

Public Health & the Built Environment

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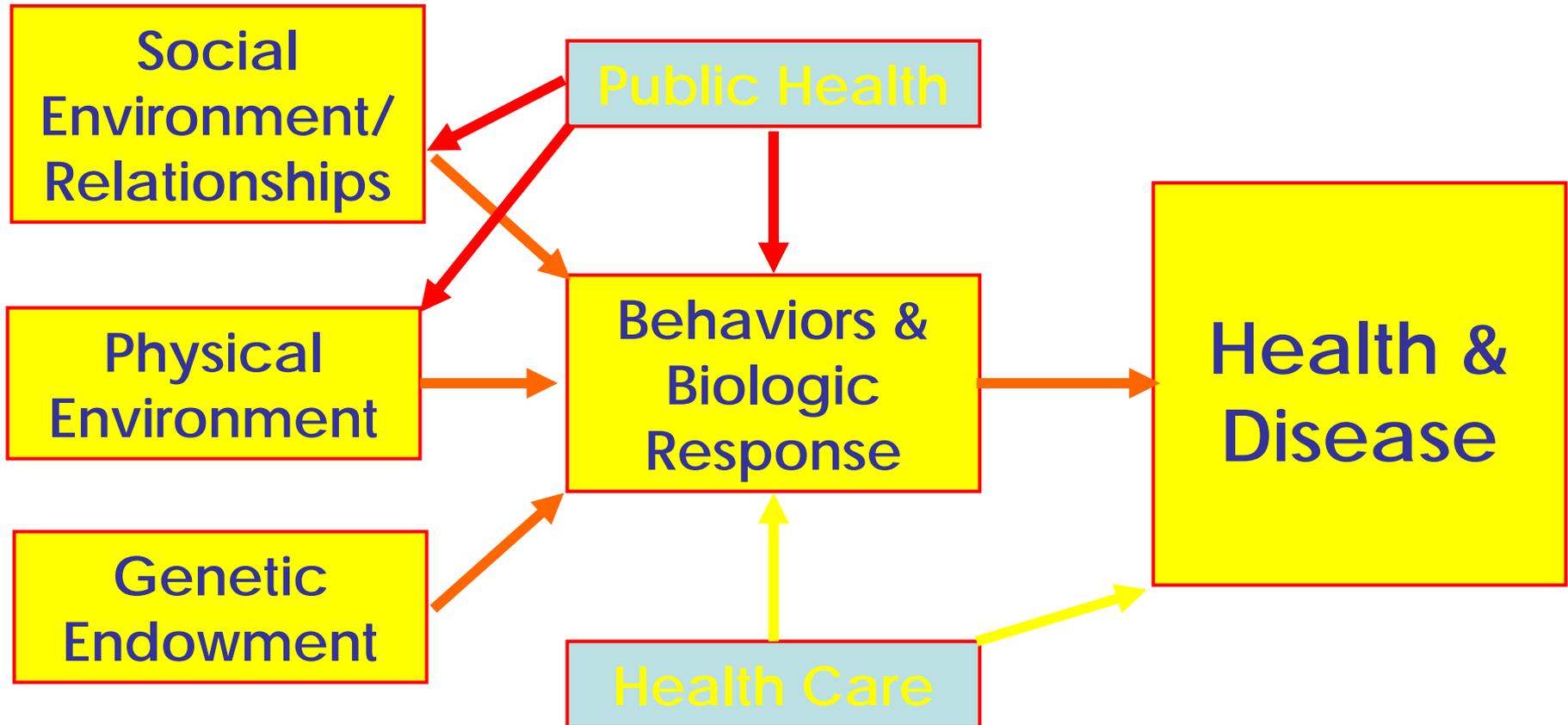
Assessment, Policy Development & Evaluation

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Data

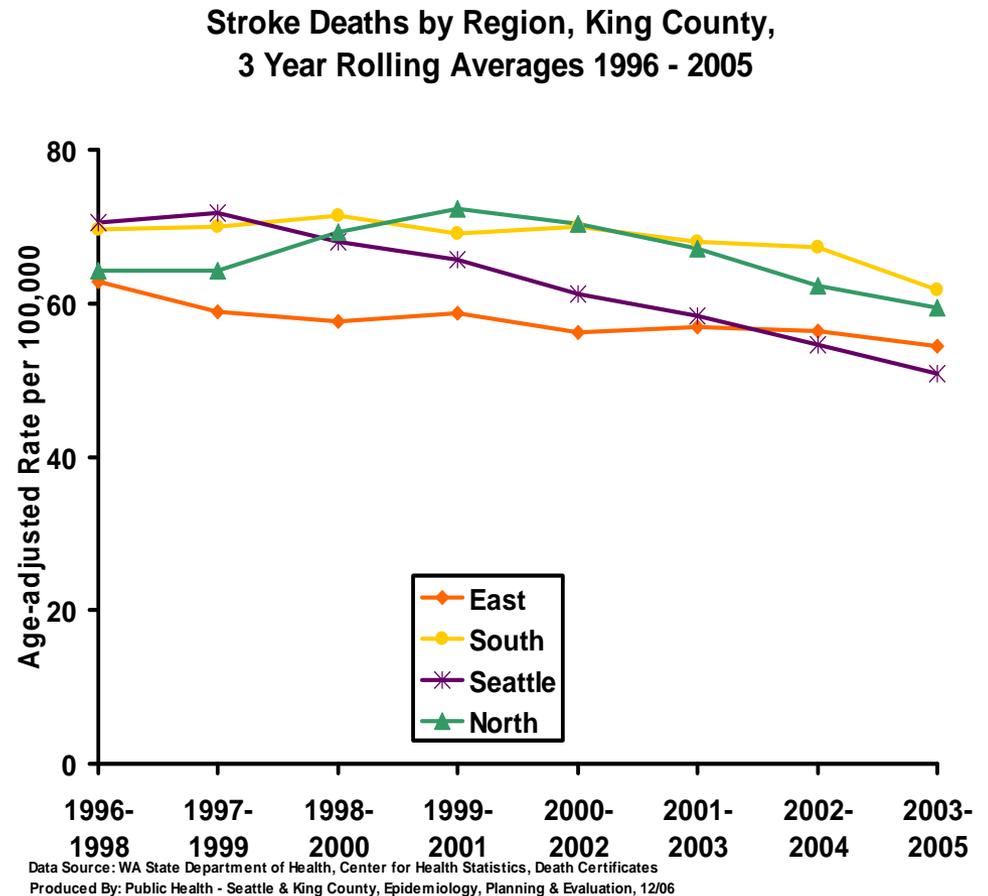
- Cardiovascular disease
- Diabetes
- Obesity
- Physical Inactivity
- How does the built environment interact with these health conditions?

Determinants of Health

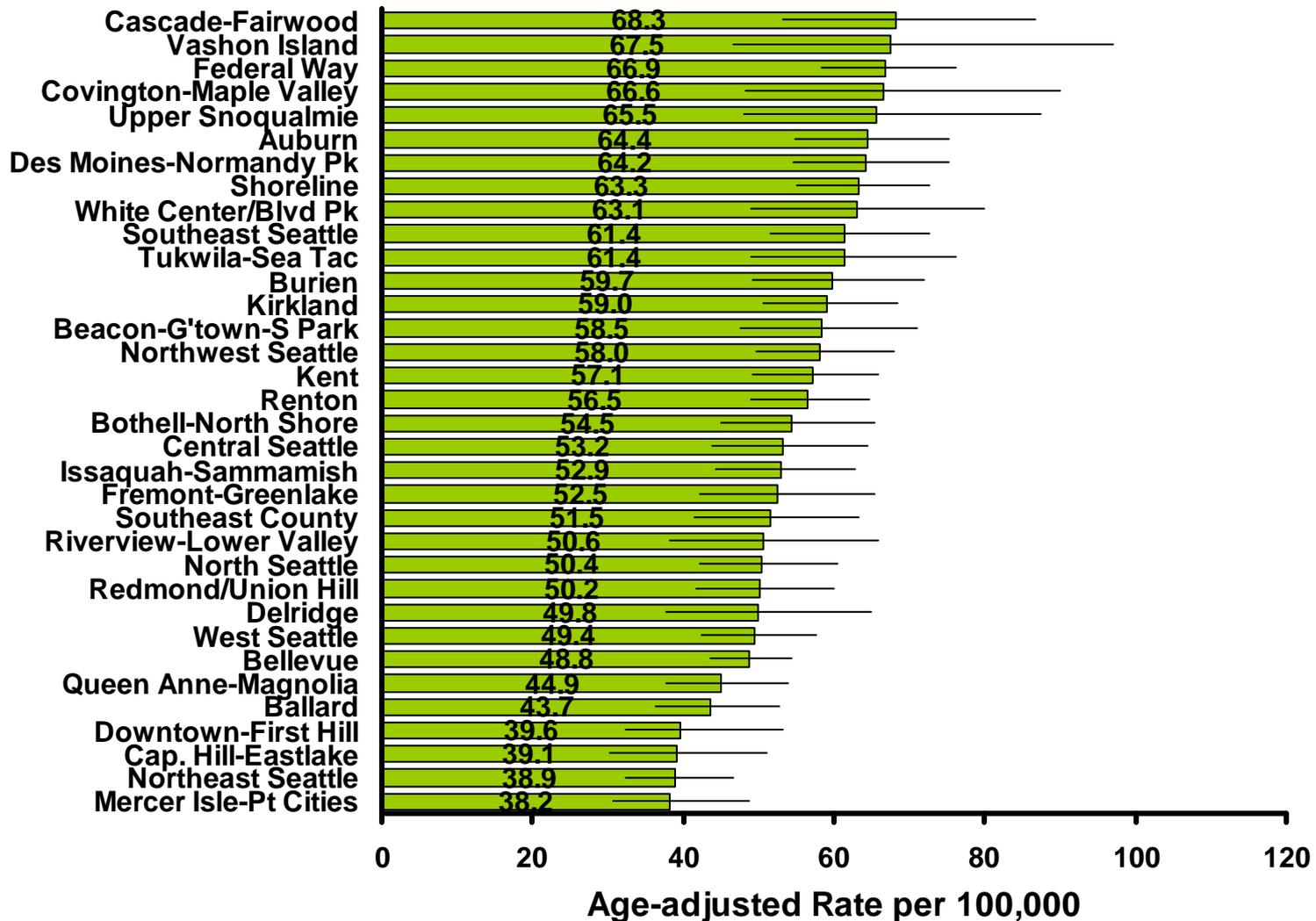


Stroke Deaths

- Have been decreasing over the past 10 years for King County, East region, and Seattle.



Stroke Deaths, King County Health Planning Areas 5-Year Average, 2001-2005

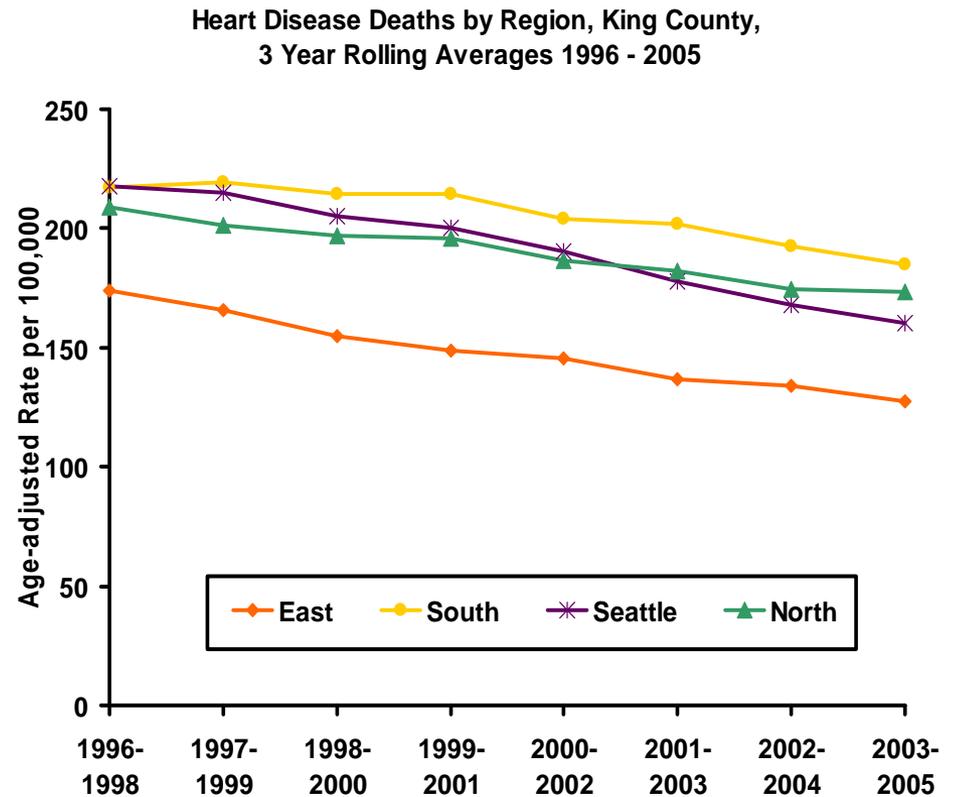


Data Source: WA State Department of Health, Death Certificates

Produced By: Public Health - Seattle & King County, Assessment, Policy Development & Evaluation, 12/07

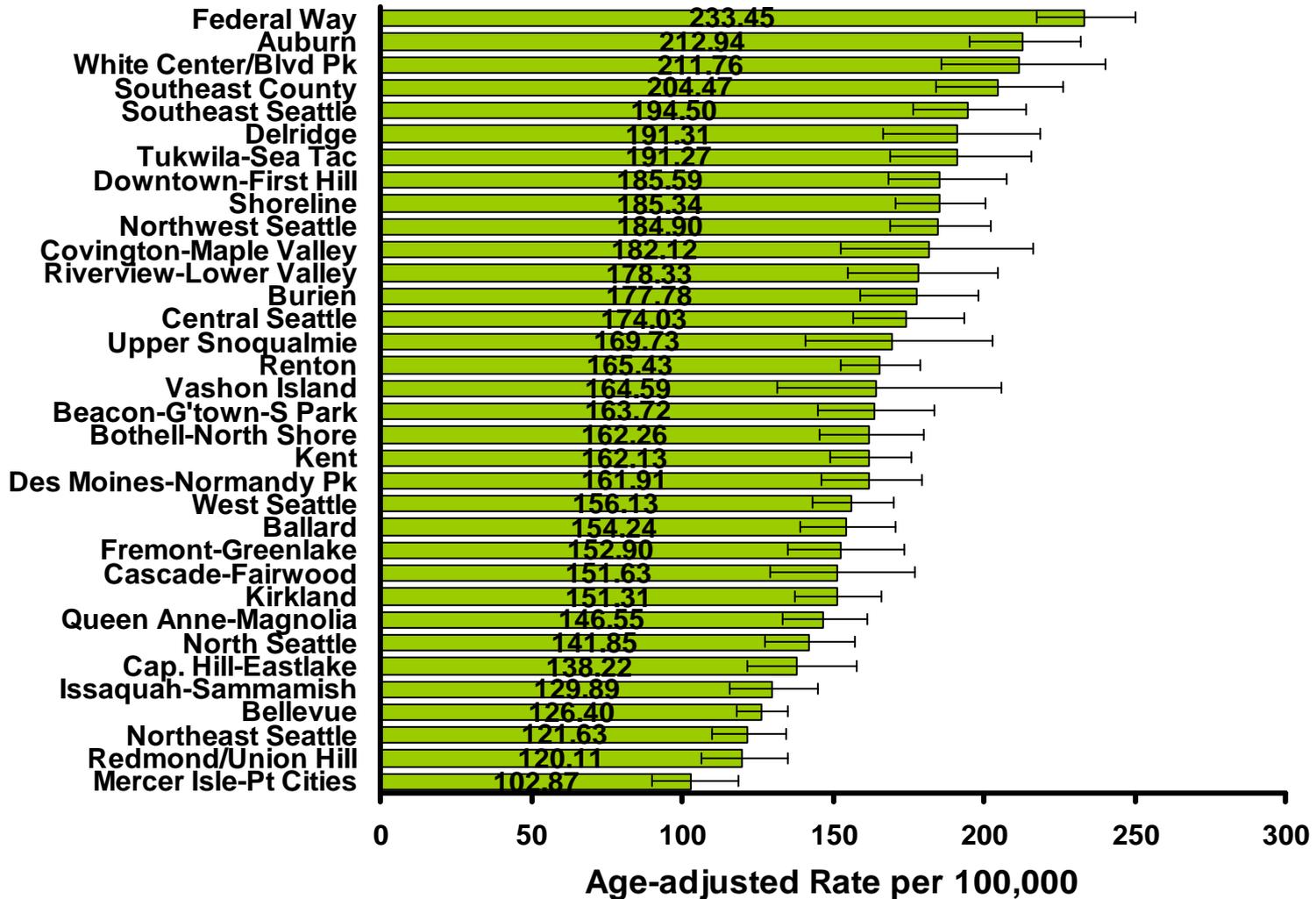
Heart Disease

- Decreasing over past 10 years in KC and all regions
- Disparities in race and poverty.



Data Source: WA State Department of Health, Center for Health Statistics, Death Certificates
Produced By: Public Health - Seattle & King County, Assessment, Policy Development & Evaluation, 12/07

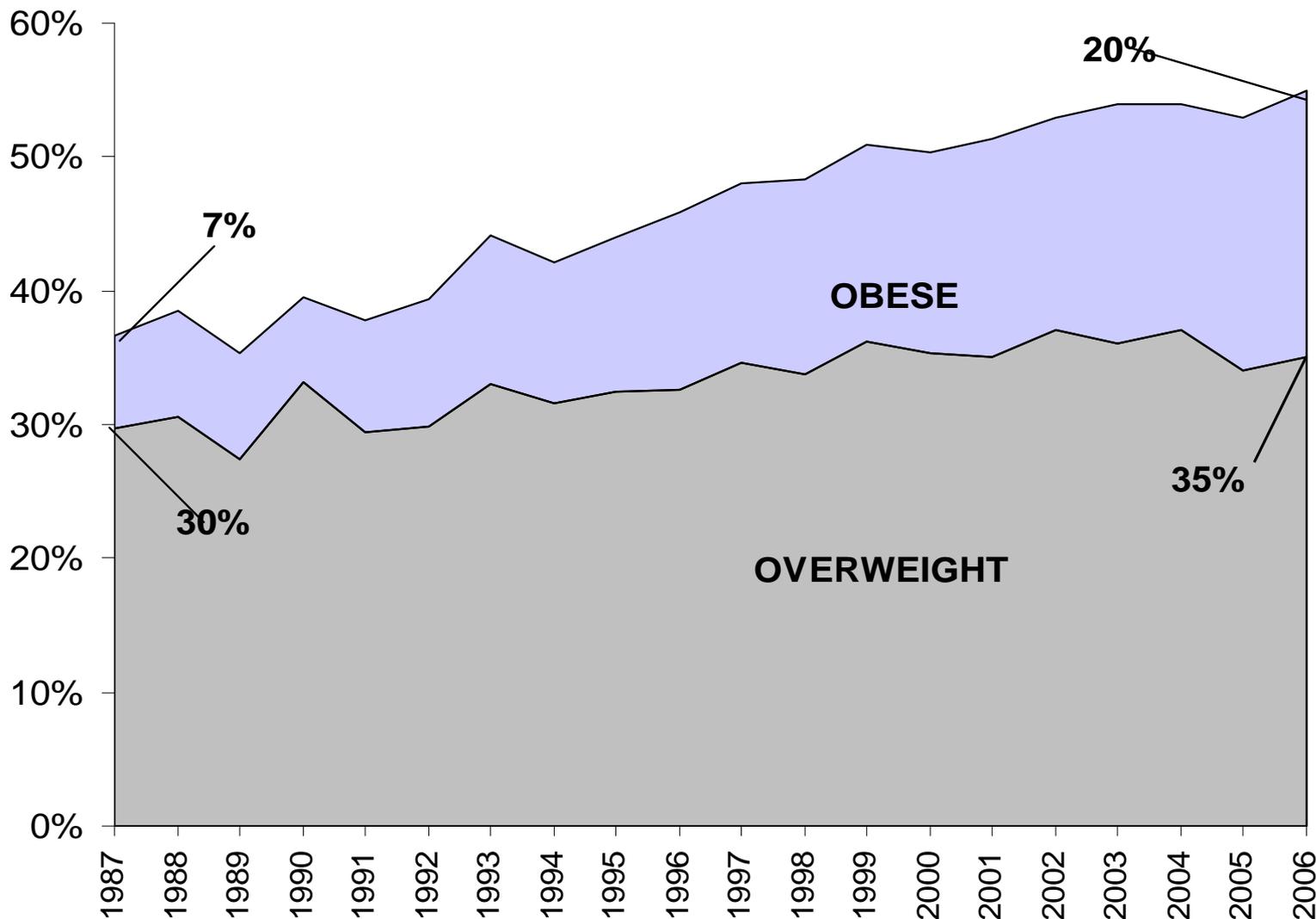
Heart Disease Deaths, King County Health Planning Areas 5-Year Average, 2001-2005



Data Source: WA State Department of Health, Death Certificates

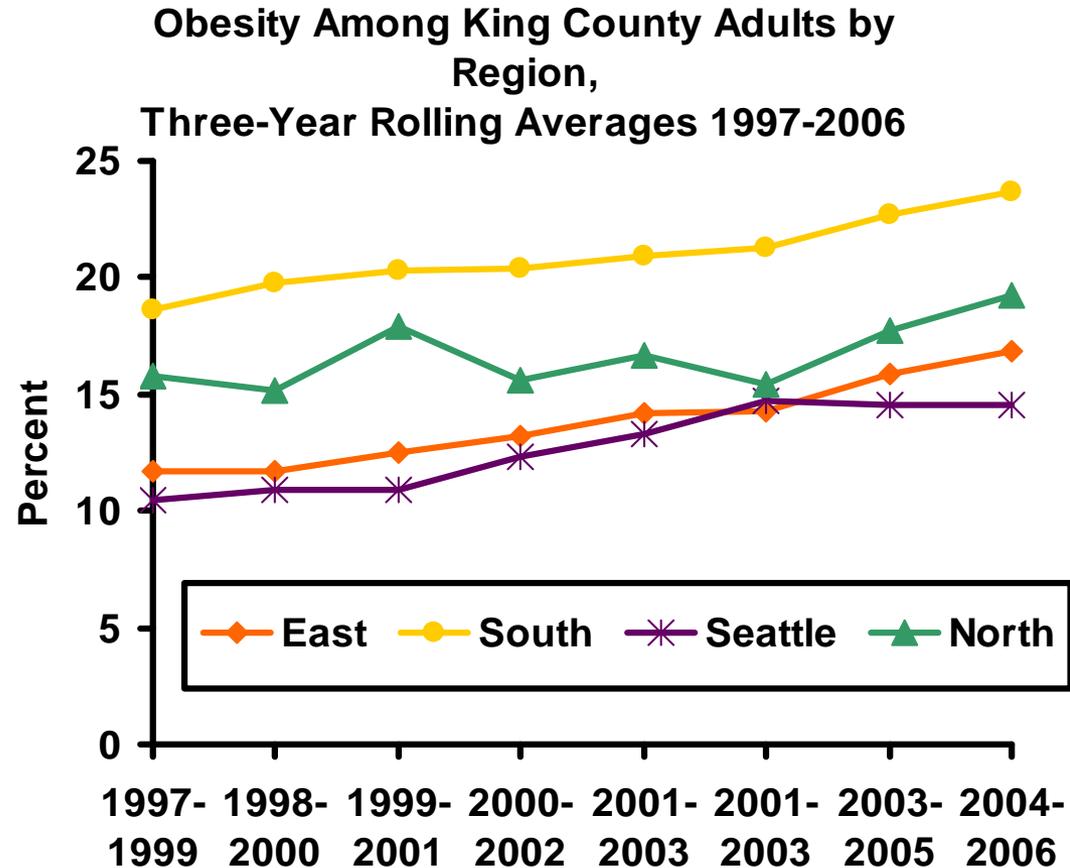
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Overweight and Obesity Prevalence, Age 18 and Older, King County, 1987-2006



Obesity by Region

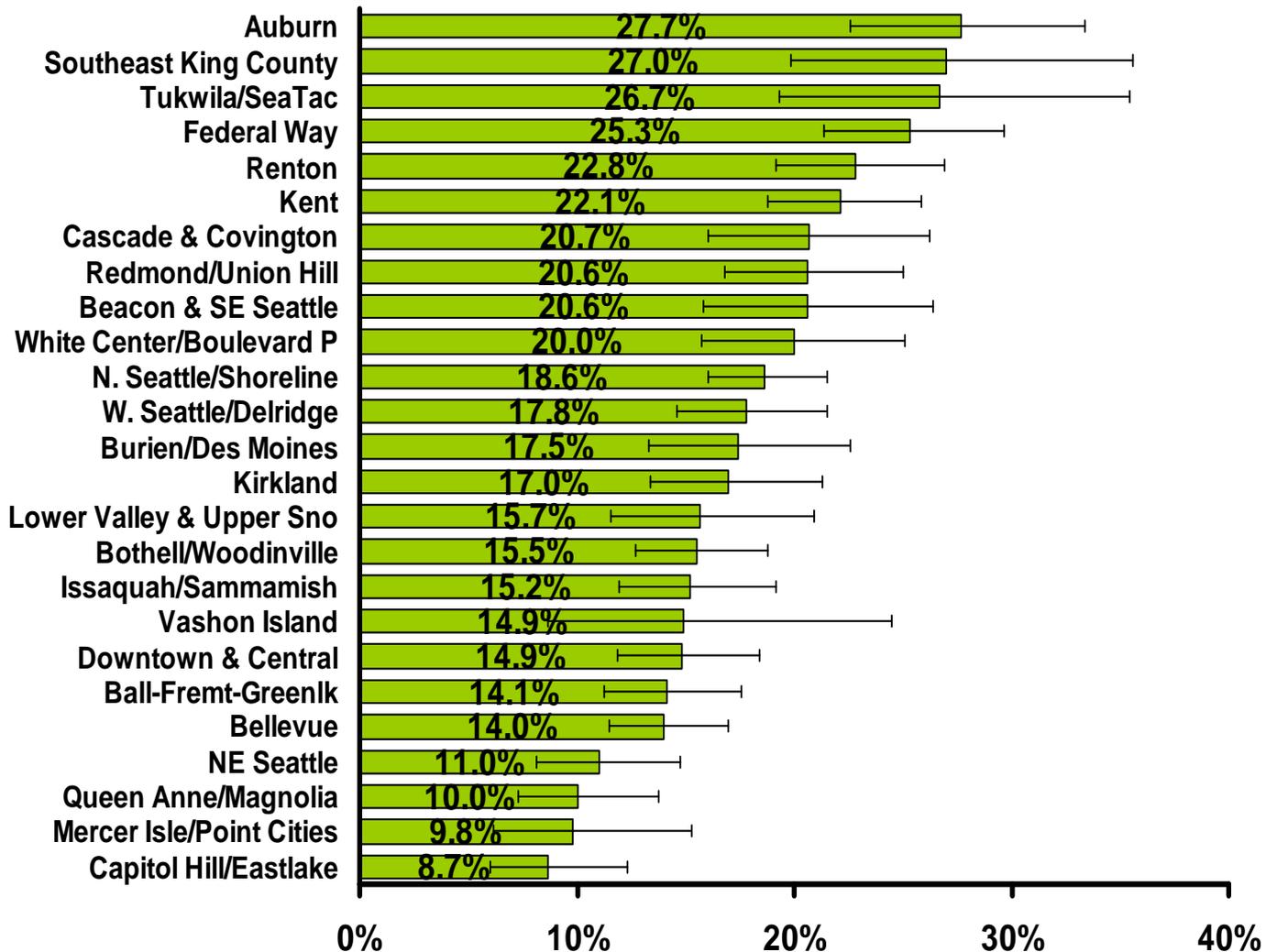
- Highest rates seen in South King County
- 10-year trends increasing for Seattle and for King County as a whole



Data Source: Behavioral Risk Factor Surveillance System

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Obesity, King County, Health Planning Areas 5-Year Average, 2002-2006



Data Source: Behavioral Risk Factor Surveillance System

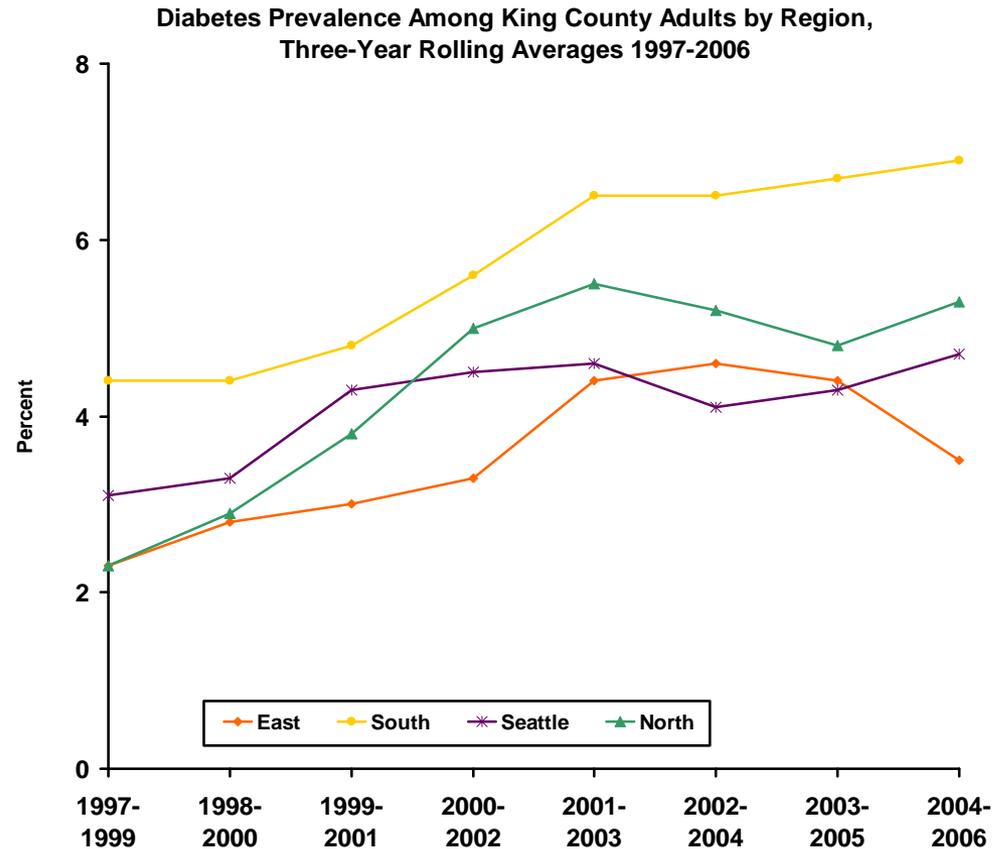
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Percent



Diabetes Prevalence

- Prevalence among adults has *doubled* in the past decade.
- It's increased across almost every demographic sector.

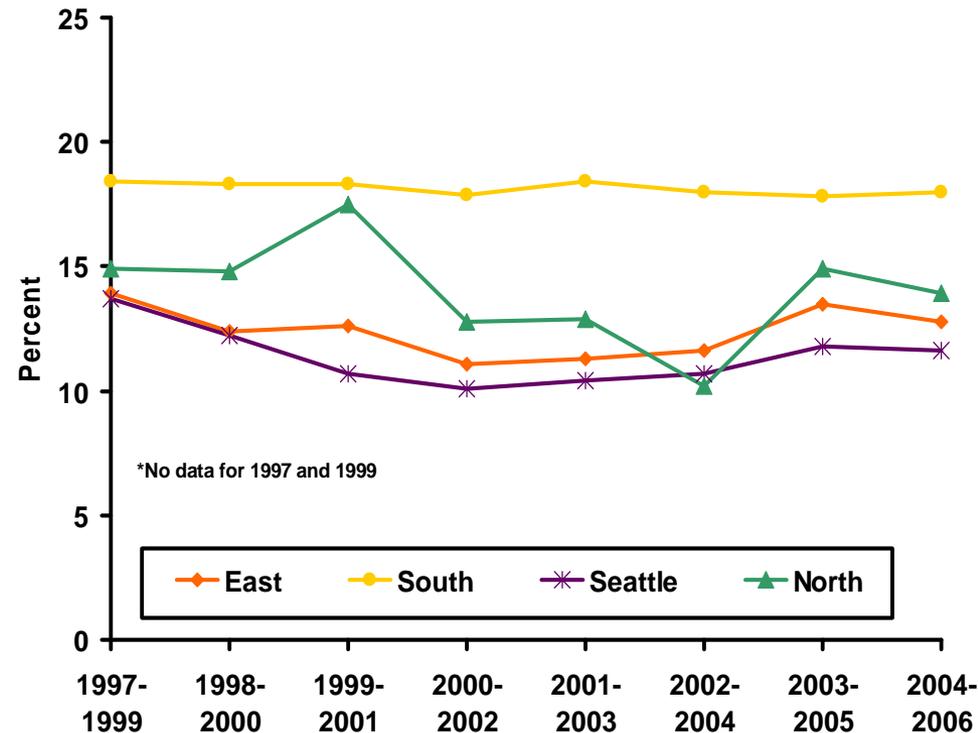


Data Source: Behavioral Risk Factor Surveillance System
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Physical Activity

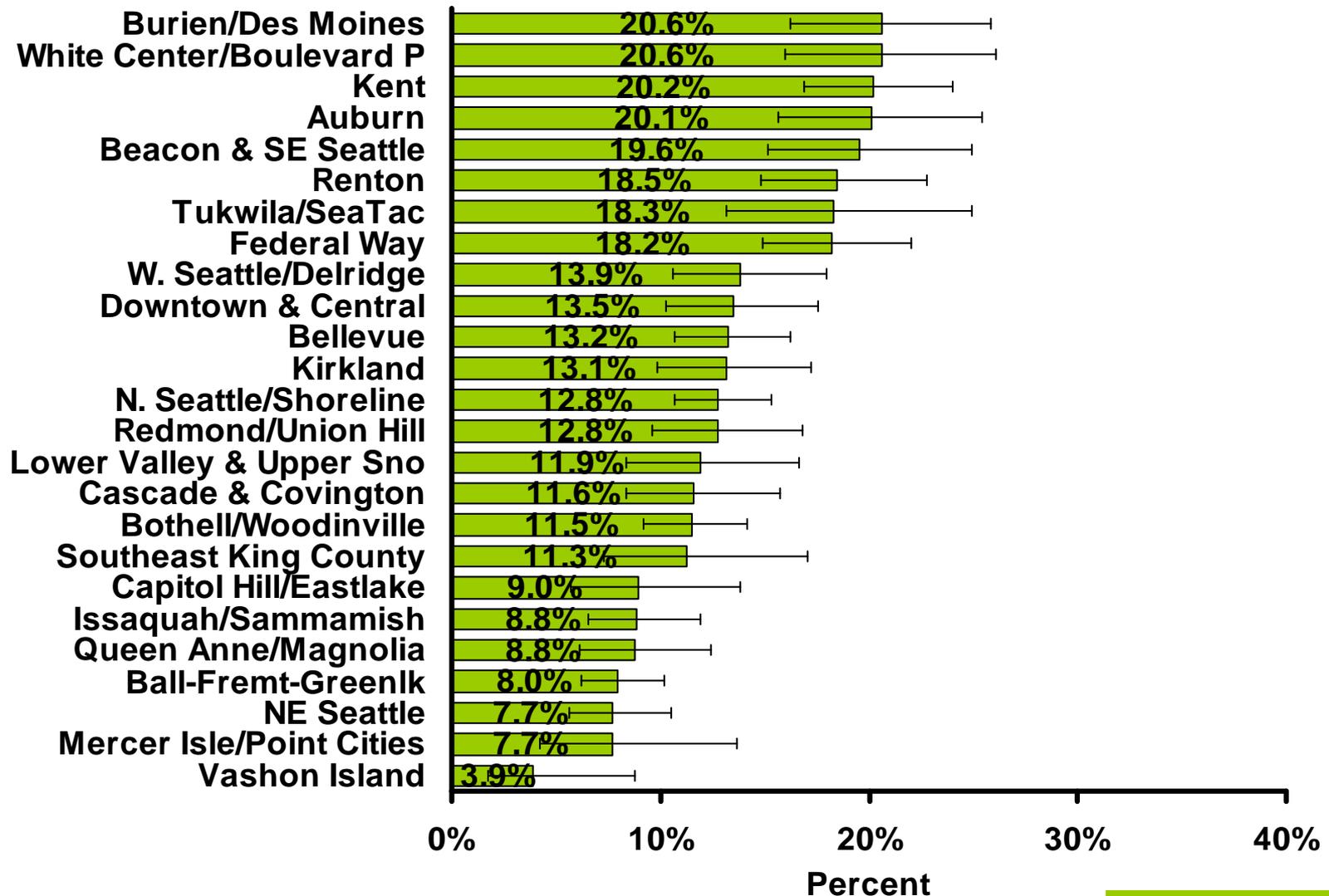
- Some improving trends.
 - King County
 - white and Hispanic/Latino race/ethnicity
 - Households with income greater than \$50,000
- Worsening trends:
 - Asian/PI
 - households making between \$15,000-\$34,999

No Physical Activity Among King County Adults by Region
Three-Year Rolling Averages 1997-2006*



Data Source: Behavioral Risk Factor Surveillance System
Produced by: Public Health - Seattle & King County, Assessment, Policy Development & Evaluation, 12/07

No Physical Activity, King County, Health Planning Areas 5-Year Average, 2002-2006



Data Source: Behavioral Risk Factor Surveillance System

Produced by: Public Health - Seattle & King County, Assessment, Policy Development & Evaluation, 12/07

What are common barriers to physical activity?

- Long distances between homes, shopping, jobs, and schools
- Unwalkable areas (poor sidewalk, no sidewalk)
- Lack of safe places to walk or exercise, and no easily accessible destinations
- Perception that walking, bicycling is unsafe due to crime, traffic
- Immediate neighborhood not conducive, nurturing inactivity
- Building and sites are designed to accommodate cars, not pedestrians
- Large school grounds, distant from homes
- Climate

Impact of Sedentary Lifestyle on Mortality

“Equivalent to smoking one pack of cigarettes per day”



Physical Activity and Health: A Report of the Surgeon General, USHHS, 1996,
Steven Blair, P.E.D., Senior Scientific Editor

Incidental walking trips matter

- Eliminate 20 minutes of walking,
- 5 days a week (2 kcal/min)
- Net loss of 40/kcal day = 10,400 kcal a year
- Gain of approximately 3 lbs/year



- 30 lbs/decade

A collage of three informational graphics. The top left graphic is titled "Smart Shopping by Bus, Bike or Foot" and lists several benefits of walking to the store, such as saving time, reducing parking costs, and increasing security. The top right graphic is titled "Metro Transit Information" and provides contact information for Metro Transit, including phone numbers and website addresses. The bottom graphic is titled "Shop by Bus, Bike or Foot" and features a photograph of a woman walking with shopping bags, along with the Metro logo and the text "Shop by Bus, Bike or Foot".

Isn't it personal choice?



- Individual level versus environmental level interventions
- Choices are made in context; must consider that
- Most major PH improvements due to changes in working/living conditions or in policies

How does the built environment impact health?

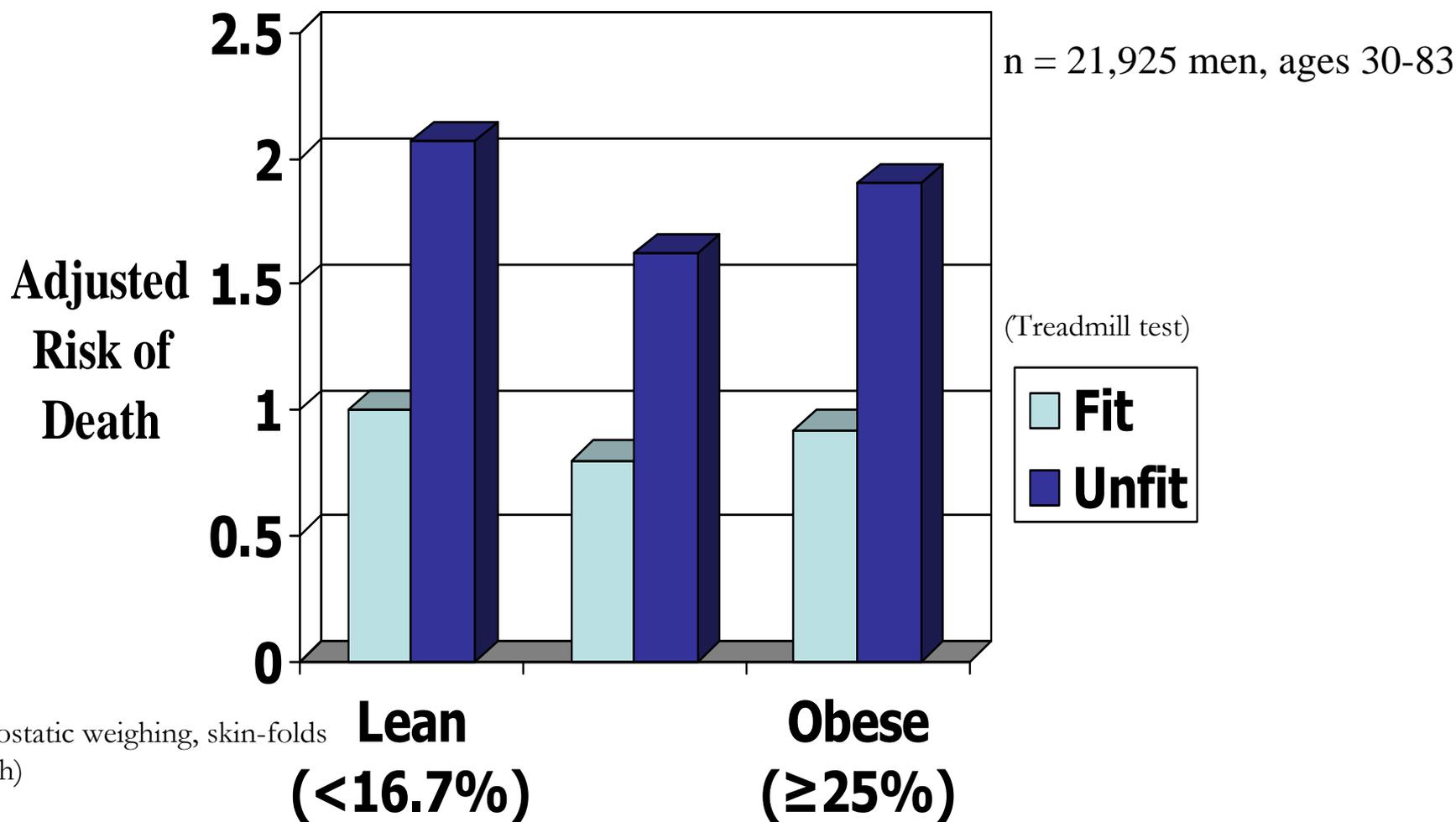
- Affects the level of physical activity
- Obesity and related chronic diseases
- Pedestrian/bicycle injuries
- Crime and violence
- Social capital
- Psychosocial development
- Mental health
- Disparities in health
- Asthma and respiratory diseases

“Neighborhood environment is one of the strongest predictors of whether a person will be physically active.”

Brownson, et al, 2001.



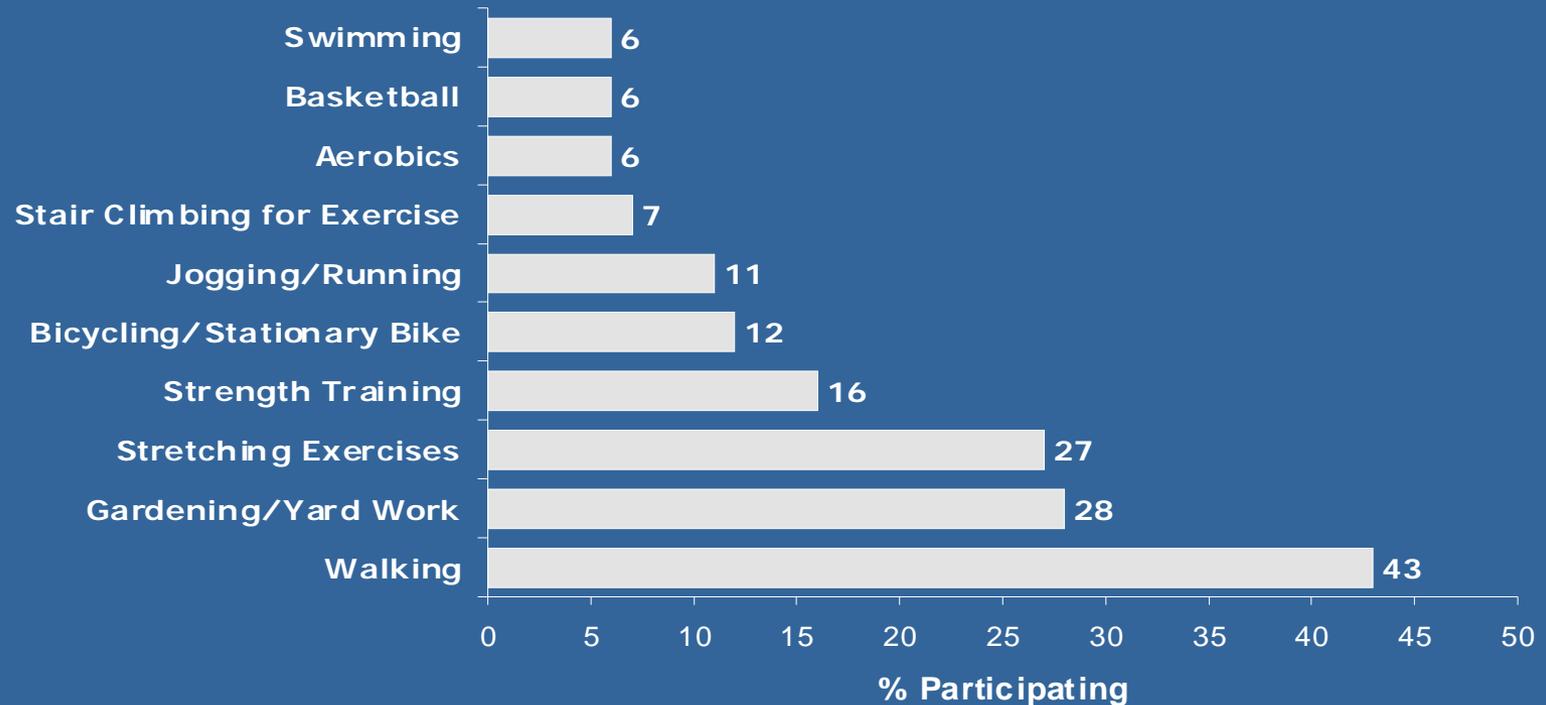
Fitness, Body Composition & All-Cause Mortality



What people like to do for physical activity

Common Types of Physical Activity

Proportion of U.S. Adults Reporting Various Activities, 1998



Data Source: National Health Interview Survey, 1998.



What is the evidence?

- 5 percent increase neighborhood walkability:
 - 32% *increase* in walking for transport
 - 7% decrease in vehicle miles driven
 - 6% decrease in both NOx and VOC¹
- 1 in 4 kids walk to school in high-walkable neighborhoods vs 1 in 10 in low-walkable²
- Presence of stores, parks, schools and other destinations within a 1/4- to 1/2-mile of home is most important factor in how much people walk¹

1 Frank, et al, JAPA, 2006

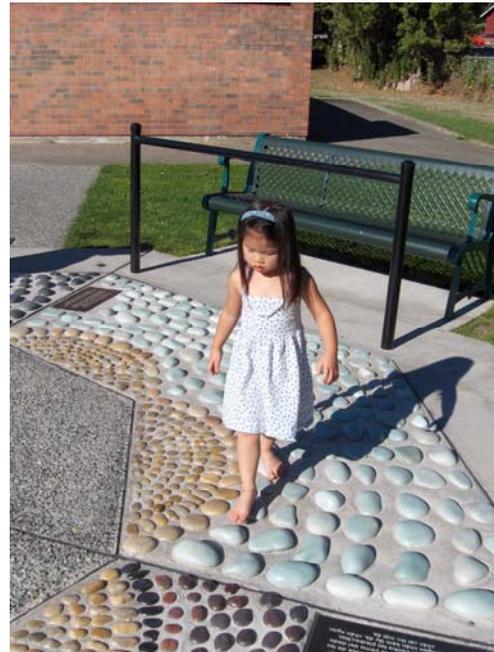
2 Kerr et al, MSSE 2006

Increased access to recreation opportunities, parks and open space

Availability of Parks and Trails =
25 % increase in physical activity ¹

Access to places for physical activity *combined* with informational outreach = **48.4% increase** in frequency of physical activity. Also

- **5.1%** median increase in aerobic capacity
- reduction in body fat
- weight loss
- improvements in flexibility
- increase in perceived energy ²



¹ CDC, "Increasing Physical Activity" 2001

² Kahn, "The Effectiveness of Interventions to Increase Physical Activity" 2002

Communities that are designed to make it easier to be active

Variable

Presence/proximity of convenient services and mixed land use

Outcome

27% increase in walk/bike trip in areas having high presence and good proximity



Communities that are designed to make it easier to be active

Variable

Perceived traffic safety

Outcome

88% increase in walk/bike trips in areas perceived as more safe



Communities that are designed to make it easier to be active

Variable

Perceived aesthetics

Outcome

50% increase in walk/bike trips perceived as more aesthetically pleasing



Communities that are designed to make it easier to be active

Variable

Development of bikeway



Outcome

57% increase in bicycling in areas with dedicated bikeways



Acknowledgements

- Amy Shumann
- Tony Gomez