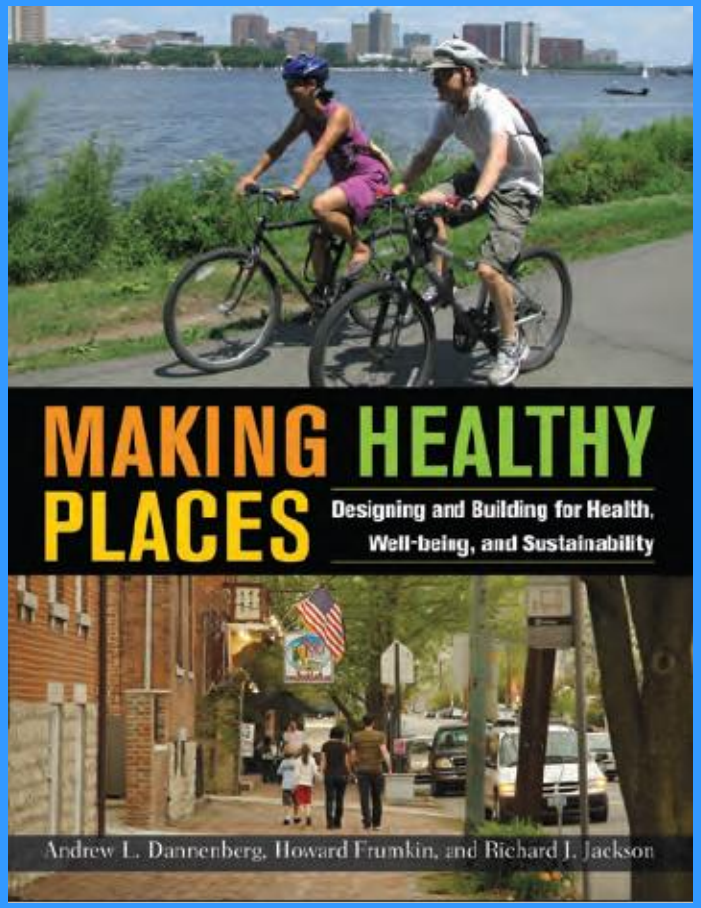
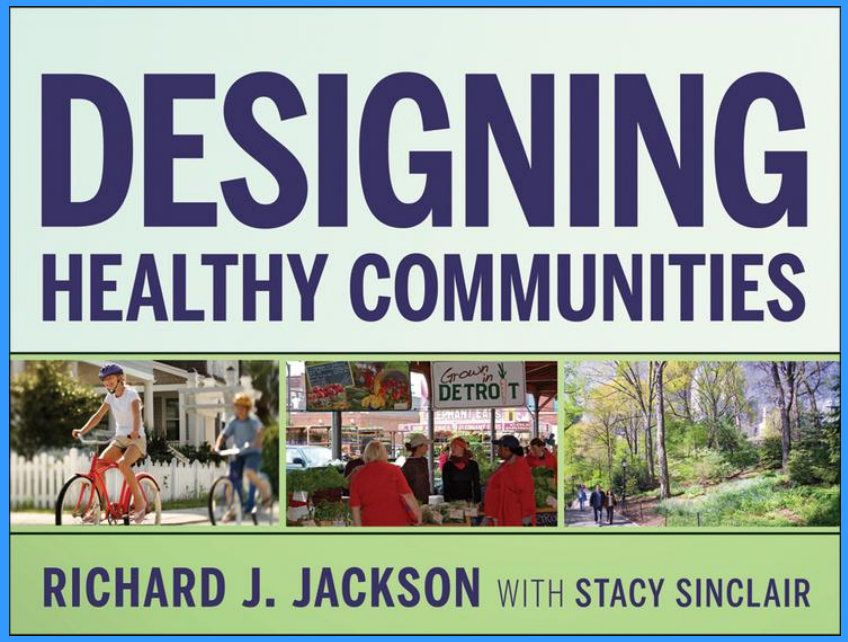
# We Are What We Eat—
# And What We Build




*Richard J Jackson MD, MPH, FAAP*
*HonASLA, HonAIA*
*dickjackson@ucla.edu*

# DESIGNING HEALTHY COMMUNITIES

## The 2012 PBS 4-Part Series

Dr. Richard Jackson, former head of Environmental Public Health for the Centers for Disease Control, explains the link between health and the way our communities – especially our suburbs – are designed. Obesity, asthma, diabetes and heart disease are aggravated by the auto-centric way we live today. It's no secret that today's young people are likely to have shorter lives than their parents due to unhealthy lifestyles.

It doesn't have to be this way. Well-designed communities can improve both physical and mental health.

**Special Offer, courtesy of the Fund for the Environment & Urban Life:**

Purchase the Complete **Designing Healthy Communities** Series (4 DVDs, 1 hour each, plus 4 bonus videos) to share with colleagues. Normally $99, **the series is available at $20.**

For this special offer, visit:
**www.DesigningHealthyCommunities.org/oram**
Limited supply available at discount. $6 s/h added.

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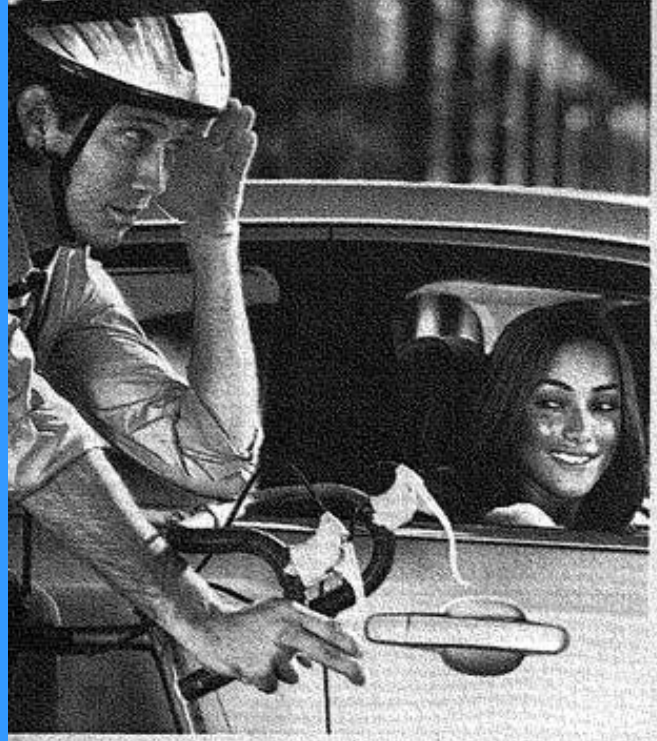
mpc | OUR MEDIA BUILDS COMMUNITIES

http://designinghealthycommunities.org/oram/

# REALITY SUCKS



## LUCKILY THE GM COLLEGE DISCOUNT DOESN'T.

GM College Discount

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(discount example)

| | |
|---|---|
| Sonic 5-Door LS MSRP starting at | $ 15,395.00 |
| MSRP of Sonic 5-Door 1LT as shown[3] | $ 16,495.00 |
| Preferred Pricing[3] | $ 16,202.07 |
| **Your Discount** | **$ 292.93** |

**2012 GMC Sierra 1500**
(discount example)

| | |
|---|---|
| Sierra 1500 Reg. Cab WT 2WD MSRP starting at | $ 22,940.00 |
| MSRP of Sierra 1500 Extended Cab SLE 2WD with optional equipment as shown[3] | $ 32,840.00 |
| Preferred Pricing[3] | $ 31,026.26 |
| **Your Discount** | **$ 1,813.74** |

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GMC

# CDC: Antidepressant use skyrockets 400% in past 20 years

By Janice Lloyd, USA TODAY

Updated 8h 50m ago



Use of antidepressant drugs has soared nearly 400% since 1988, making the medication the most frequently used by people ages 18-44, a report from the Centers for Disease Control and Prevention shows.

Matt Detrich, AP

Doctors who prescribe some popular antidepressants should monitor their patients closely for warning signs of suicide, especially when they first start the pills or change a dose.

Eleven percent of Americans ages 12 years and older took antidepressants during the 2005-08 study period, the authors write. They add that though the majority of antidepressants were taken to treat depression, the drugs also can be used for anxiety disorders and other conditions.

The data are from the National Health and Nutrition Examination Surveys, which included information from 12,637 participants about prescription-drug use, antidepressant use, length of use, severity of depressive symptoms and contact with a health professional.

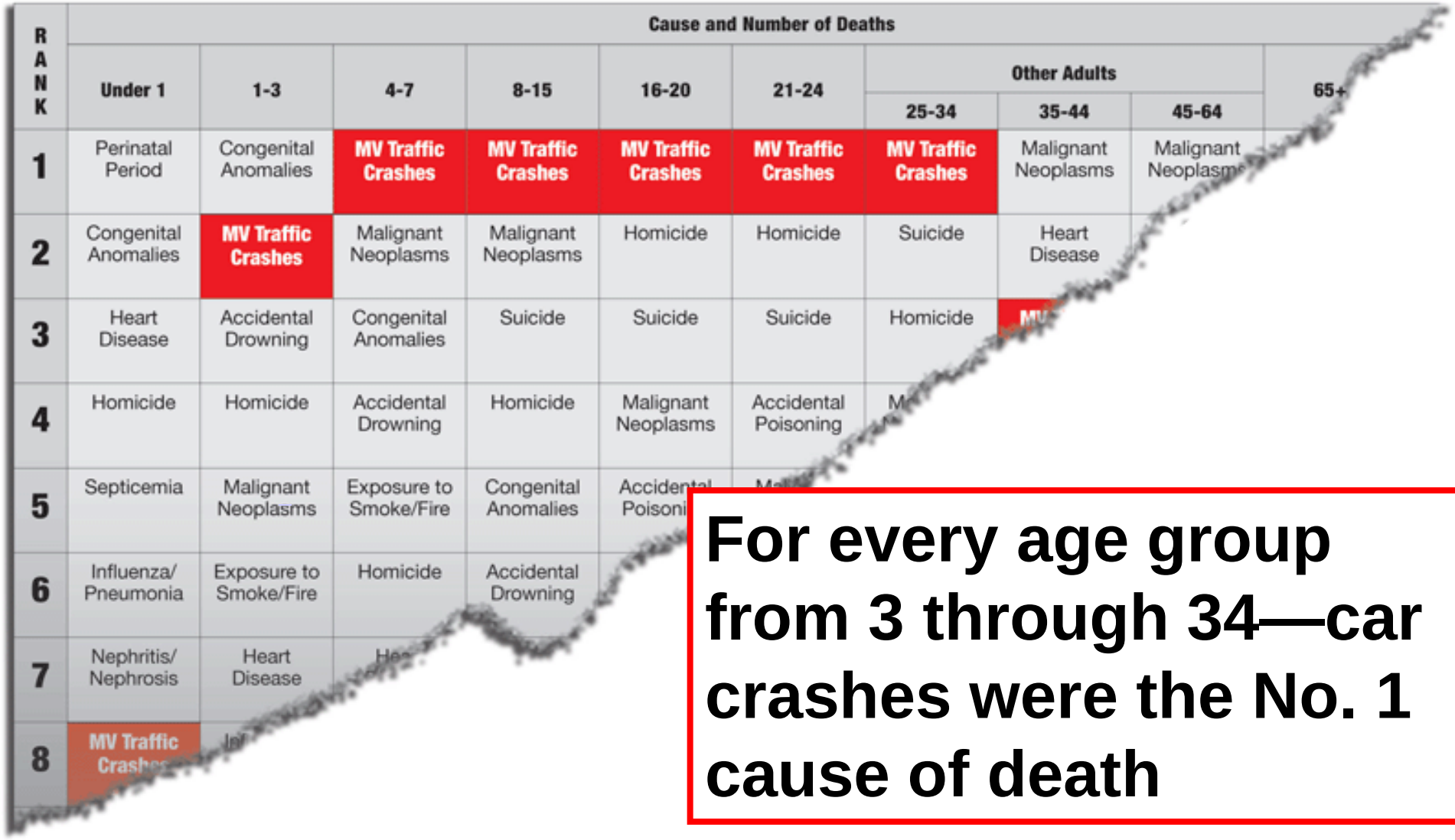
Mental-health professionals not associated with the survey cited several reasons as possible explanations for the spike:

**USA Today 10/20/2011**

# Commuting by driving is not good for your physical, mental, and social health.

**Traffic along LA freeways and Wilshire Blvd.**

# We Pediatricians Fear This Most In Our Own Children…



| RANK | Cause and Number of Deaths | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Under 1 | 1-3 | 4-7 | 8-15 | 16-20 | 21-24 | Other Adults | | | 65+ |
| | | | | | | | 25-34 | 35-44 | 45-64 | |
| 1 | Perinatal Period | Congenital Anomalies | MV Traffic Crashes | MV Traffic Crashes | MV Traffic Crashes | MV Traffic Crashes | MV Traffic Crashes | Malignant Neoplasms | Malignant Neoplasms | |
| 2 | Congenital Anomalies | MV Traffic Crashes | Malignant Neoplasms | Malignant Neoplasms | Homicide | Homicide | Suicide | Heart Disease | | |
| 3 | Heart Disease | Accidental Drowning | Congenital Anomalies | Suicide | Suicide | Suicide | Homicide | MV | | |
| 4 | Homicide | Homicide | Accidental Drowning | Homicide | Malignant Neoplasms | Accidental Poisoning | M | | | |
| 5 | Septicemia | Malignant Neoplasms | Exposure to Smoke/Fire | Congenital Anomalies | Accidental Poisoni | M | | | | |
| 6 | Influenza/ Pneumonia | Exposure to Smoke/Fire | Homicide | Accidental Drowning | | | | | | |
| 7 | Nephritis/ Nephrosis | Heart Disease | He | | | | | | | |
| 8 | MV Traffic Crashes | In | | | | | | | | |

**For every age group from 3 through 34—car crashes were the No. 1 cause of death**

nhtsa "People Saving People"

# In 2009 in the US

2,953,501million vehicle miles traveled

33,808 people died

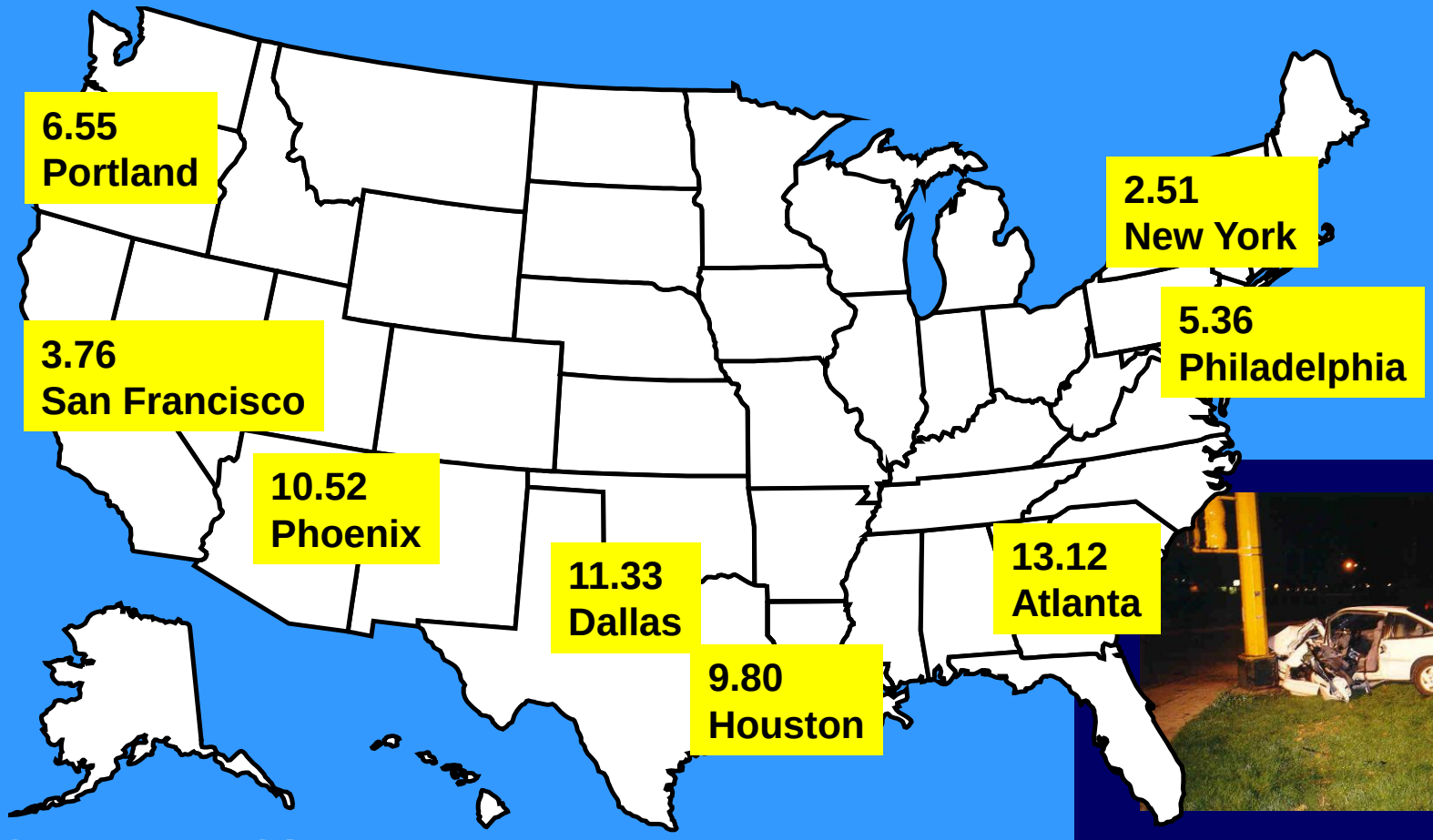
in motor vehicle traffic crashes.

One in a million chance of death per every 87 miles driven

- http://www.fhwa.dot.gov/policyinformation/statistics/2009/vm1.cfm
- http://www-nrd.nhtsa.dot.gov/Pubs/811363.PDF

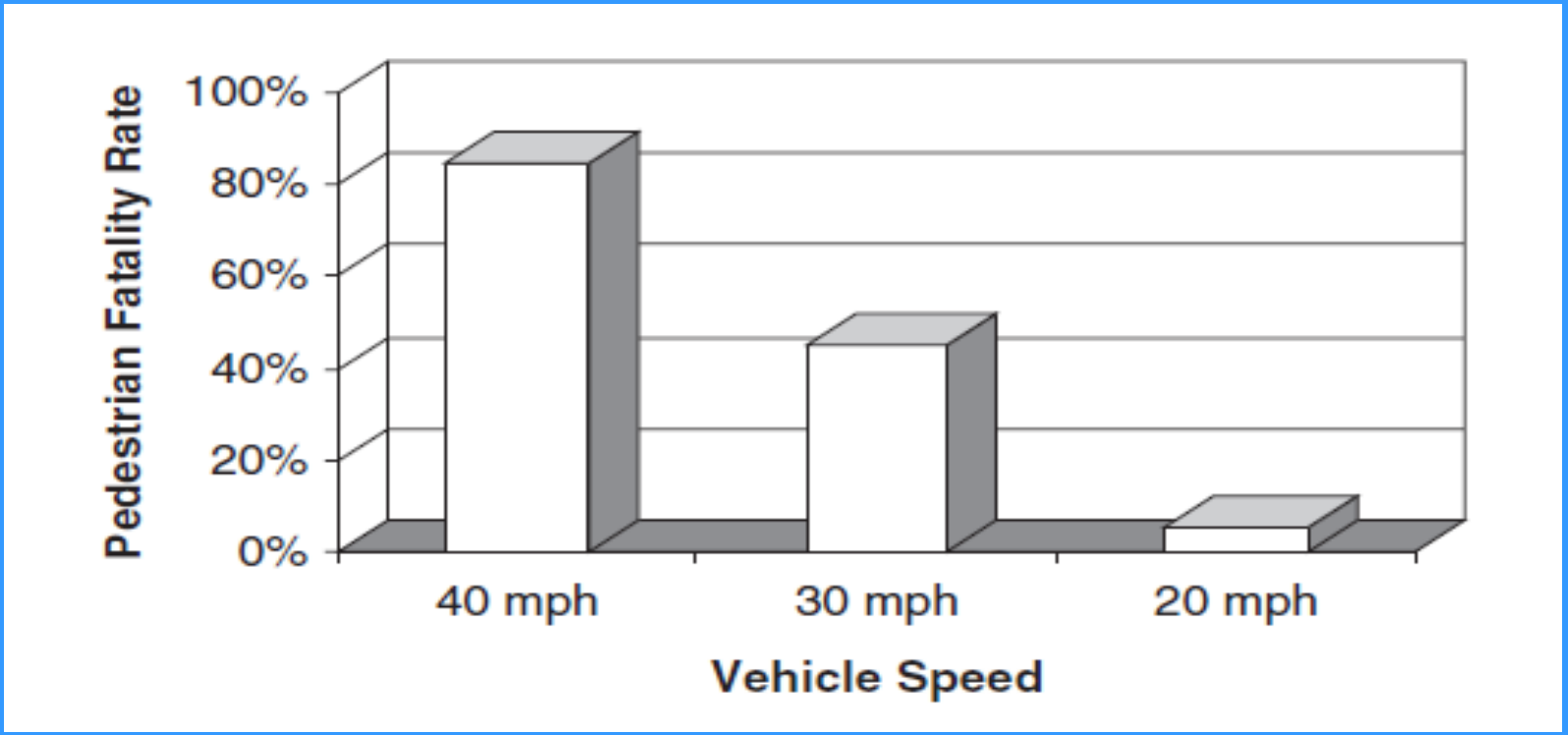
# Automobile fatality rates by city, 1998

(excluding pedestrian fatalities; deaths/100,000/year)




Source: NHTSA

# Pedestrian Fatality Rates for Collisions at Different Speeds




**Zegeer et al 2002**

# The Most Prevalent Chronic Disease of Childhood Is…

# Asthma Study in 12 Southern California High Schools

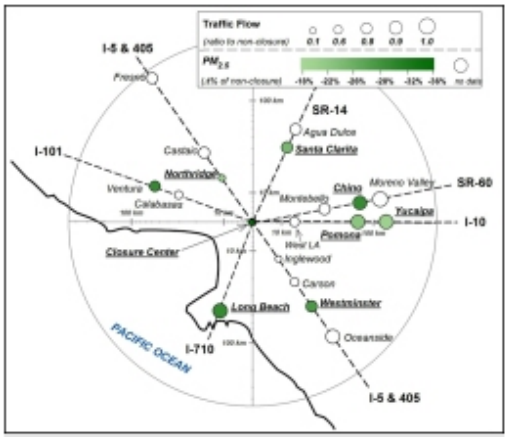
- 3535 children with no history of asthma in 6 high and 6 low air pollution high schools
- **5 years later:** 265 children developed asthma.
  - High ozone high schools:
    - asthma rate was 3.3x higher in children playing three or more sports.
  - Low ozone high schools:
    - sports had no effect on asthma rates

# Did you Hear about Carmageddon? When the 405 Freeway in LA Was Closed for a Weekend in 2011?


The Mulholland Bridge, looking north from access road near the 405

# 'Carmaheaven': Closure of 405 in 2011 improved air quality up to 83 percent

**By Alison Hewitt** | September 28, 2012




*Traffic and pollutants (Carmageddon 2011)*

Take the time to enjoy a deep breath this weekend when the 405 freeway closes for Carmageddon II. If it's anything like last year, the air quality is about to get amazing.

In study findings announced Sept. 28, UCLA researchers report that they measured air pollutants during last year's Carmageddon (July 15–17) and found that when 10 miles of the 405 closed, air quality near the shuttered portion improved within minutes, reaching levels 83 percent better than on comparable weekends.

Because traffic dipped all over Southern California that weekend, air quality also improved 75 percent in parts of West Los Angeles and Santa Monica and an average of 25 percent regionally — from Ventura to Yucaipa, and Long Beach to Santa Clarita.

2 day closure of 10 miles of Highway 405 in July 2011

Air Quality Change During Carmageddon

Close to the Highway Improved 83%

In West Los Angeles and Santa Monica Improved 75%

For the Region Improved 25%

New York Times
March 31, 2013
CDC Data

# A.D.H.D. Seen in 11% of U.S. Children as Diagnoses Rise

**A.D.H.D. Diagnoses Worry Doctors:** The Times's Alan Schwarz on doctors' growing concern about the skyrocketing use of A.D.H.D. medications in children.

By ALAN SCHWARZ and SARAH COHEN
Published: March 31, 2013 | 1162 Comments

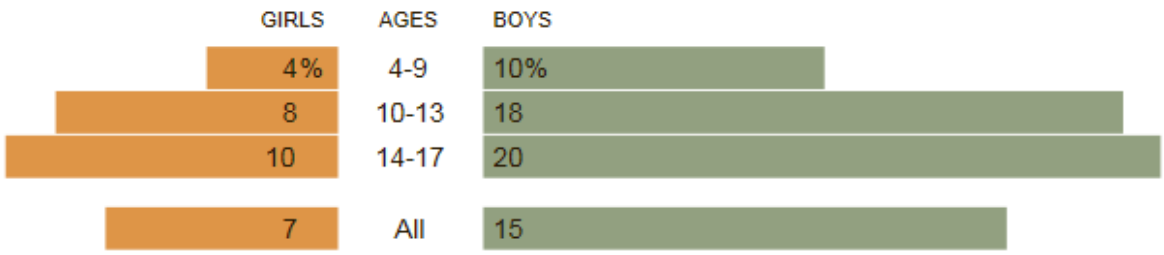
Nearly one in five high school age boys in the United States and 11 percent of school-age children over all have received a medical diagnosis of attention deficit hyperactivity disorder, according to data from the federal Centers for Disease Control and Prevention.

Published: March 31, 2013

## Rates of A.D.H.D. Diagnosis in Children

Nearly one in five high school-aged boys has been given a diagnosis of attention deficit hyperactivity disorder, about twice the rate of girls in the same age group, according to an analysis of 2011-12 data from the Centers for Disease Control and Prevention. Related Article »

Children ages 4 to 17 ever given a diagnosis of A.D.H.D.




20% of Teen Age boys taking Diagnosed with Hyperactivity

PHYS ED | MARCH 27, 2013, 12:01 AM | 93 Comments

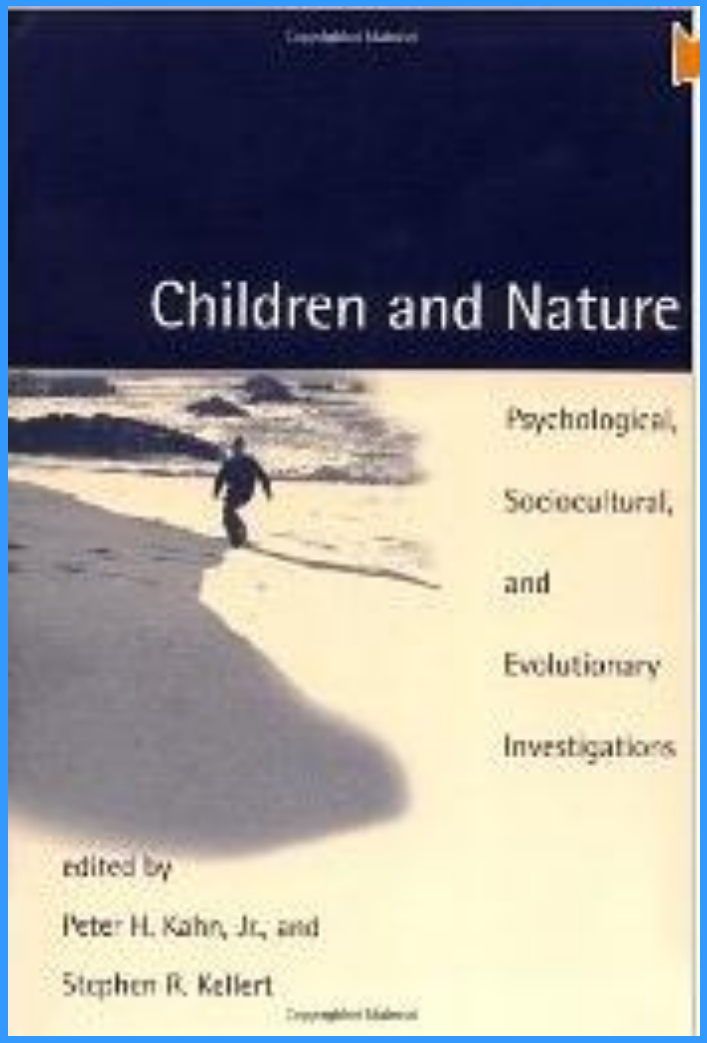
# Easing Brain Fatigue With a Walk in the Park

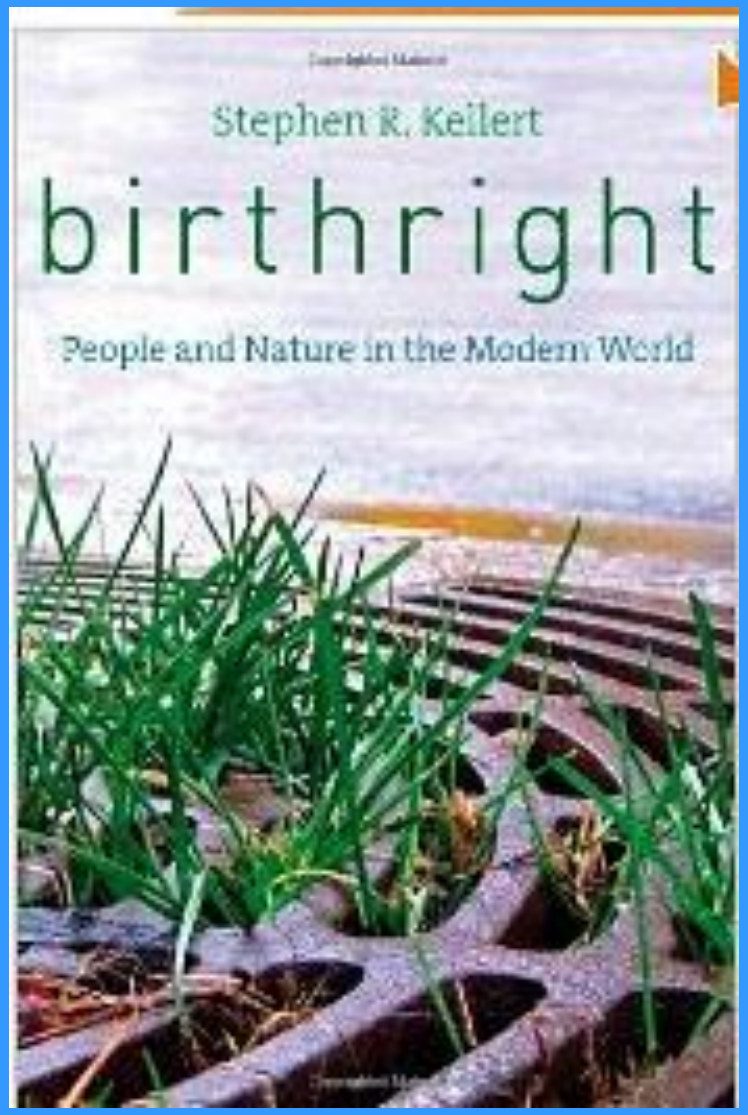
By GRETCHEN REYNOLDS

Brick House Pictures/Getty Images

FACEBOOK

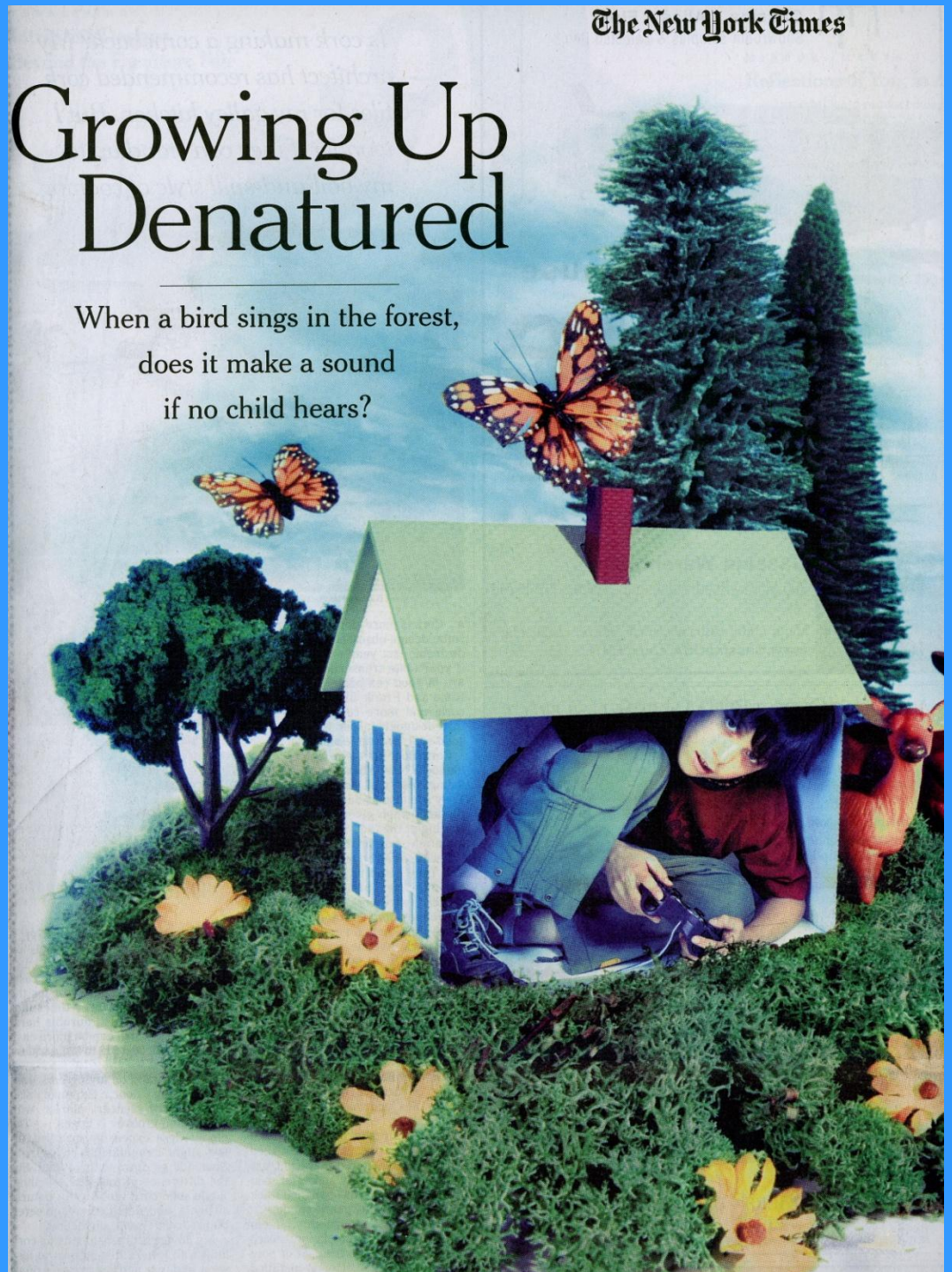
Scientists have known for some time that


Children and Nature
Psychological,
Sociocultural,
and
Evolutionary
Investigations
edited by
Peter H. Kahn, Jr., and
Stephen R. Kellert


Stephen R. Kellert
birthright
People and Nature in the Modern World

“I like to play indoors better ’cause that’s where all the electrical outlets are,”

-fourth grader.



American Academy of Pediatrics

POLICY STATEMENT

# The Built Environment: Designing Communities to Promote Physical Activity in Children


ABSTRACT

An estimated 12% of American children are overweight, and physical inactivity contributes to this high prevalence of overweight. This policy statement highlights how the built environment of a community affects children's opportunities for physical activity. Neighborhoods and communities can provide opportunities for recreational physical activity with parks and open spaces, and policies must support this capacity. Children can engage in physical activity as a part of their daily lives, such as on their travel to school. Factors such as school location have played a significant role in the decreased rates of walking to school, and changes in policy may help to increase the number of children who are able to walk to school. Environmental modifications that address risks associated with automobile traffic are likely to be conducive to more walking and biking among children. Actions that reduce parental perceptions and fear of crime may promote outdoor physical activity. Policies that promote more active lifestyles among children and adolescents will enable them to achieve the recommended 60 minutes of daily physical activity. By working with community partners, pediatricians can participate in establishing communities designed for activity and health. *Pediatrics* 2009;123:1591–1598


INTRODUCTION

A child's life is affected by the environment in which he or she lives. Relationships between health and the quality of air, water, and food are well recognized.[1–3] The physical environments of the home and school also influence health through exposures to lead,[4] mold,[5] noise,[6] or ambient light.[7] In addition, the overall structure of the physical environment of a child's community referred to as the "built environment"[8] can also affect health in diverse ways.

As cities have expanded into rural areas, large tracts of land have been frequently transformed into low-density developments in a "leapfrog" manner. The resultant urban sprawl can increase automobile travel, which increases air pollution[9] as well as passenger and pedestrian traffic fatalities.[10] Some urban areas may have few supermarkets, produce stands, or community gardens, thereby limiting access to fresh fruits and vegetables.[11] The physical environment of a community can support opportunities for play, an essential component of child development,[12] and for physical activity, a health behavior that not only reduces risk of excess weight gain[13,14] but also has many other benefits for overall well-being.

Many factors influence a child's level of physical activity, including individual-level psychosocial factors such as self-efficacy[15,16]; family factors such as parental support[17]; and larger-scale factors such as social norms.[18] Although these are all important contributors, this policy statement is limited to focusing on how the physical design of the community affects children's opportunities for physical activity. Opportunities for recreational physical activity arise with parks and green spaces. "Utilitarian" physical activity, such as walking or bicycling to school and to other activities, is an equally important part of a child's daily life. Environments that promote more active lifestyles among children and adolescents will be important to enable them to achieve recommended levels of physical activity.

BACKGROUND

The term "built environment" refers to spaces such as buildings and streets that are deliberately constructed as well as outdoor spaces that are altered in some way by human activity. This term may be unfamiliar to most clinicians, but with the high prevalence of childhood overweight and obesity,[19] the subject is increasingly relevant.

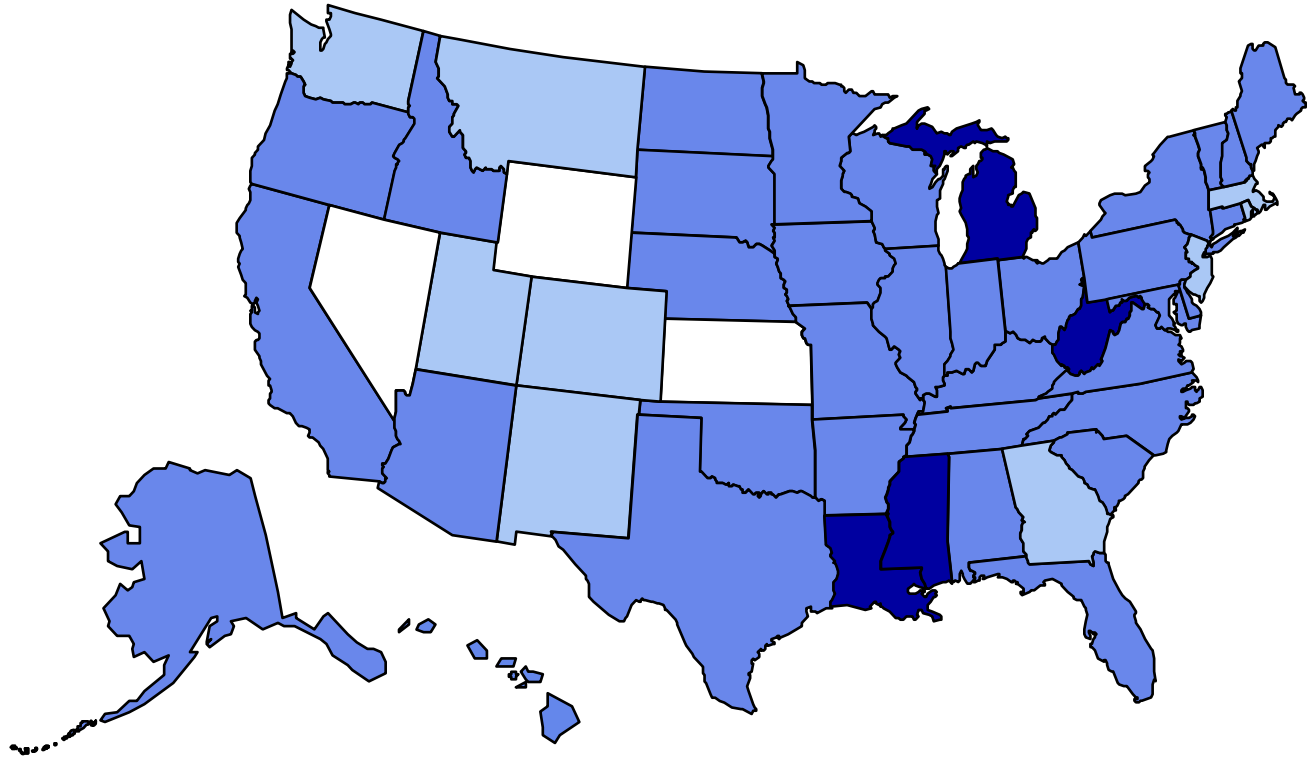


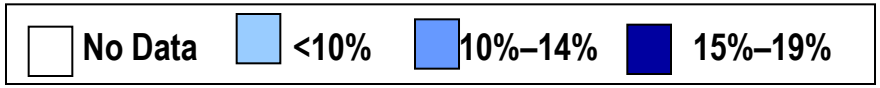
- The Built Environment: Designing Communities to Promote Physical Activity in Children
- Policy Statement American Academy of Pediatrics
- June 2009

# Obesity Trends* Among U.S. Adults

## BRFSS, 1991

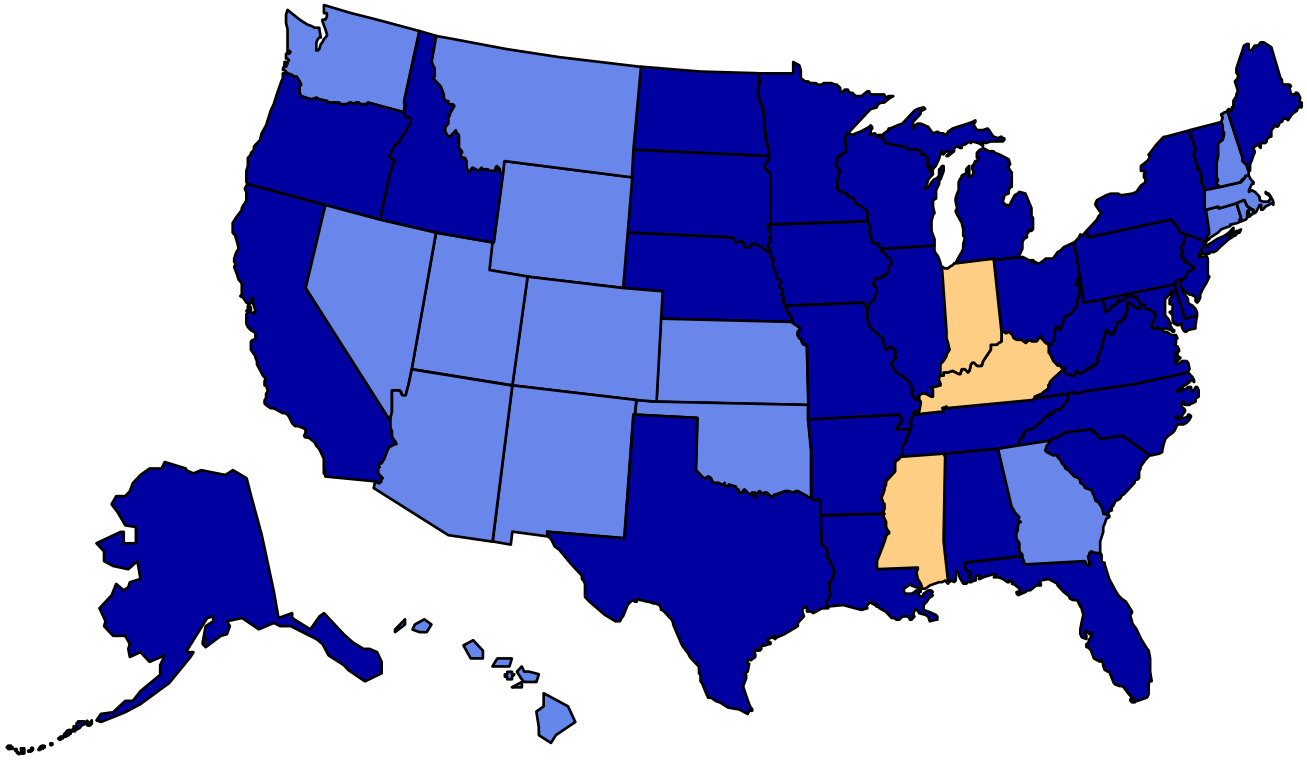
**(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)**

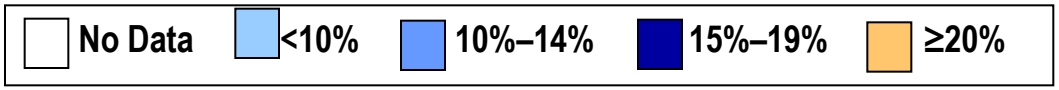




# Obesity Trends* Among U.S. Adults BRFSS, 1997

**(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person**

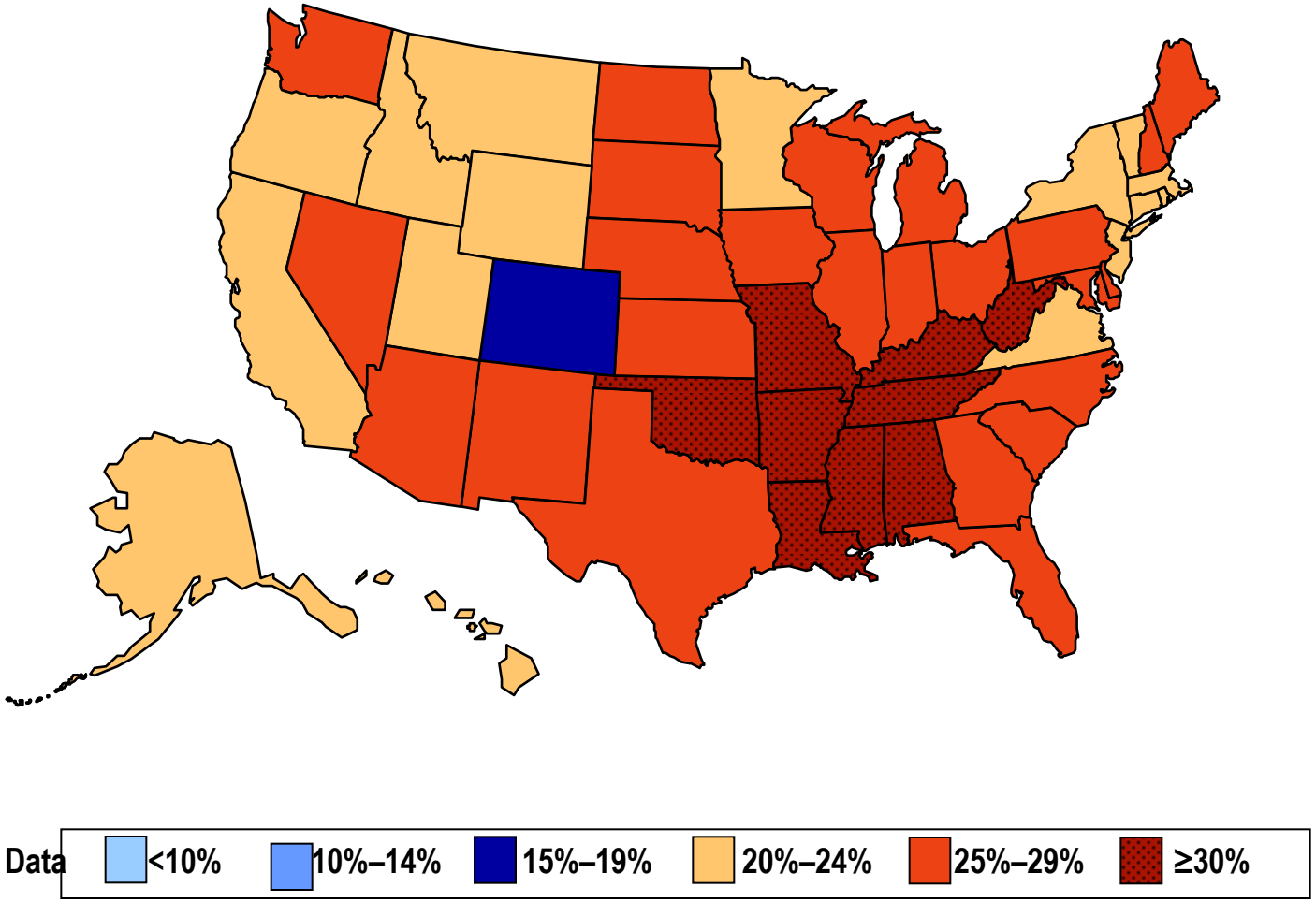




# Obesity Trends* Among U.S. Adults

## BRFSS, 2009

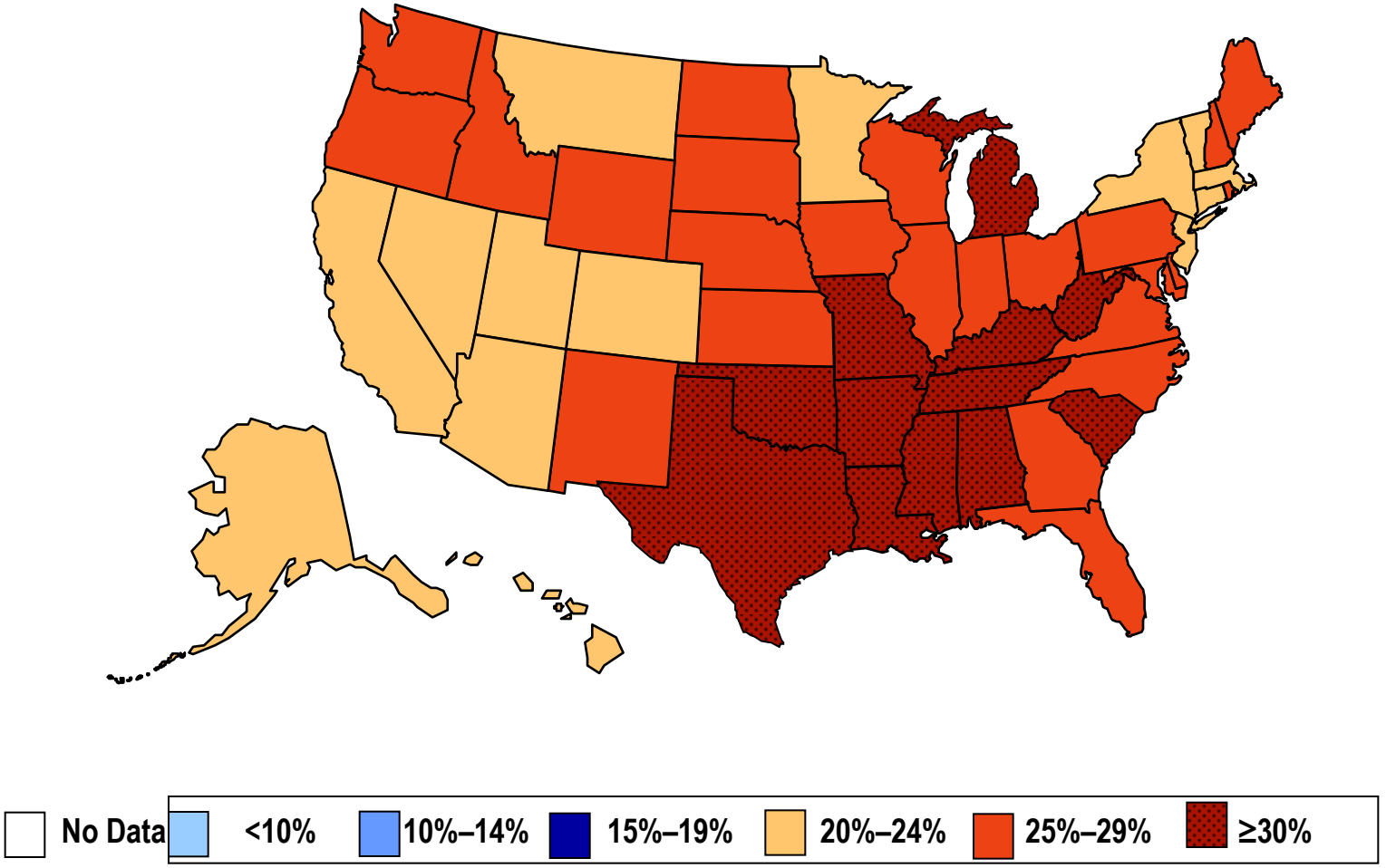
**(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)**



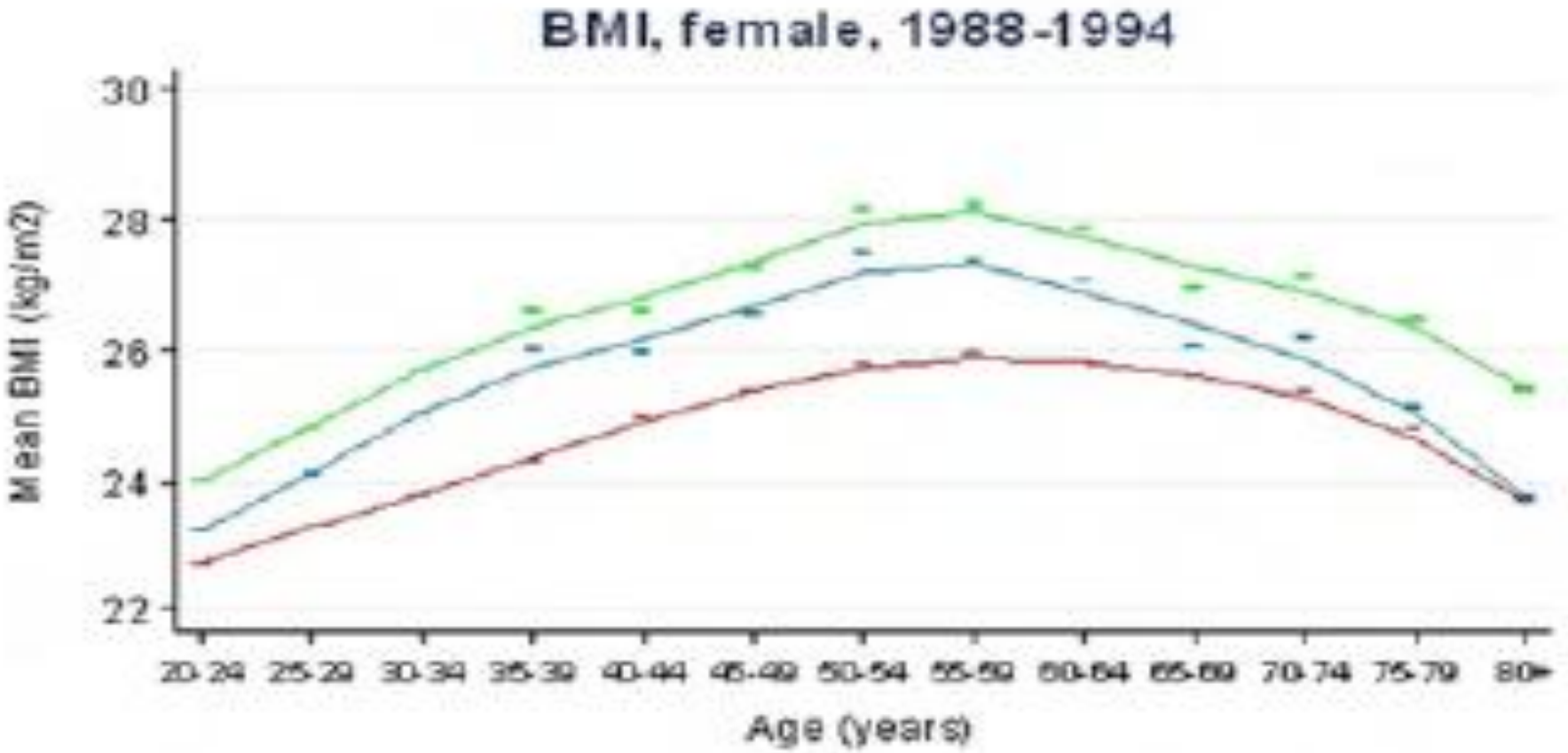
# Obesity Trends* Among U.S. Adults

## BRFSS, 2010

**(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)**



# Body Mass Index US Females 1988-1994

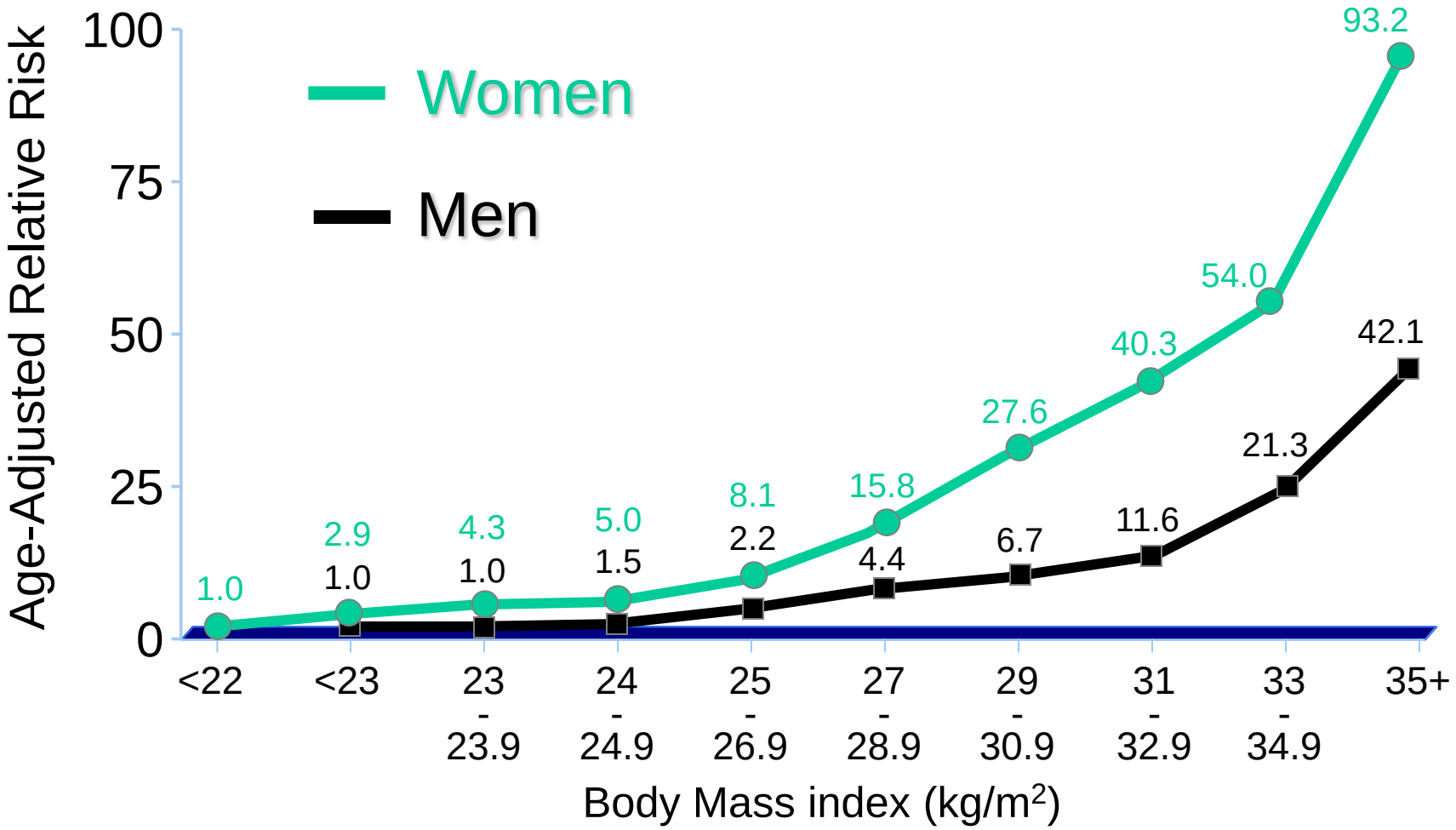



**NHANES -- Measured**

**NHANES – In person interview-- self-reported**

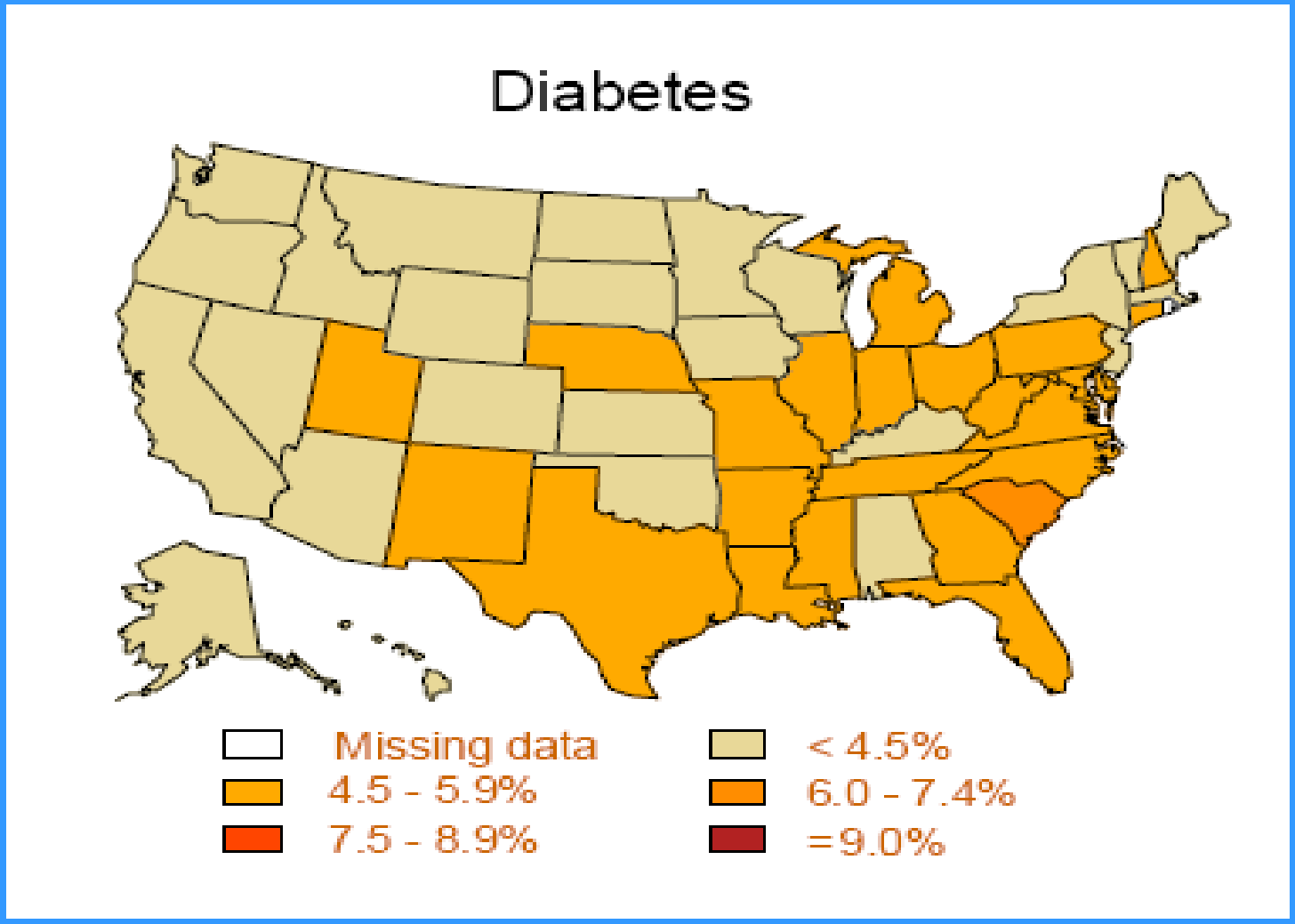
**BRFSS – Telephone Interview**

# Relationship Between BMI and Risk of Type 2 Diabetes

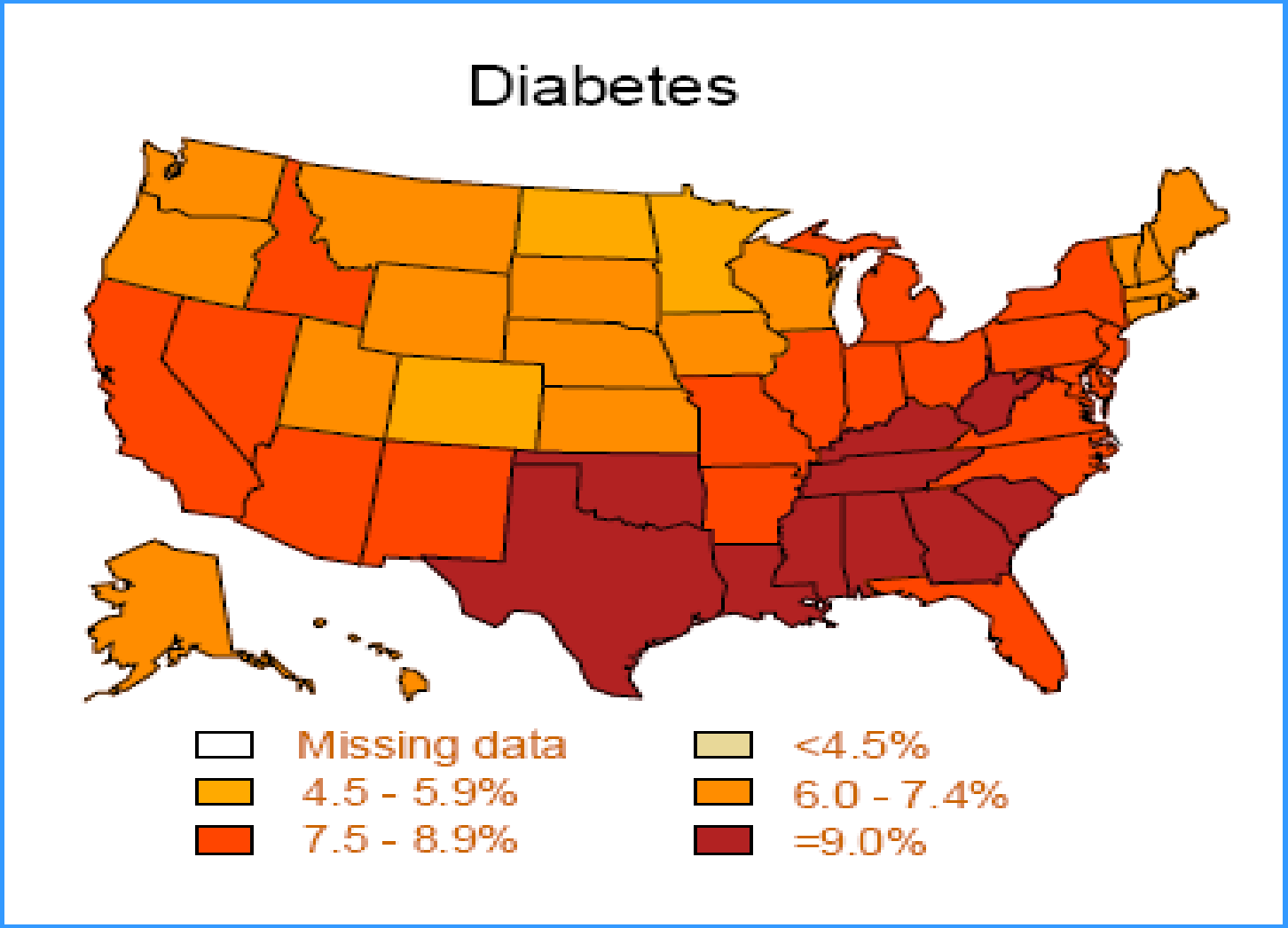



Chan J et al. *Diabetes Care* 1994;17:961.
Colditz G et al. *Ann Intern Med* 1995;122:481.

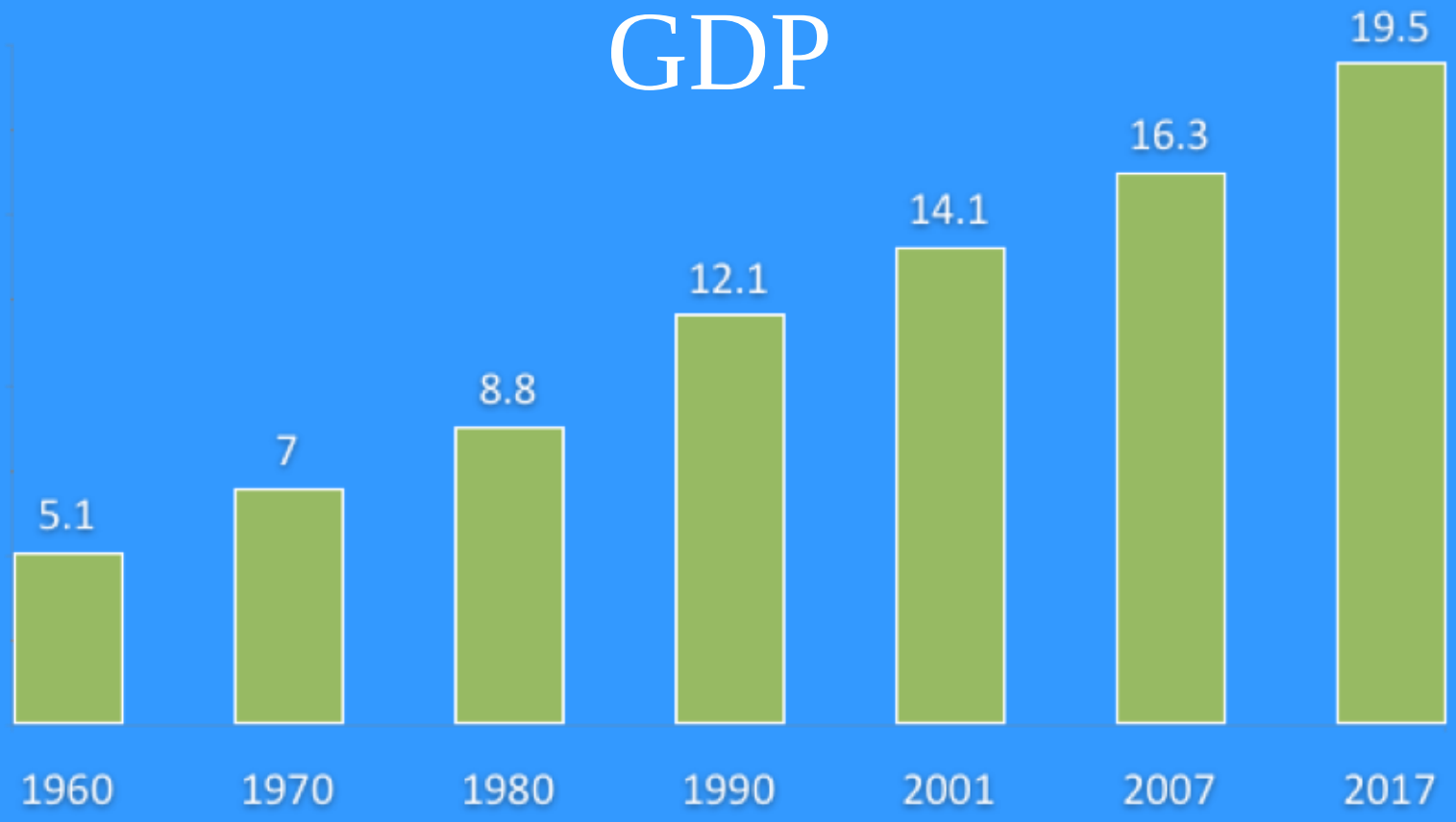
# Percentage of US Adults with Diagnosed Diabetes - 1994



# Percentage of US Adults with Diagnosed Diabetes - 2007

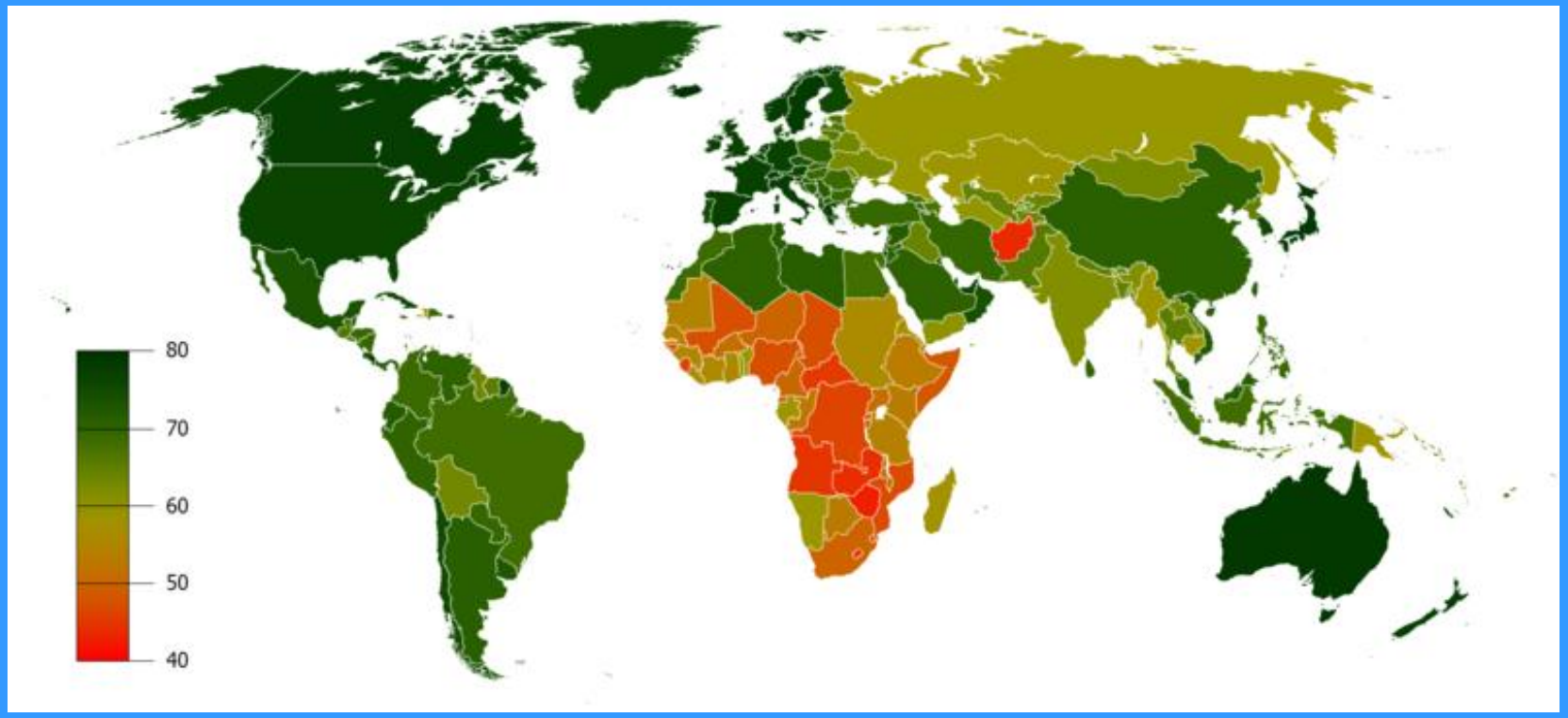


# U.S. "Health" Care Expenditures as Percent of GDP




**Keehan et al: *Health Affairs***
**March/April 2008 27: 145-155**

# Male Life Expectancy




**US Life Expectancy is #49 Worldwide – CIA Chartbook**

*"The Status of Baby Boomers' Health in the United States: The Healthiest Generation?"*

JAMA Internal Medicine

February 4, 2013



RESEARCH LETTER

ONLINE FIRST

## The Status of Baby Boomers' Health in the United States: The Healthiest Generation?

From 1946 through 1964, 78 million children ("baby boomers") were born in the United States. In 2010, baby boomers made up 26.1% of the US population.[1] Medicine has improved significantly during baby boomers' lifetimes. Although these advantages have led to a progressively increasing life expectancy,[2] previous studies have shown mixed results regarding whether baby boomers are healthier than prior generations.[3,4] The present study examined the health status of aging baby boomers relative to the previous generation to provide a vitally important context for health workforce and policy planning in the coming years.

**Methods.** We analyzed data from the National Health and Nutrition Examination Survey (NHANES), including NHANES III (1988-1994) (for previous generation) and the NHANES for 2007 to 2010 (for baby boomers), focusing on respondents who were aged 46 to 64 years during either period. The 2 cohorts were compared with regard to health status, functional and work disability, healthy lifestyle characteristics, and presence of chronic disease. Further details of the methods can be found in the eAppendix (http://www.jamainternalmed.com).

**Results.** The demographic characteristics of the cohorts were very similar except for the proportions in each racial/ethnic group, with greater proportions of non-Hispanic blacks (11.3% vs 9.4%) and Hispanics (9.8% vs 3.7%) in the 2007-2010 group compared with the 1988-1994 group ($P<.001$). The mean (SD) ages were 54.1 (0.03) years in the 2007-2010 group and 54.3 (0.03) years in the 1988-1994 group; there was no difference in sex between the 2 cohorts (49.1% male [2007-2010 group] vs 47.3% male [1988-1994 group]). Overall health status was lower in baby boomers, with 13.2% reporting "excellent" health compared with 32% of individuals in the previous generation ($P<.001$). Of the sampled baby boomers, compared with the previous generation, 6.9% vs 3.3% used a walking assist device ($P<.001$), 13.8% vs 10.1% were limited in work ($P=.003$), and 13.3% vs 8.8% had a functional limitation ($P<.001$).

With regard to healthy lifestyle factors, obesity was more common among baby boomers (38.7% obese vs 29.4% [previous generation]; $P<.001$) (**Figure**), and regular exercise was significantly less frequent (33.0% vs 49.9% exercise >12 times per month; $P<.001$); more than half of baby boomers reported no regular physical activity (52.2% vs 17.4%; $P<.001$). Moderate drinking was higher in the baby boomer cohort compared with the previous generation (67.3% vs 37.2%; $P<.001$). There were fewer current smokers in the baby boomer cohort than in the previous generation (21.3% vs 27.6%; $P<.001$).

The percentage of individuals with hypertension (Figure) was more common among baby boomers than among individuals from the previous generation (43.0% vs 30.4%; $P<.001$), as was the percentage of individuals who take medication for hypertension (33.4% vs 23.2%; $P<.001$). Among baby boomers, hypercholesterolemia was more common (73.3% vs 33.8%; $P<.001$ [Figure]), and medication use for hypercholesterolemia was more than 10 times greater (25.9% vs 1.3%; $P<.001$). Baby boomers were also more likely to have diabetes (13.3% vs 12.0%; $P=.003$ [Figure]) and take medication for diabetes (11.3% vs 6.2%; $P<.001$). The slight trend toward higher prevalence of cancer in baby boomers vs the previous generation was not significant (10.6% vs 9.3%; $P=.23$). The frequency of emphysema decreased in the baby boomer generation (2.3%) relative to the previous generation (3.3%) ($P=.03$). Baby boomers were also less likely to have had a myocardial infarction (3.6%) compared with the previous generation (5.3%) ($P=.004$).

A logistic regression was conducted to control for changes in demographic characteristics (age, sex, race,

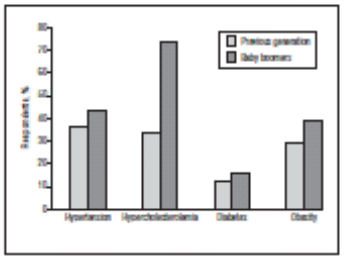



**Figure.** Proportion of each cohort (baby boomers and previous generation at age 46-64 years) with hypertension, hypercholesterolemia, diabetes, or obesity in the 1988-1994 and 2007-2010 NHANES. The difference between cohorts was statistically significant for prevalence of hypertension ($P<.001$), hypercholesterolemia ($P<.001$), diabetes ($P=.003$), and obesity ($P<.001$). Obesity is defined as the proportion of individuals who exceeded a body mass index of 30 (calculated as weight in kilograms divided by height in meters squared). NHANES indicates National Health and Nutrition Examination Survey.

# Overall Health Status US

## Persons Aged 46-64

| NHANES 1988-1994 | NHANES 2007-2010 |
| --- | --- |
| Report “excellent” health | |
| 32% | 13% |
| “Functional Limitation” | |
| 9% | 14% |
| Using Walking Assist (wheelchair, cane, etc) | |
| 3% | 7% |

# “Lifestyle Factors” US

## Persons Aged 46-64 (NHANES)

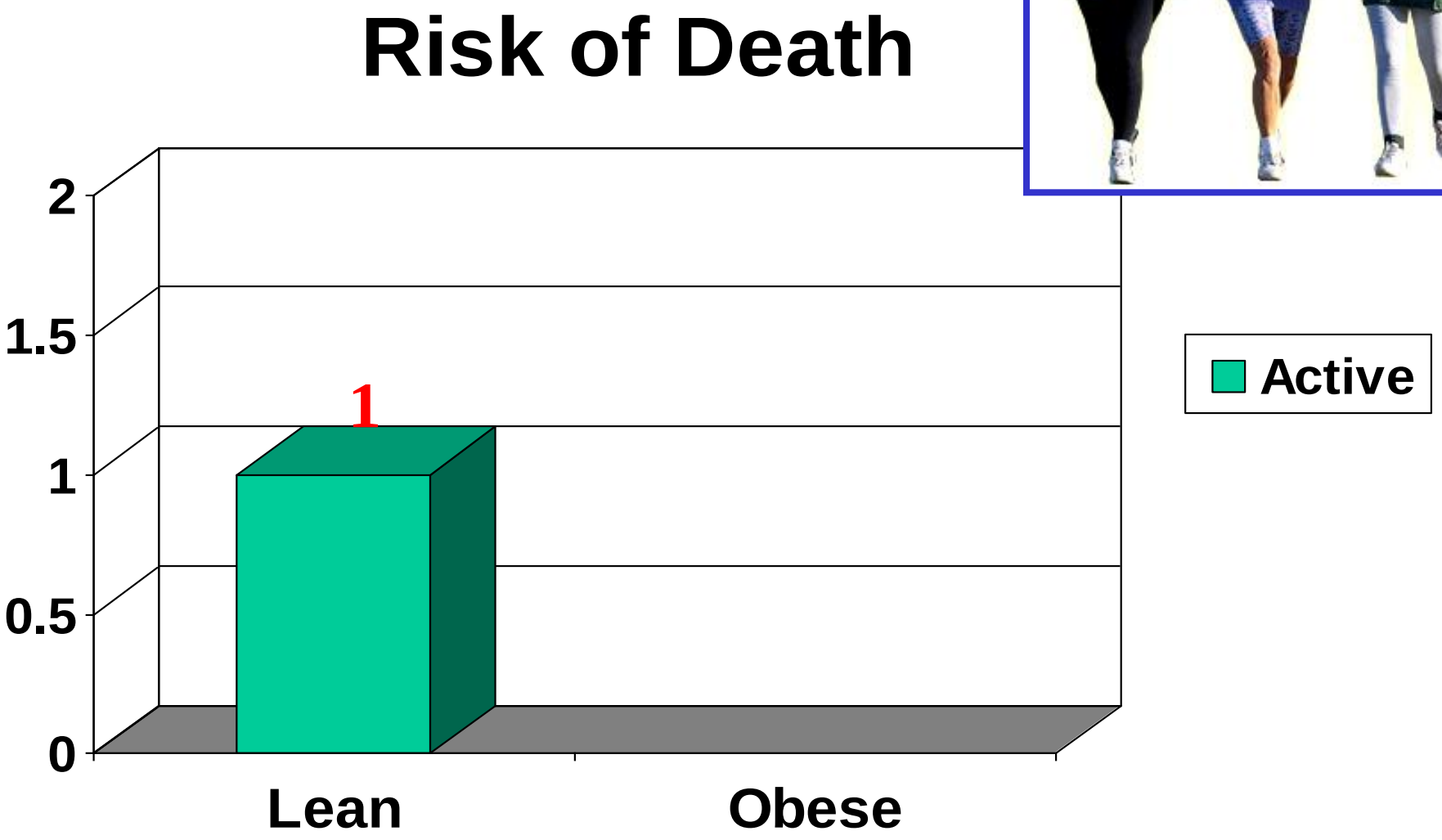
| | 1988-1994 | 2007-2010 |
|---|---|---|
| Smoking | 28% | 21% |
| Obesity | 29% | 39% |

# “Lifestyle Factors” US

## Persons Aged 46-64 (NHANES)

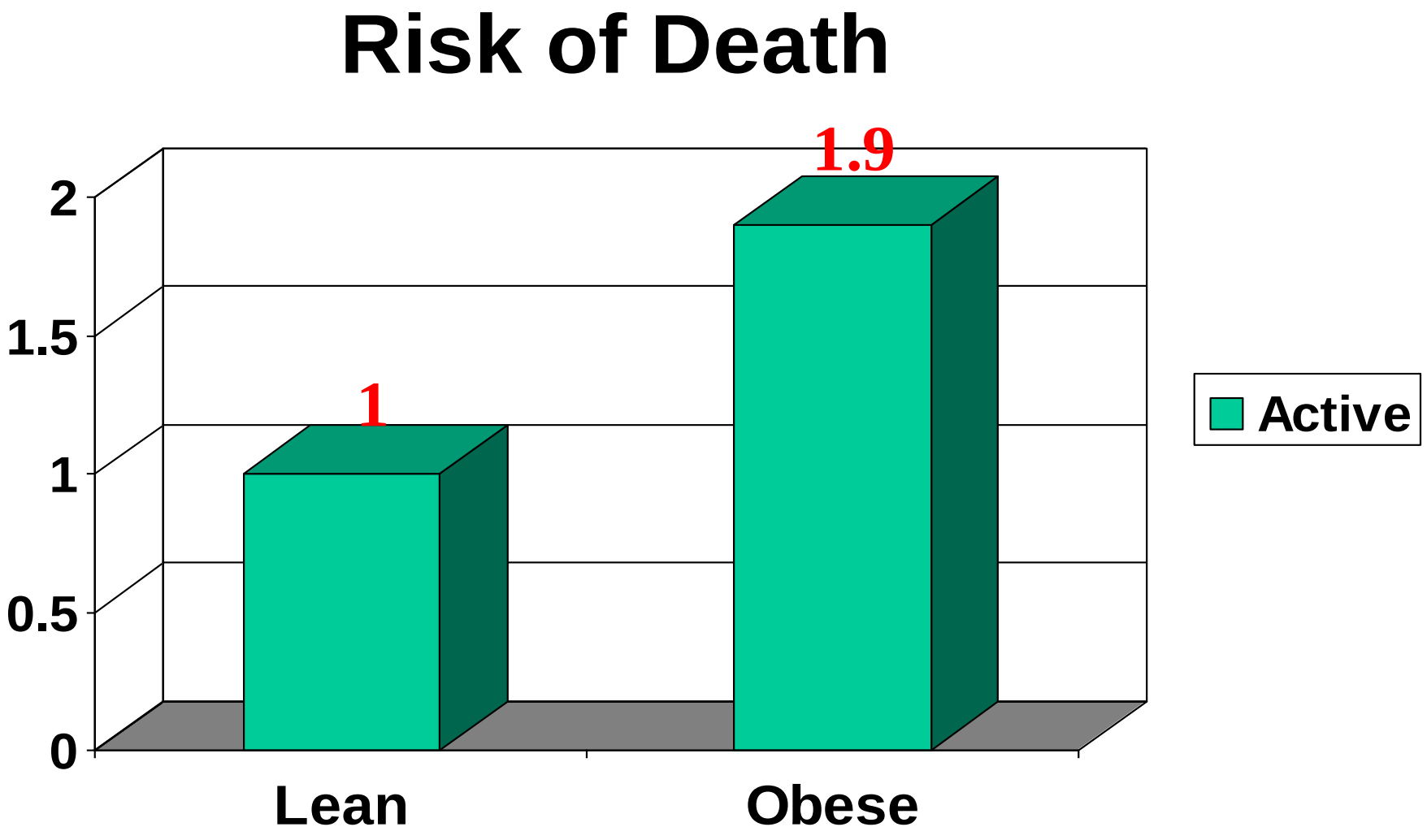
| | 1988-1994 | 2007-2010 |
|---|---|---|
| Smoking | 28% | 21% |
| Obesity | 29% | 39% |
| **No** Regular Physical Activity | 17% | 52% |

# Nurse Study 1976-2000



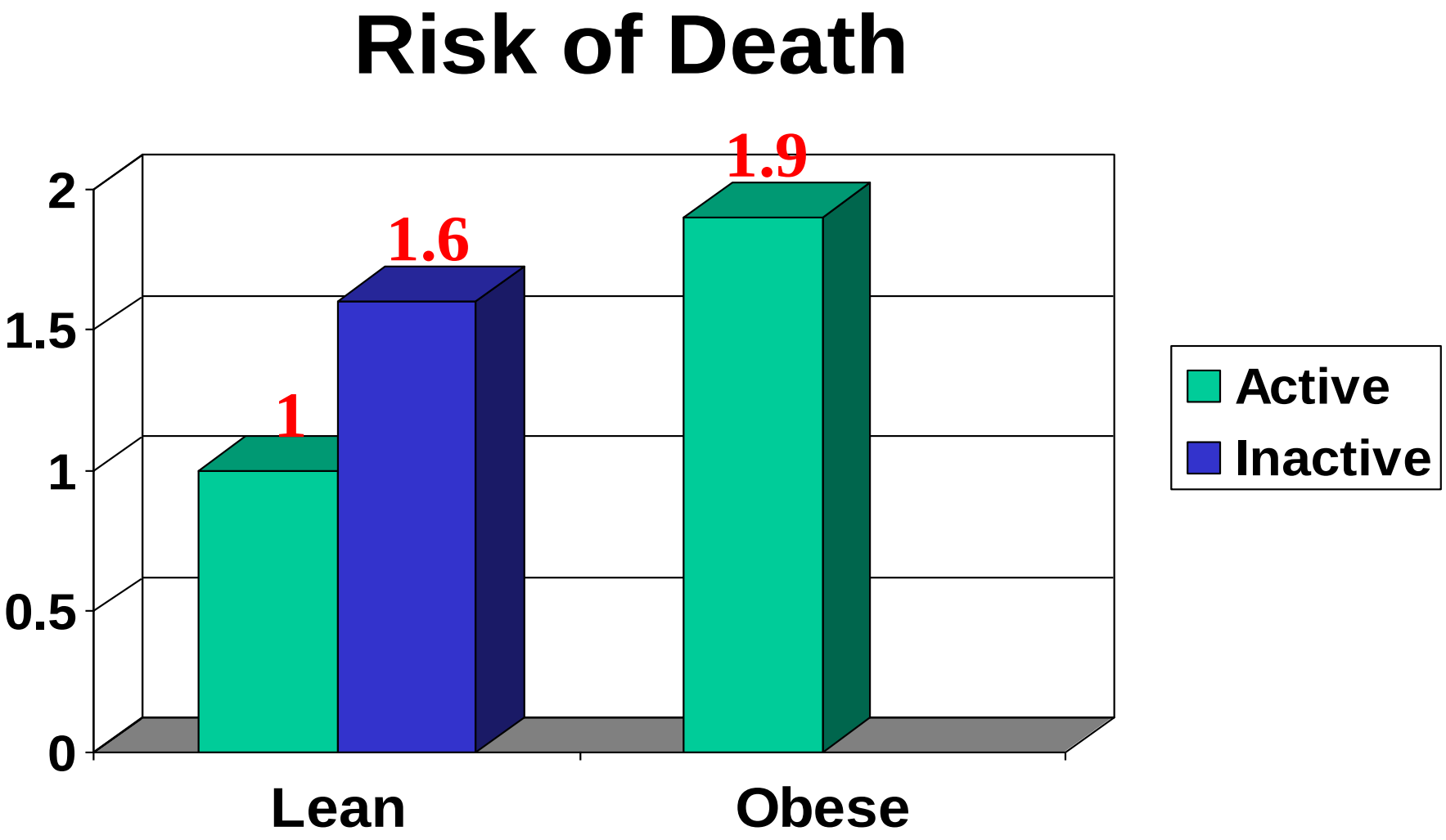

Hu et al. NEJM, December 23, 2004; 351(26):2694-2703.

# Nurse Study 1976-2000



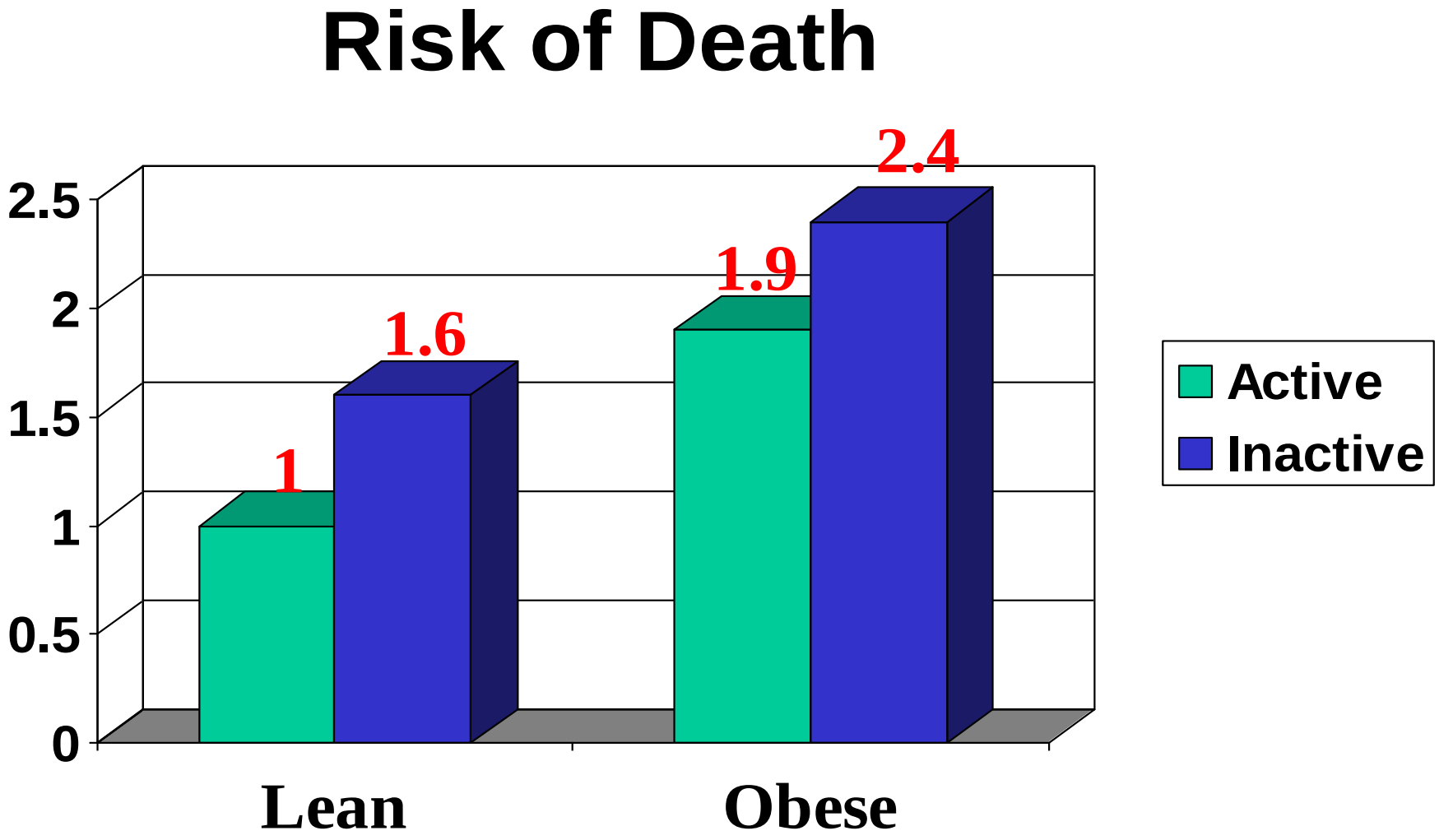

Hu et al. NEJM, December 23, 2004; 351(26):2694-2703.

# Nurse Study 1976-2000



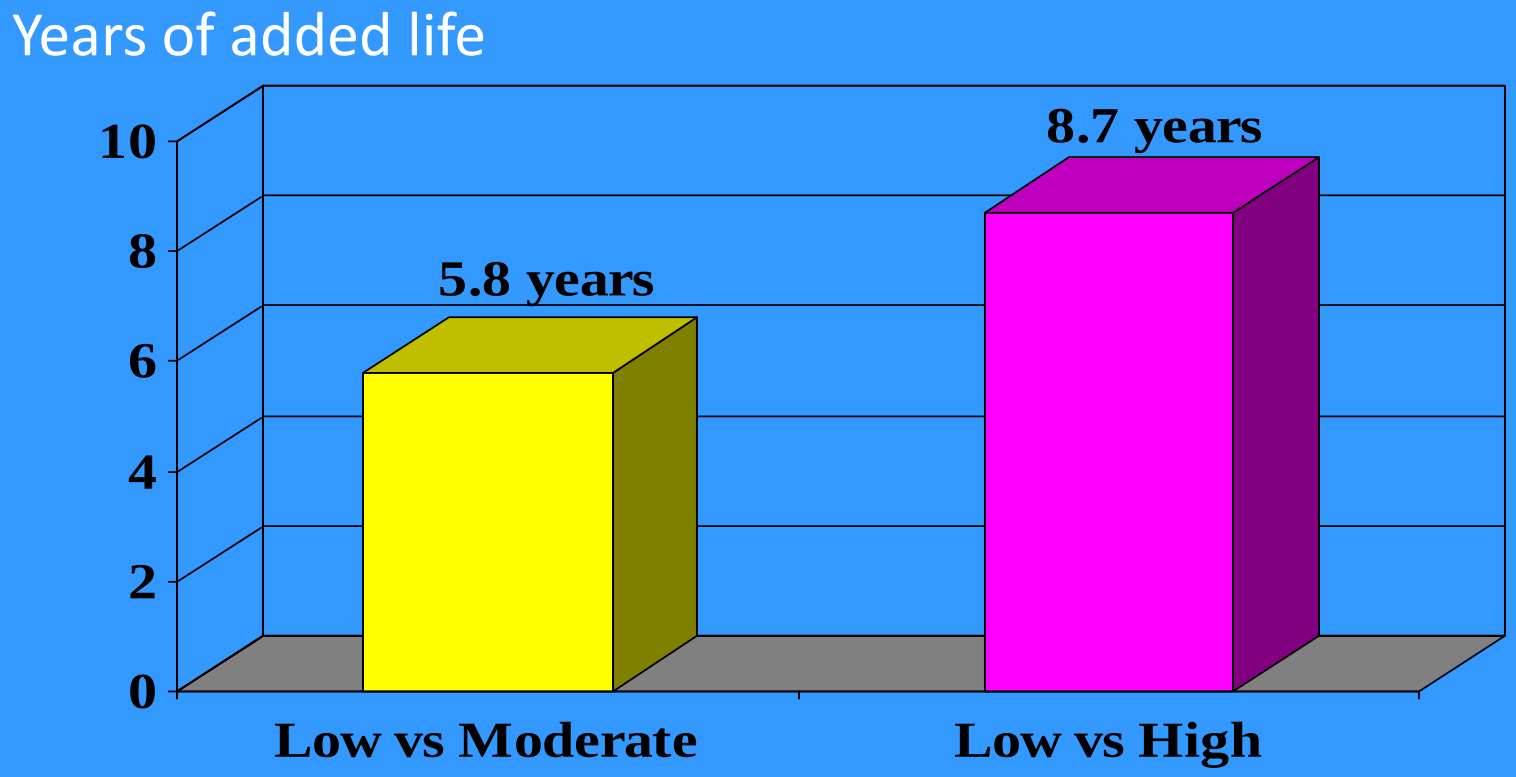

Hu et al. NEJM, December 23, 2004; 351(26):2694-2703.

# Nurse Study 1976-2000




Hu et al. NEJM, December 23, 2004; 351(26):2694-2703.

# Gain in Longevity for a 45-Year Old Male



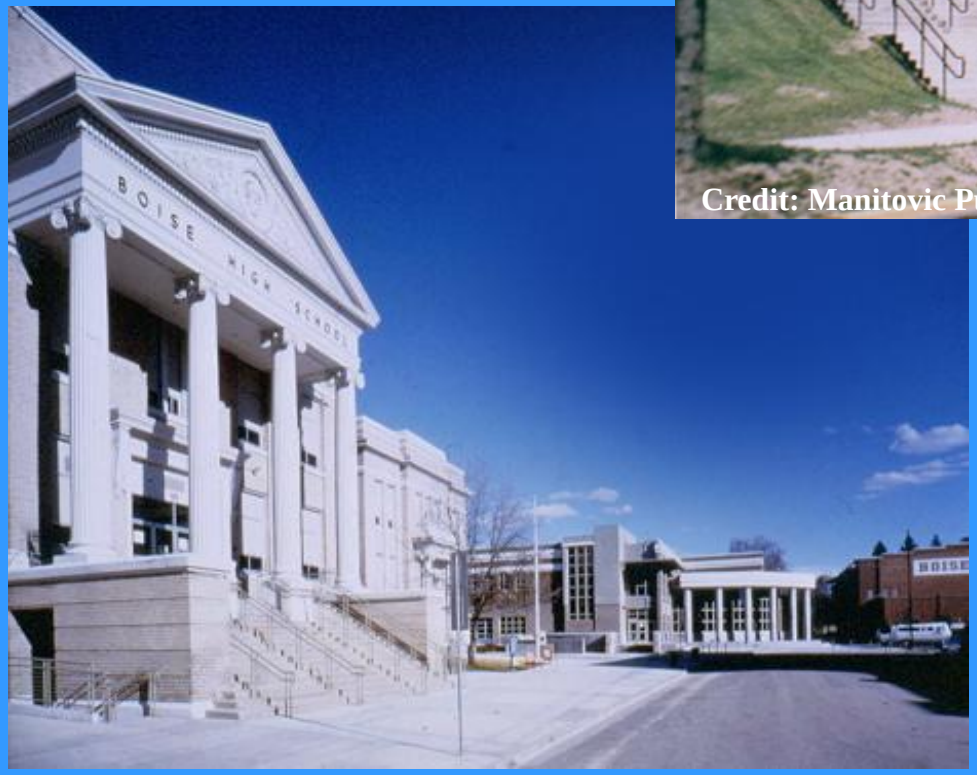

Additional years of Life:

Moving from Low to Moderate Fitness -- 5.8 years

From Low to High –- 8.7 years.

# “Old” Schools

Credit: Manitovic Public School District




Credit: Hummel Architects, Boise, ID

# Schools

- Since World War II
  - Average School Size
    - grew fivefold, from 127 to 653 students
- Number of Schools declined 70%

Credit: Constance E. Beaumant, NTHP

# We have changed how much we walk or bike

- Percent of children who walk or bike to school:
- 1974 → **66%**
- 2000 → **13%**

(CDC, 2000)


# Fitness of California Children

## Annual Fitnessgram Results

Conducted in Grades 5, 7, and 9

## Measures 6 major fitness areas

(e.g. aerobic capacity, body composition, flexibility)

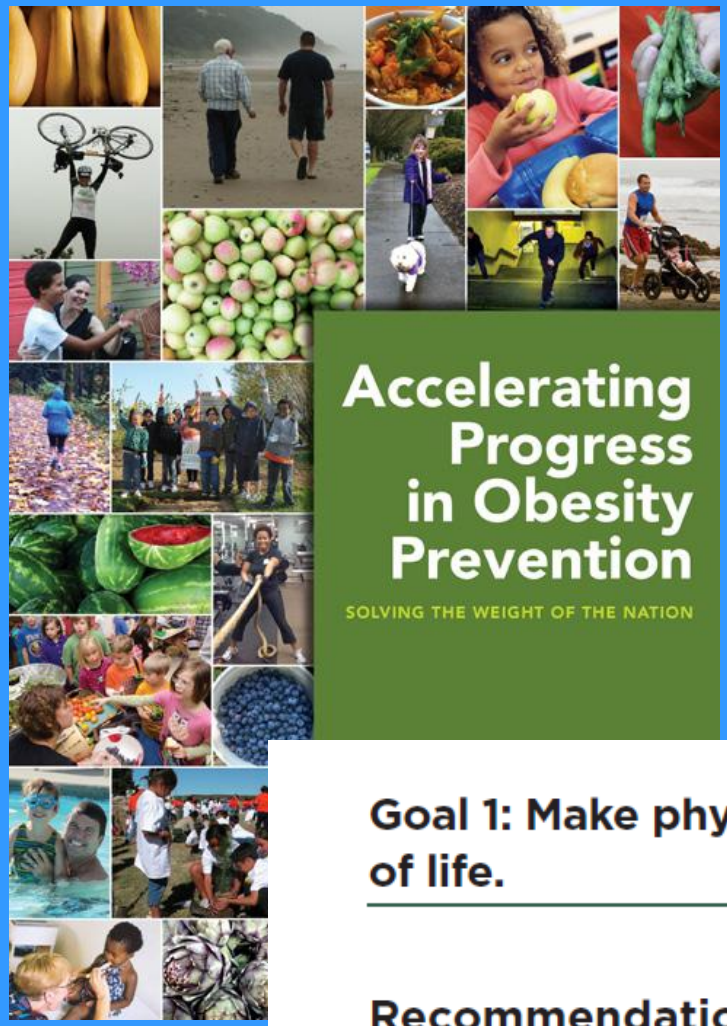
## 2011 Results: Who passed all standards?

Grade 5: 25%

Grade 7: 32%

Grade 9: 37%

http://www.cde.ca.gov/nr/ne/yr11/yr11rel95.asp#tab1



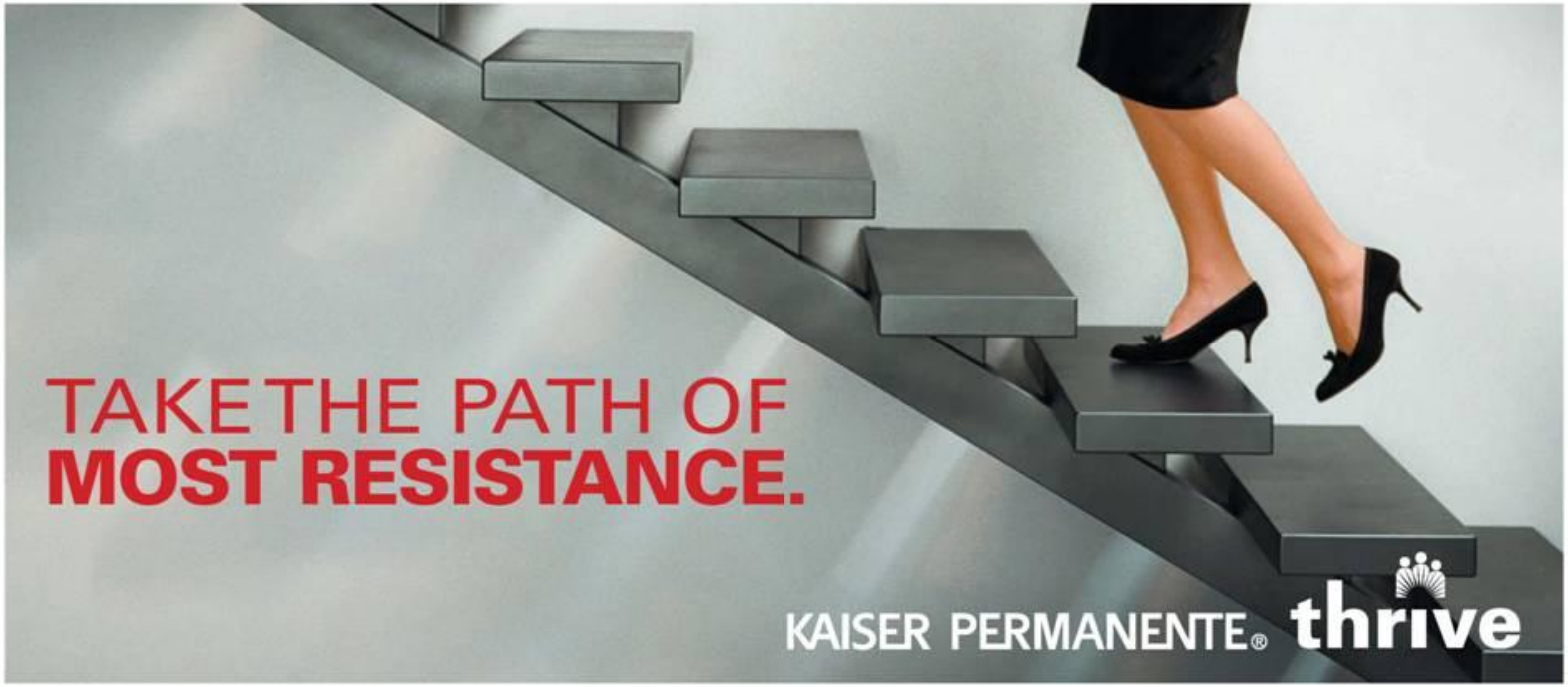

# Institute of Medicine Report *Accelerating Progress in Obesity Prevention*

May 8, 2012

**Goal 1: Make physical activity an integral and routine part of life.**

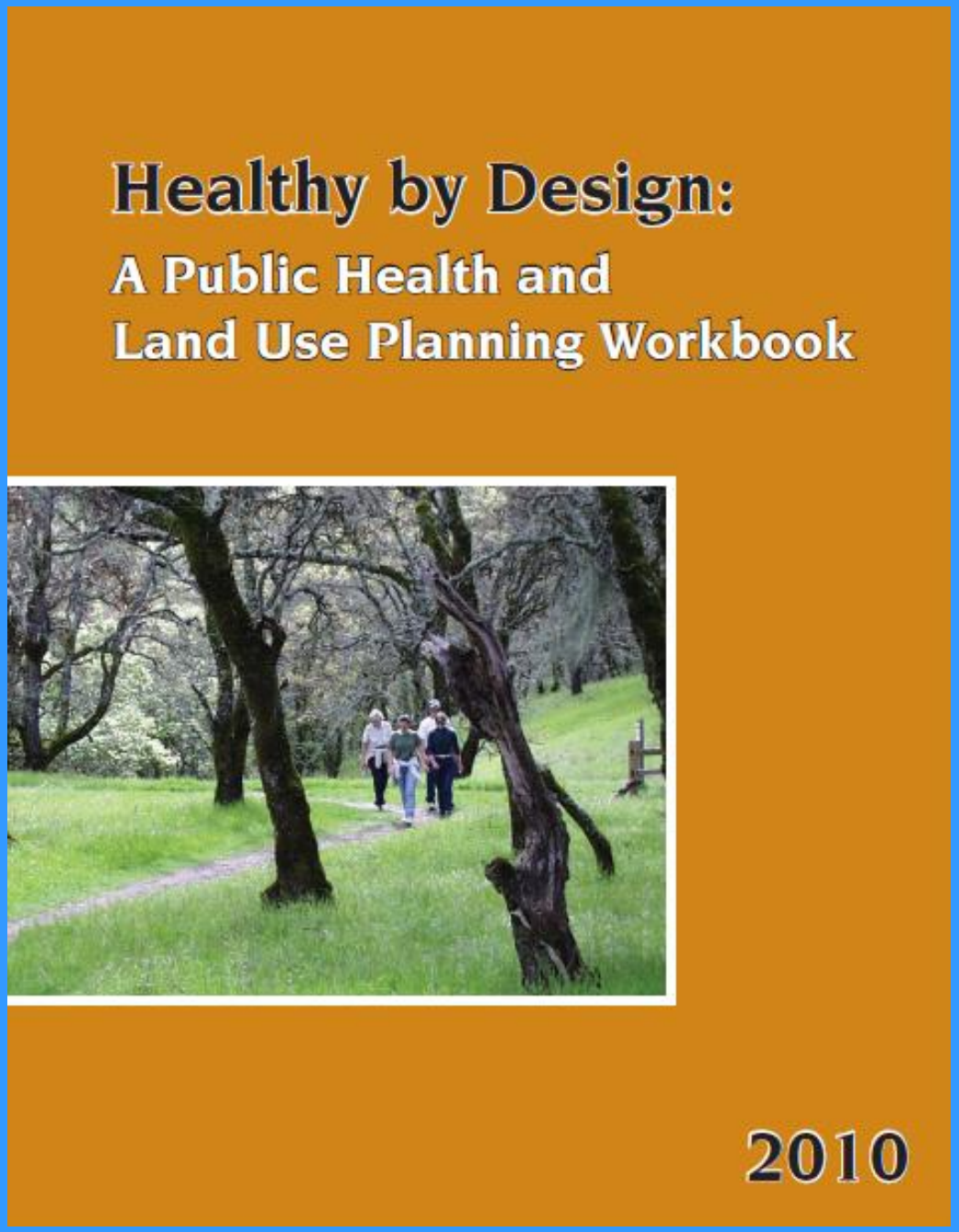
**Recommendation 1:** Communities, transportation officials, community planners, health professionals, and governments should make promotion of physical activity a priority by substantially increasing access to places and opportunities for such activity.

**Strategy 1-1: Enhance the physical and built environment.** Communities, organizations, community planners, and public health professionals should encourage physical activity by enhancing the physical and built environment, rethinking community design, and ensuring access to places for such activity.



# Complete Streets Bring Equity to Community and Transportation

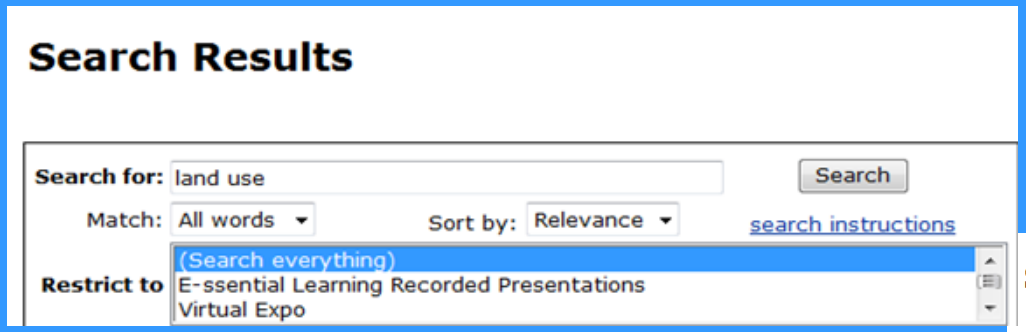
- Complete Streets
  - social equity, aesthetics, walking, improved local sales, community building



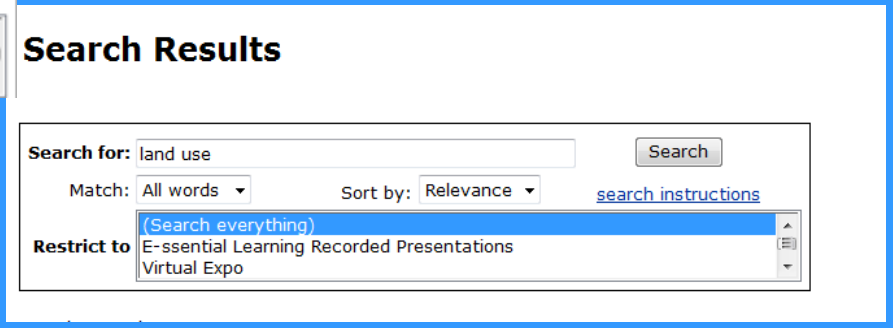

- Sonoma county: General Plan -- Policies that Address Public Health Threats

# APHA National Meeting 2002-2003 Abstracts with "land use" - 0

**2002**



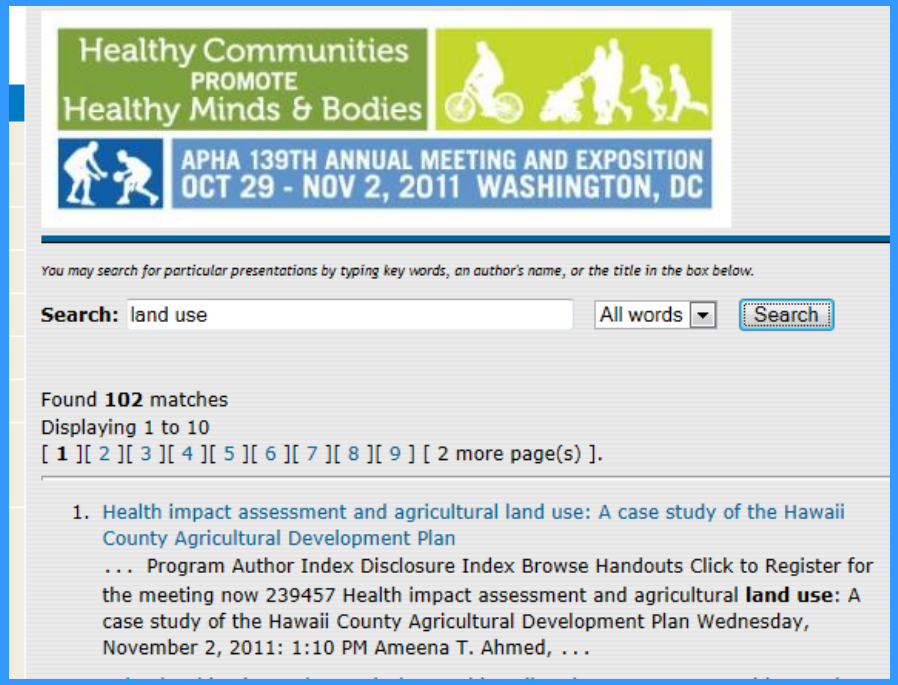

**2003**



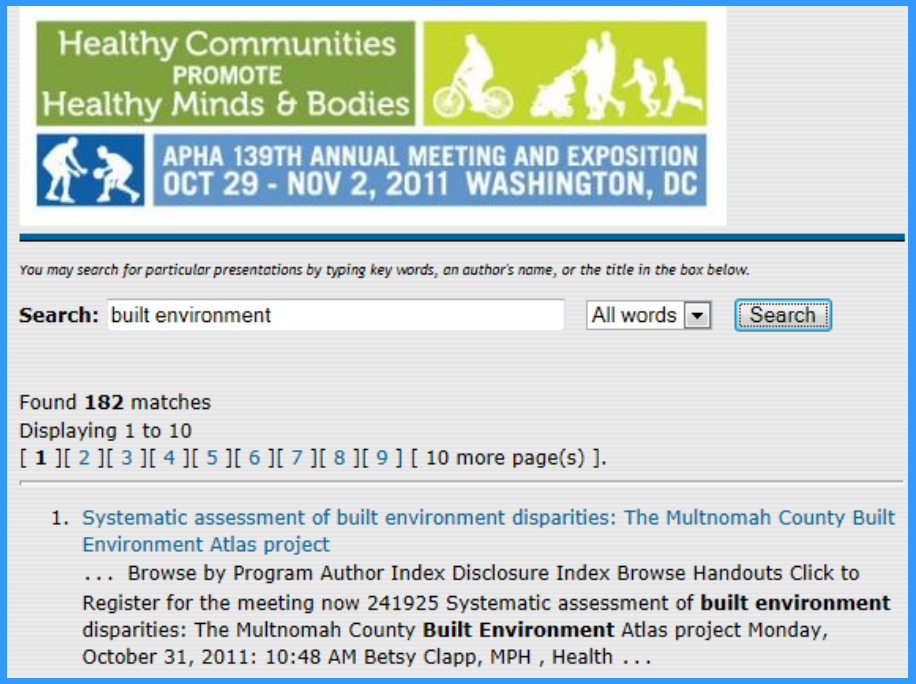

A Big Shift in Public Health's Awareness of Built Environment as a Core Determinant of Health

# 2011 APHA Annual Meeting

"land use" 102 matches




"built environment" 182 matches




Bicycle Rental Area Outside Union Station Washington, DC

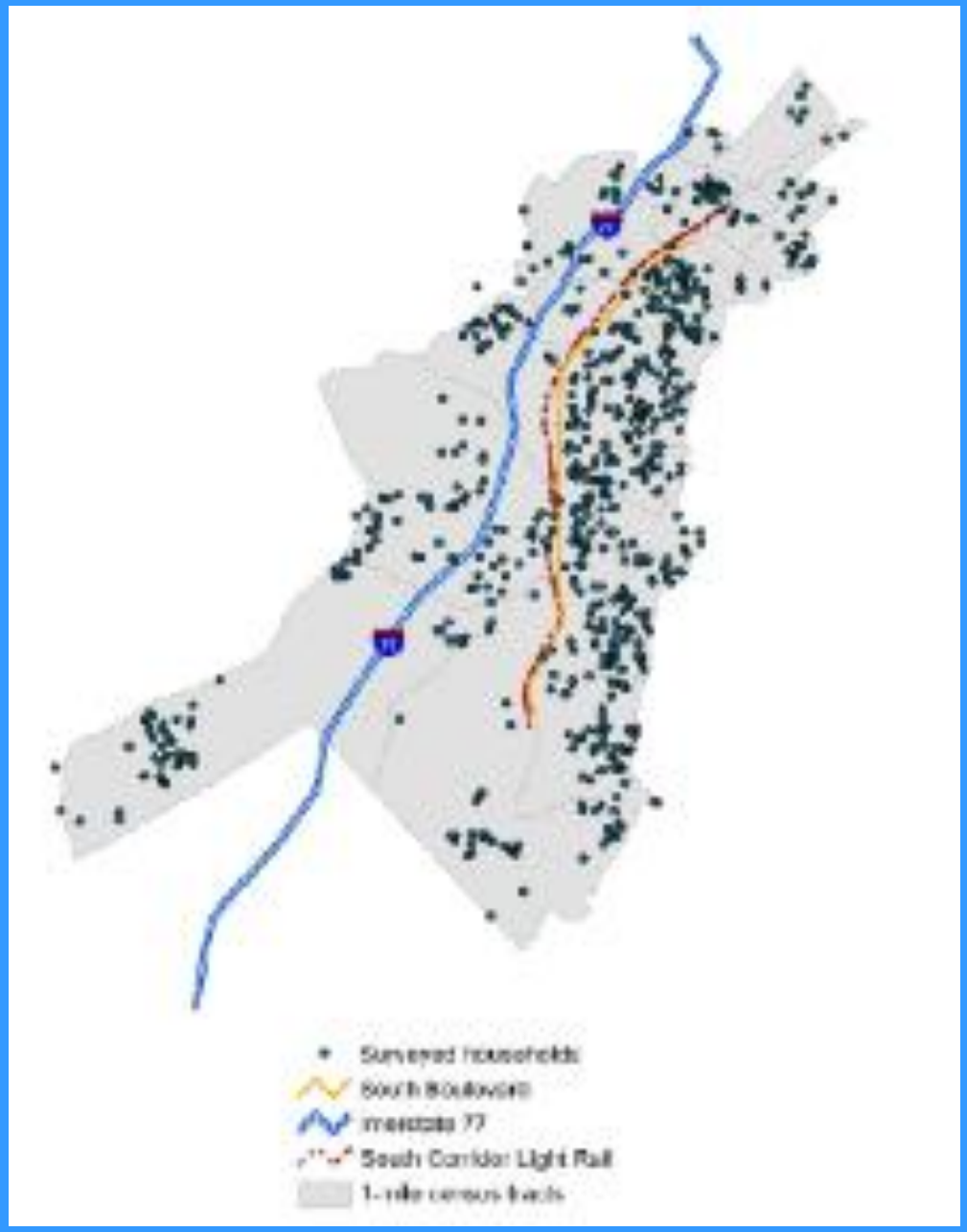

Two Police “vehicle” parked durng lunch



- Segway Personal Transporter
  - $5000 and up
  - Average ~200 kcal/hr

- Cost of Police Mountain Bike
  - $700-1000
- Average ~ 650/kcal/hr

# Charlotte, NC, Light Rail Opened November, 2007




Interviewed People at 839 Locations years before and after Charlotte Light Rail Service Began

# The Effect of Light Rail Transit on Body Mass Index and Physical Activity

John M. MacDonald, PhD, Robert J. Stokes, PhD, Deborah A. Cohen, MD, MPH, Aaron Kofner, MS, Greg K. Ridgeway, PhD

**Background:** The built environment can constrain or facilitate physical activity. Most studies of the health consequences of the built environment face problems of selection bias associated with confounding effects of residential choice and transportation decisions.

**Purpose:** To examine the cross-sectional associations between objective and perceived measures of the built environment; BMI; obesity (BMI > 30 kg/m$^2$); and meeting weekly recommended physical activity (RPA) levels through walking and vigorous exercise. To assess the effect of using light rail transit (LRT) system on BMI, obesity, and weekly RPA levels.

**Methods:** Data were collected on individuals before (July 2006–February 2007) and after (March 2008–July 2008) completion of an LRT system in Charlotte NC. BMI, obesity, and physical activity levels were calculated for a comparison of these factors pre- and post-LRT construction. A propensity score weighting approach adjusted for differences in baseline characteristics among LRT and non-LRT users. Data were analyzed in 2009.

**Results:** More-positive perceptions of one's neighborhood at baseline were associated with a −0.36 ($p<0.05$) lower BMI; 15% lower odds (95% CI = 0.77, 0.94) of obesity; 9% higher odds (95% CI = 0.99, 1.20) of meeting weekly RPA through walking; and 11% higher odds (95% CI = 1.01, 1.22) of meeting RPA levels of vigorous exercise. The use of LRT to commute to work was associated with an average −1.18 reduction in BMI ($p<0.05$) and an 81% reduced odds (95% CI = 0.04, 0.92) of becoming obese over time.

**Conclusions:** The results of this study suggest that improving neighborhood environments and increasing the public's use of LRT systems could provide improvements in health outcomes for millions of individuals.

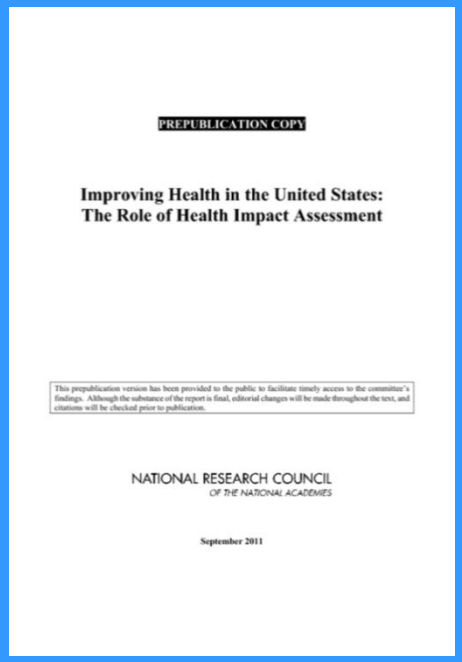
[Am J Prev Med 2010;39(2):105–112] 

- Significant increase in meeting the weekly Recommended Physical Activity
- … through walking
- …and through vigorous exercise

- The use of Light Rail Transit to commute to work was associated with an average reduction of 1.18 BMI points ($p<0.05$) and 81% reduced odds of becoming obese over time.
- For a person who is 5’5” --equivalent to a relative weight loss of 6.45 lbs.

# The Need for Health Impact Assessment (HIA)

- Big decisions are made without examining potential health impacts (both positive and negative) over the life cycle.



PREPUBLICATION COPY

**Improving Health in the United States: The Role of Health Impact Assessment**

This prepublication version has been provided to the public to facilitate timely access to the committee's findings. Although the substance of the report is final, editorial changes will be made throughout the text, and citations will be checked prior to publication.

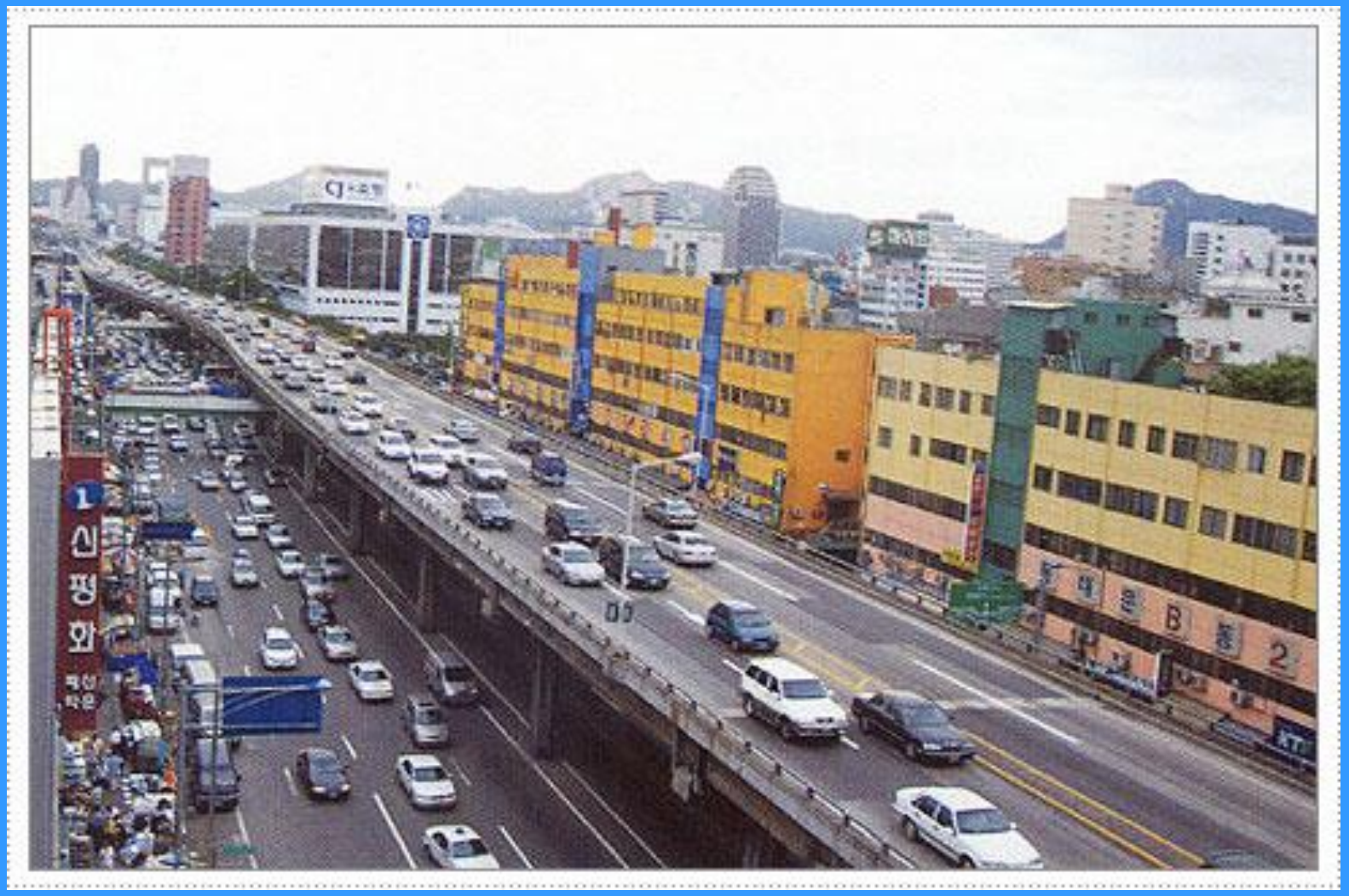
NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

September 2011

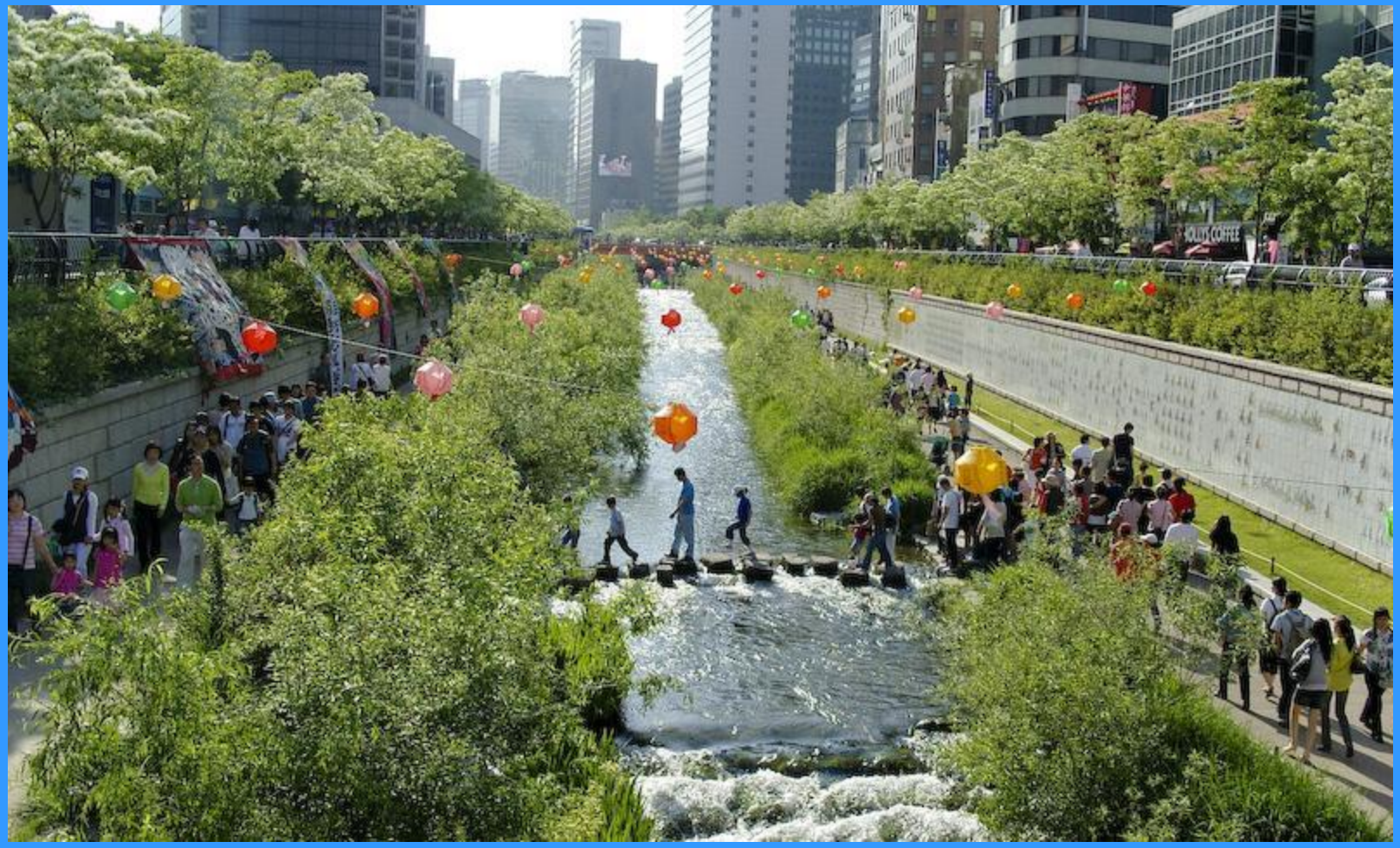
# Cooper River Bridge
# Charleston SC

- If you build a walkway on a major bridge, how many pedestrians and bicyclists will use it?

# Walkway on Cooper River Bridge, Charleston SC




- The Chenoggye freeway ran through the center of Seoul ~1970-2005



- Cheonggyecheon -- 8.4 km long downtown Seoul, South Korea.
  - The $900 million project initially attracted much public criticism.

NO DUMPING

DRAINS TO BAY

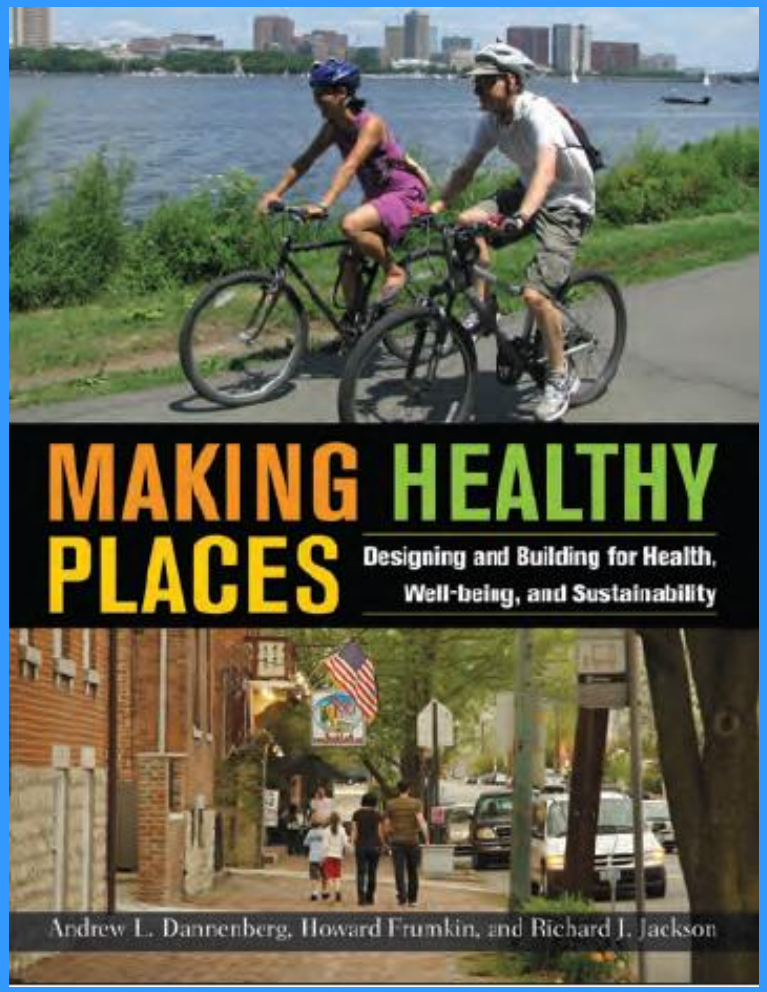
NO DUMPING

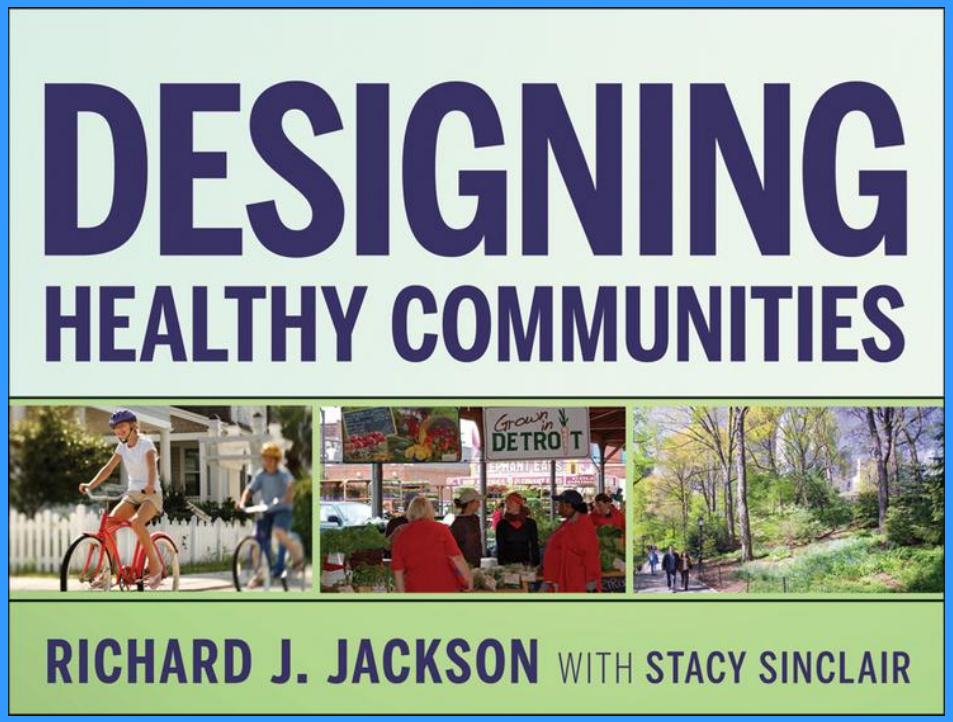
DRAINS TO OCEAN


Photo: Carlton Reid via Flickr, Art: Peter Drew

http://www.grist.org/article/2010-08-26-when-streets-tell-the-truth-about-people-riding-in-cars-bikes/

# We Are What We Eat, and…
# We Are What We Build!

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