



Activity-Friendly Communities Can Make Our Lives Better: Get Involved

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October 2014

Outline of Talk

- Why Physical Activity?
- Need for multi-sector collaboration & action
- Putting All the Pieces Together
 - Designing communities
 - Designing transportation systems
 - Designing parks
- Co-benefits
- Everyone can play a part
- **Think Big. Be Bold.**

What **Makes** Us Healthy



What We **Spend** On Being Healthy

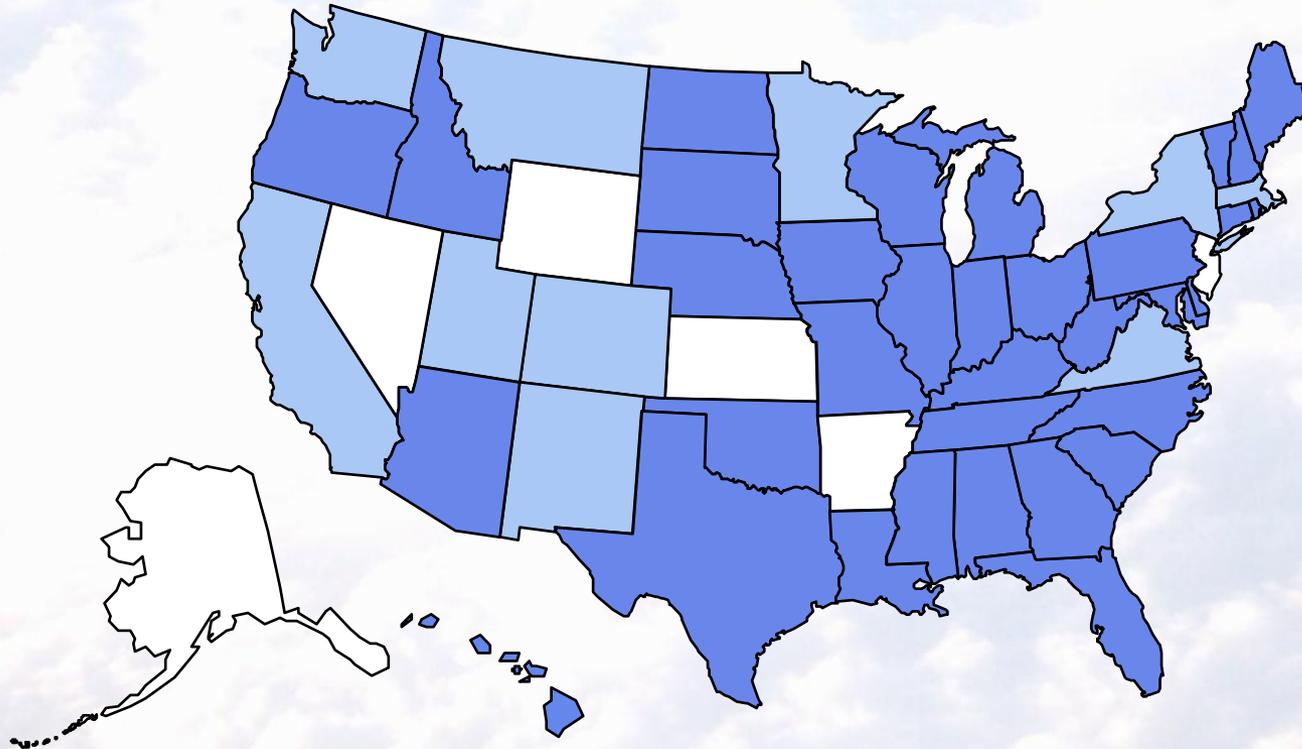


Why Focus on Health Behaviors Like Physical Activity?

Obesity Trends* Among U.S. Adults

BRFSS, 1990

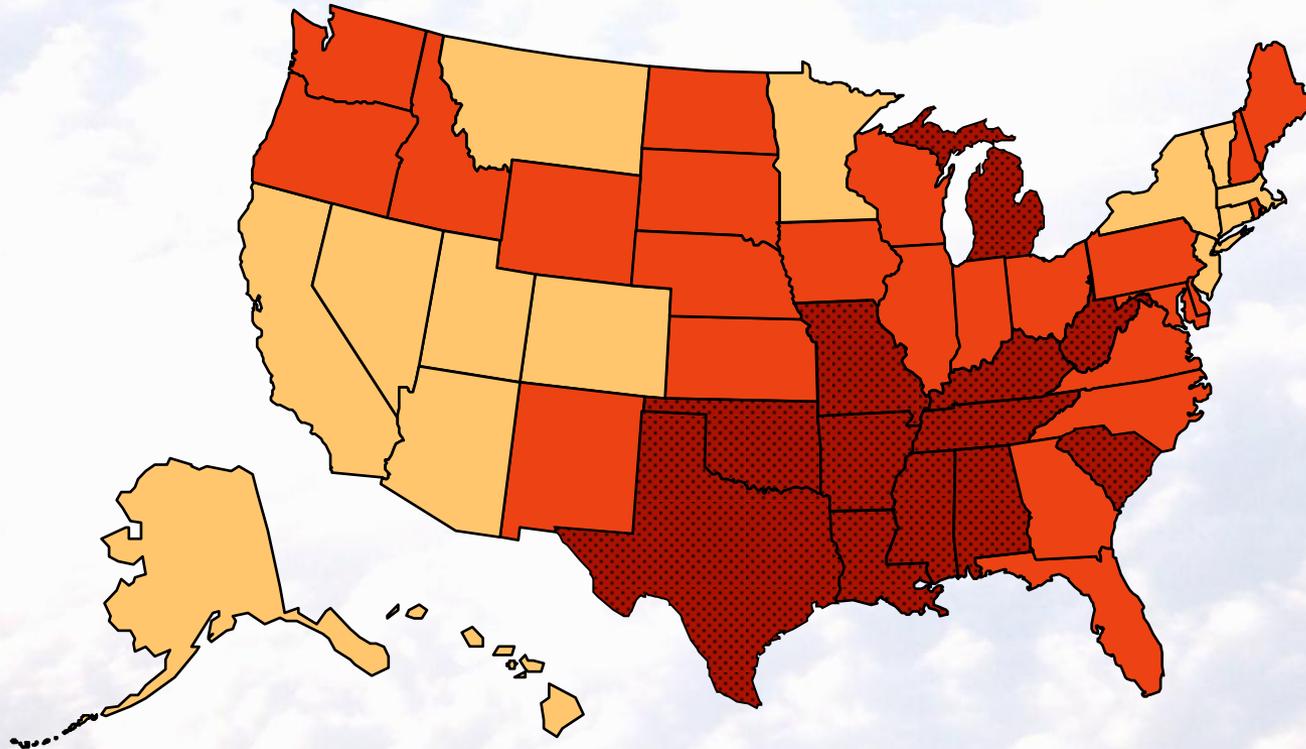
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



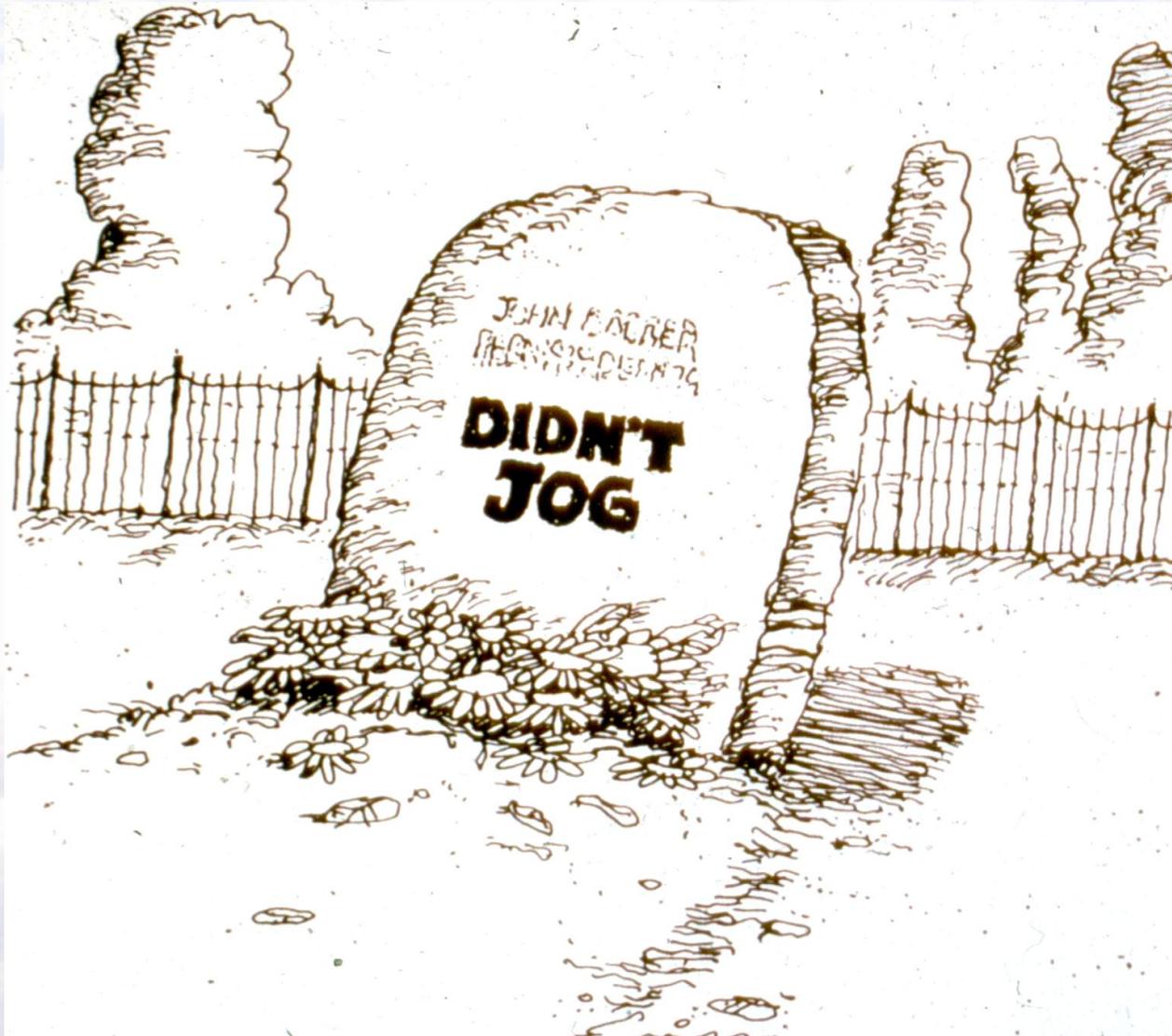
Obesity Trends* Among U.S. Adults

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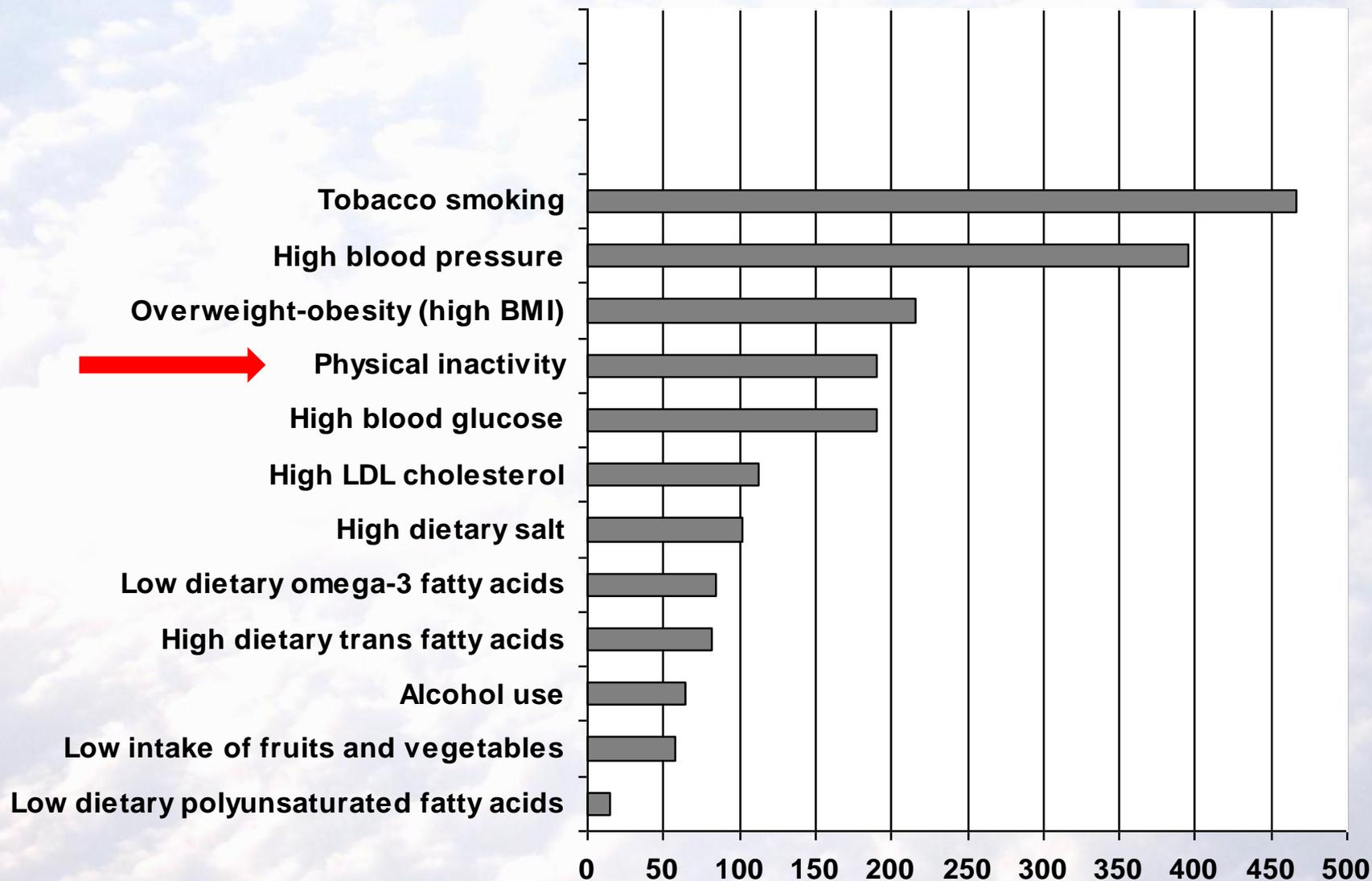
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Why target physical activity?



Deaths (thousands) attributable to individual risk factors in both sexes



Panel 1: Health benefits of physical activity in adults³⁻⁵

Strong evidence of reduced rates of:

- All-cause mortality
- Coronary heart disease
- High blood pressure
- Stroke
- Metabolic syndrome
- Type 2 diabetes
- Breast cancer
- Colon cancer
- Depression
- Falling

Strong evidence of:

- Increased cardiorespiratory and muscular fitness
- Healthier body mass and composition
- Improved bone health
- Increased functional health
- Improved cognitive function

High Burden of Disease from Inactivity



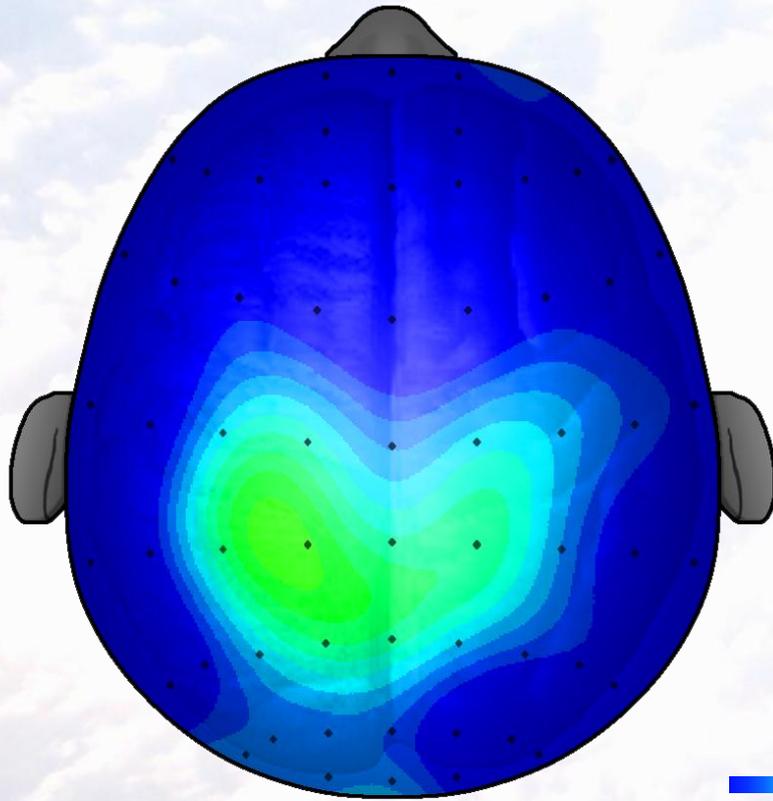
Obesity & Inactivity in Oregon

- 60% of adults overweight or obese
- 120% increase since 1990
- 27% of 8th graders overweight or obese
- 44% of adults do not meet 150 min/week guideline for physical activity
- 12% walk or bike as part of commute to work
- % of active adolescents decreased from 2005 to 2009

Costs of Inactivity

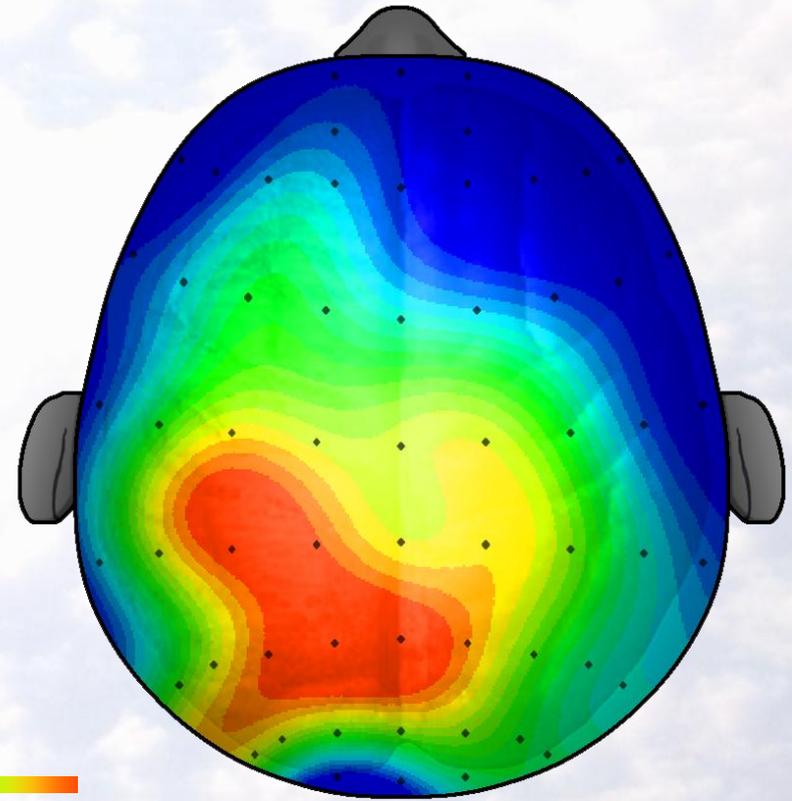
- New report from CDC estimates 9-11% of US health care expenditures are due to adults not meeting guideline of 150 minutes of PA per week. Carlson, 2014

Physical Activity and Brain Function in Children During a Cognitive Task



After 20 minutes of

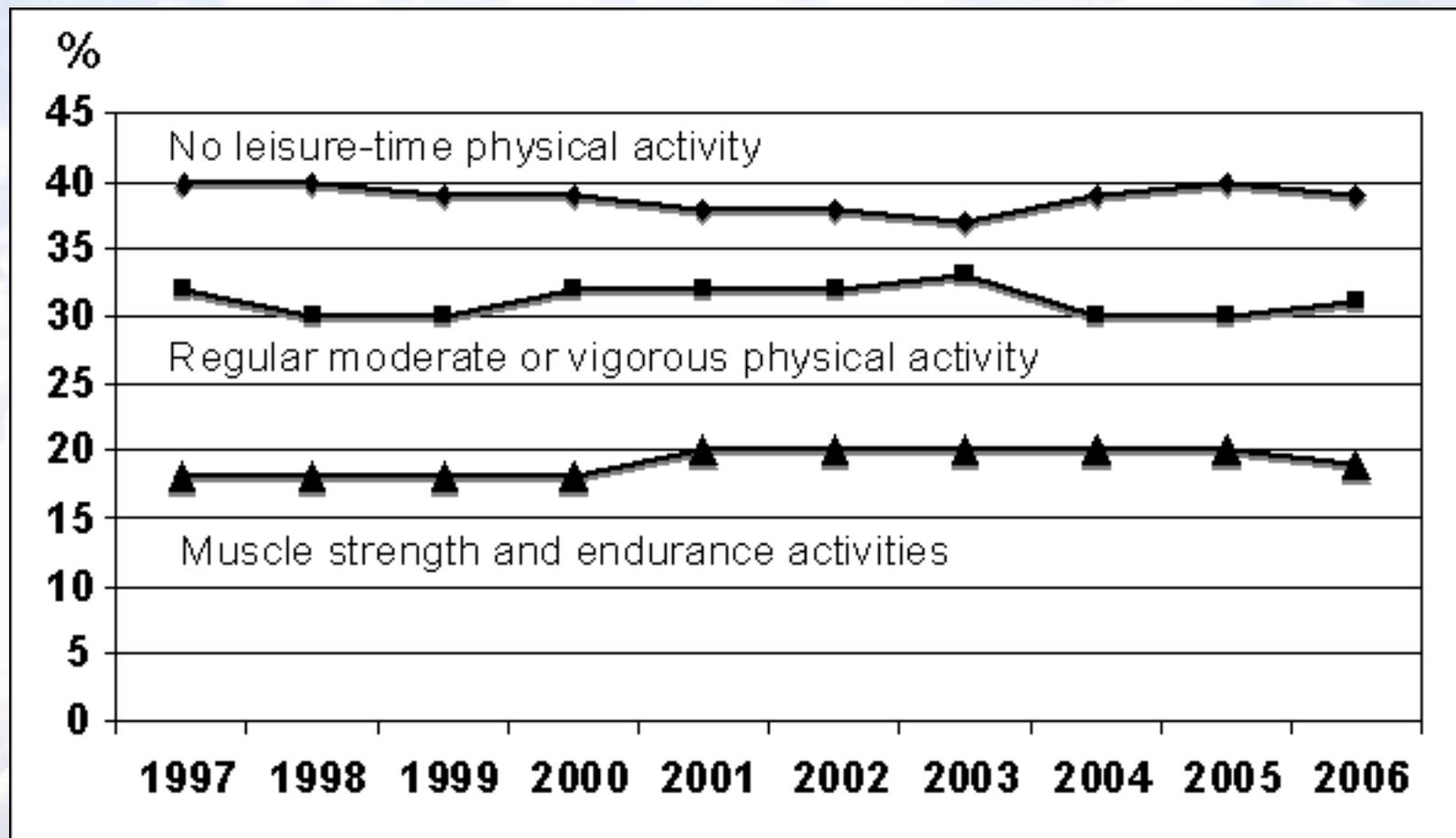
Sitting Quietly



After a 20 minutes of

Walking

How are we doing in promoting PA?

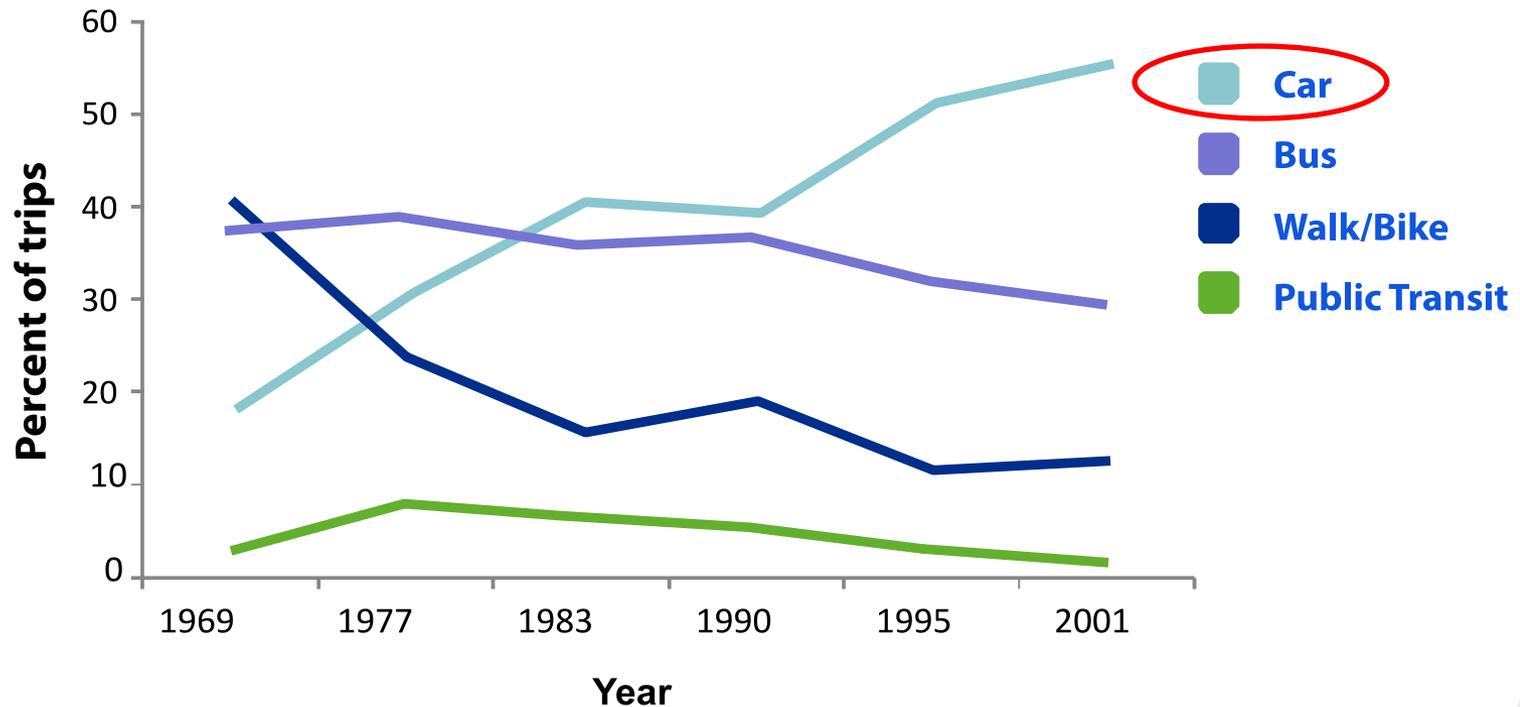


**Reported Physical Activity by Adults in the USA:
1997-2006 The Healthy People 2010 Database**

Healthy People 2010 Database (DATA2010) for men and women combined

Active Transportation by Youth has Decreased

Mode for Trips to School – National Personal Transportation Survey

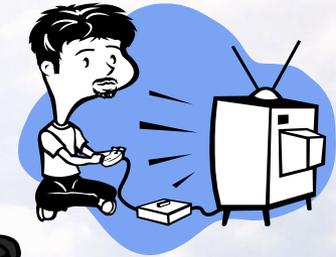


How Did We Become Inactive?

- Sleep



- Leisure



- Occupation



- Transportation

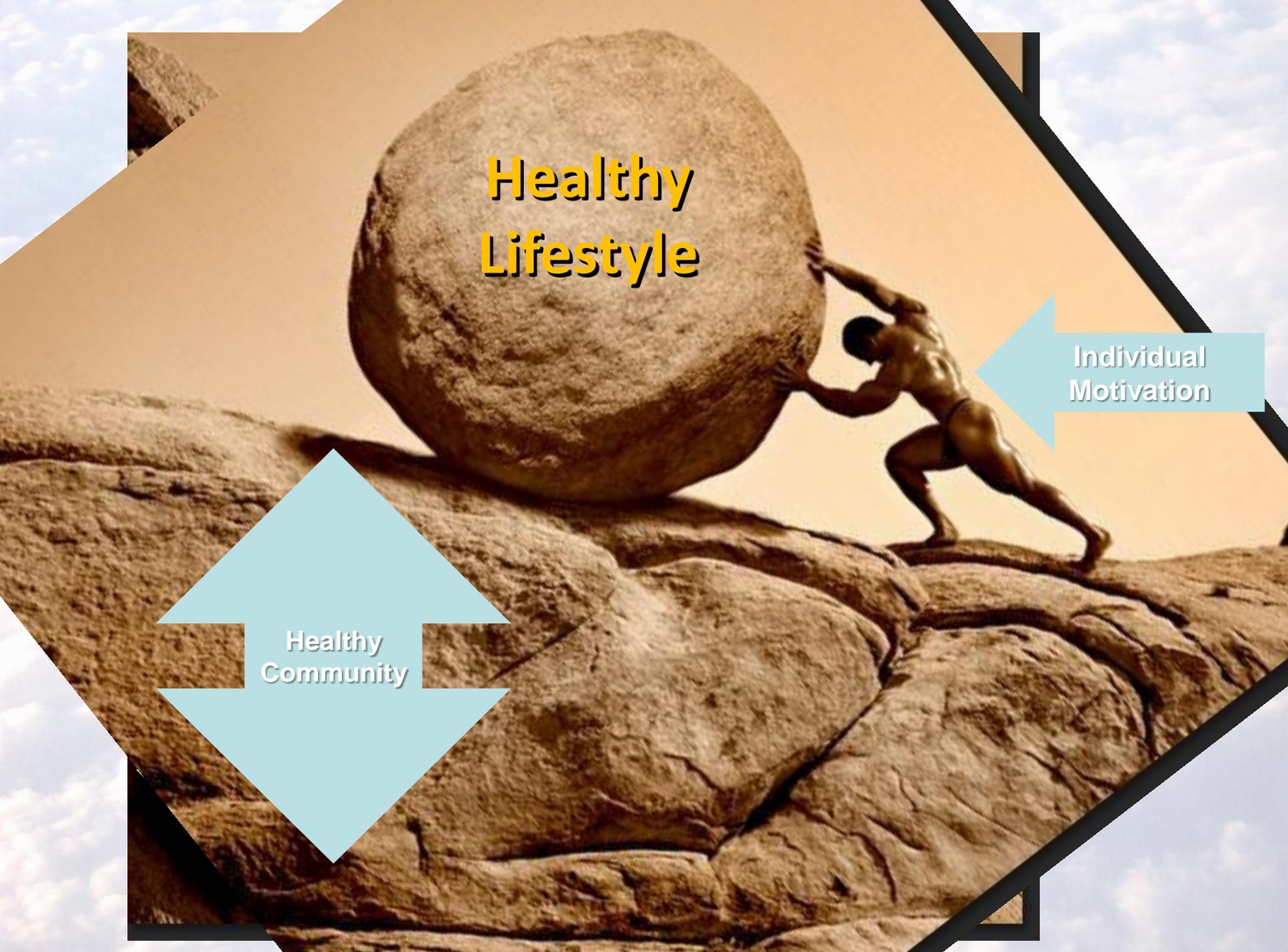


- Household



The Future?





Healthy Lifestyle

Individual Motivation

Healthy Community

Elements of An Active Living Community

**Community Design
Destinations**



Transportation System

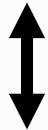
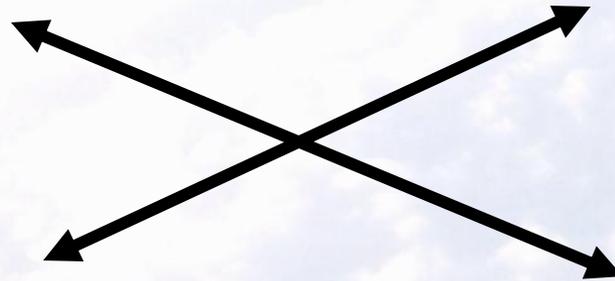
Home



School & Worksite



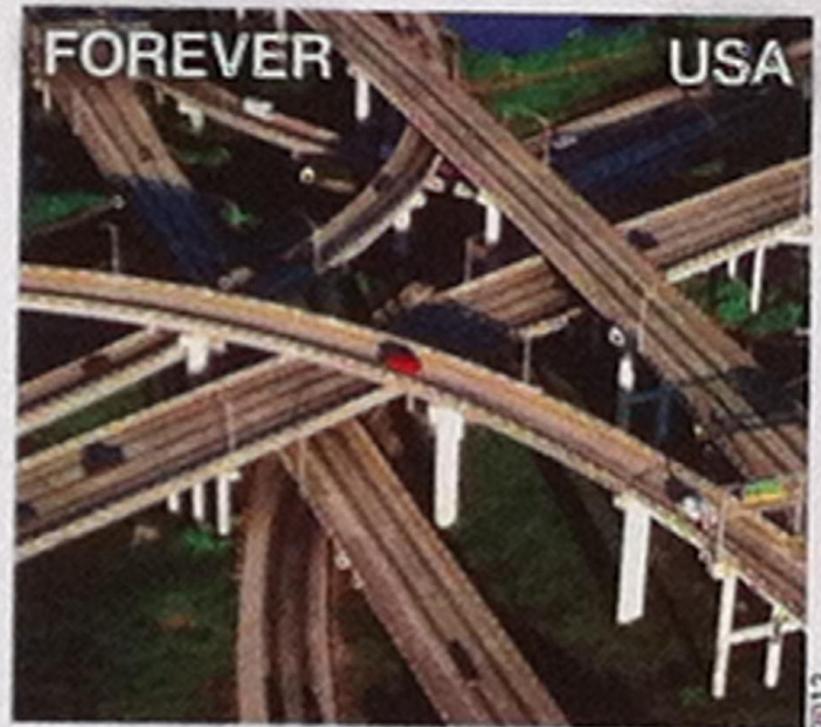
Park & Rec



Exposure to PA Environments Is Significant. So Are Investments.



Residential subdivision



Highway interchange



“Walkable”: Mixed use, connected, dense²⁰



Not "walkable"

↓ street connectivity and ↓ mixed land use



Low-Walkable Residential Area

Studying the Relation of Neighborhood Design to Health

Walkability

Low

High

Socioeconomic Status

Low

High

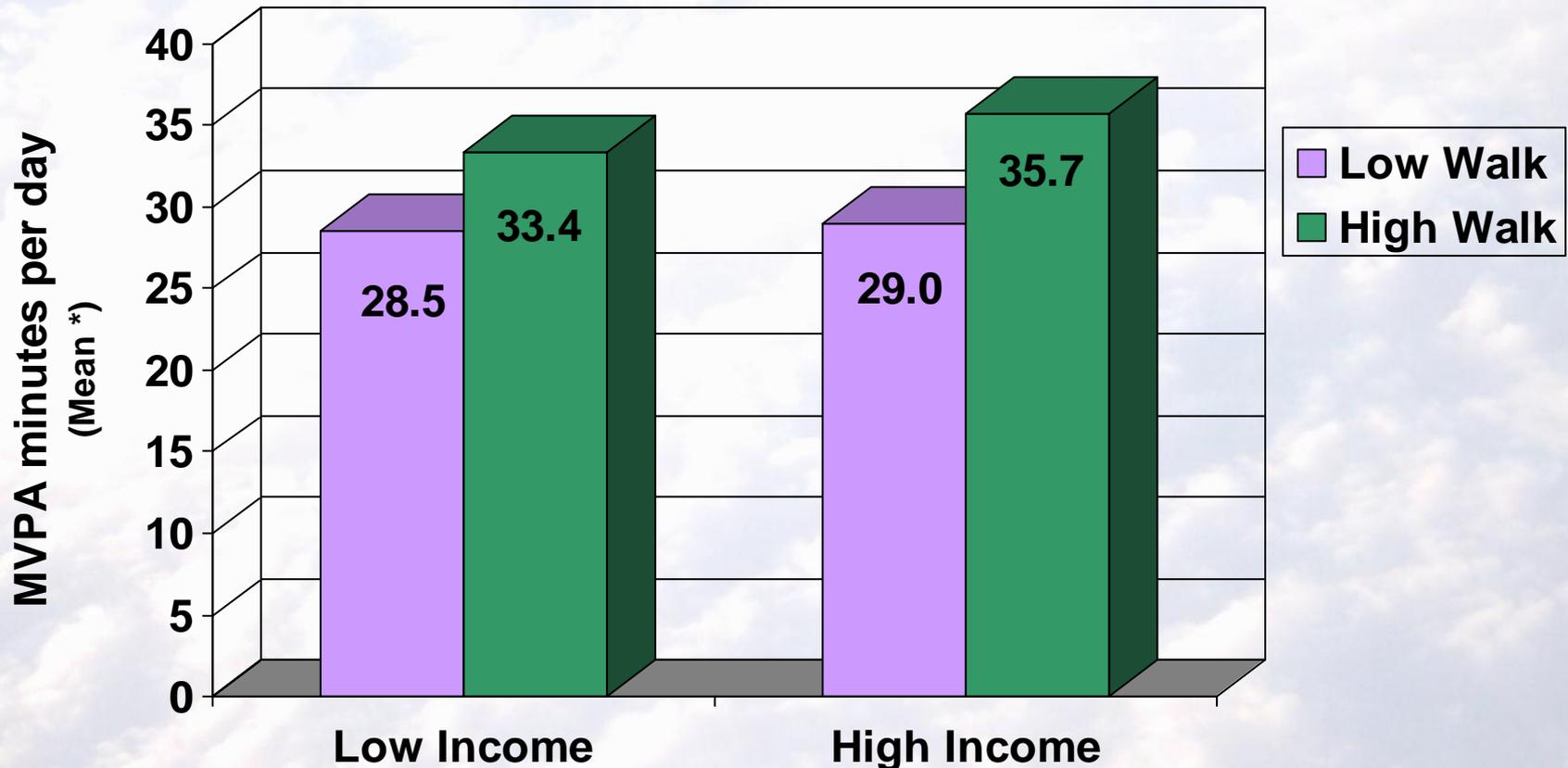
4 per city	4 per city
4 per city	4 per city

Adults' Objective Physical Activity Min/day in Walkability-by-Income Quadrants

Walkability: $p = .0002$

Income: $p = .36$

Walkability X Income: $p = .57$



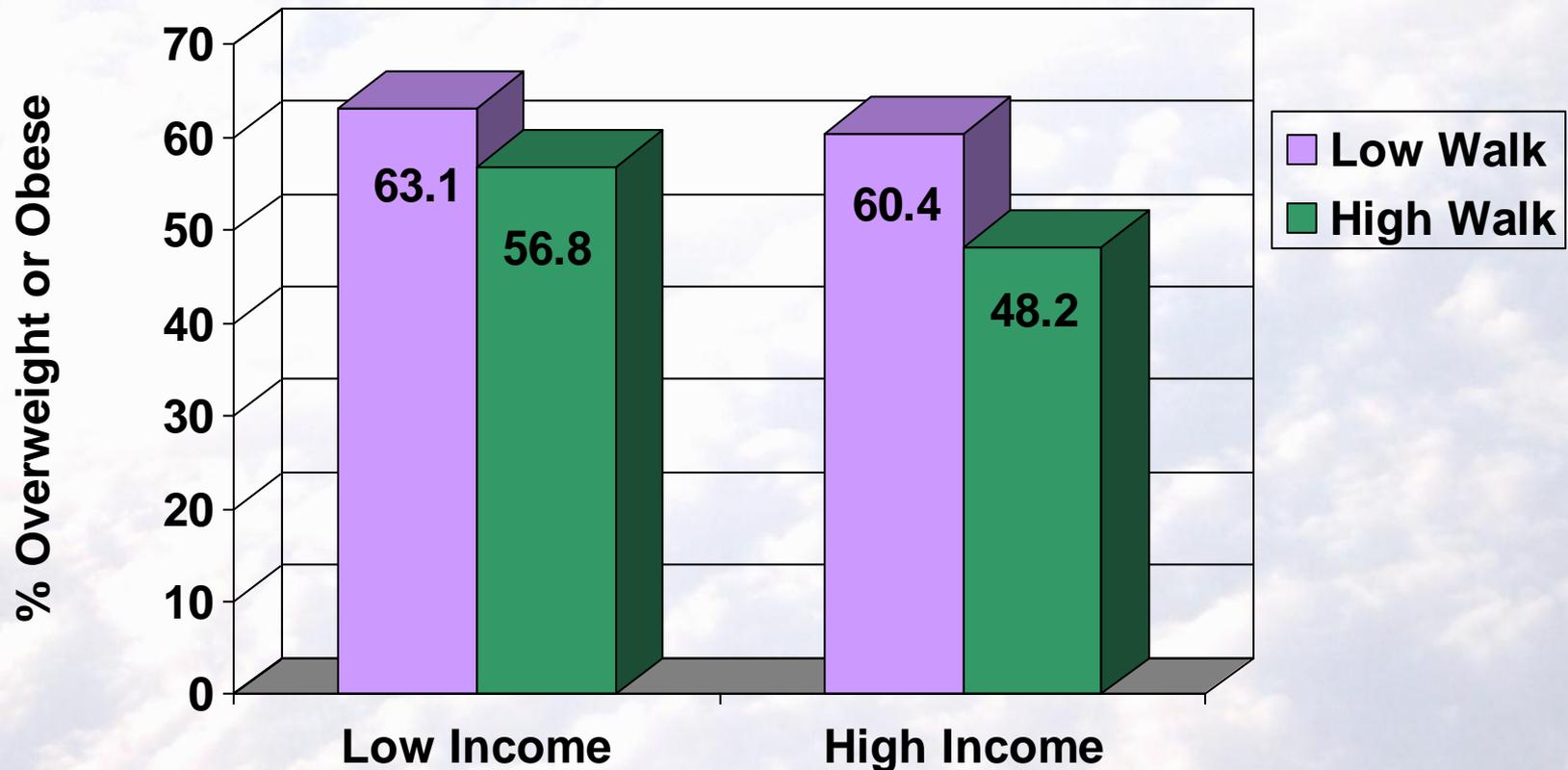
* Adjusted for neighborhood clustering, gender, age, education, ethnicity, # motor vehicles/adult in household, site, marital status, number of people in household, and length of time at current address.

Adults' Percent Overweight or Obese (BMI \geq 25) in Walkability-by-Income Quadrants

Walkability: $p = .007$

Income: $p = .081$

Walkability X Income: $p = .26$



* Adjusted for neighborhood clustering, gender, age, education, ethnicity, # motor vehicles/adult in household, site, marital status, number of people in household, and length of time at current address.

Estimated Public Health Impact of Walkability

- 50 minutes per week = 2+ miles per week
- 2 miles per week = 100 miles per year
- 100 miles per year X 100 calories per mile
= 10,000 kcal per year
- 10,000 kcal per year = 2.9 pounds/1.3 kg
- More than the average adult weight gain per year in the U.S.



Atlanta, USA

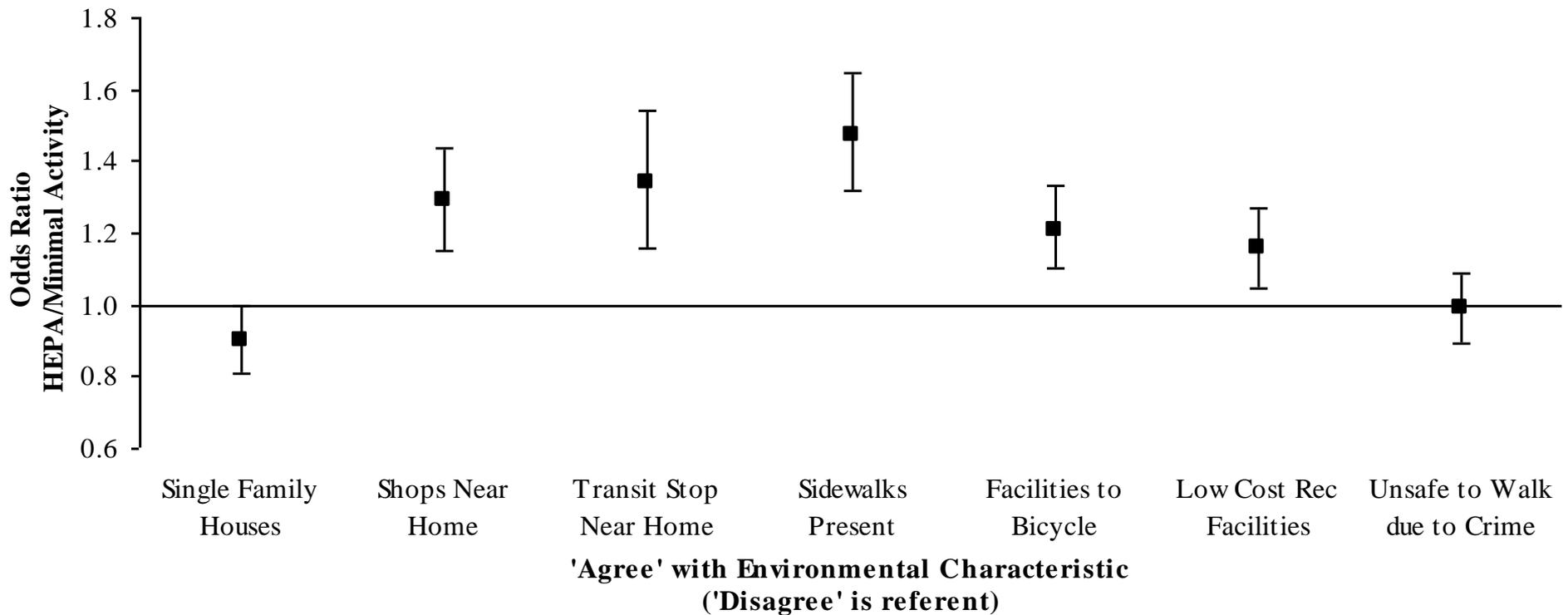
Ghent, Belgium

We can learn
from
international
studies

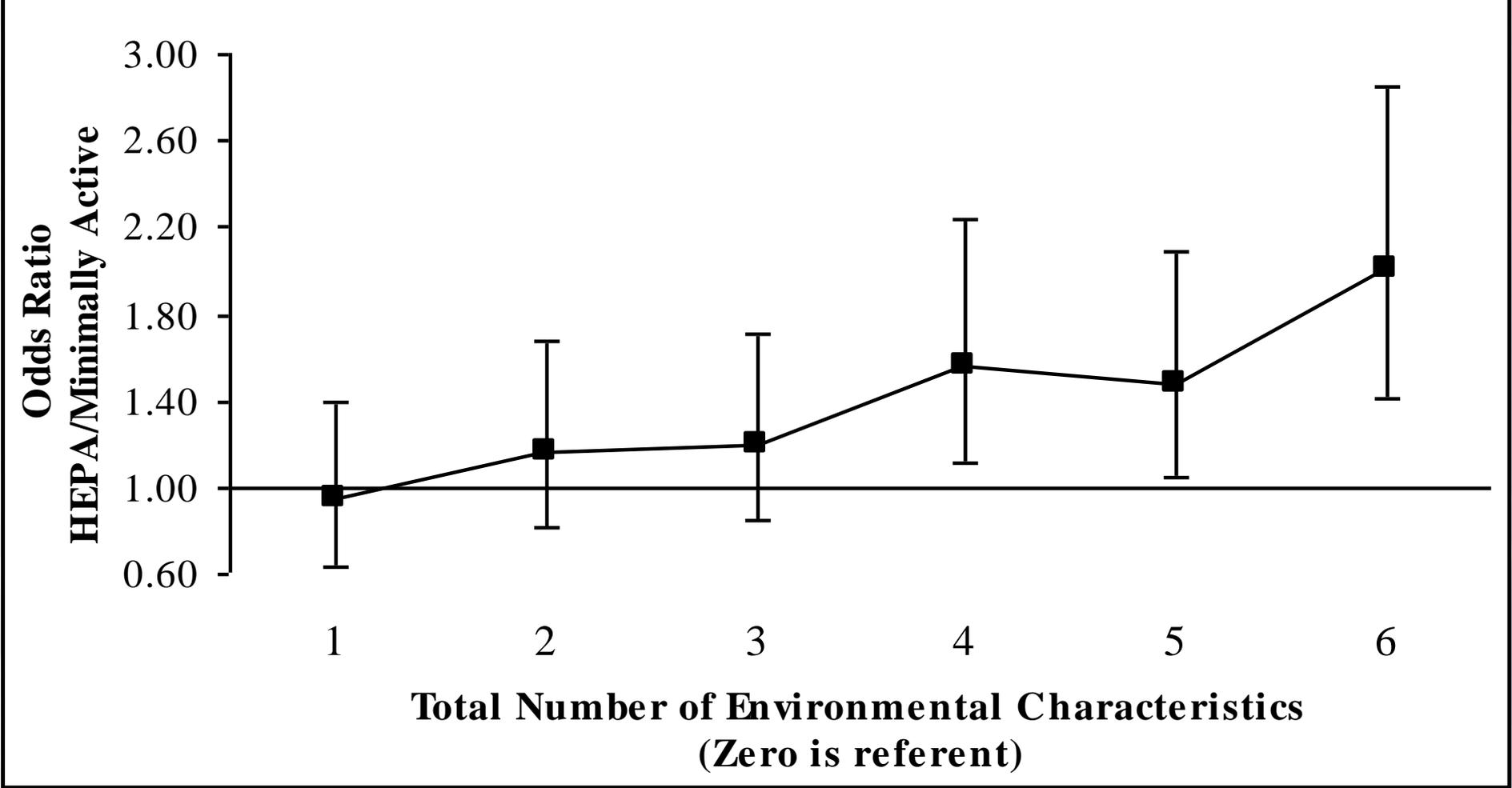


Built Environment Features Related to Physical Activity in 11 Countries

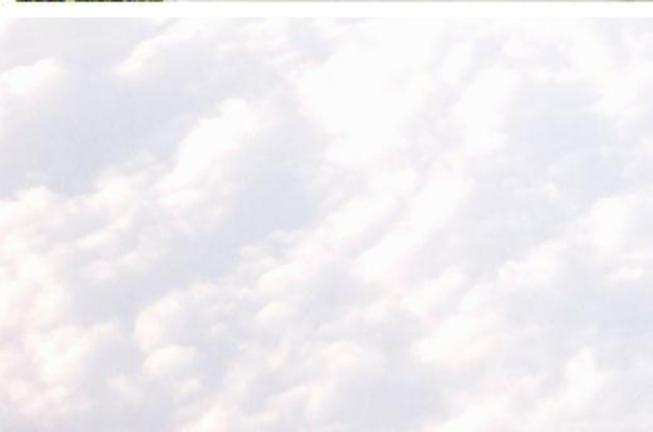
Associations Between Individual Environmental Characteristics and HEPA/Minimal Activity Among Respondents who Live in Cities with Population $\geq 30,000$



Number of Activity-Friendly Attributes Is Related to Physical Activity: Evidence for Putting All the Pieces Together



Getting the Details Right: Micro-Scale Features



How to do Density



28 Units per acre

Pedestrian-Oriented Design: Floor Area Ratio

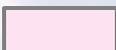
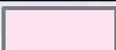
- Building fills the parcel
- Oriented to sidewalk
- Visual interest for pedestrians
- Building is small % of parcel
- Built for cars
- Hostile to pedestrians



MAPS Mini: Assessing the Details

- **15-item MAPS-Mini was designed for practitioners and advocates**
 - Reduced from 120 items
- Trained observers walk down streets and evaluate presence and condition of key attributes
- MAPS-Minis was evaluated in 3677 children, teens, adults, older adults
 - 3 regions

How do MAPS-Mini scores relate to active transportation? ADJUSTED

MAPS Mini Score	Children	Adolescents	Adults	Seniors
Commercial Segments				N/A
Public Parks				
Transit Stops				
Street Lights				
Benches				
Building Maintenance				
Absence of Graffiti				
Sidewalk				
Buffer				
Tree, Awning Coverage				
Absence of Trip Hazards				
Marked Crosswalk				
Curb Cuts				
Crossing Signal				
GRAND SCORE				
GRAND SCORE (for Active Transport)				

MAPS-Mini Grand Score & Active Transport: Adults



222% difference

Putting the Pieces Together: Designing an Activity-Friendly Street

Clever, MO:
Clarke Street



Credit: National Assn. of Realtors & Urban Advantage

Clever, MO: Clarke Street



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Activity-Friendly Transportation Systems

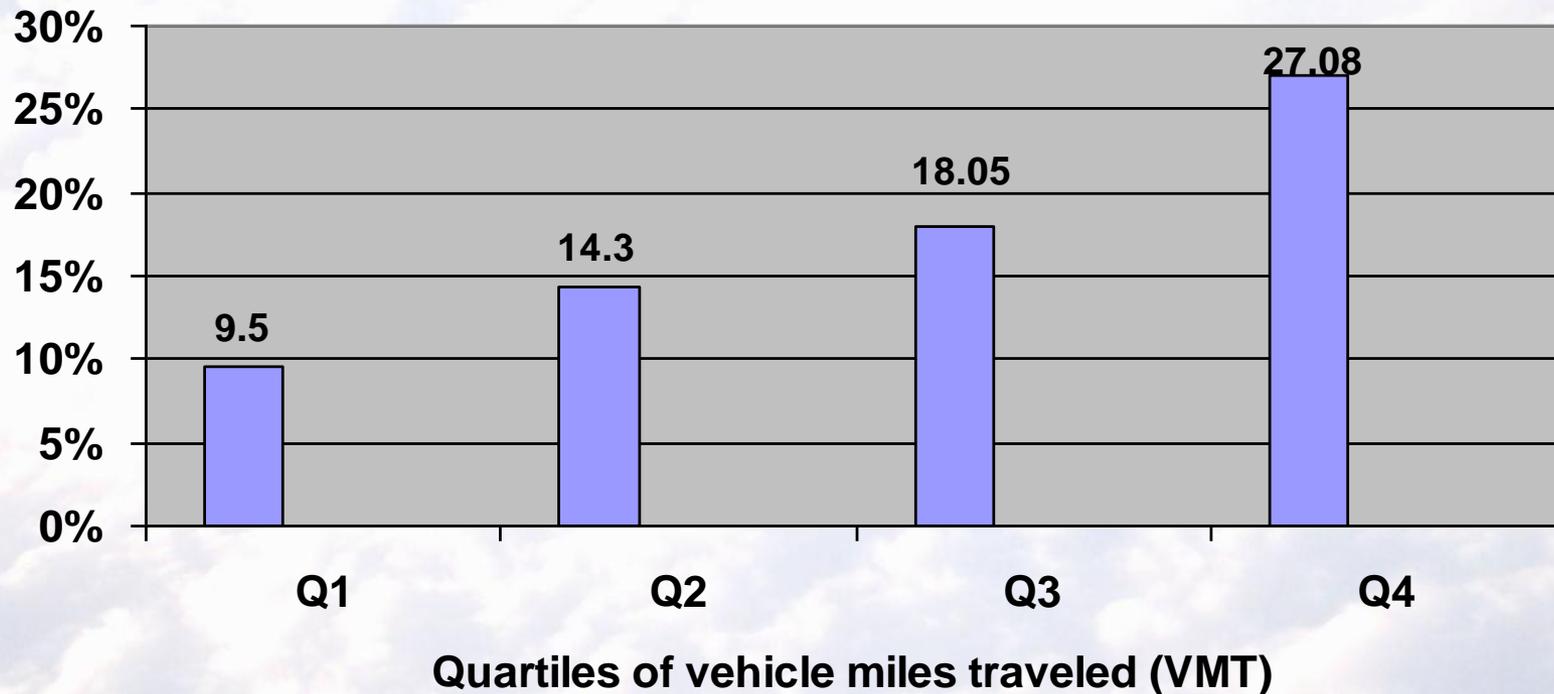


Not designed for active travel

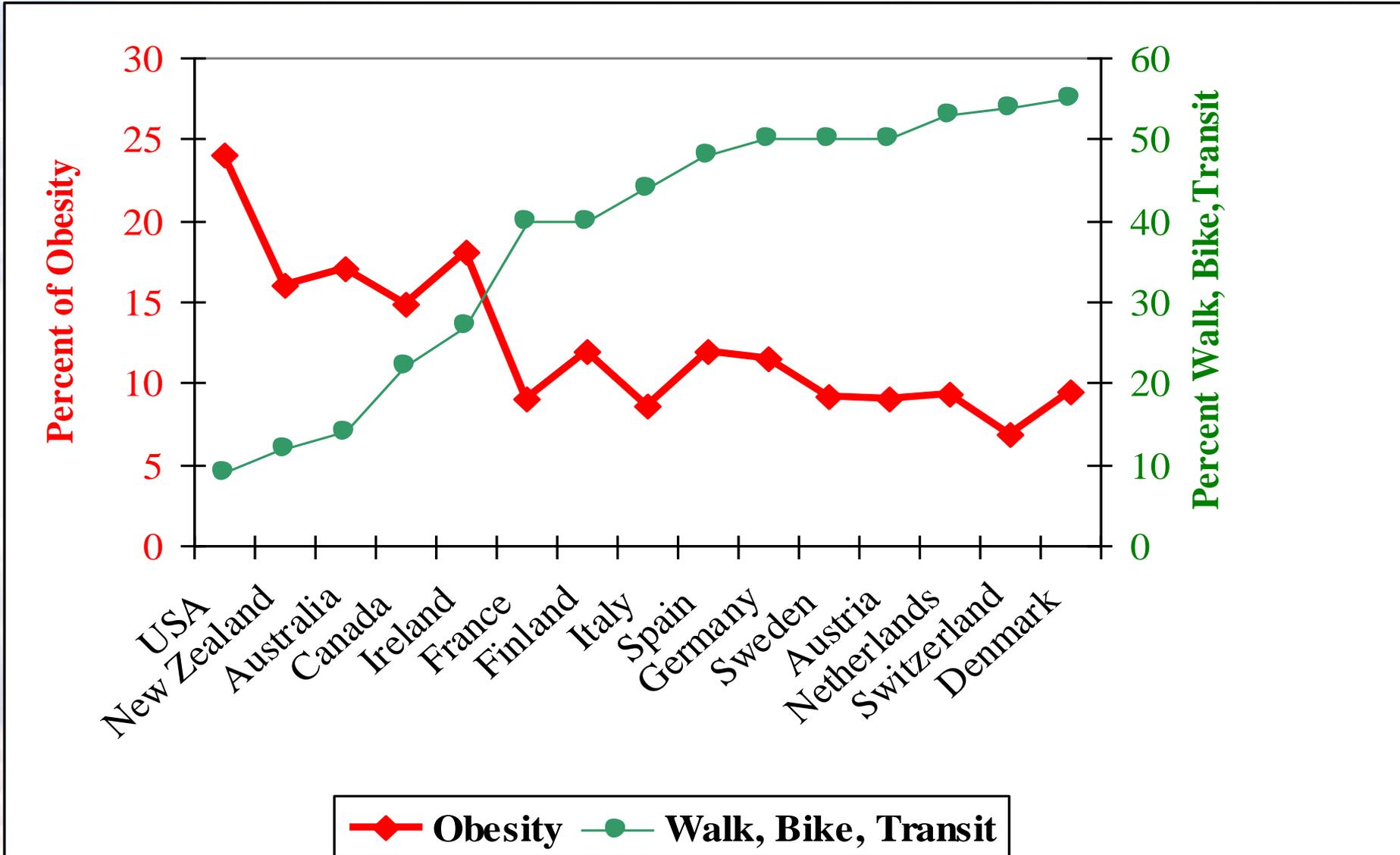


Driving >> Obesity

The more miles a person travels by vehicle, the more likely they are to be obese

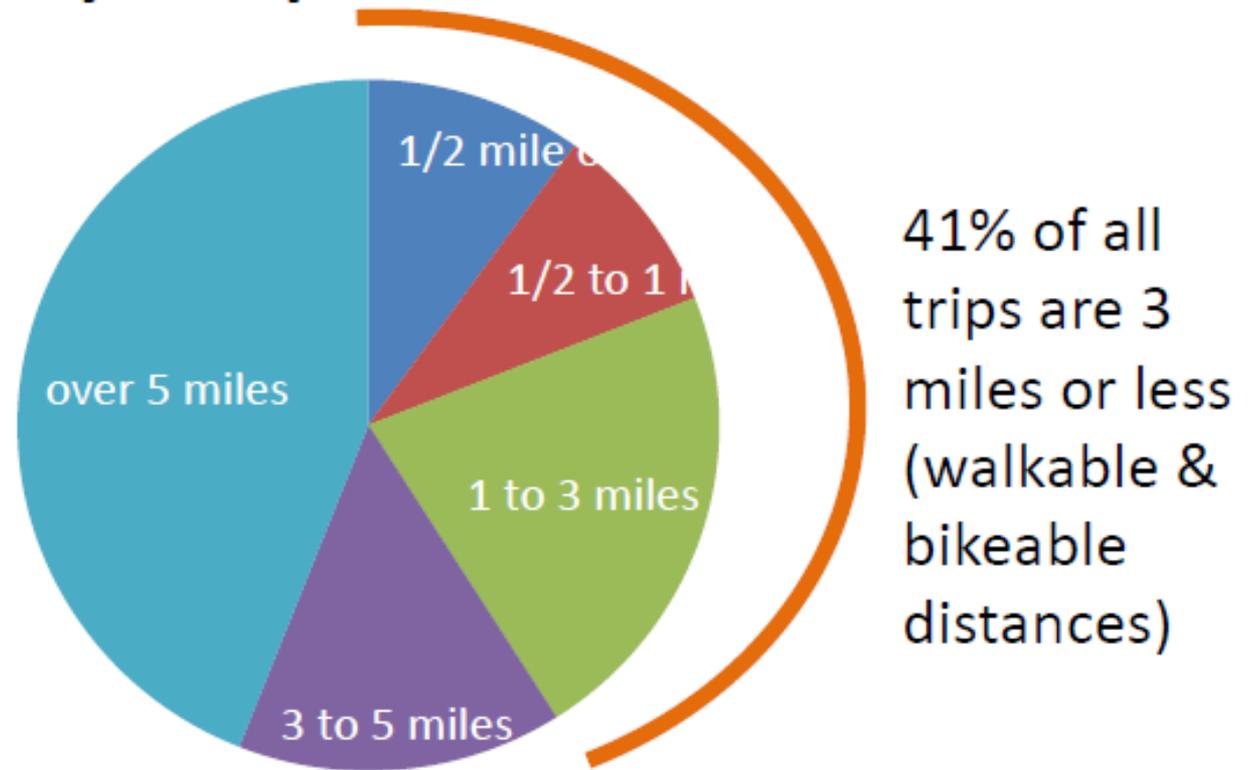


Obesity falls sharply with increased walking, cycling, and transit use!



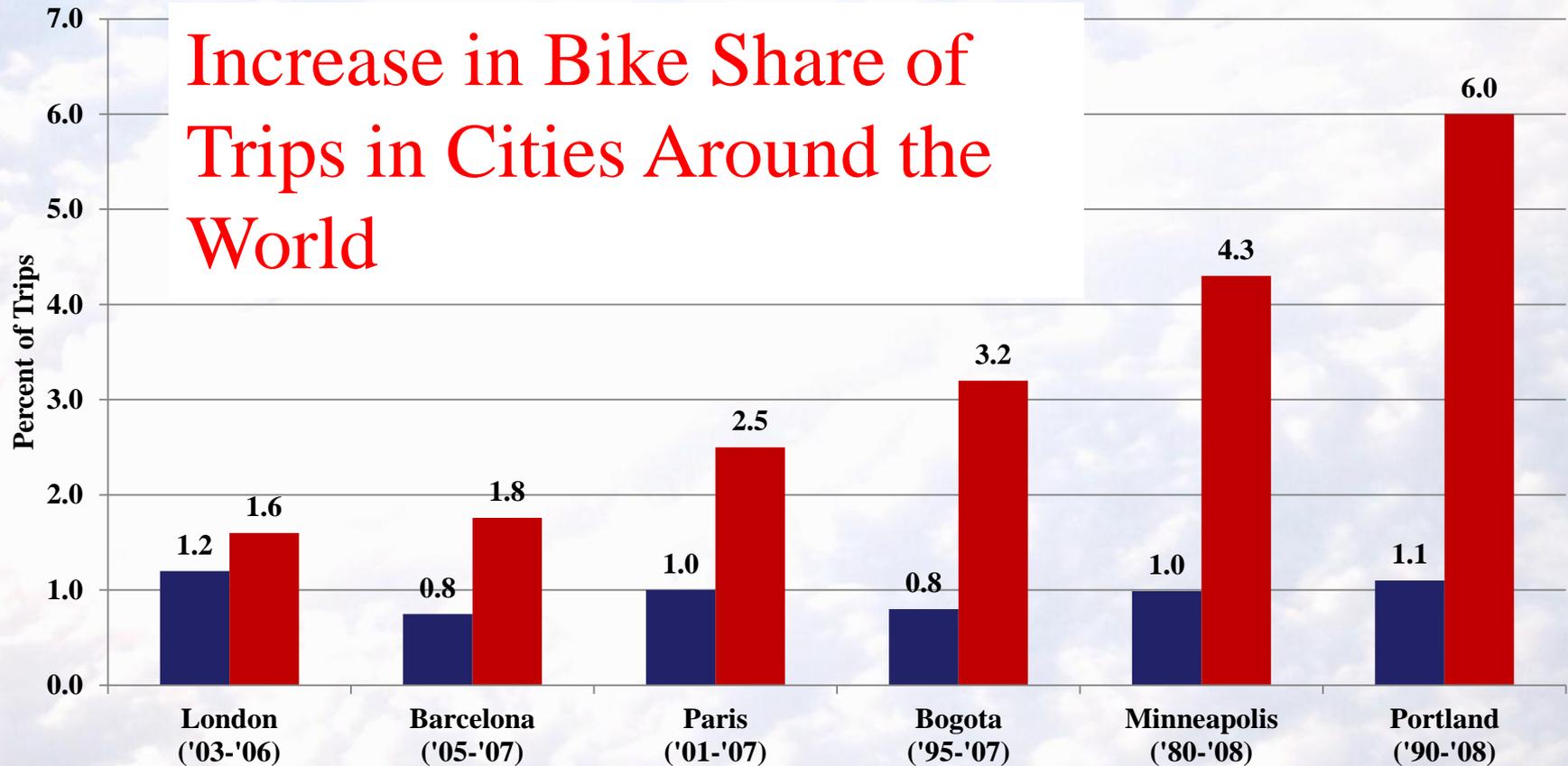
Credit: John Pucher

The Good News: Many trips are short



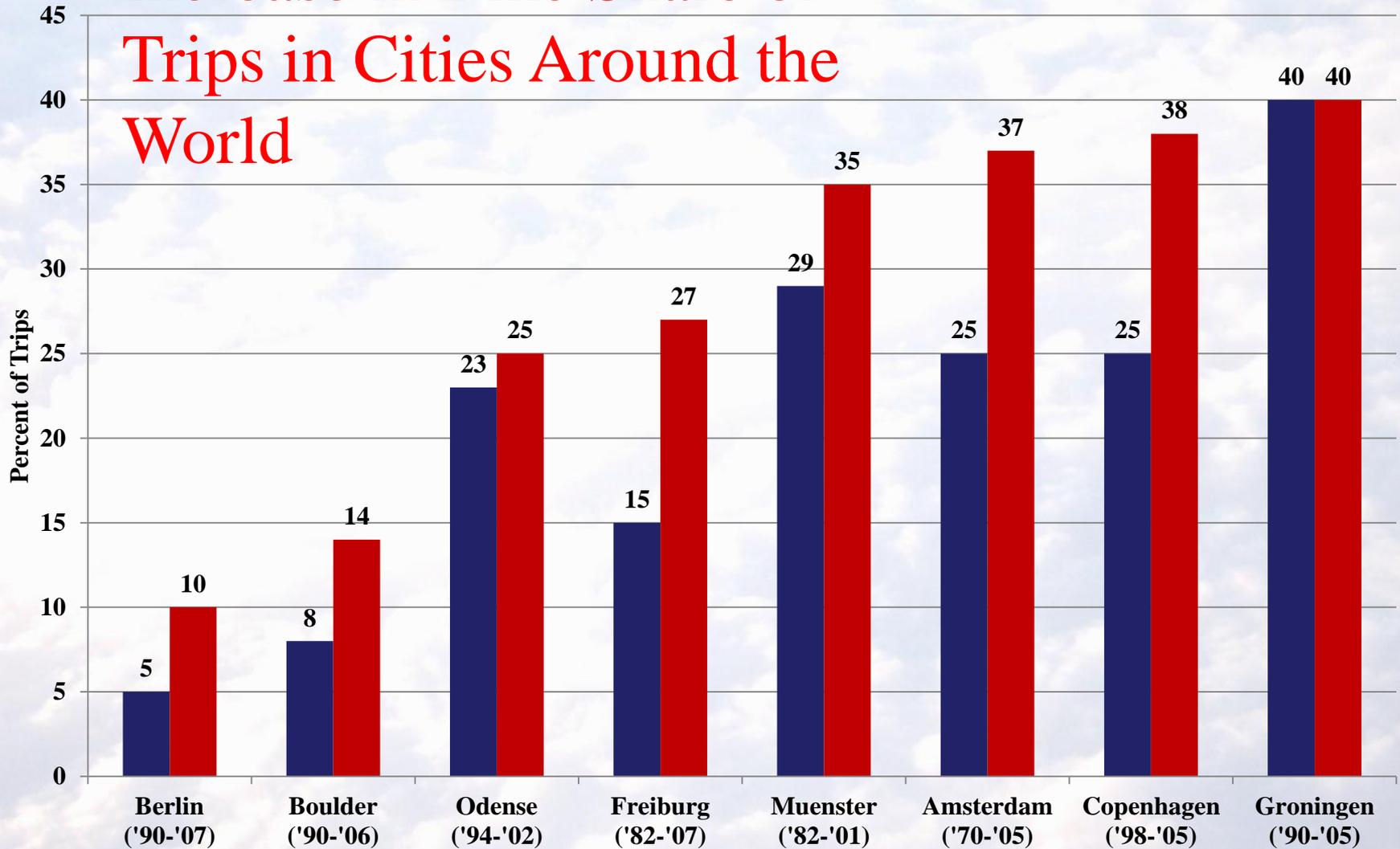
Short trips are convertible trips

Case studies of multi-level, multi-component, multi-year interventions suggest a different conclusion



Source: Pucher, Dill, and Handy, "Infrastructure, Programs, and Policies to Increase Bicycling," *Preventive Medicine*, Jan 2010, Vol. 50, S.1, pp. S106-S125.

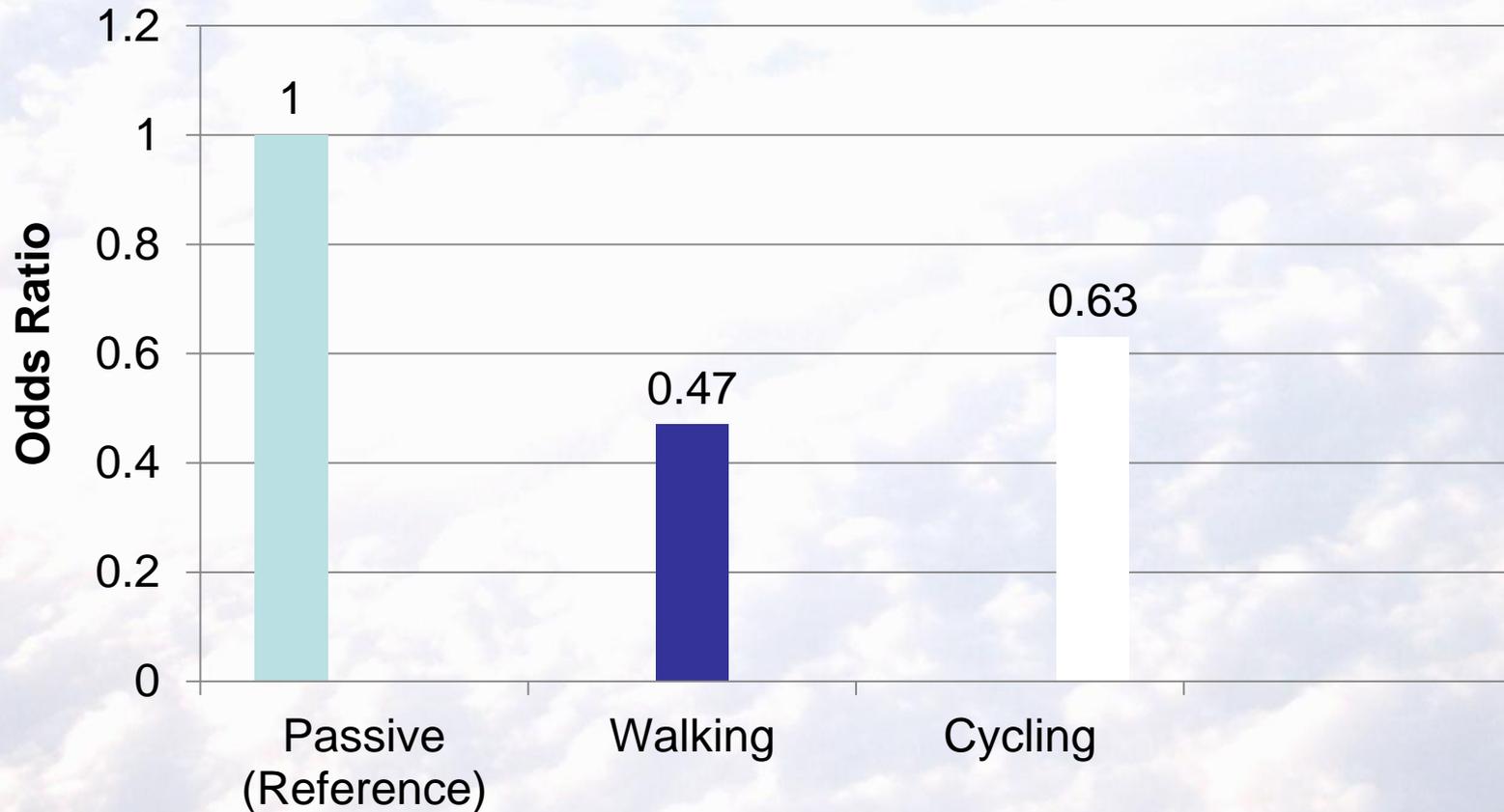
Increase in Bike Share of Trips in Cities Around the World



Source: Pucher, Dill, and Handy, "Infrastructure, Programs, and Policies to Increase Bicycling," *Preventive Medicine*, Jan 2010, Vol. 50, S.1, pp. S106-S125.

Walking and Biking to School Reduces Odds of Being Overweight

A Danish study found that adolescents (N=3847) who walked or cycled to school were less likely to be overweight than those who rode to school in motor vehicles (passive transport).



Østergaard L. et al. Cycling to School Is Associated With Lower BMI and Lower Odds of Being Overweight or Obese in a Large Population-Based Study of Danish Adolescents. *Journal of Physical Activity and Health* 2012, 9: 617-625.



Step 1: Site schools where the students are



Step 2: Create Safe Routes to School



Multistate Evaluation of Safe Routes to School Programs

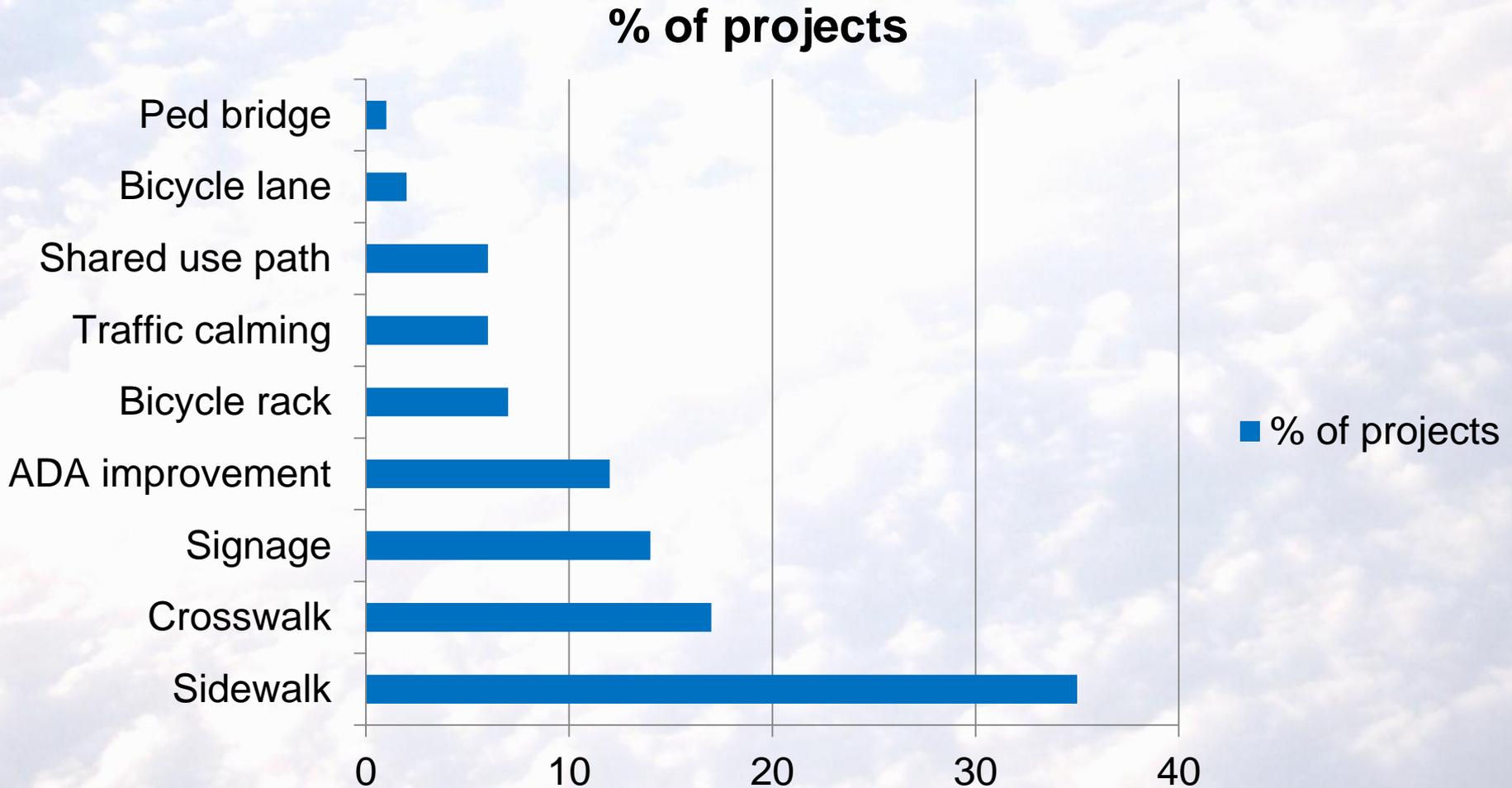
Orion Stewart, MUP; Anne Vernez Moudon, Dr Es Sc; Charlotte Claybrooke, MS

American Journal of Health Promotion

January/February 2014, Vol. 28, No. 3 Supplement

S89

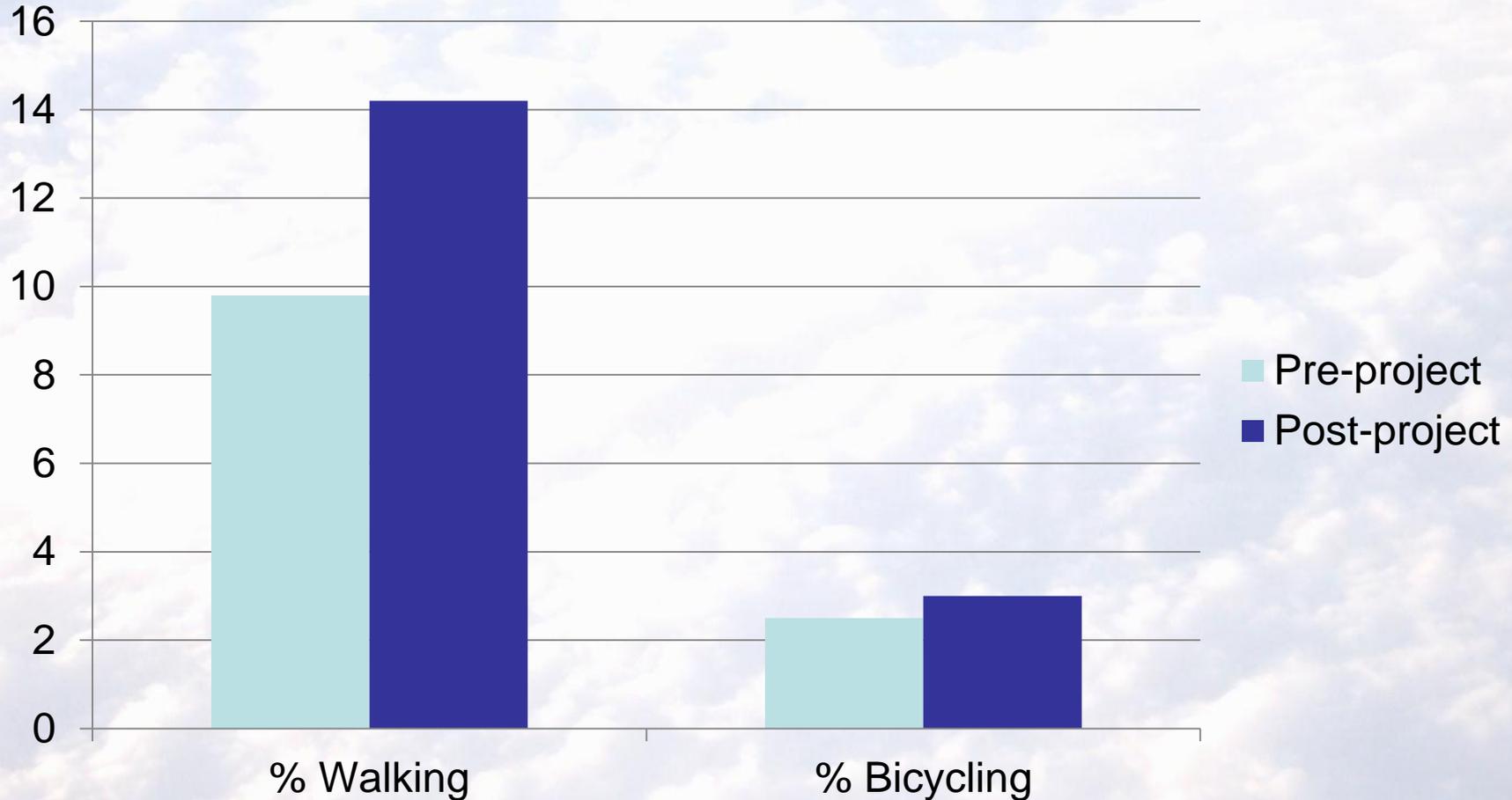
% of SRTS Projects, By Type



Moving Forward: WASH DOT.

<http://www.wsdot.wa.gov/research/reports/fullreports/743.3.pdf>

Walking & Cycling to School Pre & Post SRTS Projects in 5 States



Moving Forward: WASH DOT.

<http://www.wsdot.wa.gov/research/reports/fullreports/743.3.pdf>



Before and after renovation of Denver schoolyards in low-income neighborhoods. Youth were more active **AFTER**.



If the best solutions solve multiple problems, then building activity-friendly communities is an exceptional solution.



Co-Benefits of Designing Activity-Friendly Environments

	Physical Health	Mental Health	Social Benefits	Environmental Sustainability	Safety / Injury Prevention	Economic Benefits
Open spaces / Parks / Trails	57.5+ 3.5(0)	93+	42.5+ 4(0)	20+ 4(0)	23+	19+ 4(0)
Urban Design	105+ 54(0) 19-	31+ 4-	80.5+ 29(0)	265.5+ 45.5(0) 3.5-	13.5(0) 18.5-	69+ 10.5(0) 4-
Transport Systems	7+ 3.5-	3+ 3.5(0)	23+	70+ 21(0) 3-	67+ 14(0) 4-	56+ 3.5(0) 4-
Schools	19.5+ 3.5(0)	21+	11+	21.5+	4+ 3-	15+
Workplaces / Buildings	55+ 3.5(0)	18.5+ 4-		20.5+		48+ 3.5(0)

Active Living Research

Using Evidence to Prevent Childhood Obesity
and Create Active Communities



Photo by Gary Hack

Business Performance in Walkable Shopping Areas

With success, enterprises in walkable shopping areas are able to pay higher rents for their space, and housing near walkable commercial areas commonly sells for higher prices than in more distant areas.

Barriers to Active Transportation

- **Zoning laws** that require separation of land uses and low density
- **Transportation policies** that favor autos over all other modes
- **Lending practices** that discourage mixed-use development
- **Parking policies & standards** that increase distances
- **Pedestrian-hostile architecture & community design** that makes walking unpleasant
- **Locational/siting practices** that increase distances

Solutions to Zoning Barriers

Examples of Code Changes Under Review or Approved in Oregon Cities

Dundee, OR:

- More land uses allowed in commercial zones
- Easier approvals for residential-commercial mixed-use buildings

Nyssa, OR:

- Bike parking requirements
- No auto parking requirements for Main Street

Grants Pass, OR:

- Smaller lots allowed
- Higher-density allowed
- Standards for accessory dwelling units

Better Transportation Policies

- Performance/mobility standards for pedestrians and bicyclists, as well as motorists.
- Narrower lanes in urban areas
- Slower speeds in urban areas & match “design speeds” with posted speeds
- Complete streets policies that design streets for all users
- Counting pedestrians and bicyclists
- Please be a voice for changes in these policies.
Communities designed for active transport have better health, economic, and environmental outcomes

But What Can I Do?

- Get informed
 - Learn the research
- Join with others
 - Join an advocacy group
 - Start an advocacy committee in your organizations
- Speak up—often
 - Attend & speak at city council & local planning group meetings
 - Get to know your local and national reps
 - Write an op-ed, letter to editor, blog

Resources at www.activelivingresearch.org

SIDEWALKS AND CROSSWALKS
In five states (Fla., Miss., Texas, Wash., Wis.), walking and biking to school increased by **37%** after sidewalks and crosswalks were improved.

WALKING SCHOOL BUS
In Houston, the number of children walking or biking to school increased by **125%** after schools began participating in a Walking School Bus program.

BIKE LANES
After the installation of a new bike lane in New Orleans, the number of cyclists increased by **225%**.

RECREATIONAL FACILITIES
People who used outdoor fitness equipment in Los Angeles parks exercised **46%** more frequently than those who did not.

CHANGING Communities GETS PEOPLE MOVING
Communities across the country are making improvements to encourage walking, biking, and other forms of physical activity.

Active Living Research
www.activelivingresearch.org

Sources: SIDEWALKS AND CROSSWALKS: Stewart, O. et al. (2014). Multistate Evaluation of Safe Routes to School Programs. American Journal of Health Promotion, 28 (sp3):S89-S96. WALKING SCHOOL BUS: Mendoza J.A. et al. (2011). The Walking School Bus and Children's Physical Activity: A Pilot Cluster Randomized Controlled Trial. Pediatrics, 128(3): e537-e544. BIKE LANES: Parker, K.M. et al. (2013). Effect of Bike Lane Infrastructure Improvements on Ridership in One New Orleans Neighborhood. Annals of Behavioral Medicine, 45(1Suppl): S101-S107. RECREATIONAL FACILITIES: Cohen, D.A. et al. (2012). Impact and Cost-Effectiveness of Family Fitness Zones: A Natural Experiment in Urban Public Parks. Health & Place, 18(1), 39-45.

Attend conference in San Diego. February 22-25, 2015

Brisbane, Australia has invested in pedestrian facilities



- *Beautiful pedestrian bridge
- *Walkways along the river
- *Pleasing aesthetics

Bogota, Colombia has invested heavily in walking, cycling, & PA events



Bergen, Norway

Special streets designed for children's play



Pedestrian streets,
Like most European cities

Amsterdam is a model for being friendly to pedestrians & cyclists



The Incredible Bicycle Parking Structure At the Train Station

Healthy Community Design Resources in Oregon

- HEAL Cities NW Campaign
 - www.HEALcitiesNW.org
 - Promoting local policies that encourage healthy eating and active living
- Safe Routes to School, Pacific NW Regional Network
 - www.saferoutespacificnorthwest.org
- Oregon Walks
 - www.oregonwalks.org
- Bicycle Transportation Alliance
 - www.BTAOregon.org
- 1,000 Friends of Oregon
 - www.friends.org

Healthy Community Design Resources in Oregon

- Oregon Transportation & Growth Management Program
 - Local resources to support the creation of vibrant, active communities: www.oregon.gov/LCD/TGM/Pages/index.aspx
- Oregon Health Authority – Public Health Division
 - OHA-ODOT partnership activities and programs addressing physical activity, obesity and chronic disease heather.gramp@state.or.us
 - Injury Prevention Program: adrienne.j.greene@state.or.us
 - Environmental Health Program: julie.early-alberts@state.or.us
 - *Place Matters* Conference Nov 19-21, 2014, Portland Hilton
<https://public.health.oregon.gov/PreventionWellness/HealthyCommunities/>
- Local public health agencies (34)
<http://public.health.oregon.gov/ProviderPartnerResources/>
- Tribal public health agencies (9)
http://www.npaihb.org/member_tribes/
- Local land use and transportation planning departments!

Active Living by Design

5 “P” Community Action Model

- Multi-Sector Coalition
 - Public health
 - City planning
 - Transportation
 - Parks & rec
 - Schools/education
 - Walk/bike advocates
 - Community groups
 - Faith groups
 - Philanthropy
- 5 “P”s
 - Preparation
 - Get coalition together
 - Promotion
 - Of opportunities
 - Programs
 - To appeal to many groups
 - Policy
 - To remove barriers
 - Projects
 - To change environments