

## *The road less traveled:*

# *Environmental and policy influences on physical activity*

AAHPERD 2010 Raymond A. Weiss Lecture

Ross C. Brownson

Prevention Research Center in St. Louis  
Washington University in St. Louis  
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## Questions

1. What is the public health problem?
2. Do we have solutions?
3. Where to we go from here?

“We must make the healthy choice  
the easy choice.”

World Health Organization

“Public health workers... deserve to  
get somewhere by design, not just  
by perseverance.”

McKinlay and Marceau

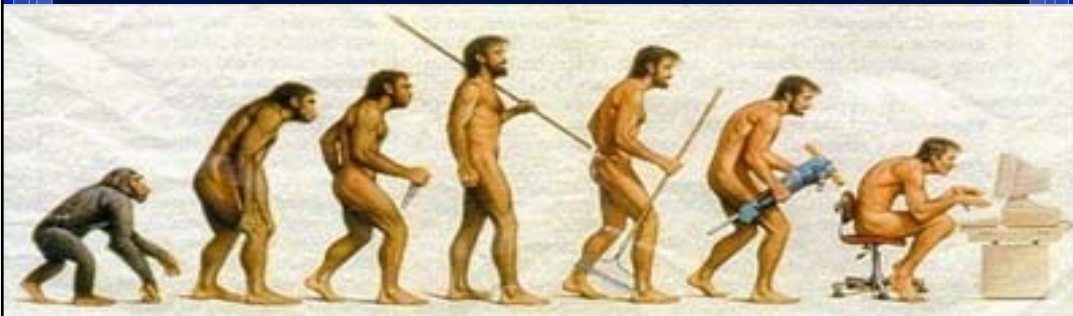
What is “health?”

“A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”

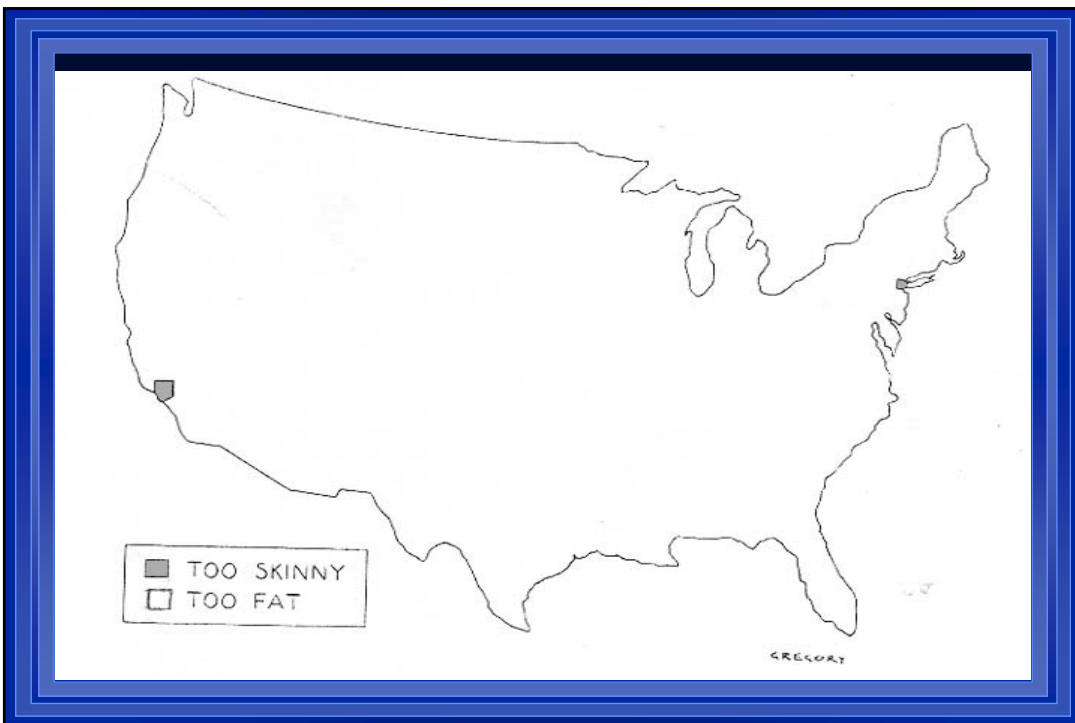
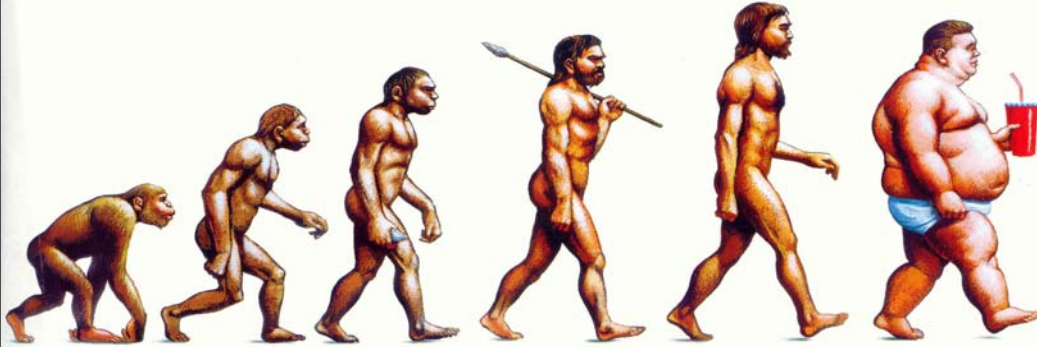
- WHO, 1948

# 1. What is the problem?

## The evolutionary process...



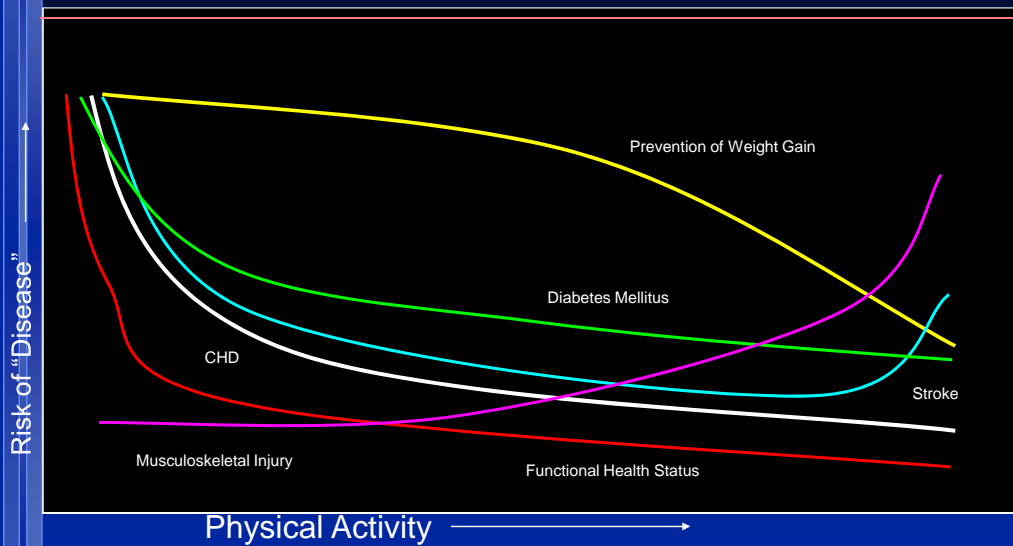
# The evolutionary process...



## Evidence on PA and Health

- Important Outcomes
  - Coronary heart disease
    - over 50 epidemiologic studies show an approximate 1.9 RR for physical inactivity
  - Diabetes
    - several cohort studies show a 30-40% increase in risk due to inactivity
  - Colon cancer
    - approximately 30 studies show an inverse association between physical activity and colon cancer (mainly case-control studies)
  - Population burden of PA
    - 200-300K preventable deaths each year in the United States

## Physical Activity and Health (Dose-Response)

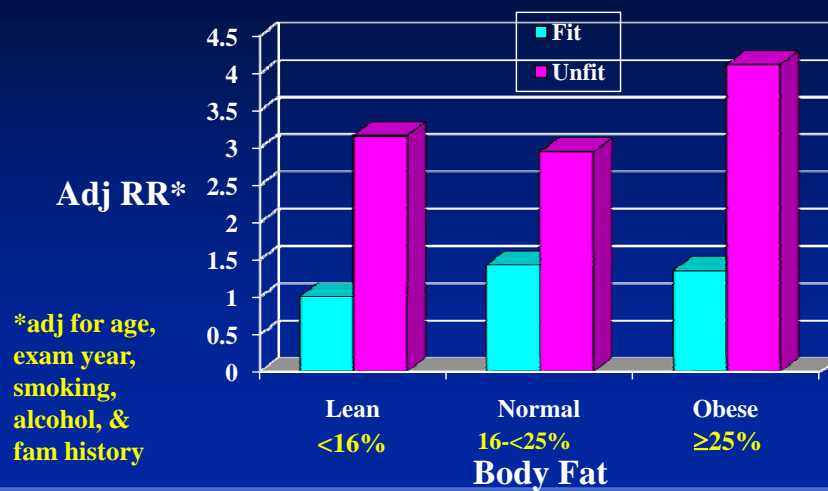


## Fit or fat evidence?

Puzzle is not always so simple...

### *Fit or Fat?*

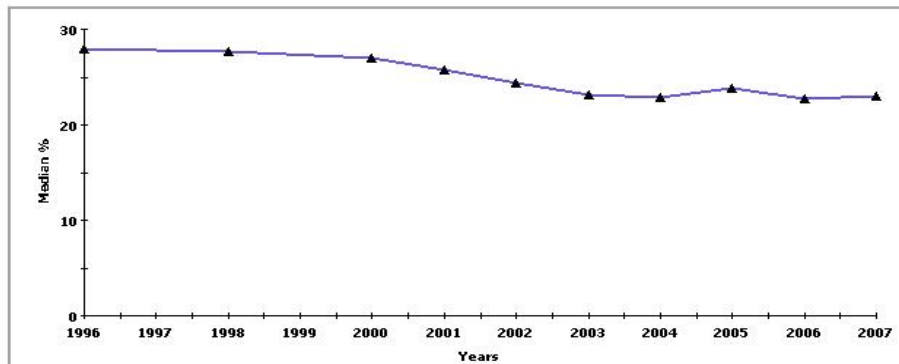
CVD Mortality, % Body Fat, and Fitness



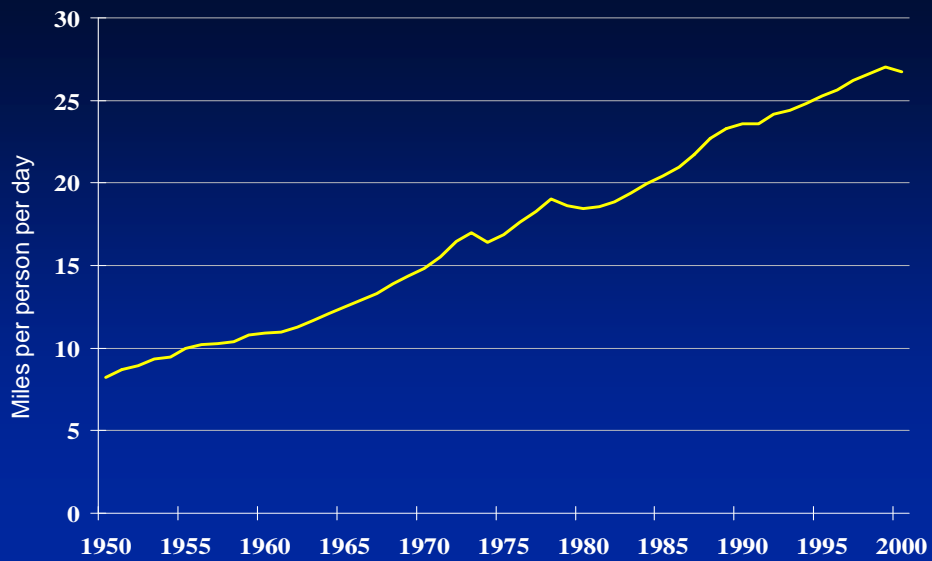
Lee CD et al. Am J Clin Nutr 1999.

## Has promoting exercise worked? (no leisure activity)

**Participated in Physical Activities  
Nationwide (States, DC, and Territories) - All Available Years  
Response = No**



## Vehicle miles traveled





Perhaps the cause is environmental...





# Transportation Planning and Land Use Choices

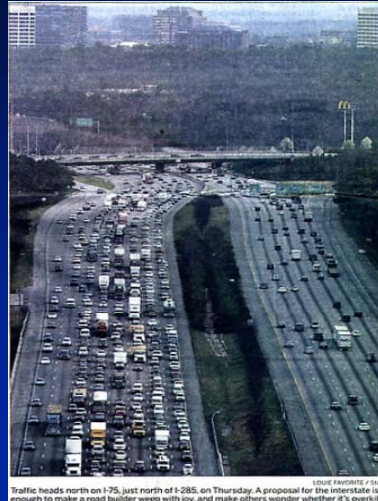
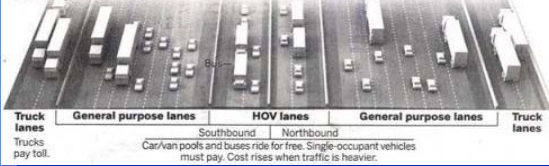
## Will 23 lanes be enough?

Proposal would put I-75 among country's biggest

By ARIEL HART  
ahart@ajc.com

It's wider than an aircraft carrier. Far wider than the carving on Stone Mountain. Wider than the White House stretched end to end, twice. It's the planned I-75, all 23 lanes, coming soon to Cobb County. As currently conceived it's 388 feet across, wider than a football field is long.

**23 LANES:** The state Department of Transportation is planning to expand I-75 (below) and I-575 in Cobb and Cherokee counties. The 23-lane stretch would be between Delk and Windy Hill roads on I-75.



Source: Atlanta Journal-Constitution, March 10, 2006

## Drive thru (fill in the blank)...

DRIVE-THRU



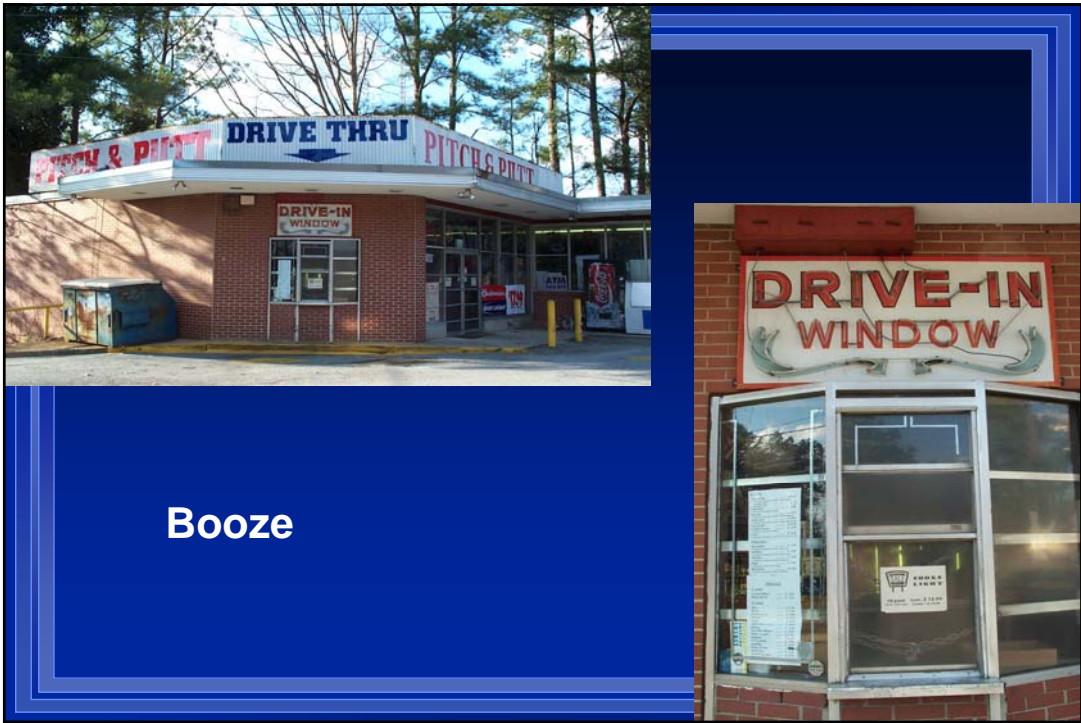
Drive Thru  
OPEN

24 Hours





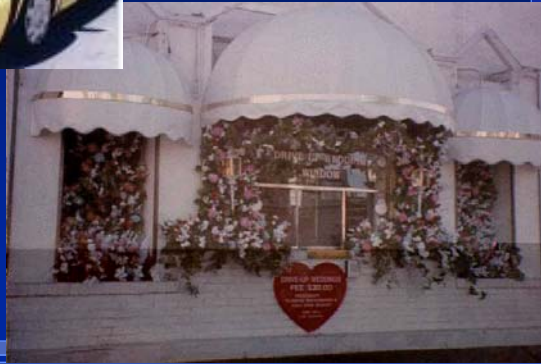
Pharmacies



Booze



**Drive-up  
wedding  
windows**



**Gardner Memorial  
Chapel**



**Junior Funeral  
Home  
Pensacola, FL  
Funerals**



**Adams Funeral  
Parlor  
Compton, CA**



Fine

TACO BELL  
DRIVE THRU

Food



## 2. What are potential solutions?

### What is an activity-friendly environment?



- A place that makes it easy to choose to be physically active, through planned exercise or routine daily activity

## What do we know ("interventions")?

### Environmental and policy interventions

- Aimed at changing the physical and sociopolitical environments
  - Provide opportunities, support, and cues to help people develop healthier behaviors
- May directly affect behaviors or may alter social norms
  - Influence of the price of foods on consumption
  - Many physically active people in public spaces
- Often more permanent than many public health programs focused on individual-level behavioral change
  - Important complement to individual-level programs
- For policy intervention
  - Much of the power held by states
  - Local efforts in many areas related to the built environment



## Research and policy shifts social norms

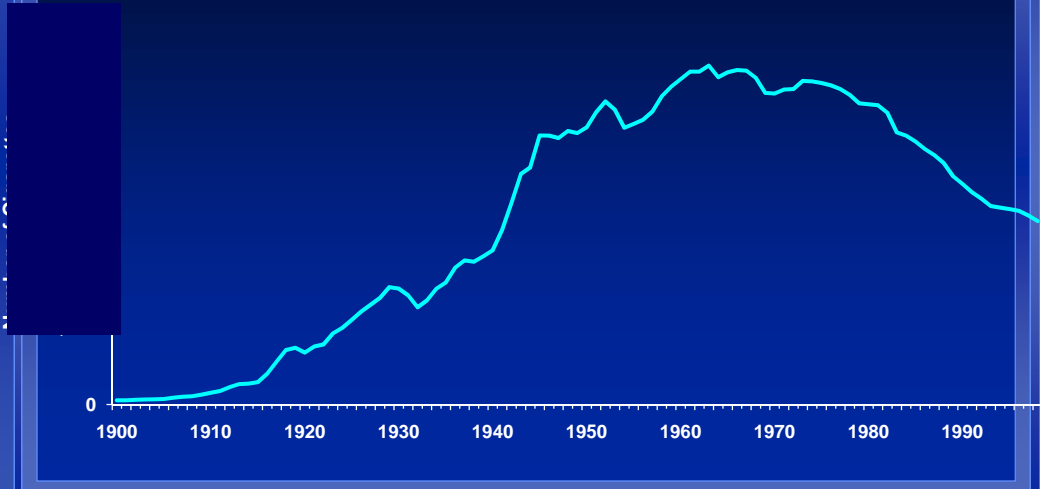


## What is the built environment?

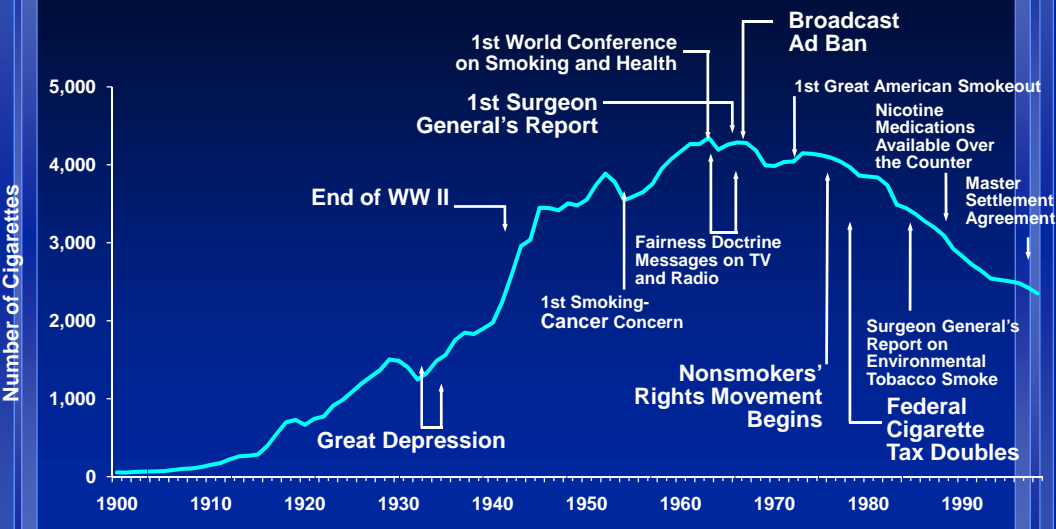
- The physical form of our communities
  - Two essential elements
    - land use patterns, the location of activities across space
      - More “bottom up”
    - the transportation system, the facilities and services that link one location to another
      - More “top down”



What is this public health achievement of the 20th Century?  
 What scientific methods produced this achievement?



Adult Per Capita Cigarette Consumption and  
 Major Historical Events—United States, 1900-2000



Source: USDA; 1986 Surgeon General's Report. MMWR 2001.

*ENORMOUS* potential

## Conclusions from Recent Research

- Humpel, Owen, & Leslie reviewed health studies
  - About 20 studies of environmental & PA in adults
- Consistent correlates of PA
  - Access to facilities & aesthetics
- Saelens, Sallis, & Frank reviewed planning & transport studies
  - About 20 studies
- Consistent correlates of walking for transport
  - Mixed use, connected streets, density

One important effort for practitioners:

*The Guide to Community Preventive Services*

(the *Community Guide*)

[www.thecommunityguide.org](http://www.thecommunityguide.org)

### Strongly recommended

- Modified physical education
- Individualized behavioral change
- Non-family social support
- Community-wide education
- Create or enhance access

### Recommended

- Point-of-decision prompts
- Urban design policies and practices at the street and community scale

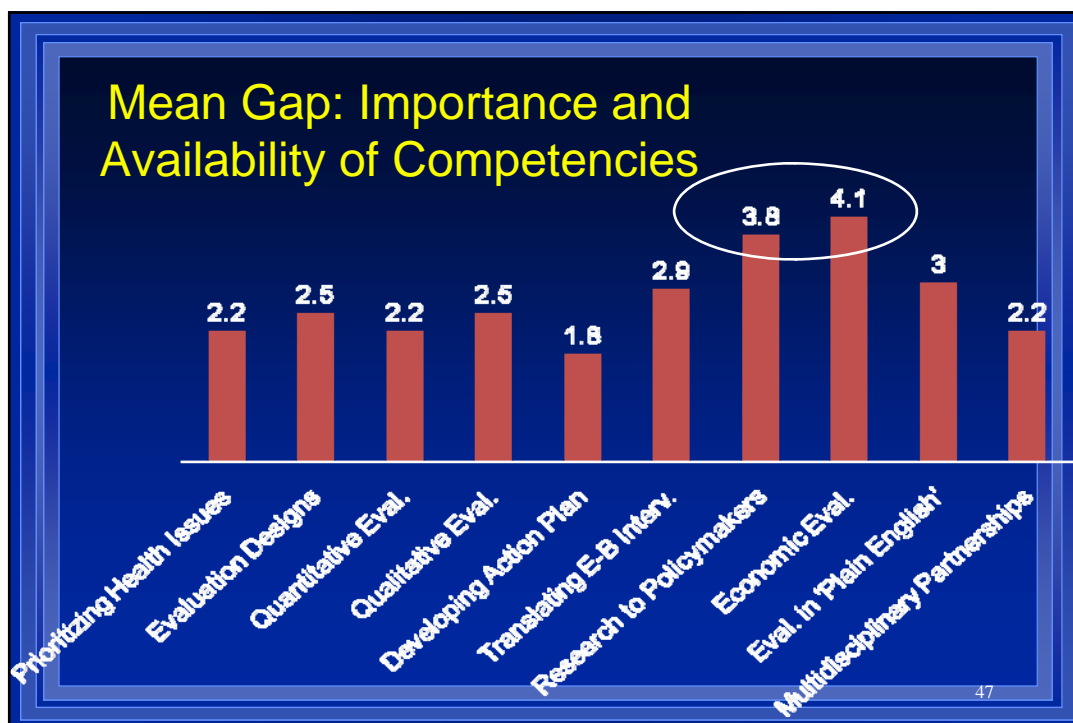
Yet, the amount of well done policy research/evaluation in 'real world' settings is small compared with the reach and potential

3. Where do we go from here?

## Policy change as intervention

### The Policy Paradox

- Perhaps the largest impact on population health
  - Learn from smallpox, tobacco, seat belts
- Yet we may have the fewest skills
  - Out of comfort zone
  - Requires some new thinking and actions
  - Evaluations can be messy
  - Limitations in government agencies



- ### Expand scope of evidence
- “Best practices” from research to the most appropriate adaptations for special populations (health disparities)
  - The success of individual behavior changes of the affluent to the system changes needed to reach the less affluent, less educated...
  - University-based, investigator-driven research to practitioner- & community-centered research



## Need for more practice-based research



## PAPRN survey of practitioners (n = 306)

- Most important
  - Evaluating policy change
  - Surveying local and regional policy
  - Assessing model legislation
- Most available
  - Analyzing data
  - Learning grant writing skills
  - Searching the literature

Think globally, act locally

## Examples of community planning across the globe

- Transportation planning in Amsterdam
- Innovative urban planning in Curitiba
- Ciclovía in Bogota





- The Healthy Living Tax Incentive is a tax credit of up to \$500 per child. It is intended to help with the cost of registering children and youth in sport or recreation activities that offer health benefits.
- Young people aged 17 and under who are registered in an approved organized sport, physical recreation, or physical activity program qualify for the tax credit.



## In the work of public health...

- Diverse set of issues/evidence base
  - Health reform
  - Cancer prevention & control
  - Genomics
  - Obesity prevention
  - Poverty, social inequities, -isms
  - War
- Variability in staffing and training needs
  - Turnover in agencies
- Funds/infrastructure are limited in every program, country

## Summary

- Numerous challenges and barriers
  - Discussion will only highlight some
  - Key issues include use of transdisciplinary teams and translation of science to practice
- Remember sound public health practice is a blend of art and science

## Sample resources

Email: [rbrownson@wustl.edu](mailto:rbrownson@wustl.edu)

[www.thecommunityguide.org](http://www.thecommunityguide.org)

Brownson RC, Kelly CM, Eyer AA, Carnoske C, Grost L, Handy SL, et al. Environmental and policy approaches for promoting physical activity in the United States: a research agenda. *J Phys Act Health* 2008;5(4):488-503

Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: A fundamental concept for public health practice. *Annu Rev Public Health*. Apr 21 2009;30:175-201

Pratt M, Jacoby ER, Neiman A. Promoting physical activity in the Americas. *Food Nutr Bull* 2004;24:183-193.

