



Working Together for Healthier Communities in Oregon: Evidence for Win-Win-Wins

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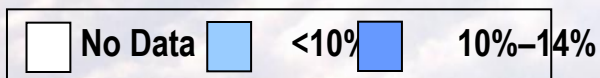
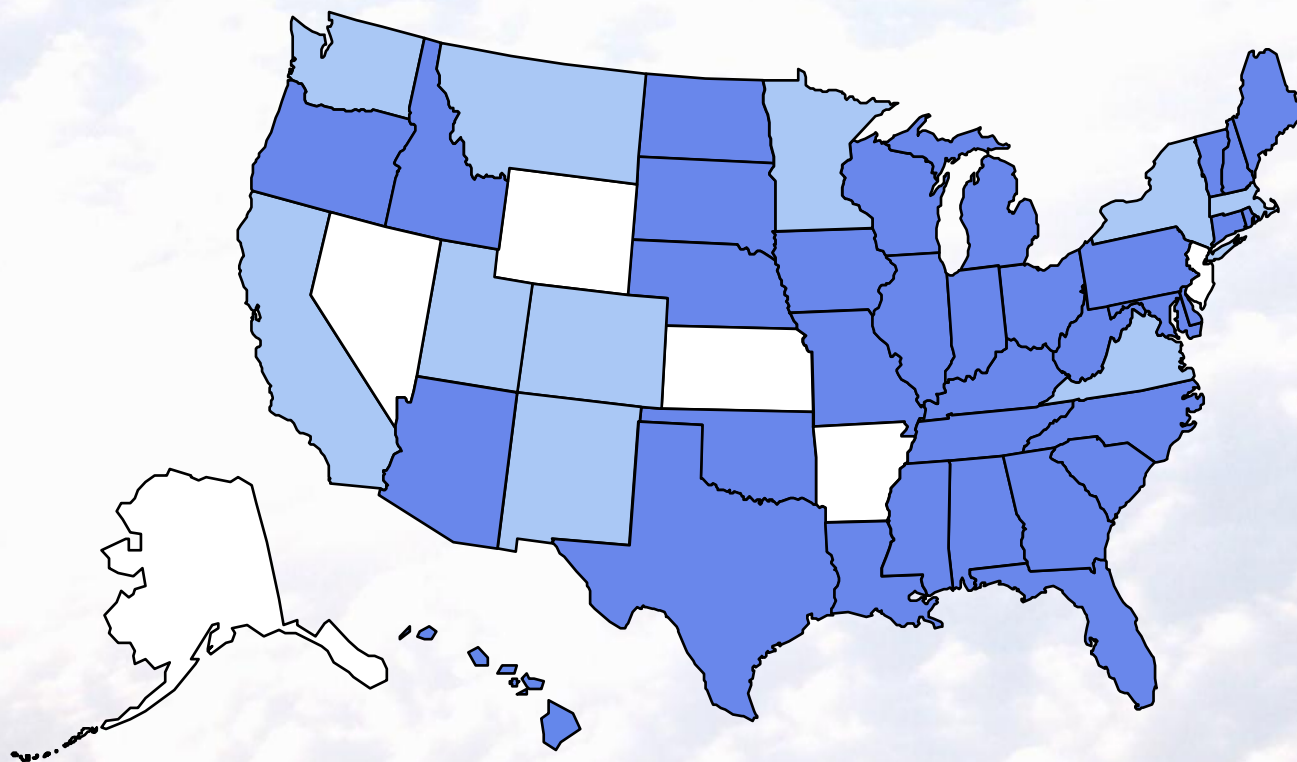
Outline of Talk

- Why Physical Activity?
- Need for multi-sector collaboration & action
- Putting all the pieces together
 - Designing activity-friendly communities
 - Designing transportation systems to move people
 - Rediscovering active commuting to school
 - Designing parks
- Co-benefits of activity-friendly communities
- Everyone can play a part
- Resources

Obesity Trends* Among U.S. Adults

BRFSS, 1990

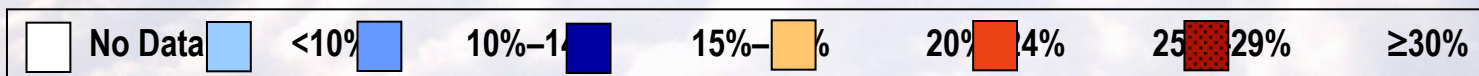
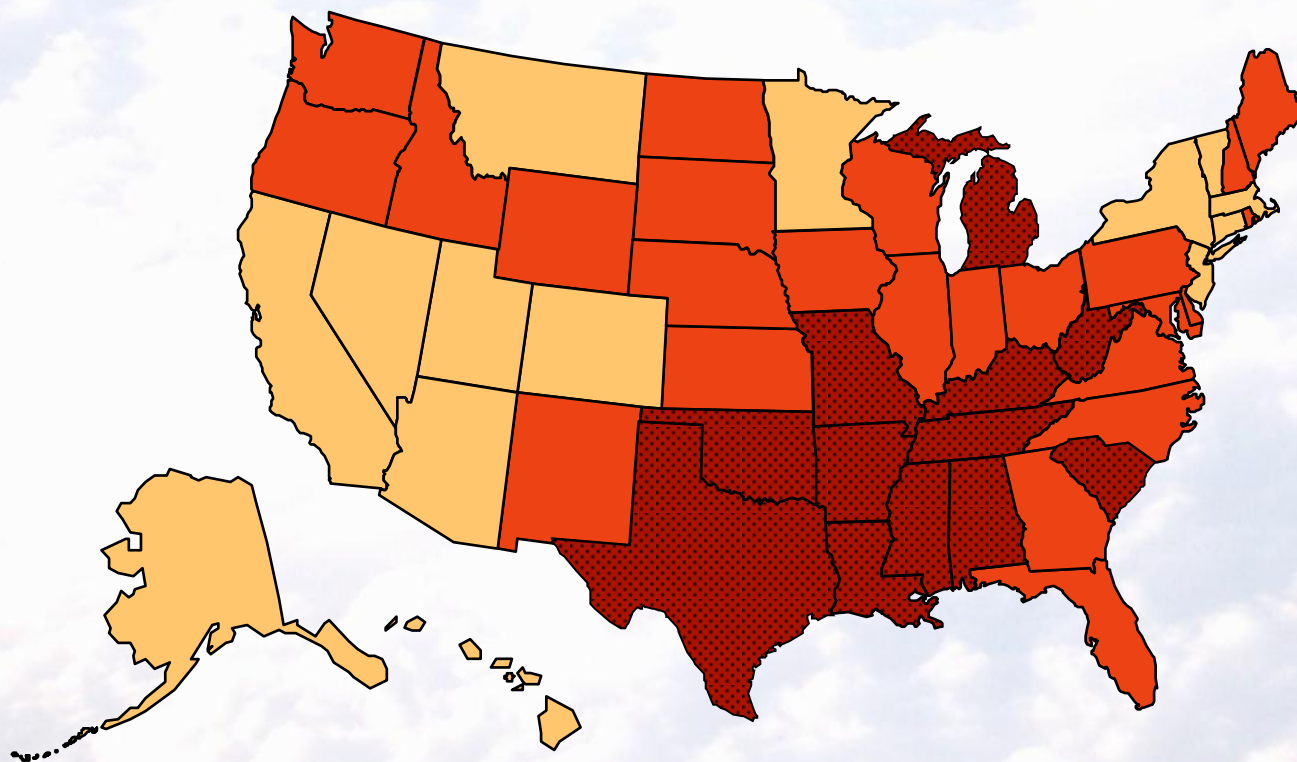
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



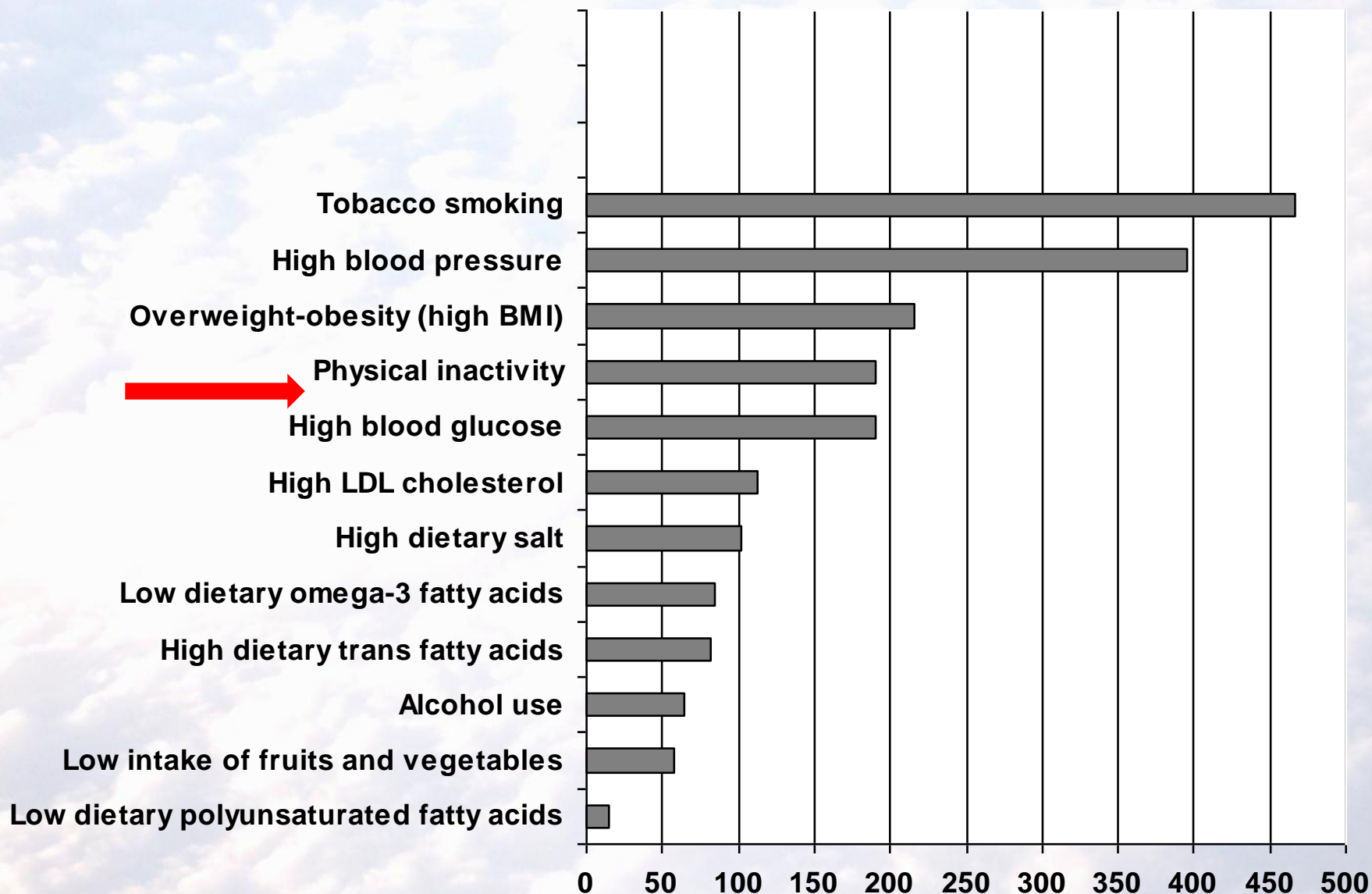
Obesity Trends* Among U.S. Adults

BRFSS, 2010

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



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



High Burden of Disease from Inactivity



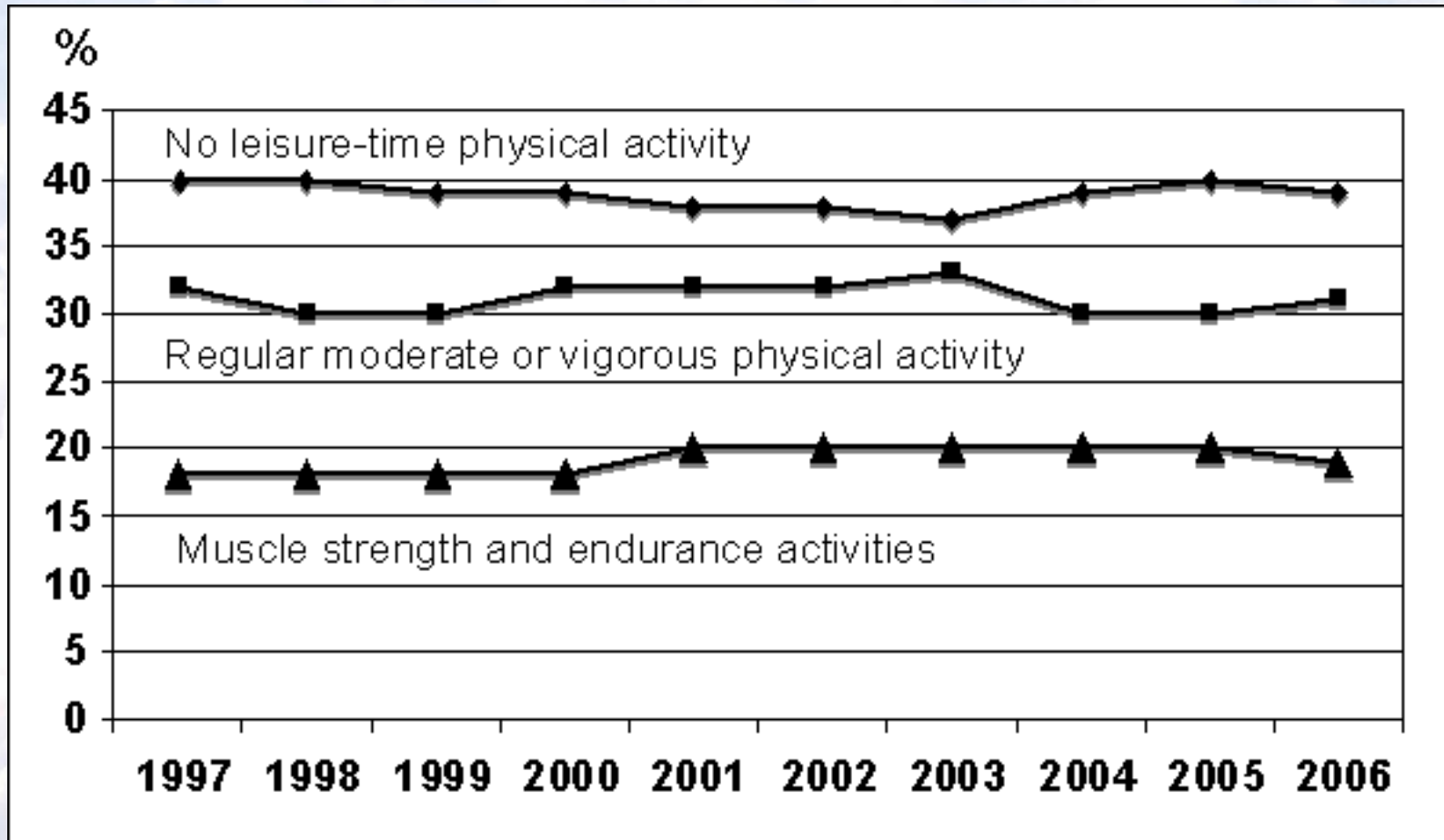
Obesity & Inactivity in Oregon

- 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

How are we doing in promoting PA?

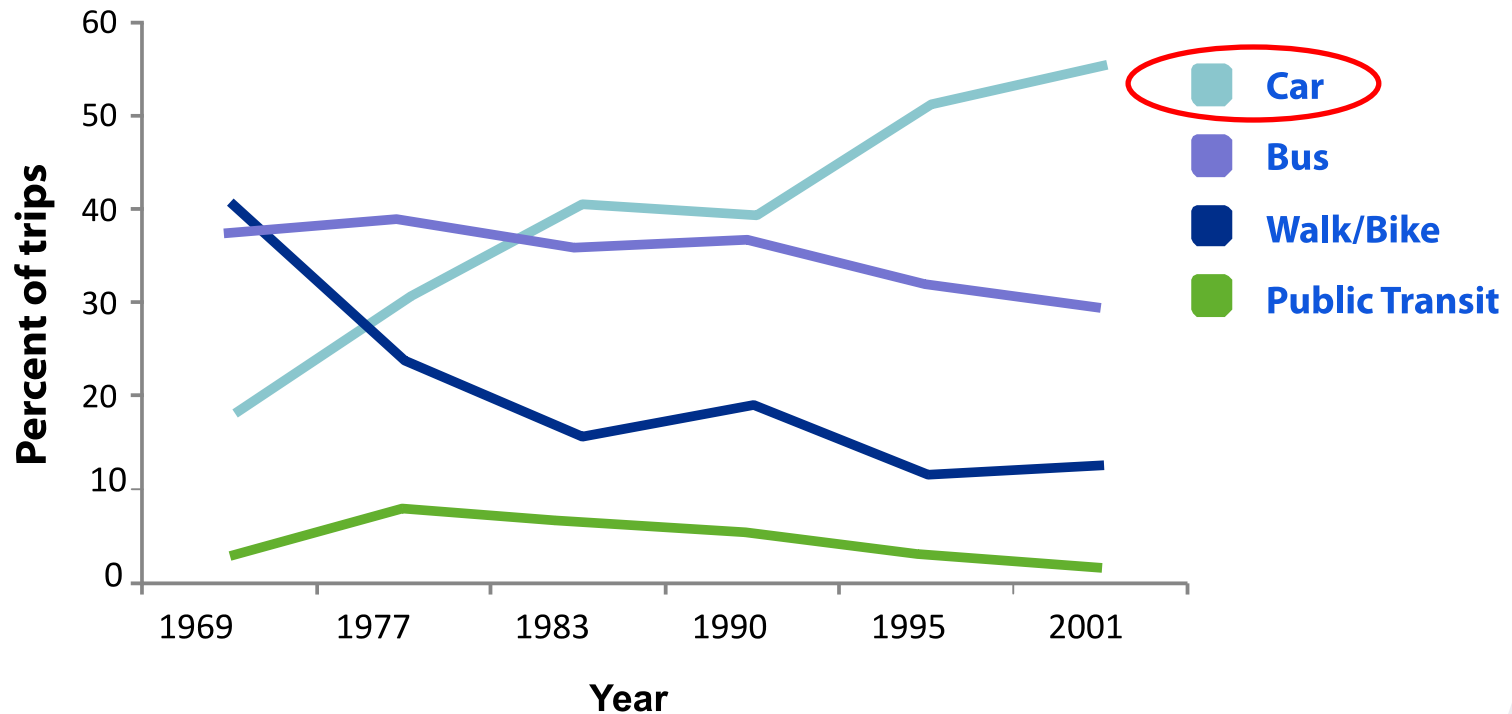


**Reported Physical Activity by Adults in the USA:
1997-2006 The Healthy People 2010 Database**

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

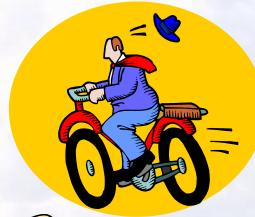
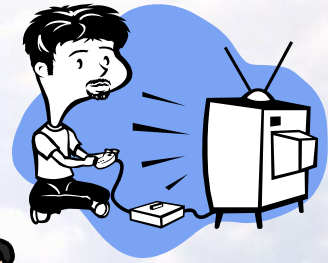
Active Transportation by Youth has Decreased

Mode for Trips to School – National Personal Transportation Survey



How Did We Become Inactive?

- Sleep
- Leisure
- Occupation
- Transportation
- Household



The Future?



Elements of An Active Living Community

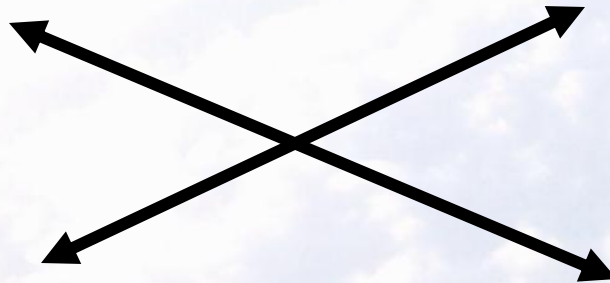
**Community Design
Destinations**



Transportation System



Home



School & Worksite



Park & Rec



Public Health Needs to Partner

Setting for PA

- Neighborhood
- Transportation facilities (sidewalks)
- Recreation facilities
- Schools & workplaces

Expertise for Policy, Practice

- Planners
- Transport engineers & planners
- Park & rec, landscape architects
- Educators, architects

Exposure to PA Environments Is Significant. So Are Investments.



Residential subdivision



Highway interchange



“Walkable”: Mixed use, connected, dense¹⁶



Not “walkable”

↓ street connectivity and ↓ mixed land use



Low-Walkable Residential Area

Evidence of the link between community design and health

The Neighborhood Quality of Life Study
of Adults (NQLS)

Seattle, WA and Baltimore, MD regions

NQLS Neighborhood Categories

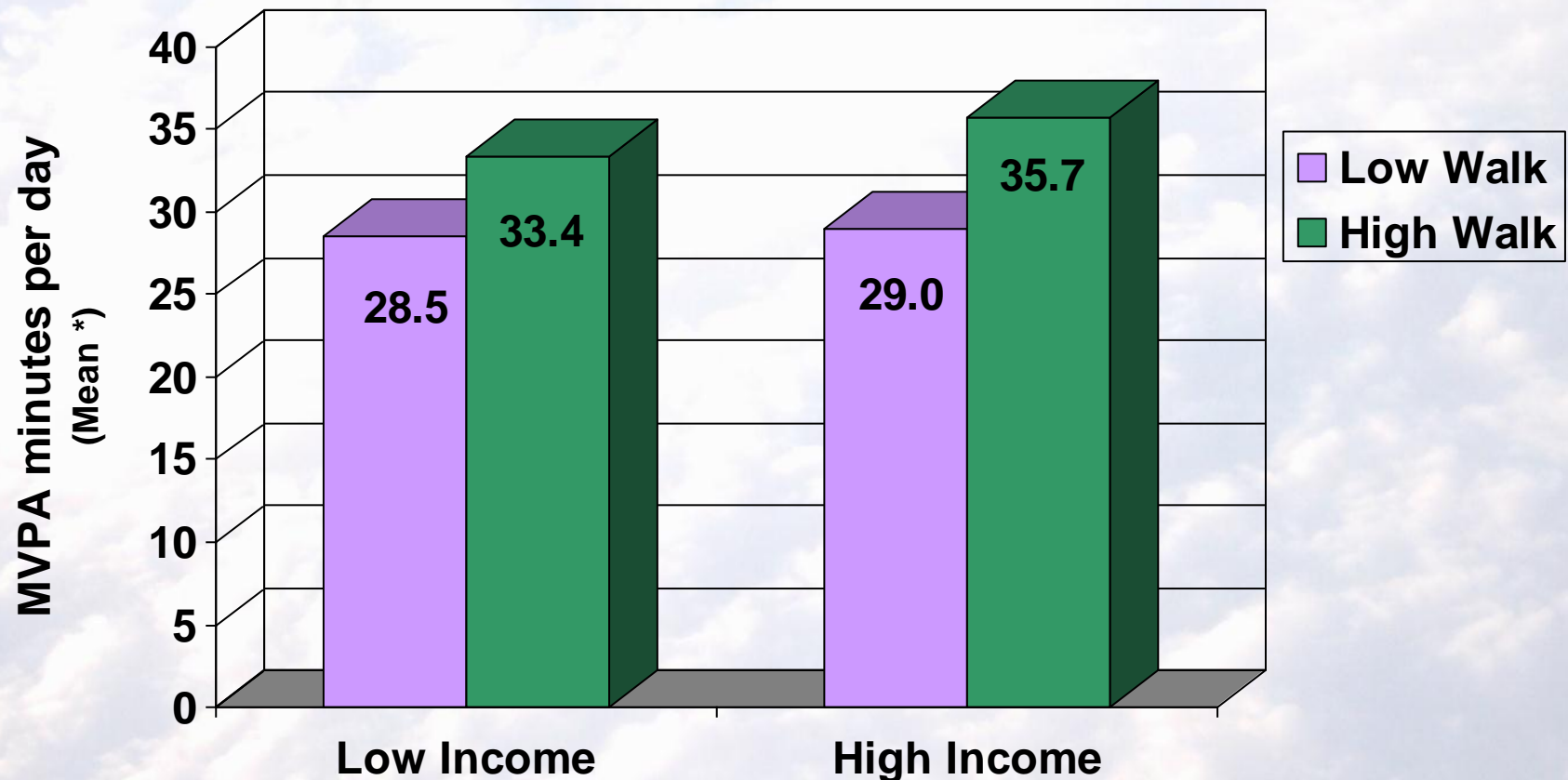
		Walkability	
		Low	High
Socioeconomic Status	Low	4 per city	4 per city
	High	4 per city	4 per city

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

Walkability: $p = .0002$

Income: $p = .36$

Walkability X Income: $p = .57$



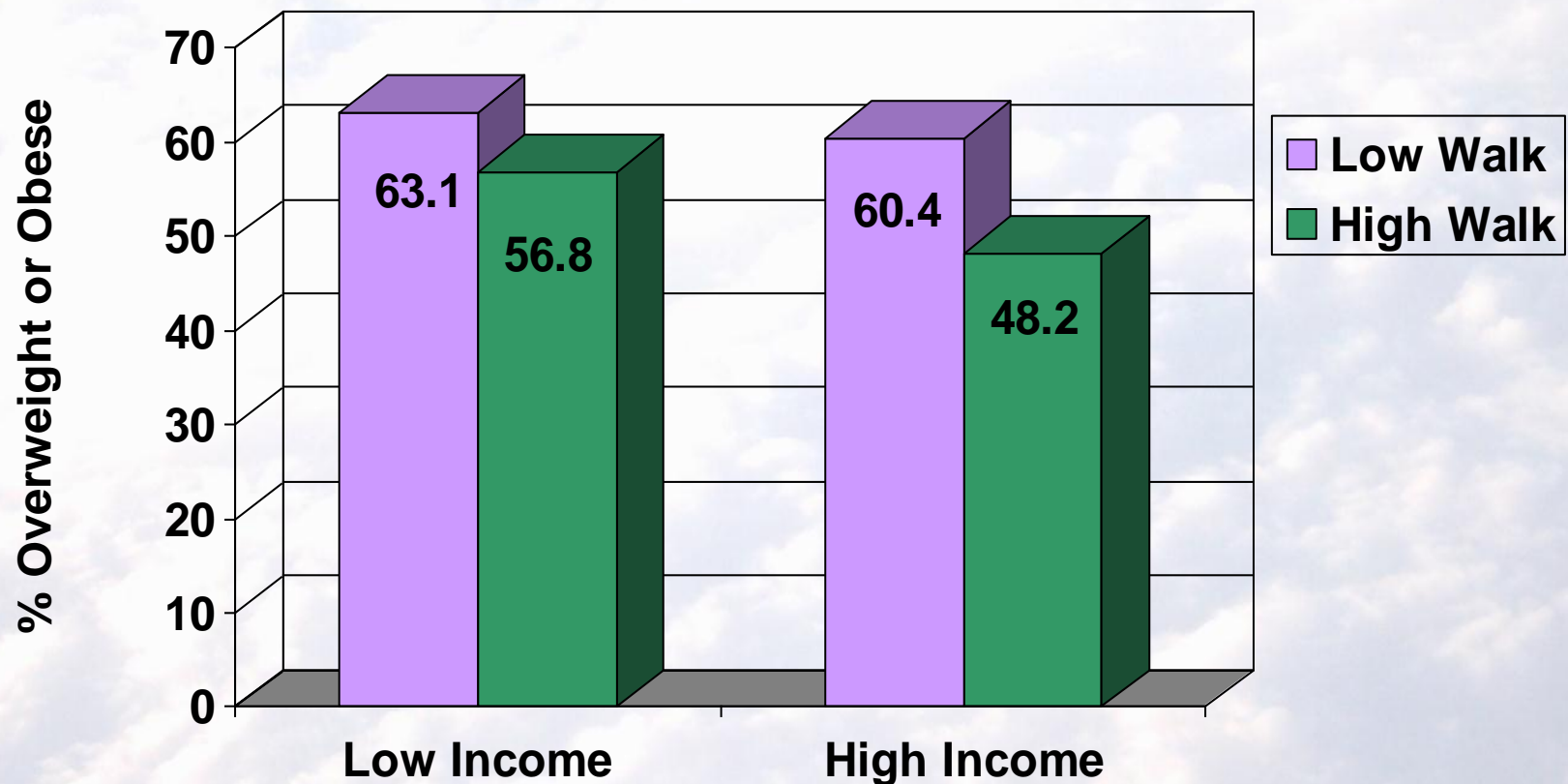
* Adjusted for neighborhood clustering, gender, age, education, ethnicity, # motor vehicles/adult in household, site, marital status, number of people in household, and length of time at current address.

Adults' Percent Overweight or Obese (BMI_≥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

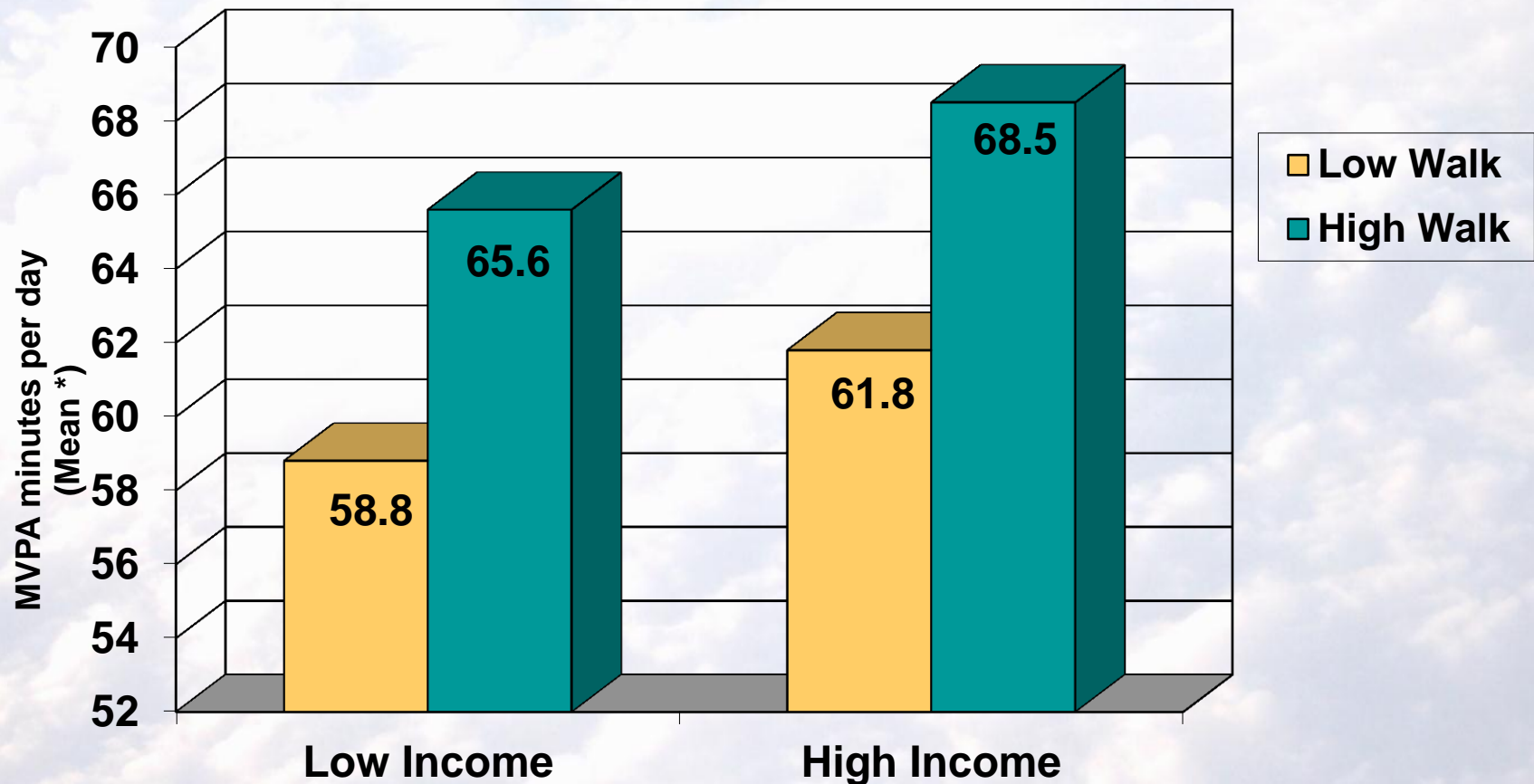
- 50 minutes per week = 2+ miles per week
- 2 miles per week = 100 miles per year
- 100 miles per year X 100 calories per mile = 10,000 kcal per year
- 10,000 kcal per year = 2.9 pounds/1.3 kg
- More than the average adult weight gain per year in the U.S.

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

Walkability: $F=13.74$; $p=.000$

Income: $F=2.59$; $p=.108$

Walkability X Income: $F=.001$; $p=.981$



* Adjusted for gender and age

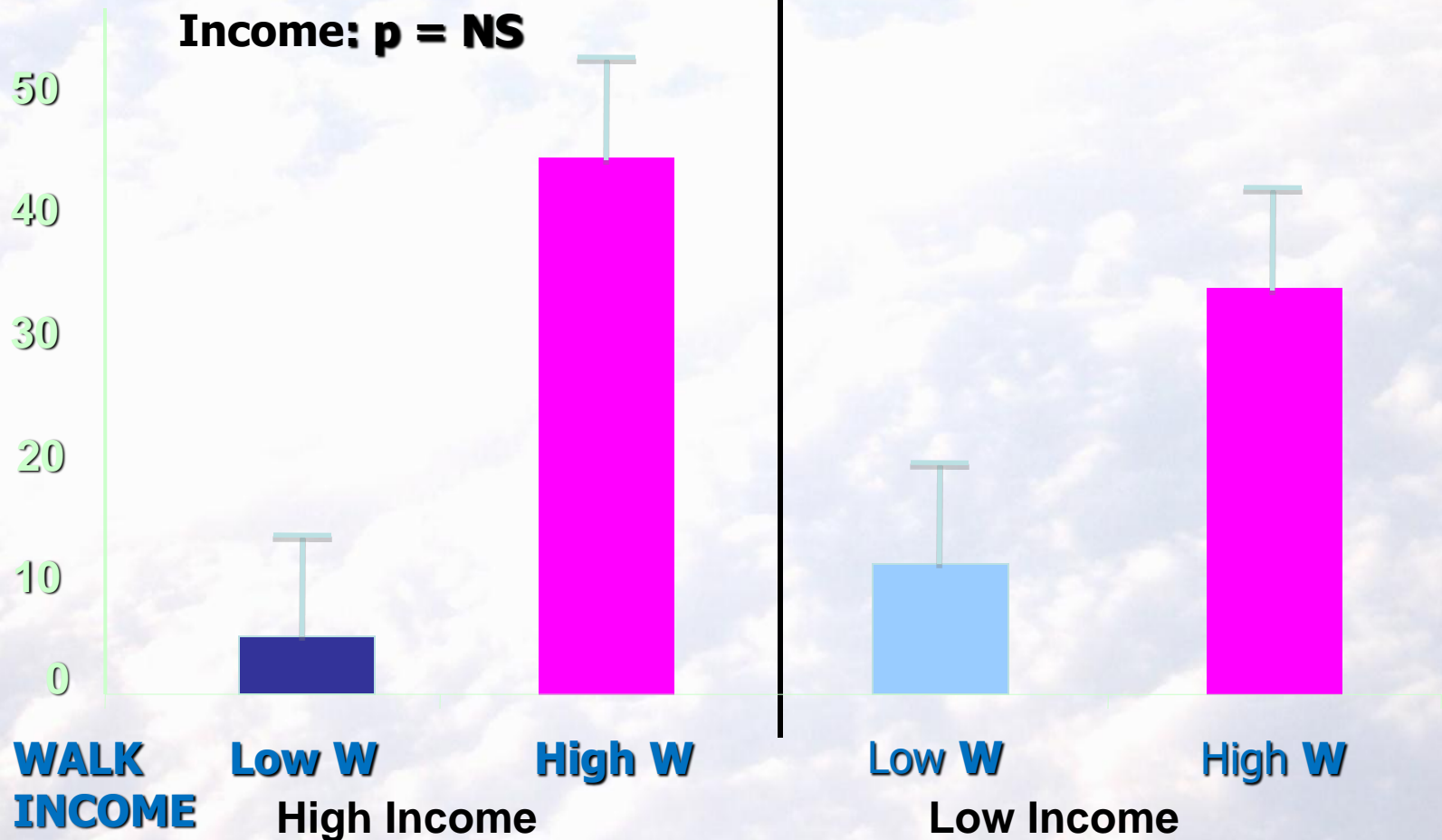


Seniors: Walk/Bike for *Errands/Transport* (Min/wk)

(Adjusted for Time, Region, Demographics)

Walkability: $p < .0001$

Income: $p = \text{NS}$





Atlanta, USA

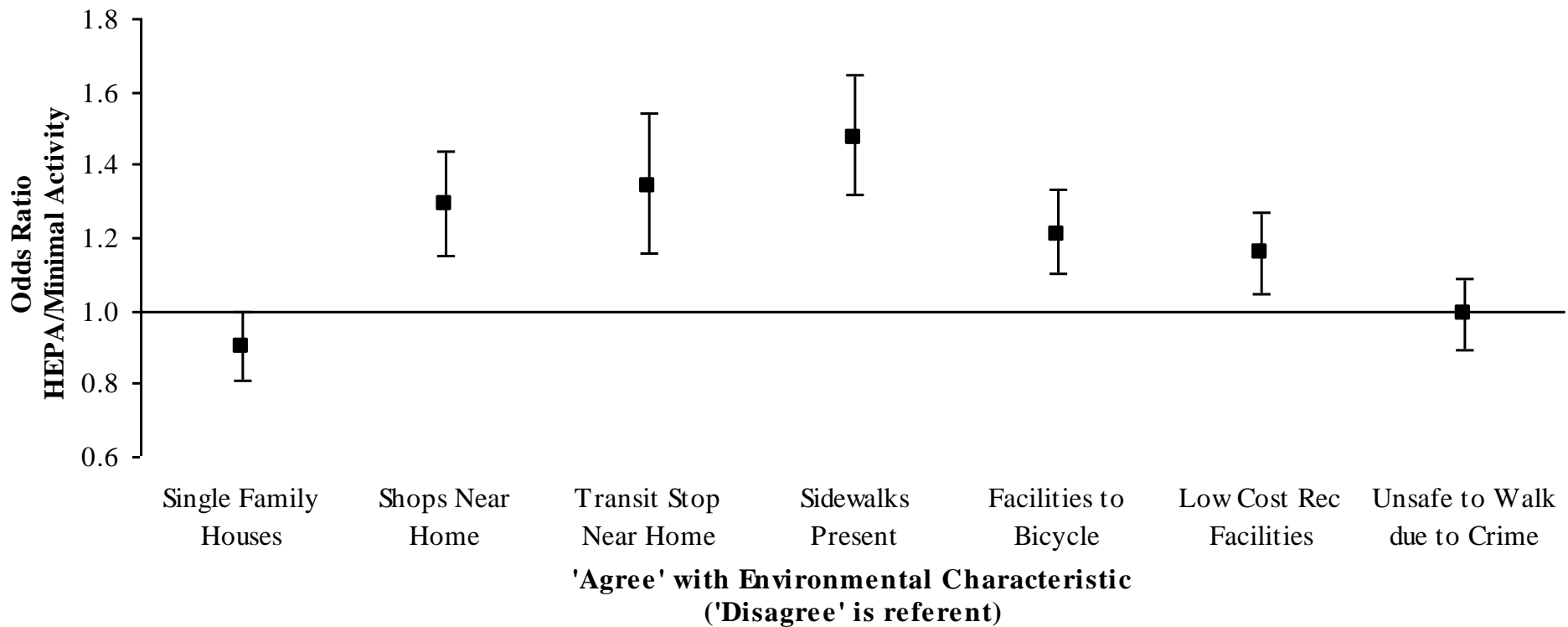
Ghent, Belgium

We can learn
from
international
studies

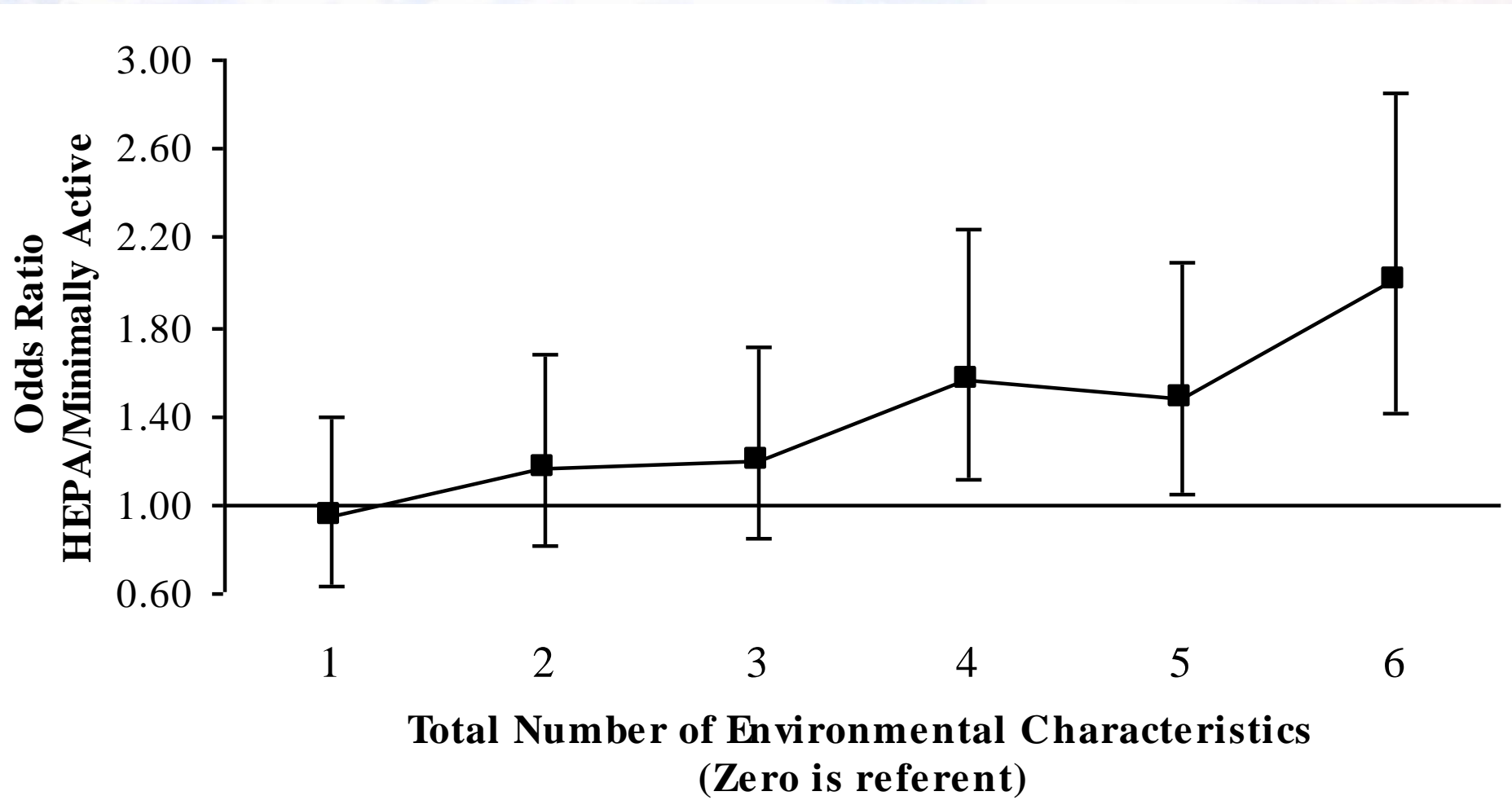


Built Environment Features Related to Physical Activity in 11 Countries

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



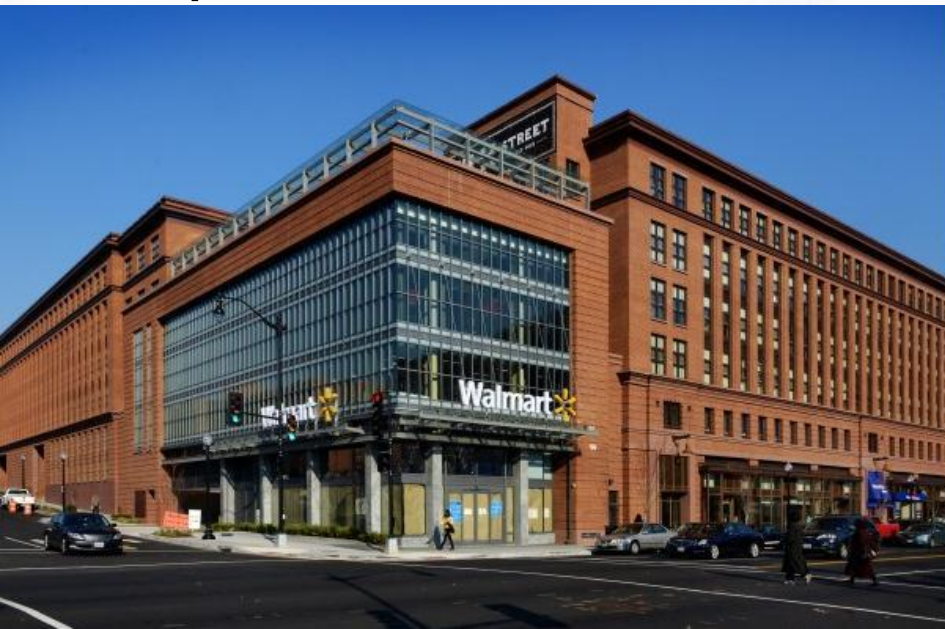
How to do Density




28 Units per acre

Pedestrian-Oriented Design: Floor Area Ratio

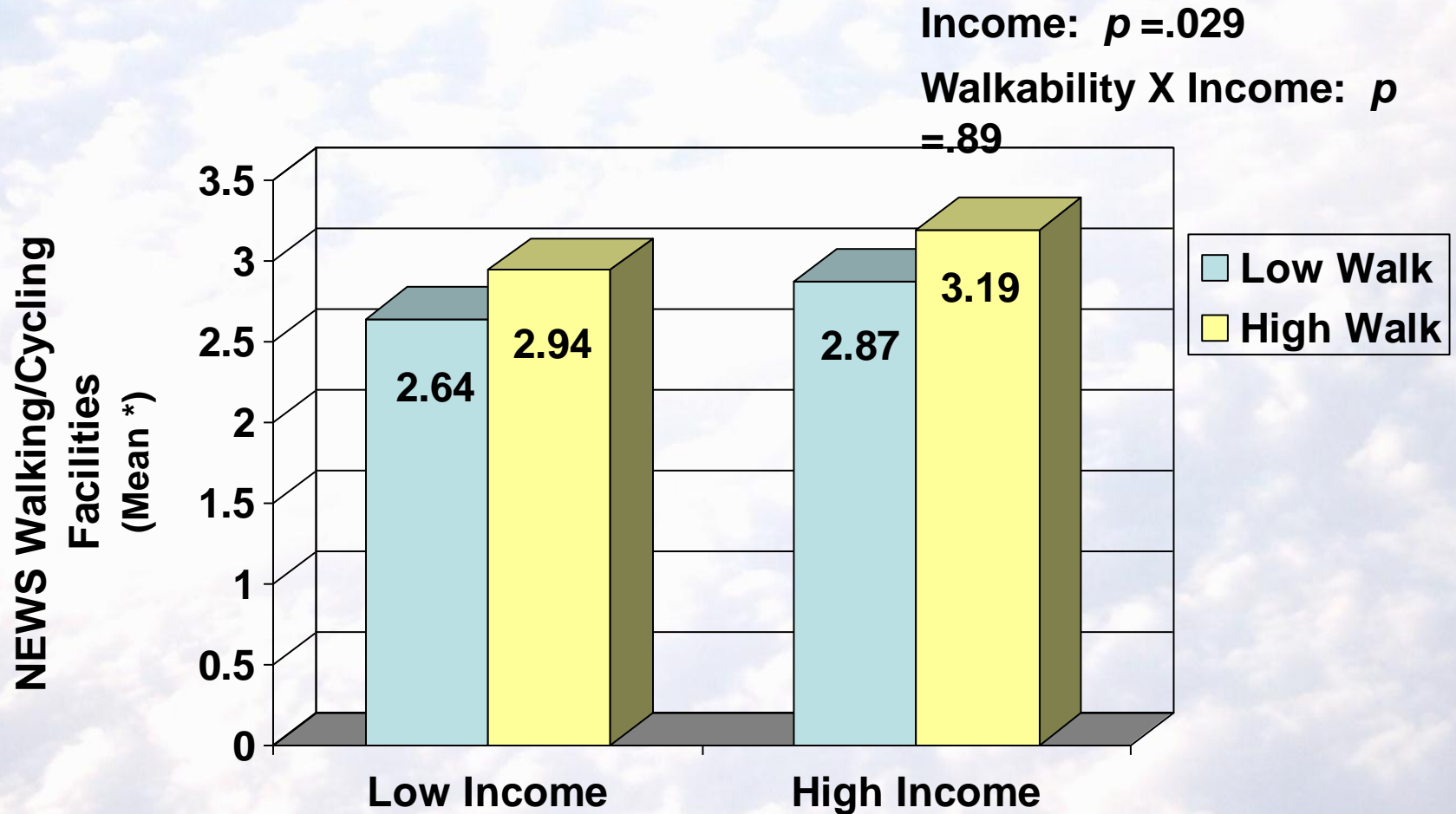
- Building fills the parcel
- Oriented to sidewalk
- Visual interest for pedestrians
- Building is small % of parcel
- Built for cars
- Hostile to pedestrians





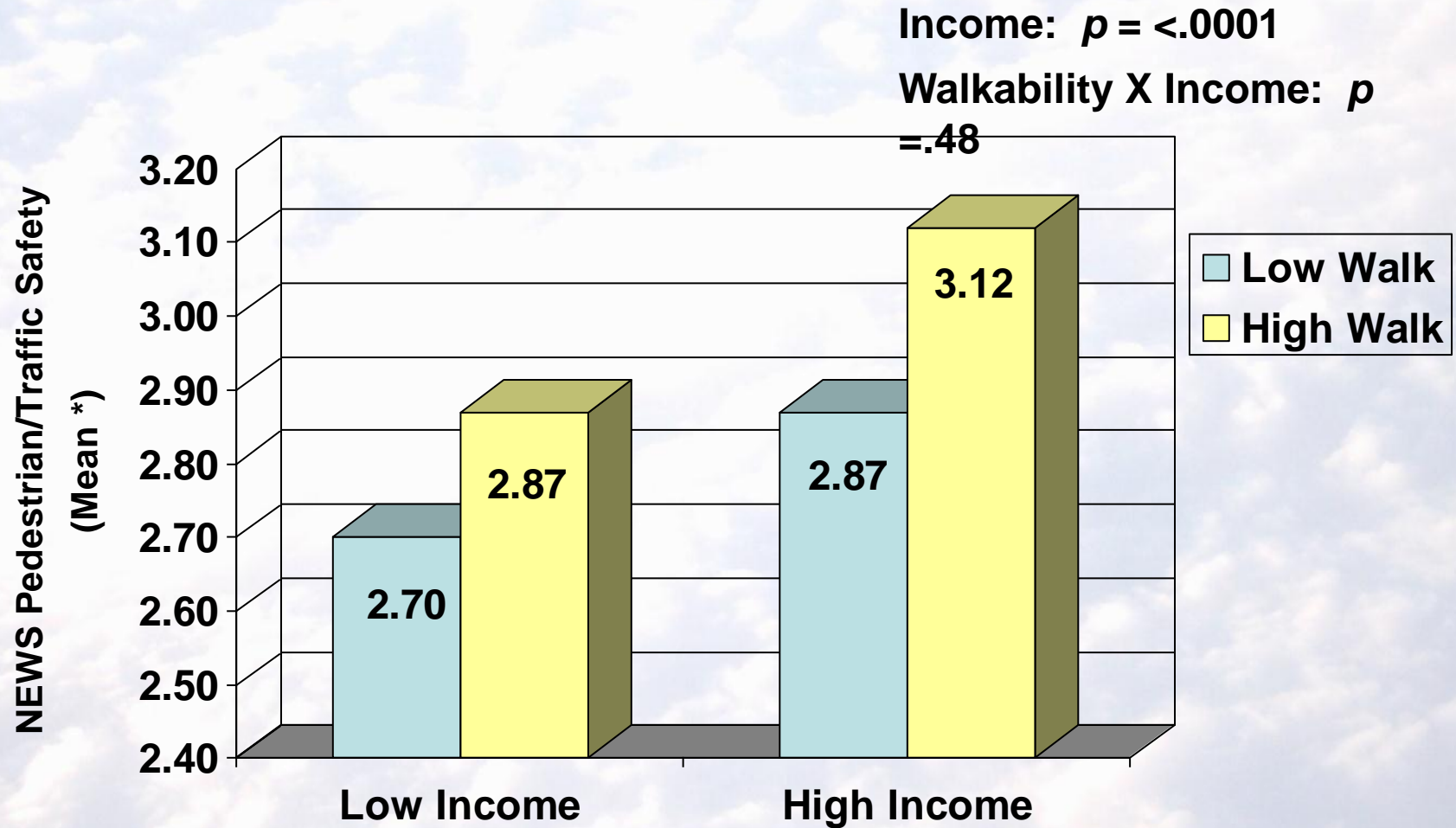
There is not equal access to
activity-friendly environments

Walking/Cycling Facilities in Walkability-by-Income Quadrants



*All models adjusted for gender, age, education, ethnicity, # motor vehicles/adult in household, site, marital status, number of people in household, and length of time at current address. Neighborhood was included as a random effect to adjust for clustering.

Pedestrian/Traffic Safety in Walkability-by-Income Quadrants



*All models adjusted for gender, age, education, ethnicity, # motor vehicles/adult in household, site, marital status, number of people in household, and length of time at current address. Neighborhood was included as a random effect to adjust for clustering.






















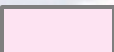
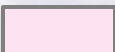


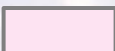





Getting the Details Right: Micro-Scale Features



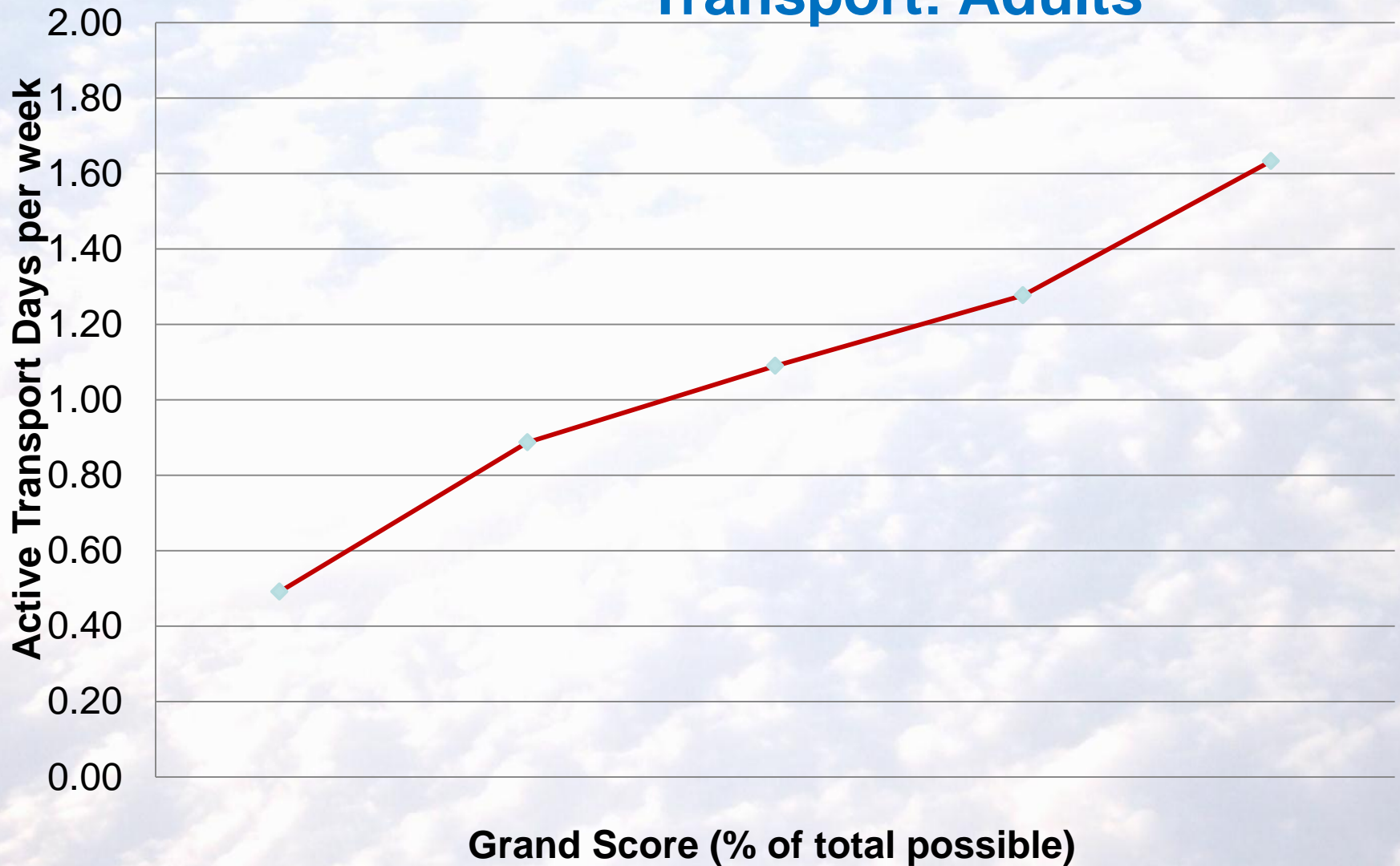
MAPS Mini: Assessing the Details

- **15-item MAPS-Mini was designed for practitioners and advocates**
 - Reduced from 120 items
- Items were selected based on
 - Correlations with physical activity
 - Guidelines and recommendations
 - Modifiability
- Evaluated for validity 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



Credit: National Assn. of Realtors & Urban Advantage

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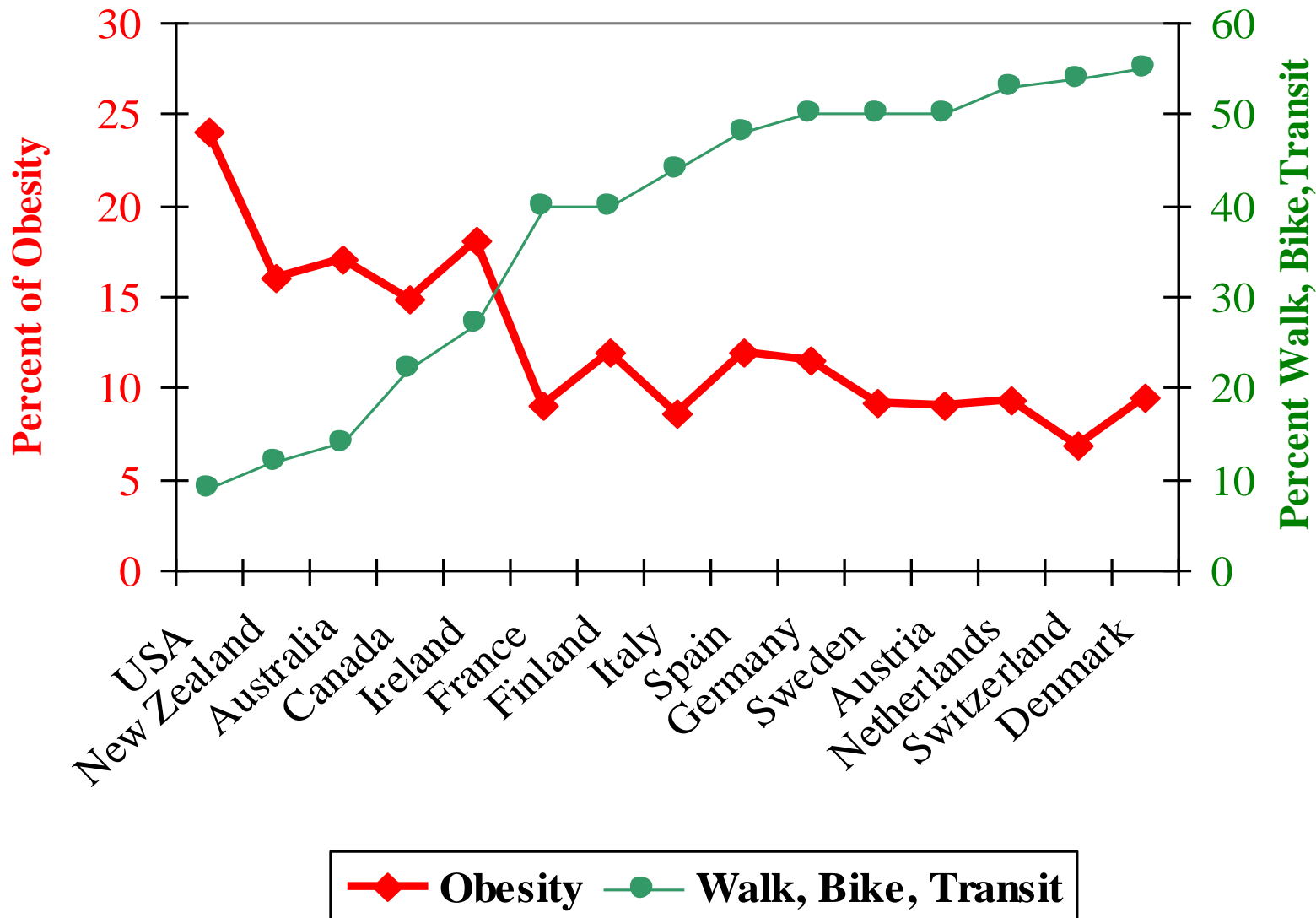
Activity-Friendly Transportation Systems



Not designed for active travel

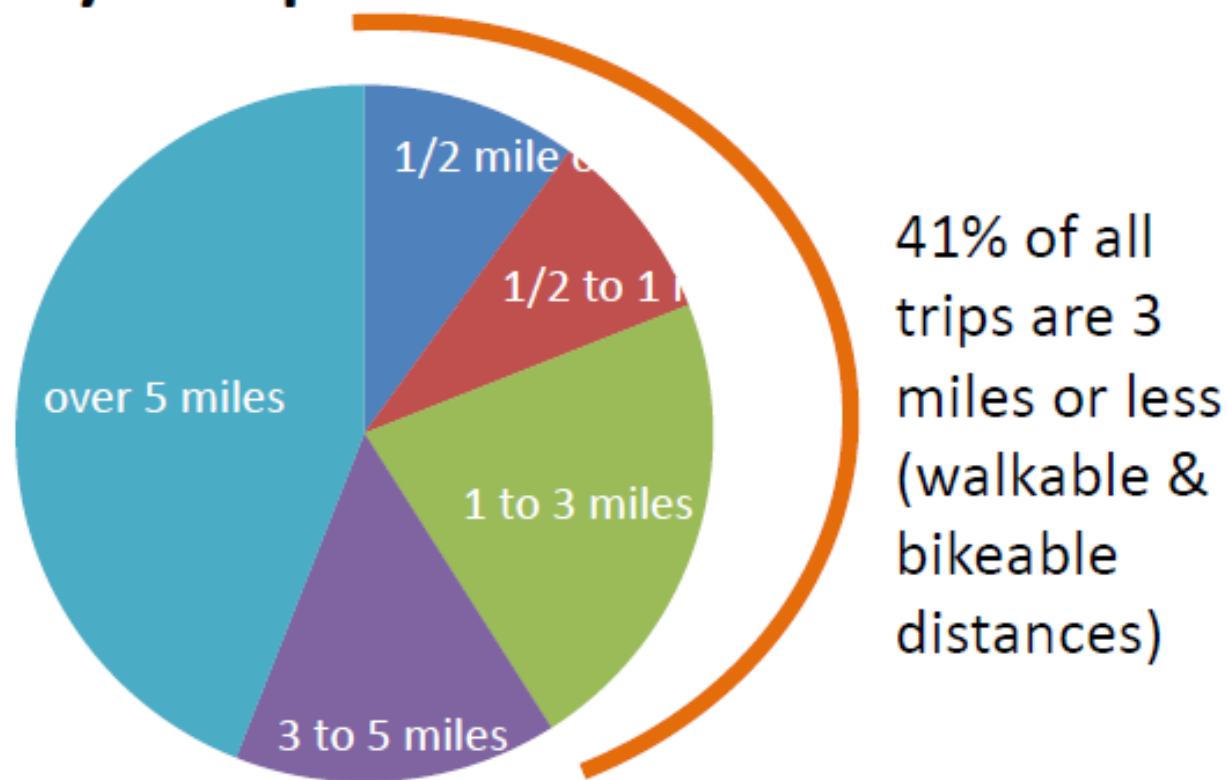


Obesity is strongly related to walking, cycling, and transit use!



Credit: John Pucher

The Good News: Many trips are short



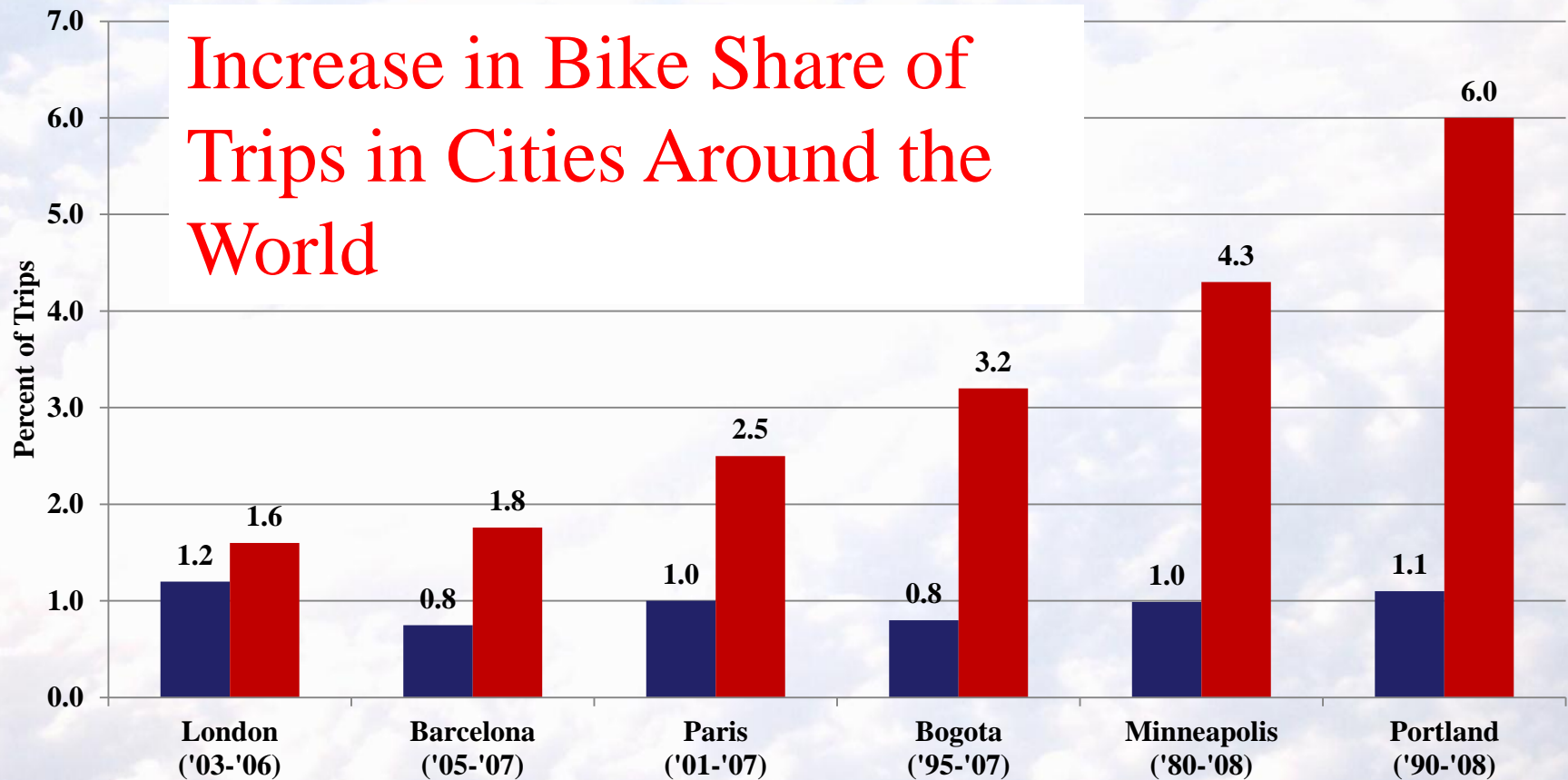
Short trips are convertible trips

Can we increase bicycling?

According to controlled studies, any single cycling intervention does not work well

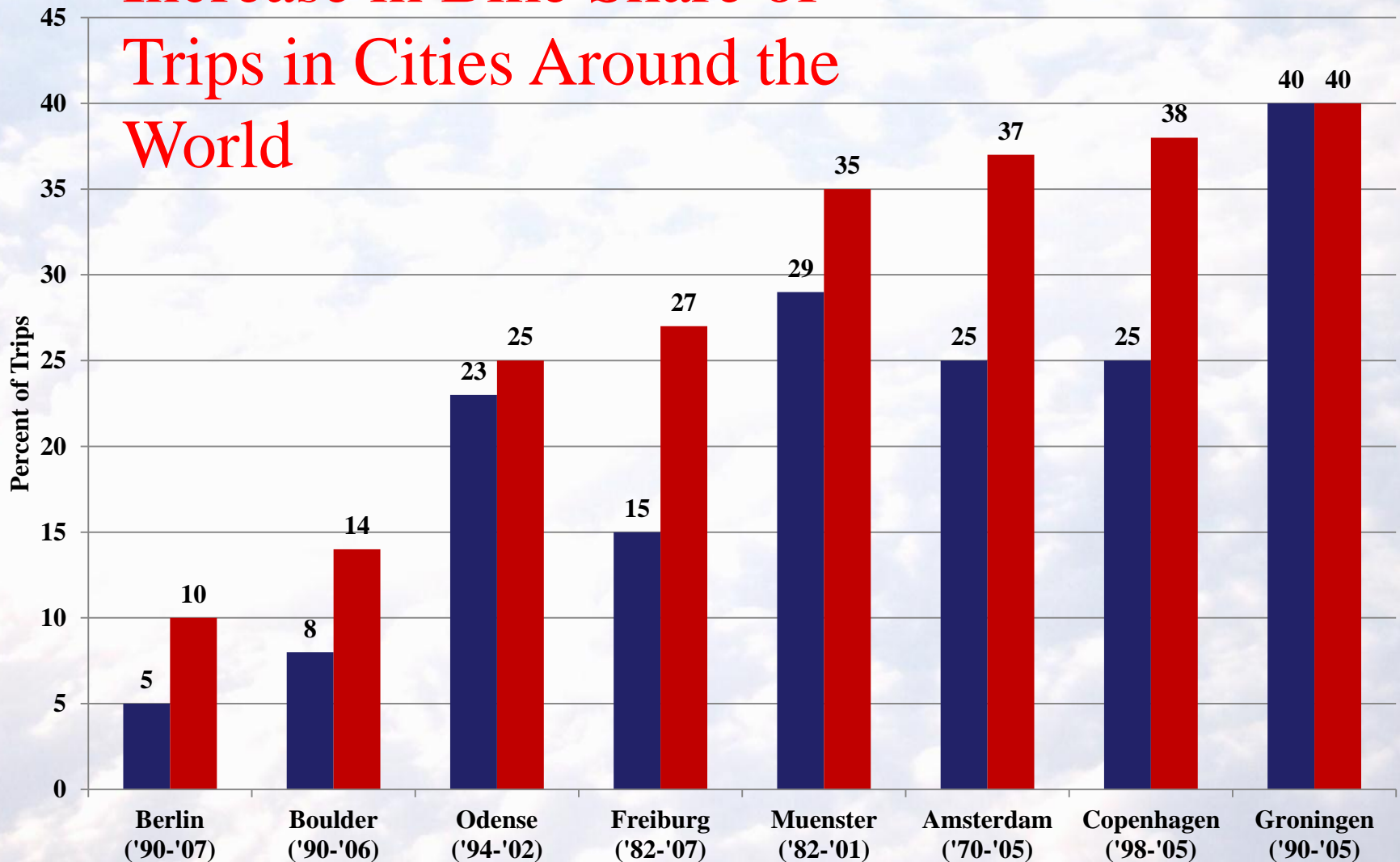
- bike lanes
- cycling paths
- education
- bike parking
- bike crossing signals
- connected networks
- colored bike lanes
- bikes on buses
- bikes on trains
- signed routes
- bike boxes
- traffic calming
- car free zones

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



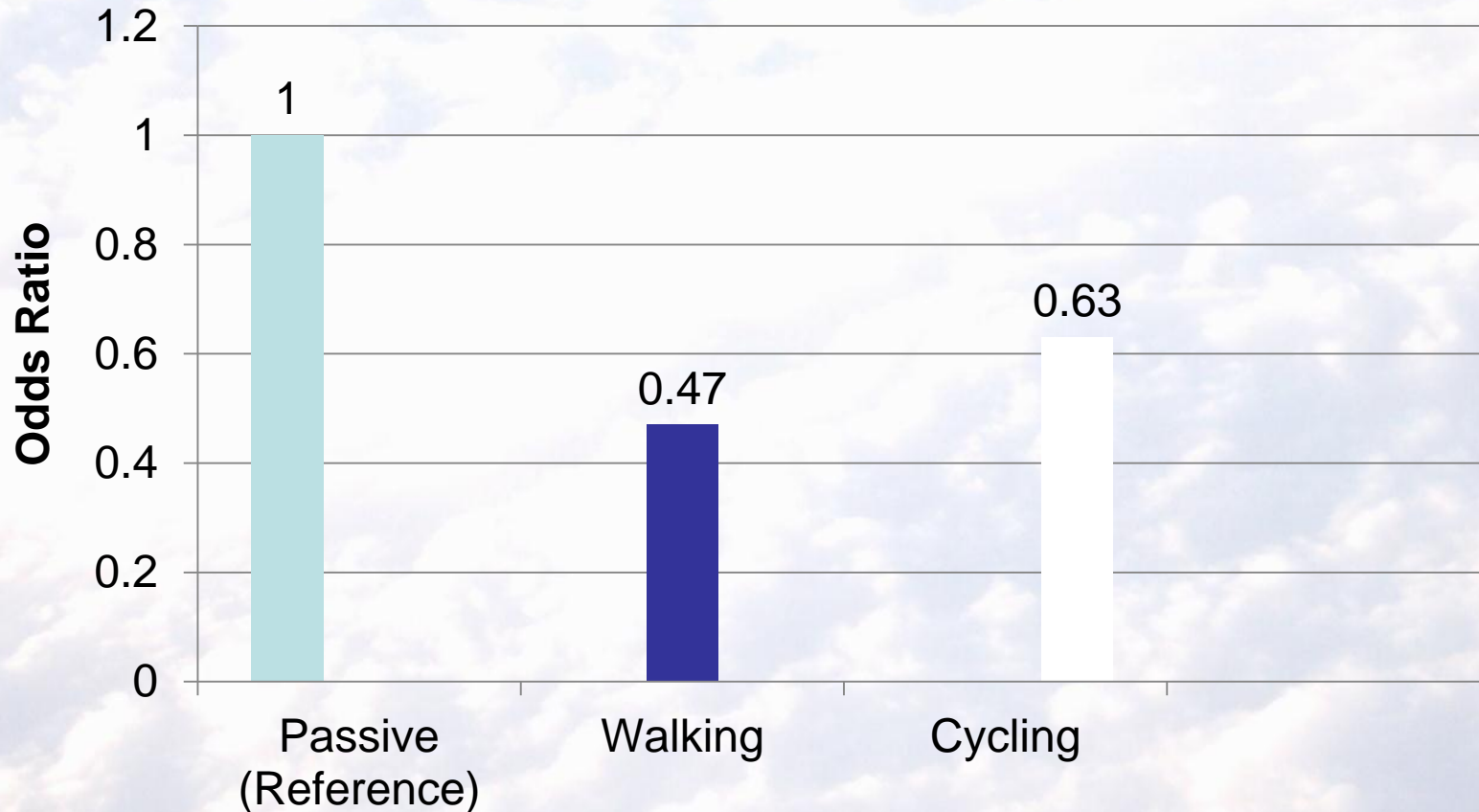
Source: Pucher, Dill, and Handy, "Infrastructure, Programs, and Policies to Increase Bicycling," *Preventive Medicine*, Jan 2010, Vol. 50, S.1, pp. S106-S125.

Where do people bicycle in Portland, OR? Based on GPS.

Type of road	% of bicycle miles	% of road miles
Without bicycle facilities	51	92
With bicycle facilities (lane, separate path, bike boulevard)	49	8

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

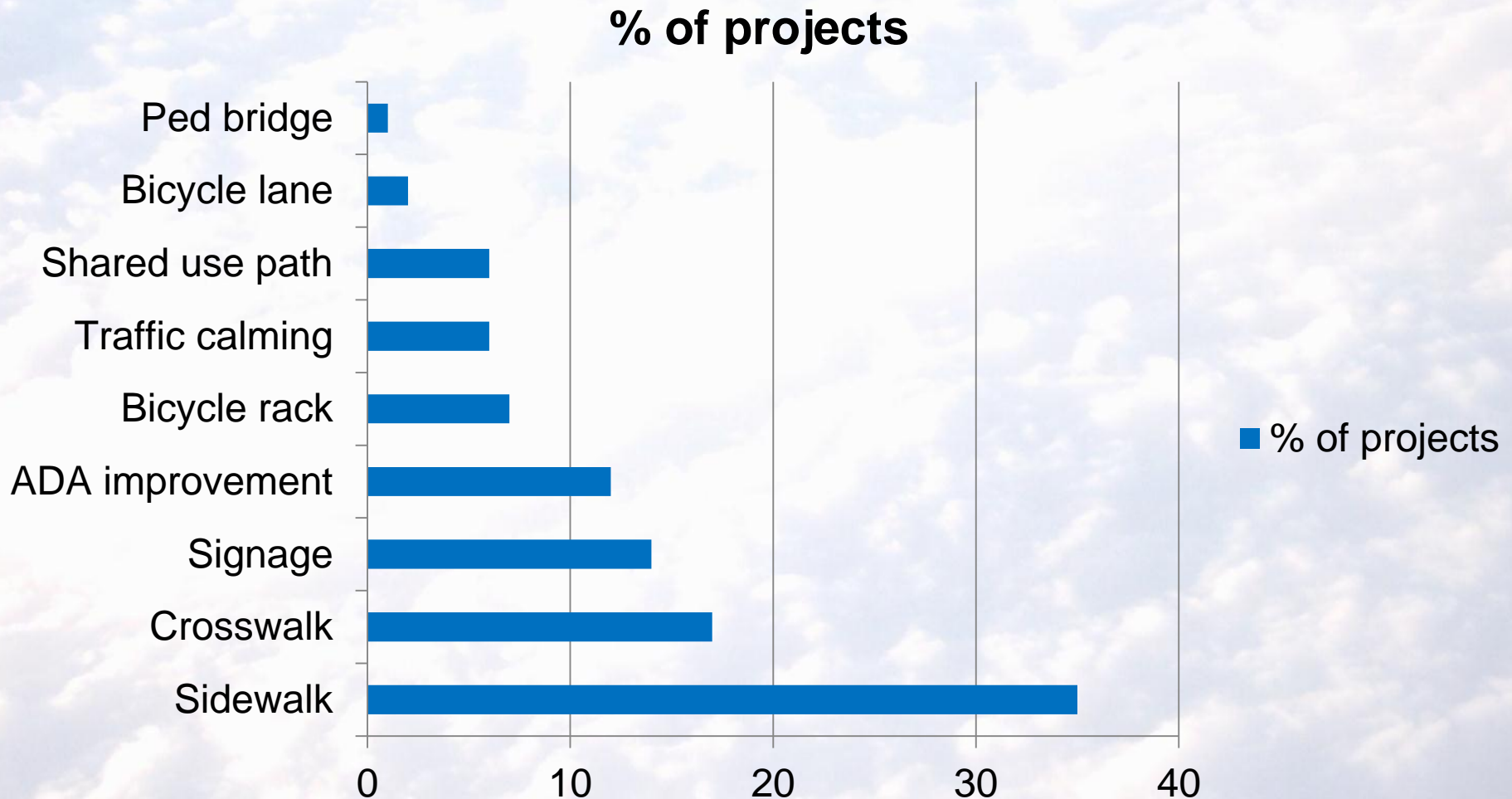
Orion Stewart, MUP; Anne Vernez Moudon, Dr Es Sc; Charlotte Claybrooke, MS

American Journal of Health Promotion

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

S89

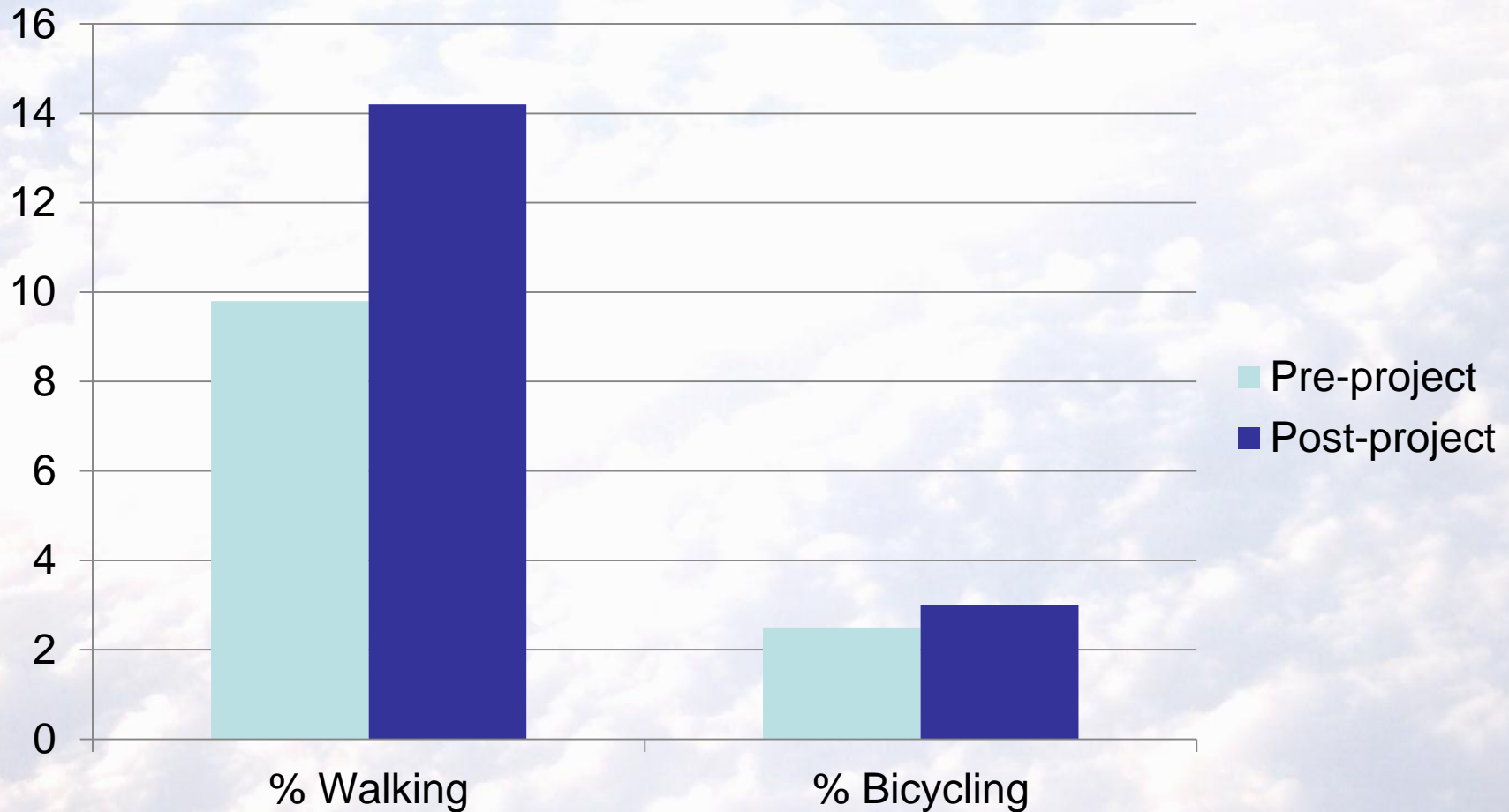
% of SRTS Projects, By Type



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

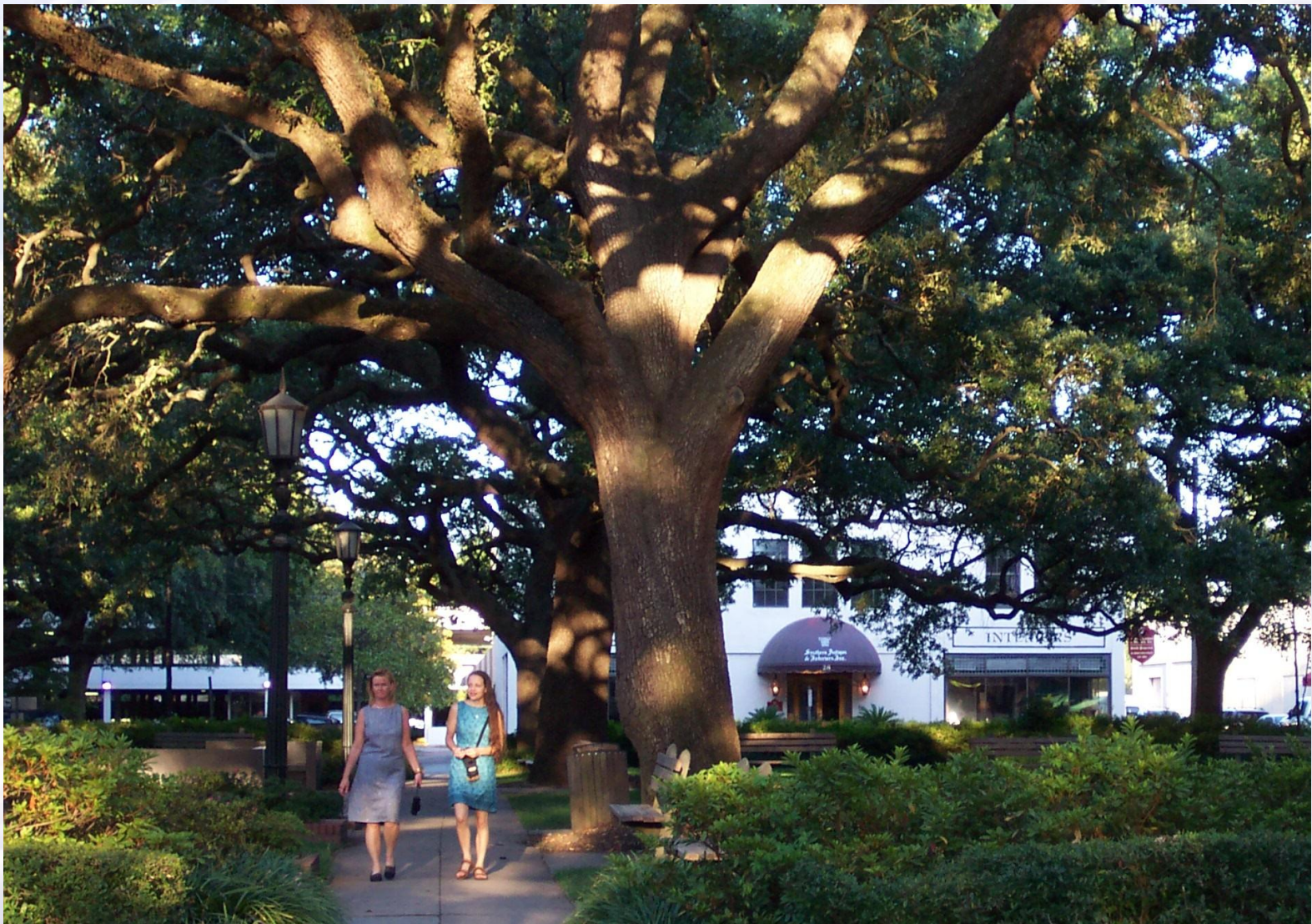


Moving Forward: WASH DOT.

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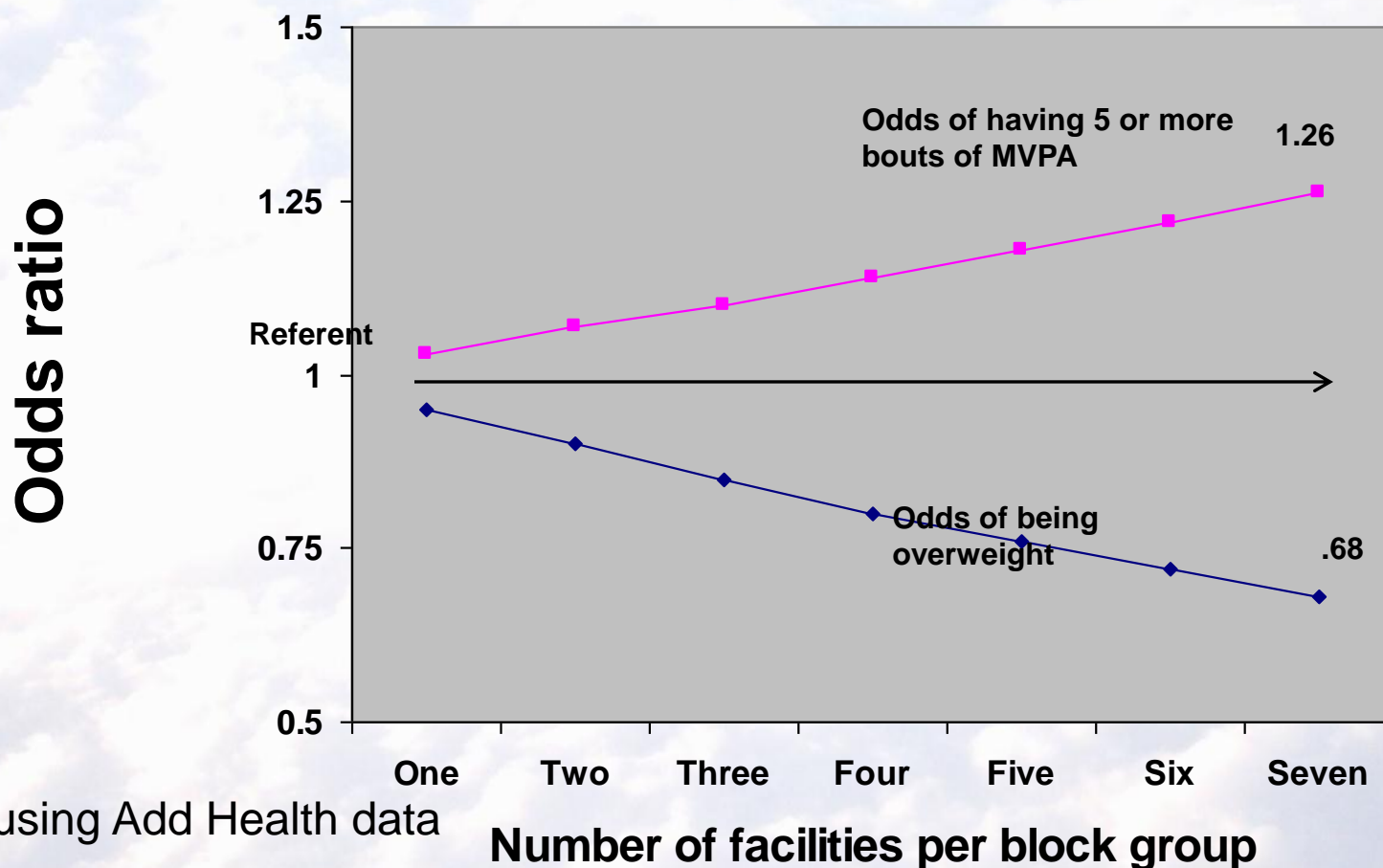
Before and after renovation of
Denver schoolyards in low-
income neighborhoods. Youth
were more active **AFTER**.





People with access to parks & recreation
Facilities are more likely to be active

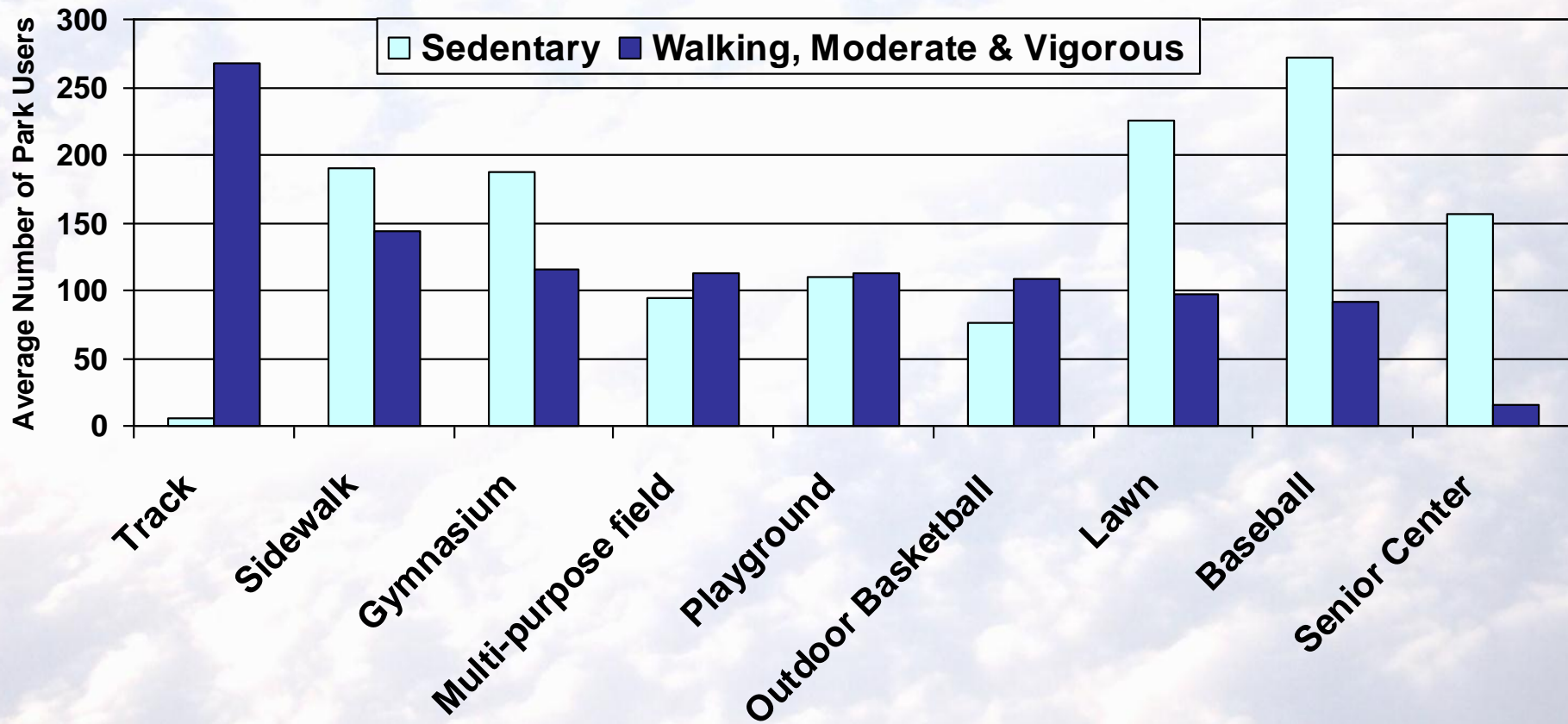
A national study of US adolescents (N=20,745)* found a greater number of physical activity facilities is directly related to physical activity and inversely related to risk of overweight



Gordon-Larsen et al, Pediatrics, 2006

<http://www.pediatrics.org/cgi/content/full/117/2/417>

People are Most Active on Tracks and Walking Paths



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)

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

But What Can I/My Agency Do?

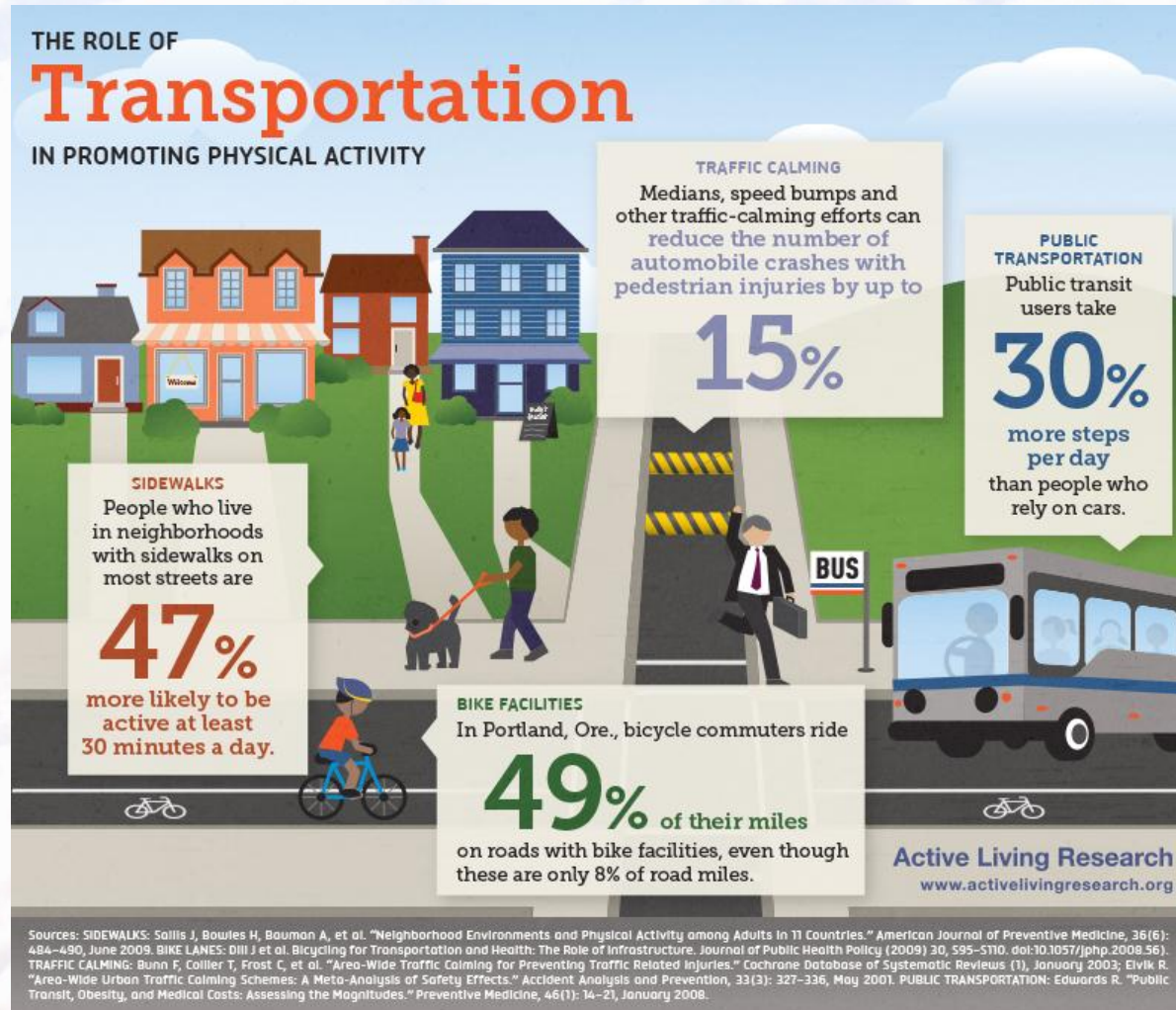
- Get informed
 - Learn the research
- Health In All Policies: Change internal goals & policies so they are consistent with activity-friendly environments
- Commit to working with multi-sector coalitions
- Find win-win-win solutions that help each sector/agency/discipline solve their problems

Active Living Research wants to be your partner

- We have spent the past 13 years researching active living environments
- We have expertise in all aspects of active living communities and are ready to put our evidence into practice
- We are looking for partners who share our vision for--

**Creating the Healthiest Communities in
America**

Resources at www.activelivingresearch.org



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

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!