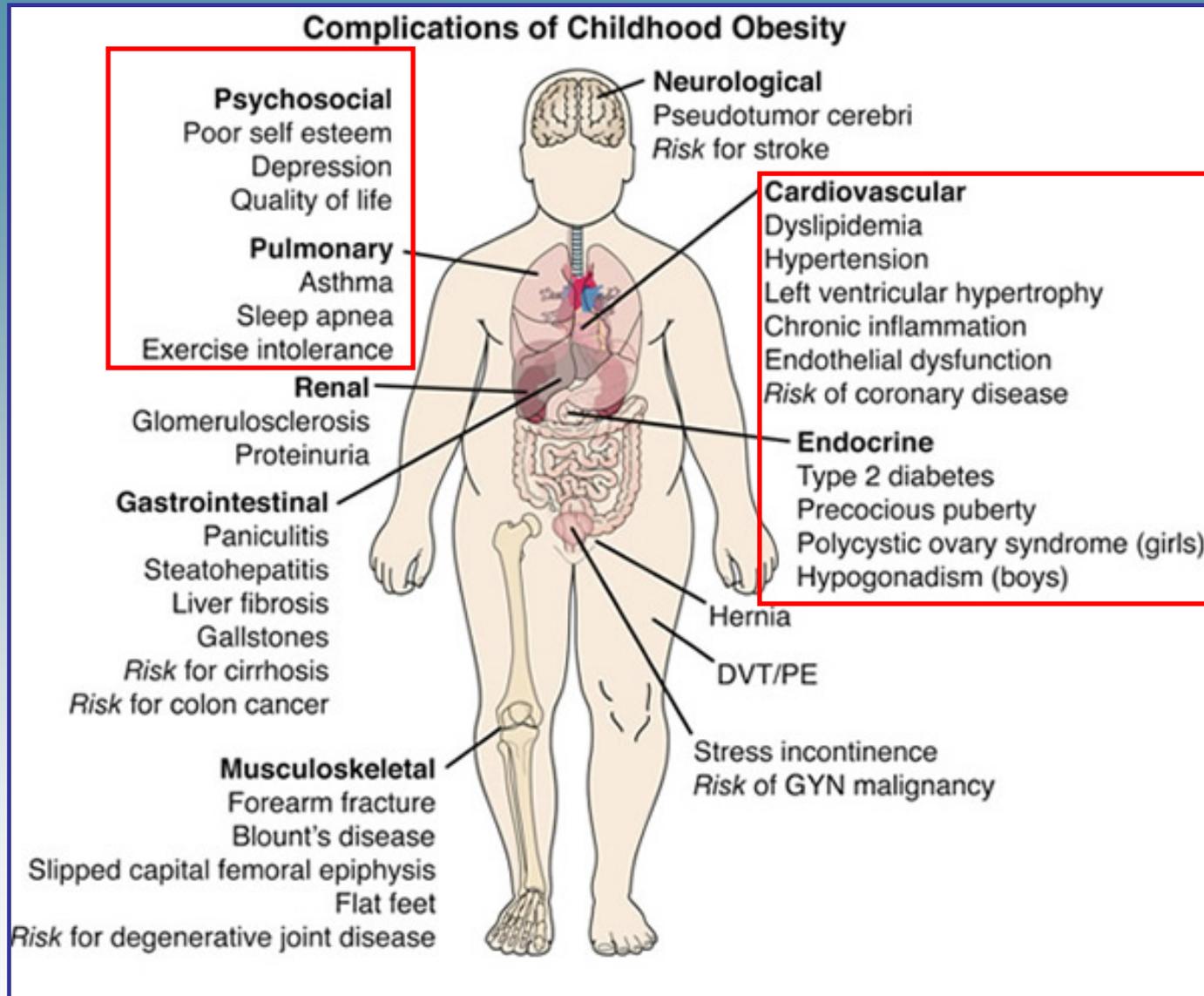
Obesity, Adults 18+, by Income, King County, WA 2006-2010



# Child obesity in King County



**Why care about obesity?**



**Obese children report quality of life similar to children with cancer<sup>1</sup>**

<sup>1</sup> Schwimmer. *JAMA*. 2003;289:1813-1819

# Medical Complications of Obesity

## Pulmonary disease

Abnormal function  
Obstructive sleep apnea  
Hypoventilation syndrome

## Nonalcoholic fatty liver disease

Steatosis  
Steatohepatitis  
Cirrhosis

## Gall bladder disease

## Gynecologic abnormalities

Abnormal menses  
Infertility  
Polycystic ovarian syndrome

## Osteoarthritis

Skin

Gout

## Idiopathic intracranial hypertension

## Stroke

Cataracts

## Coronary heart disease

Diabetes  
Dyslipidemia  
Hypertension

## Severe pancreatitis

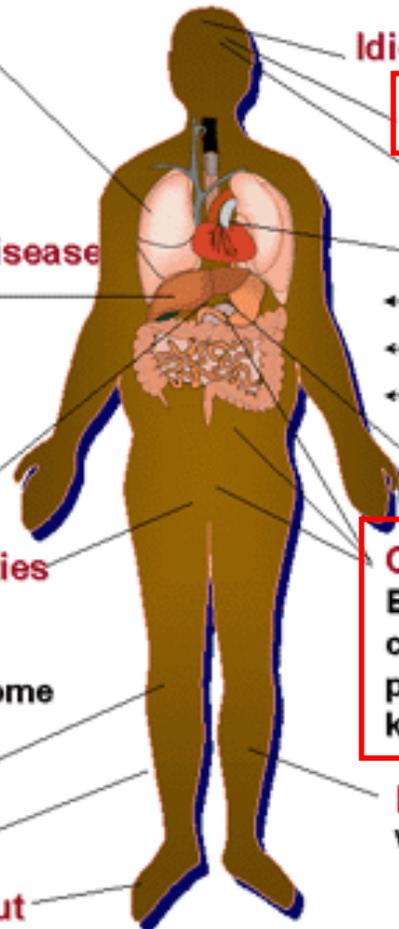
## Cancer

Breast, uterus, cervix,  
colon, esophagus,  
pancreas,  
kidney, prostate

Phlebitis

Venous stasis

Medscape  
from WebMD



# Adult health consequences of childhood obesity

- **Premature mortality**
  - **First generation to have shorter life expectancy than parents<sup>2</sup>**

...the life-shortening effect of obesity could rise from its current level of **one-third to three-fourths of a year to two to five years**, or more, in the coming decades, as the obese who are now at younger ages carry their elevated risk of death into middle and older ages.

- **Heart Disease**
  - **By 2035, heart disease deaths will increase by 5-16% (more than 100,000 excess deaths)<sup>1</sup>**
- **Diabetes**
  - **Early onset among children is rising**

<sup>1</sup> Rocchini. NEJM 365:1927-28, 2011

<sup>2</sup> S. Olshansky, et al., "NEJM 352: 1138-1145. 2005.

# Medical costs of obesity

Medical Costs	1988	2008 <sup>1</sup>
<b>(inflation adjusted)</b>	<b>\$78.5 billion/yr</b>	<b>\$147 billion/yr</b>

- **27% of increase in health spending between 1987-2001 due to obesity<sup>3</sup>**
- **More recent estimates:<sup>2</sup>**
  - **Obese people cost \$2826 MORE per person per year in medical costs relative to normal weight people**
  - **Obesity now accounts for 16.5% of national spending on medical care**

<sup>1</sup> Finkelstein et al., Health Affairs: 2009

<sup>2</sup> Crawley and Myerhofer. Natl Bur Ec Res. Working Paper 16467, 2010

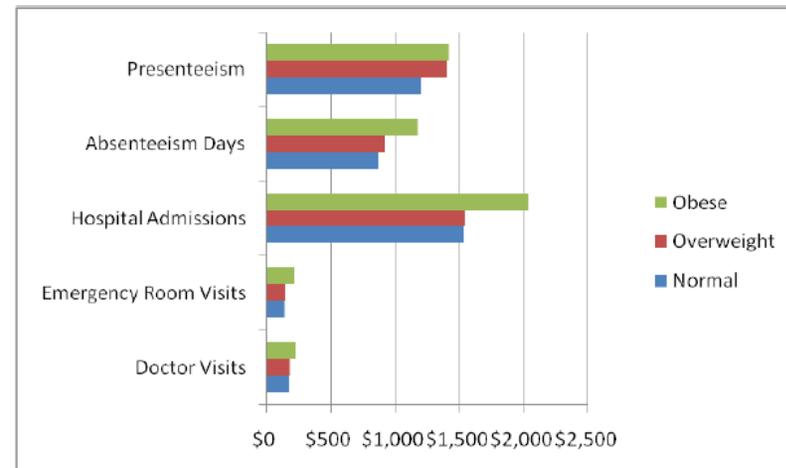
<sup>3</sup> Thorpe, et al. Health Affairs W4:480, 2004

# Impact on business

- For a firm with 1000 employees, obesity costs \$285,000 per year (30% absenteeism, 70% medical costs<sup>4</sup>)
- For city's 11,000 employees, this is 3+ million/year
- Obese workers have 1-5 more sick days per year<sup>1, 3</sup>
- 10% of corporate health care costs attributable to obesity<sup>2</sup>

## Impact of Obesity on Productivity

Number of days absent for obese employees was 14.7% higher than normal weight employees.



Source: Goetzel, et al, A Multi-Worksite Analysis of the Relationships Among Body Mass Index, Medical Utilization, and Worker Productivity, *Journal of Occupational and Environmental Medicine* Volume 52, Number 1 Supplement, January 2010

<sup>1</sup> Neovius. *Obes Rev* 10:17-27, 2009, Tsai *Ann Epidemiol.* 18:8-14, 2008

<sup>2</sup> <http://www.npr.org/2011/10/27/141760591/workplaces-feel-the-impact-of-obesity>

<sup>3</sup> Hammond. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 2010

<sup>4</sup> Finkelstein & Brown. *NC Medical Journal.* 67:310-312, 2006

# Environmental impacts

- **Excess jet fuel use due to obesity**
  - \$742 million per year
  - 350 million gallons
- **Excess car passenger fuel use due to obesity**
  - \$2.6 billion per year
  - 950 billion gallons
- **CO<sub>2</sub> emissions per 5 kg average weight increase in OECD (developed) countries**
  - 10 million metric tons (total – 12,045)

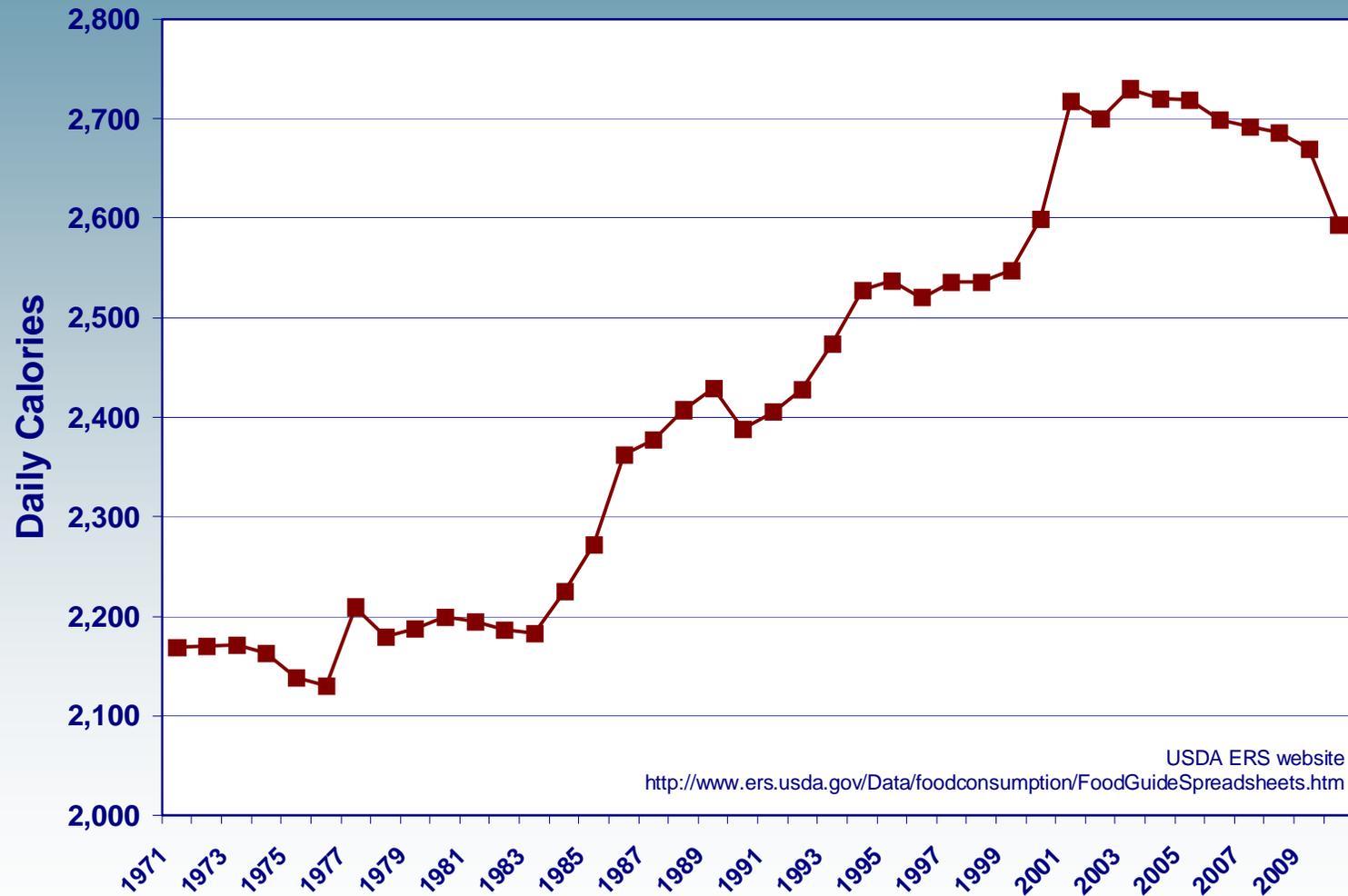
# What is causing the epidemic?



**Not enough calories OUT**

**Too many calories IN**

# Daily per capita calories (adjusted for spoilage and waste)



# Teens are eating more calories and gaining weight US, 1988-1994 vs. 1999-2002

	Average Weight Gain (lb)	Daily Increase in Calories
<b>All Teens</b>	<b>10</b>	<b>110-165</b>
<b>Overweight Teens</b>	<b>58</b>	<b>678-1,017</b>

## How to reduce about 150 calories:

- Replacing 1 can of soda (12 oz) with water
- Reducing TV watching by an hour
- Increasing PE from 1 to 3 times/week

# Top sources of calories for 9-18 year olds



**170 calories a day**



**165 calories a day**

**40% of total calories are empty calories**

# What are preschoolers eating?<sup>1</sup>

- 30% ate no vegetables on the day of the survey, 5% ate no fruit
- French fries were the most commonly consumed vegetable from 12 months to 4 years of age
- Half of 2-3 year olds drank at least one sugary drink a day
- A quarter of calories consumed by 2-3 year olds are from sweets and sugary drinks<sup>2</sup>



<sup>1</sup> Nestlé Nutrition Institute; JADA 2010.

<sup>2</sup> Reedy & Krebs-Smith JADA, Oct 2010

Slide 22

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JK2

how much should calories increase 6 -48 months?

Jim Krieger, 1/12/2012

# Snacking on the rise

- Snacks contribute 30% of the total calories in preschoolers diets (mainly crackers, cookies, and candy)
- Kids age 6-11 eat three times as many chips, crackers, popcorn and pretzels than in the mid-1970s<sup>1</sup>
- 52% of teens now eat 2 or more snacks a day compared to 25% in the 1970s
- Adult snack and meal consumption has gone from 3.8 to 4.9 per day since the 1970s (29% increase in snacking)<sup>2</sup>



<sup>1</sup> Nationwide Food Consumption Survey 1977-78 and What We Eat in America, NHANES 2005-06

<sup>2</sup> Popkin 2011

# How many calories per item?

(remember, 200 - 400 extra calories per day are driving the obesity epidemic)



100 calories



240 calories



280 calories



280 calories



250 calories

# Portion sizes have grown

**PORTIONS HAVE GROWN  
SO HAS TYPE 2 DIABETES, WHICH  
CAN LEAD TO AMPUTATIONS**

THEN NOW

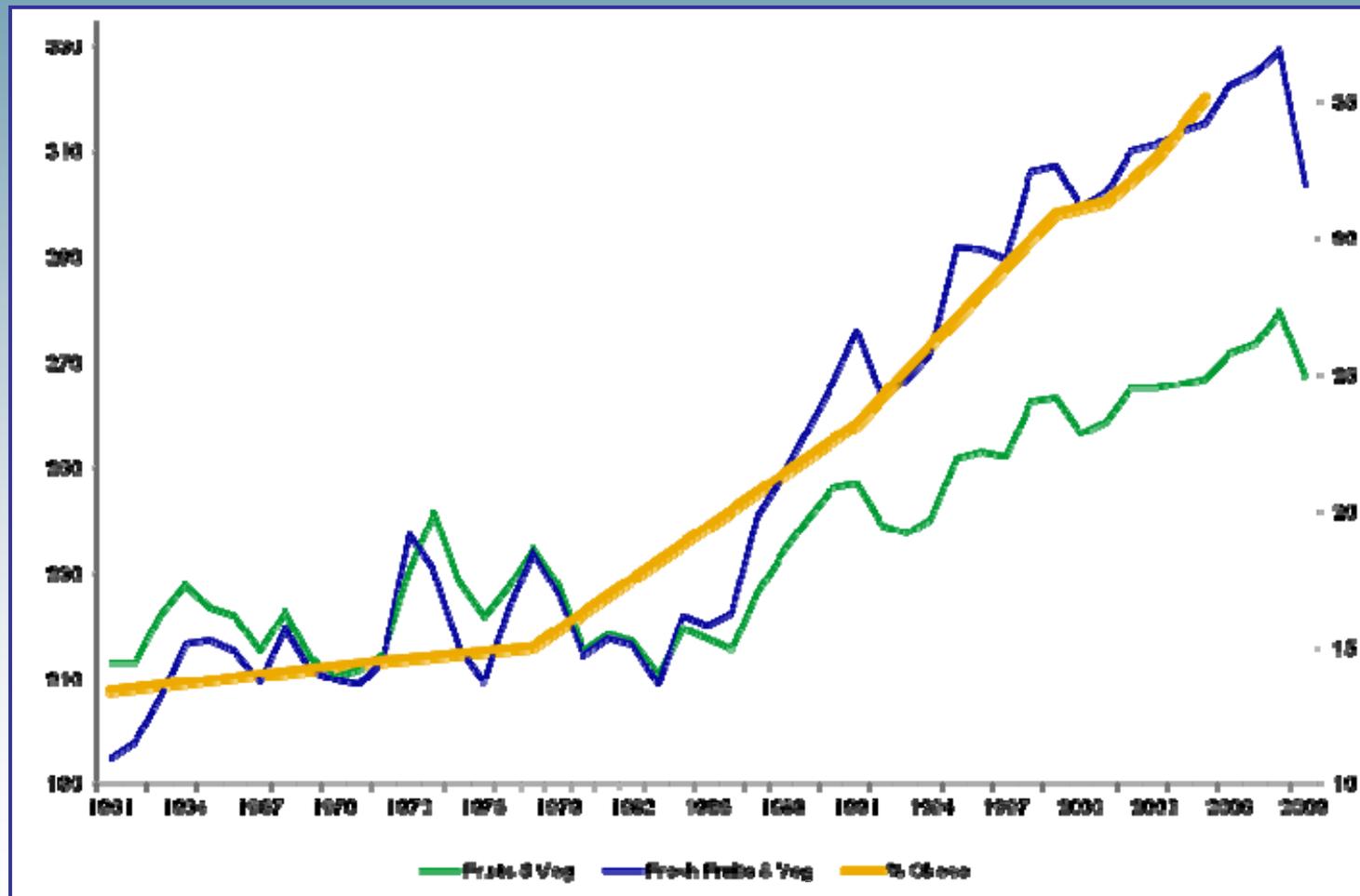
**CUT YOUR PORTIONS. CUT YOUR RISK.**  
» Call 311 for your Healthy Eating Packet

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Mayor  
Thomas Falco, MD MPH  
Commissioner

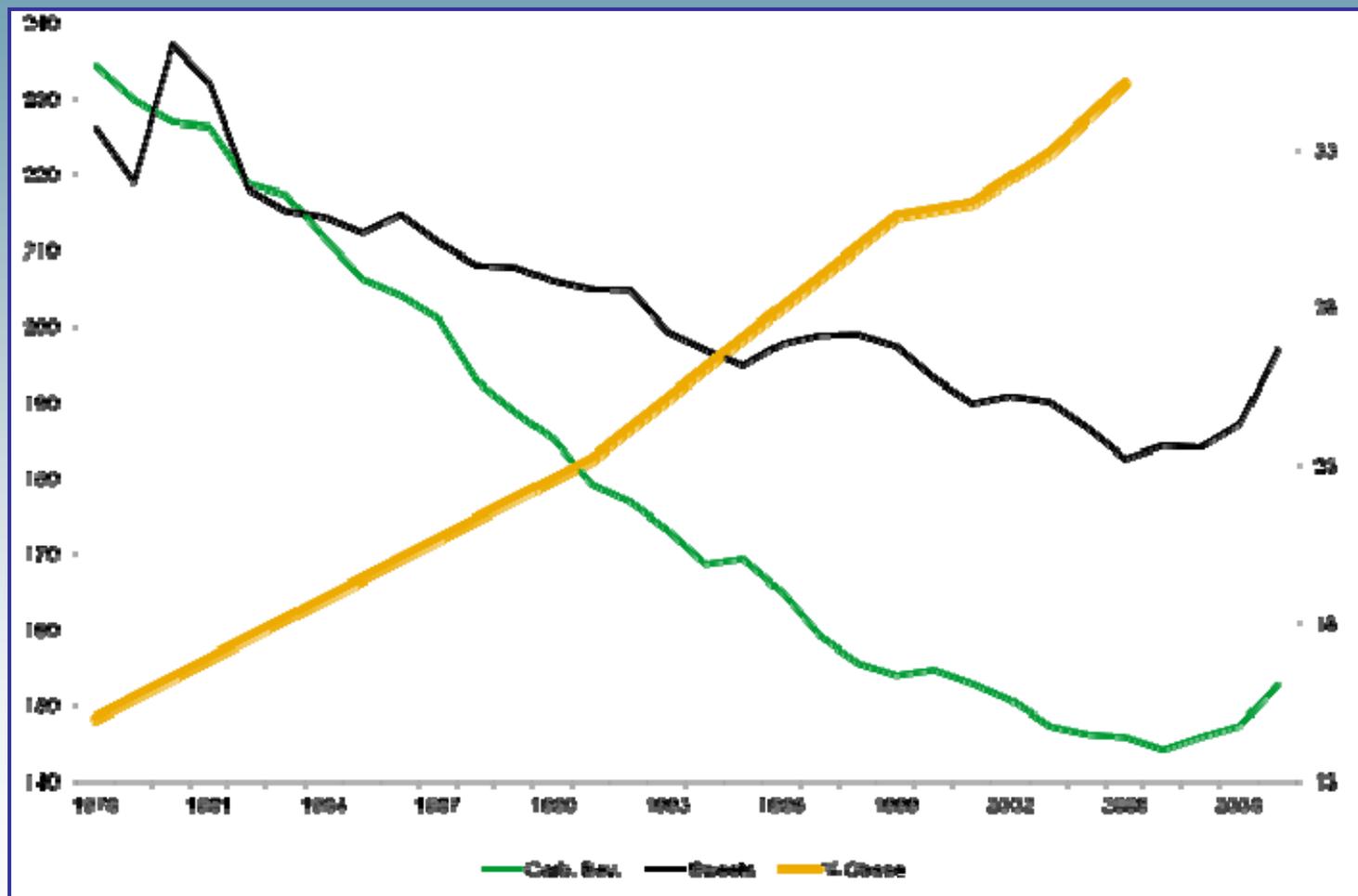
# Fruits and veggies getting more expensive

## Inflation adjusted



Source: BLS; NHES-I 1960-62; NHANES, 1971-74, 1976-80, 1988-94, 1999-2000, 2001-02, 2003-04, 2005-06

# While soda and sweets are cheaper Inflation adjusted





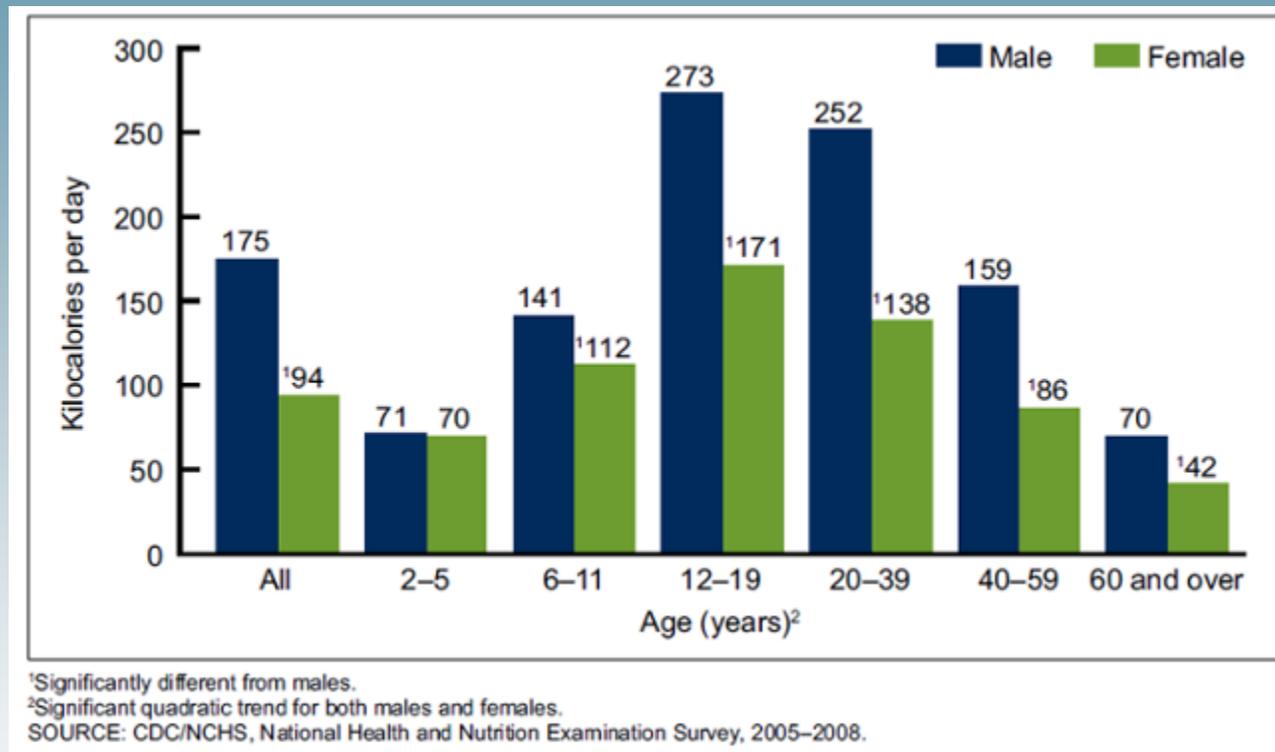
# Less healthy food is everywhere

- We are eating out more and eating more when eating out
- High calorie foods are featured in supermarkets
- Vending machines and convenience stores carry high calorie food
- Cafeterias at worksites and schools tempt us



# Calories a day from sugary drinks

## United States, 2005-2008



- Among boys 14-18 yr olds - #1 source of calories<sup>2</sup>
- Nearly 50% of the average American's increased calorie consumption is from sugar-loaded beverages.<sup>3</sup>

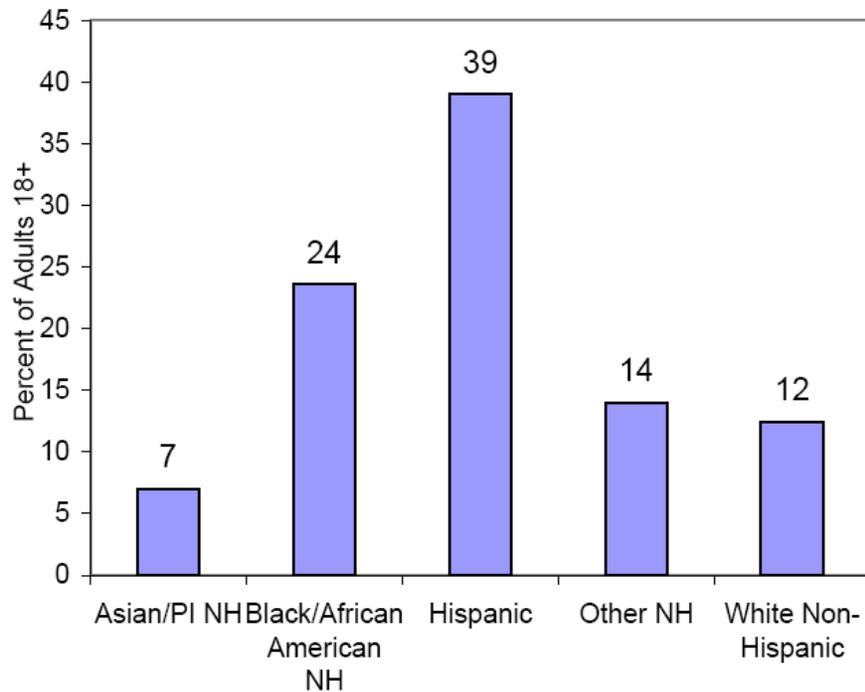
<sup>1</sup> Ogden CL, et al. NCHS data brief, National Center for Health Statistics. 2011.

<sup>2</sup> Reedy & Krebs-Smith JADA, Oct 2010 (NHANES)

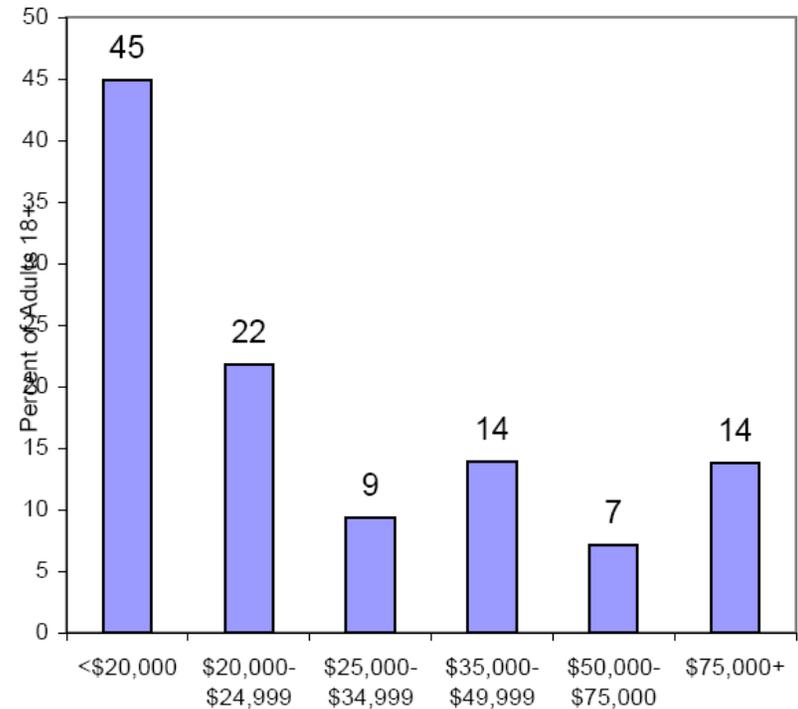
<sup>3</sup> Berkeley Study

# Sugary drink consumption by race/ethnicity and income

Percent with 30 or More Sugar-Sweetened Beverages in the Past Month, Adults 18+, by Race/Ethnicity, King County, WA, 2010

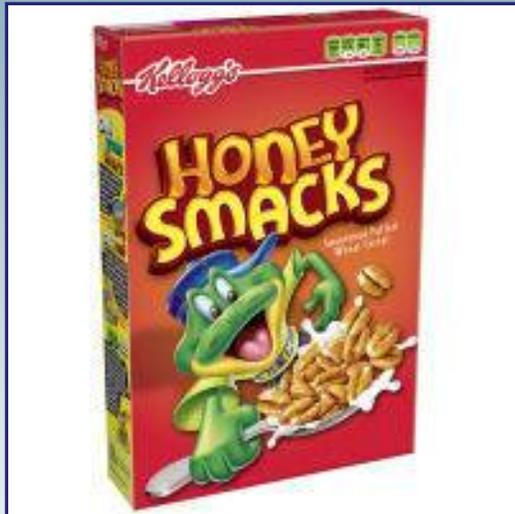


Percent with 30 or More Sugar-Sweetened Beverages in the Past Month, Adults 18+, by Income, King County, WA, 2010



# “Some Children’s Cereals Packed with Sugar, Study Finds”

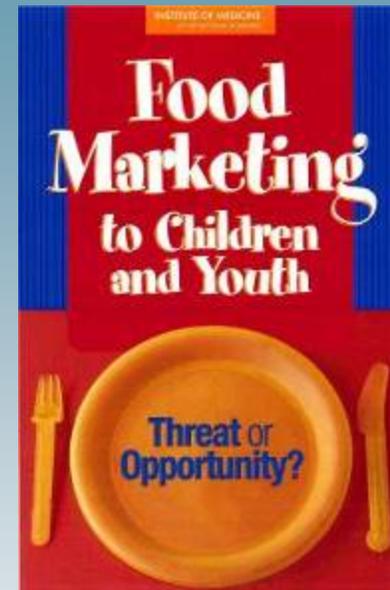
*Washington Post*, Dina ElBoghdady, 12/06/2011



**At least three popular children’s cereals are packed with more sugar in a one-cup serving than a Hostess Twinkie, and an additional 44 are loaded with more sugar in a cup than three Chips Ahoy cookies.**

# Unhealthy foods heavily marketed to kids

- TV advertising:
  - Influences consumption by children ages 2–11 years
  - Associated with body fatness in children 2–18 years
  - Exposure to fast food ads between increased by<sup>1</sup>:
    - 21% for preschoolers
    - 34% for children
    - 39% for teens
- **\$4.2 billion dollars in 2009 for fast food marketing (\$1.6 billion to children)**

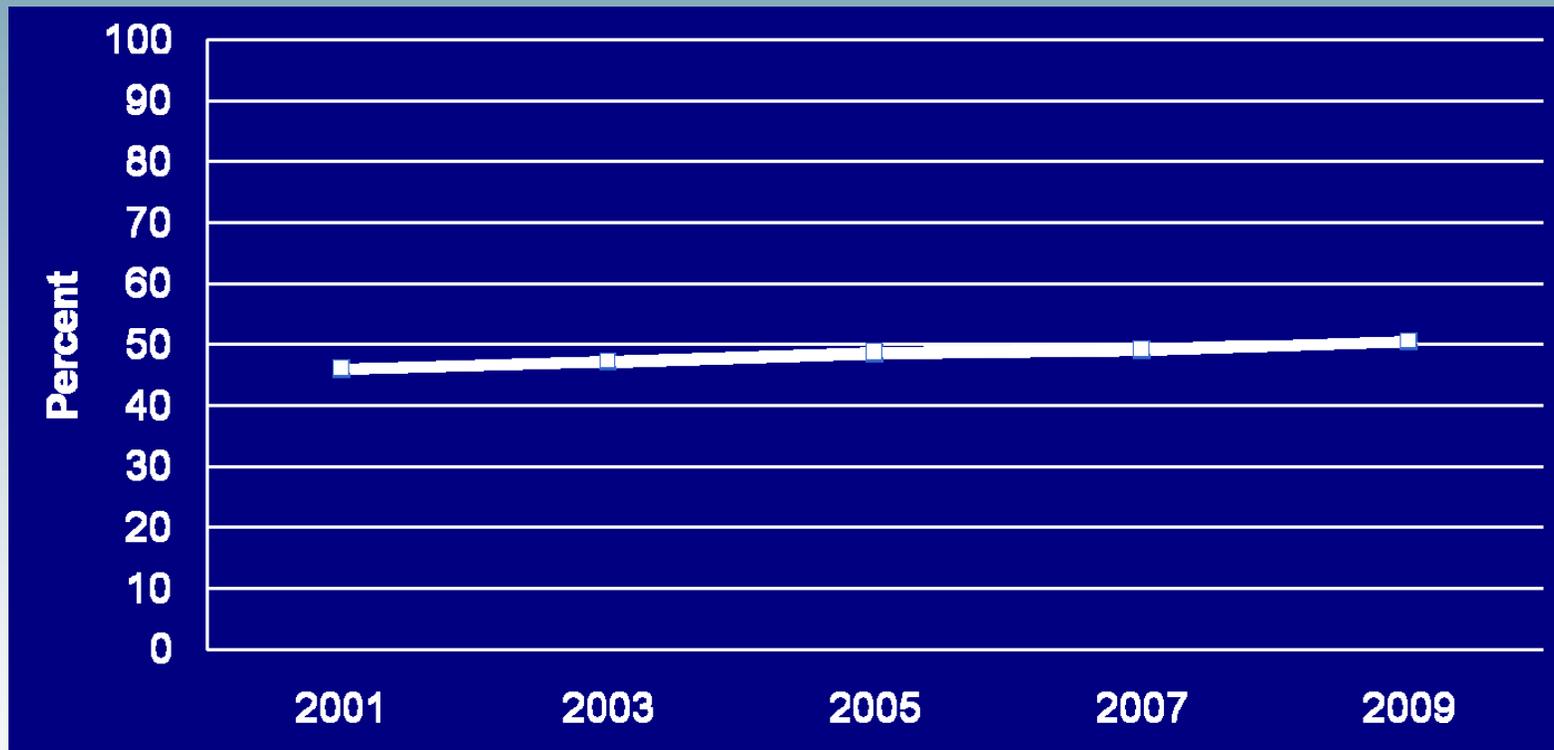


CHILDREN'S EXPOSURE TO FOOD ADVERTISING ON TV, ON AVERAGE:

AGE	Number of Food Ads Seen per Day*	Number of Food Ads Seen per Year	Hr: Min of Food Ads Seen per Year
2-7	12	4,427	29:31
8-12	21	7,609	50:48
13-17	17	6,098	40:50

<sup>1</sup> between 2003-2009

# Percentage of US adults getting recommended physical activity



**Adult leisure time PA per week has increased  
by 20 minutes since 1985**

# Children not active enough

- **Less attending daily PE**
  - 1991: 42%
  - 2003: 28%<sup>1</sup>
- **Lots of screen time**
  - 35% of high school students watch television 3 or more hours per day day.<sup>2</sup>
  - 25% play video games or use a computer for something that is not school work for 3 or more hours per day on an average school day.<sup>2</sup>
- **Little vigorous physical activity:**
  - Fewer than one-third of all children ages 6 to 17 do at least 20 minutes (sweating and breathing hard)<sup>3</sup>

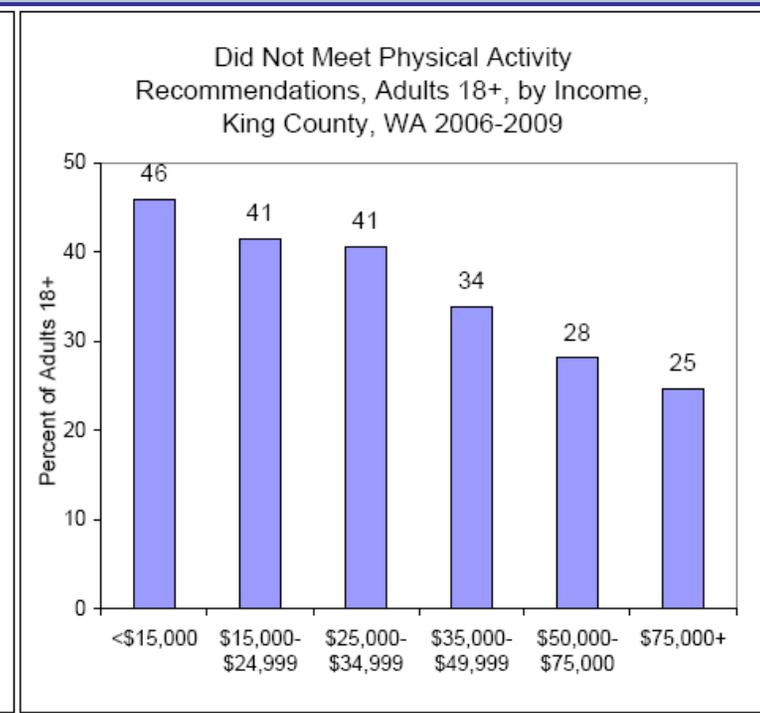
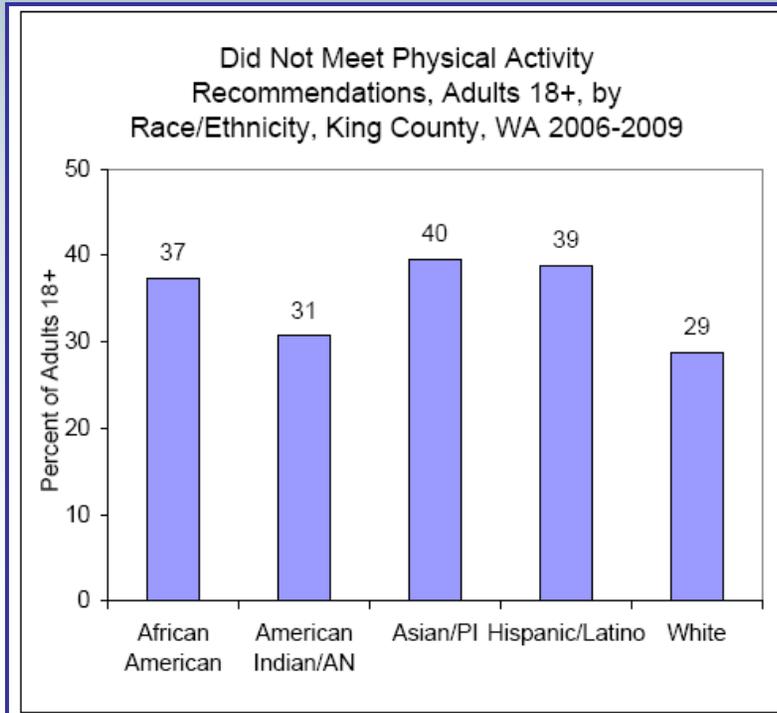
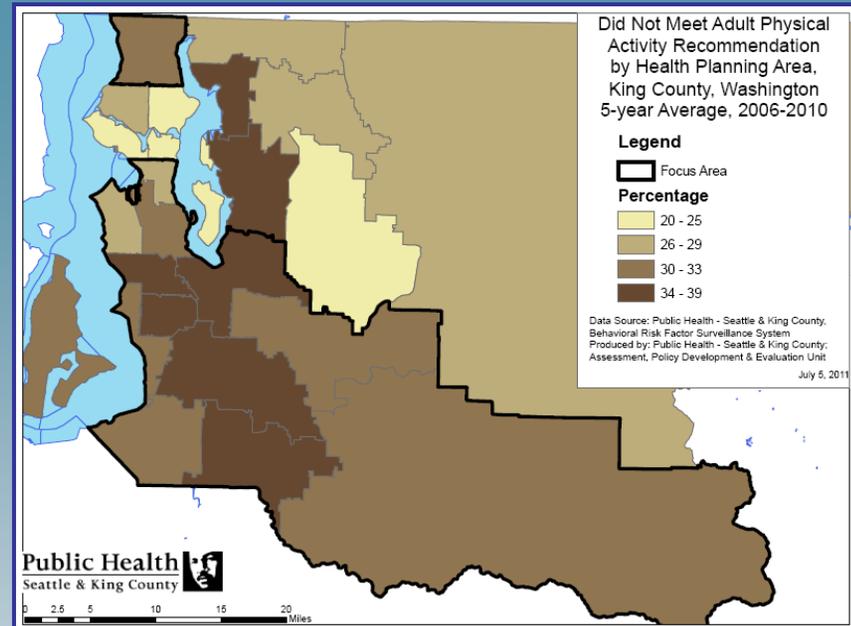


1. Centers for Disease Control and Prevention. (2004). MMWR, 53(36), 844-847.

2. U.S. Centers for Disease Control and Prevention. The obesity epidemic and United States students fact sheet, combining results from 2007 National youth risk behavior survey and 2006 school health policies and programs study.

3. Trust for America's Health. F as in fat: How obesity policies are failing in America 2009.

# Physical Inactivity



# WalkScore.com Walkability by ZIP Code, King County, Washington 2011

## Legend

 Seattle

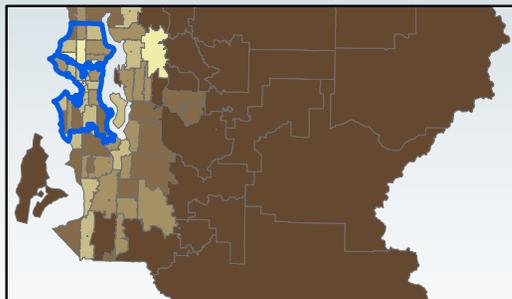
## WalkScore

-  Car required
-  Car Dependent
-  Somewhat walkable
-  Very walkable
-  Walker's Paradise

Data Source: www.walkscore.com. Data generated 6/27/11.

Produced by: Public Health - Seattle & King County;  
Assessment, Policy Development & Evaluation Unit

January 11, 2012



0 0.5 1 2 3 4  
Miles



# No place to play

- Studies show that when people have convenient access to safe parks, they exercise more.
- Yet, proximity to parks is a major issue:

Boston	97%	2,900
New York	91%	178,500
San Francisco	85%	16,700
Seattle	79%	18,600
Dallas	42%	182,800
Los Angeles	33%	657,700

Percentage of children within 1/4 mile of a park      Number of children without access



- In Los Angeles (city), 8.5 acres per 1000 residents, two-thirds of resident children have no public parks within walking distance
- In Seattle, 11.5 acres per 1000 residents, one-fifth of resident children have no public parks within walking distance

**What can we  
do about it?**

**We'll be back!**