

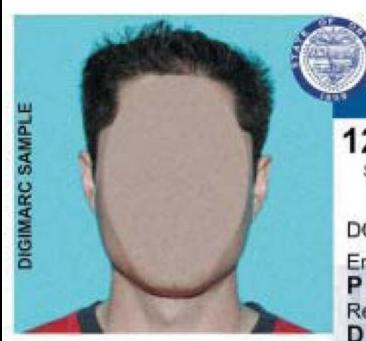
Using DMV records for obesity tracking

Daniel Morris, MS, PhD

Oregon Environmental Public Health Tracking
April 1, 2013

See oregonpublichealth.org/events for more public health week events





REGON

CLASS

DRIVER LICENSE

1234567

Expires 03-21-2014

SAMPLE MD, ZACHARY JON

DOB 03-21-1960 Issue Date 03-21-2006

Endorsements.

Sex

Record Created

M

2003

Restrictions

Height

Weight

5'10" 165

SAMPLE MD, ZACHARY JON 123 SAMPLE DRIVE APT 25 BEAVERTON, OR 97008



Who gets to access personal info on DMV records?

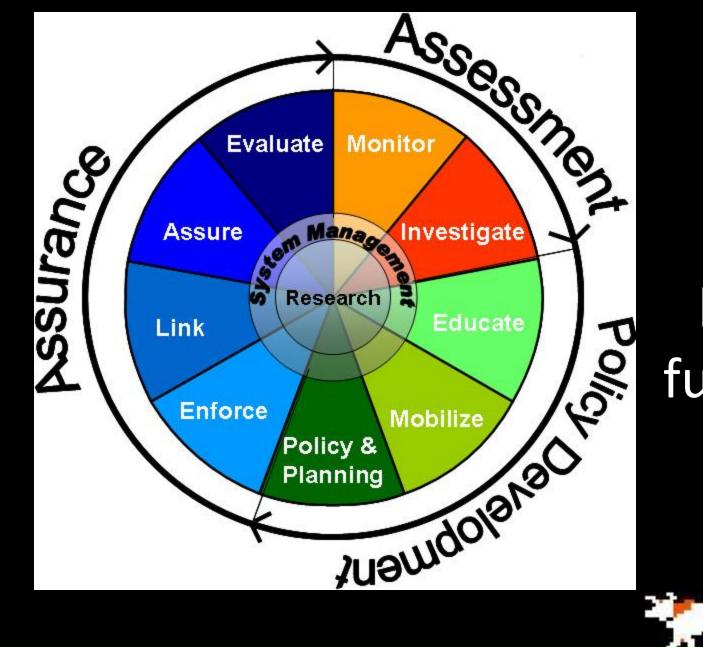
- Police
- Elections officials
- Attorneys
- Financial institutions
- Collection agencies
- Process servers
- Health researchers
- Injured people

- Tow companies
- Private security
- Employers
- Toll facility owners
- Private investigators
- Motor vehicle manufacturers
- Insurers



ORS 802.179 (1): The Department of Transportation, upon request or as required by law, shall disclose personal information from a motor vehicle record to a government agency for use in carrying out its governmental functions.





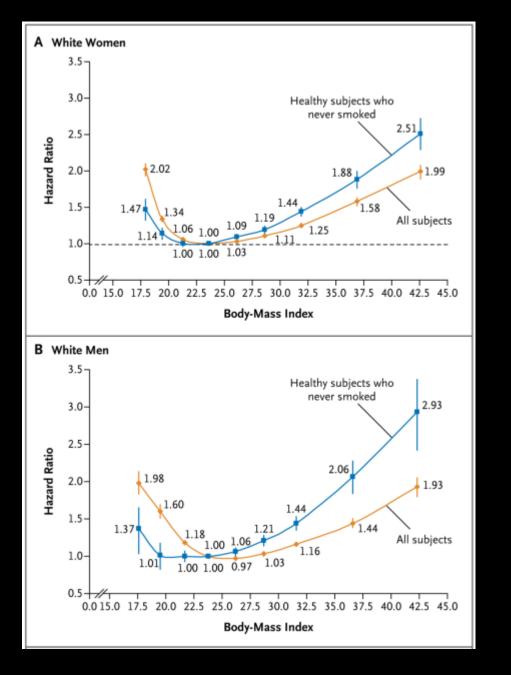
Core public health functions

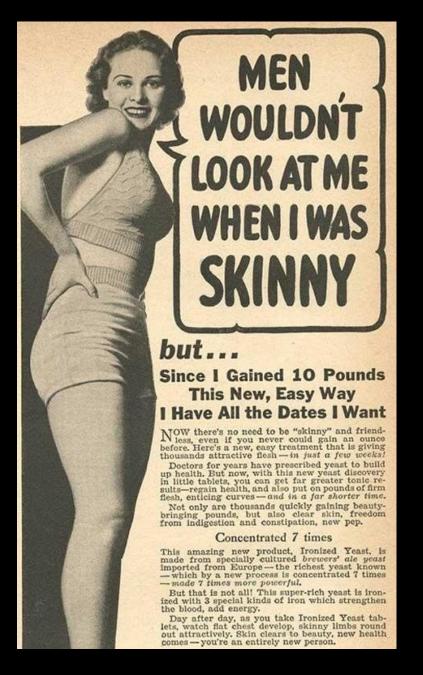


Defining weight status

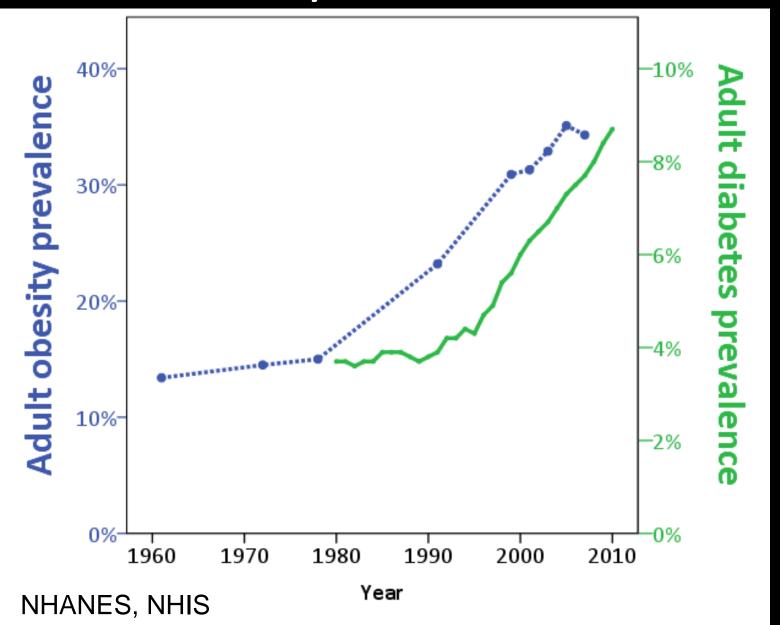
Height	Weight Range	вмі	Weight Status
5' 9"	124 lbs or less	Below 18.5	Underweight
	125 lbs to 168 lbs	18.5 to 24.9	Healthy
	169 lbs to 202 lbs	25.0 to 29.9	Overweight
	203 lbs or more	30 or higher	Obese

 $Body \ mass \ index \ = \frac{Height \ in \ meters}{(Weight \ in \ kilograms)^2}$

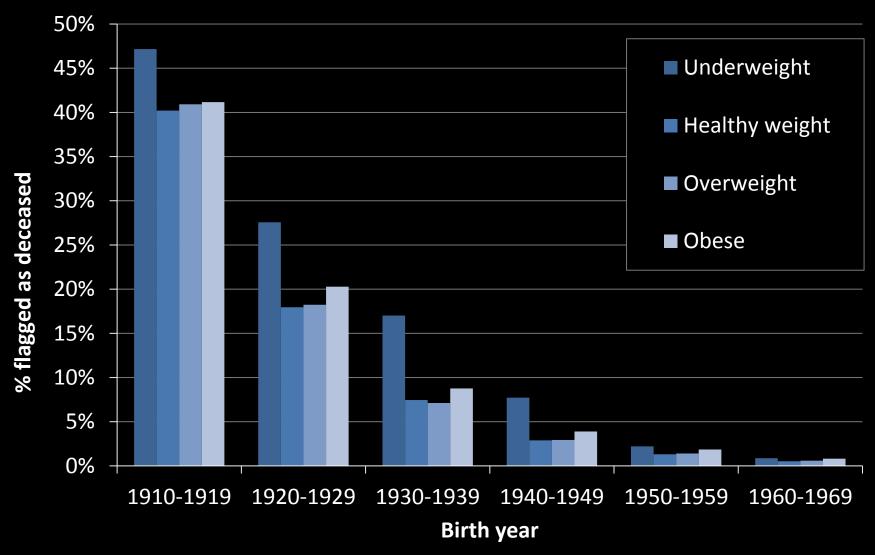




Adult obesity and diabetes, U.S.



Mortality rates from DMV records

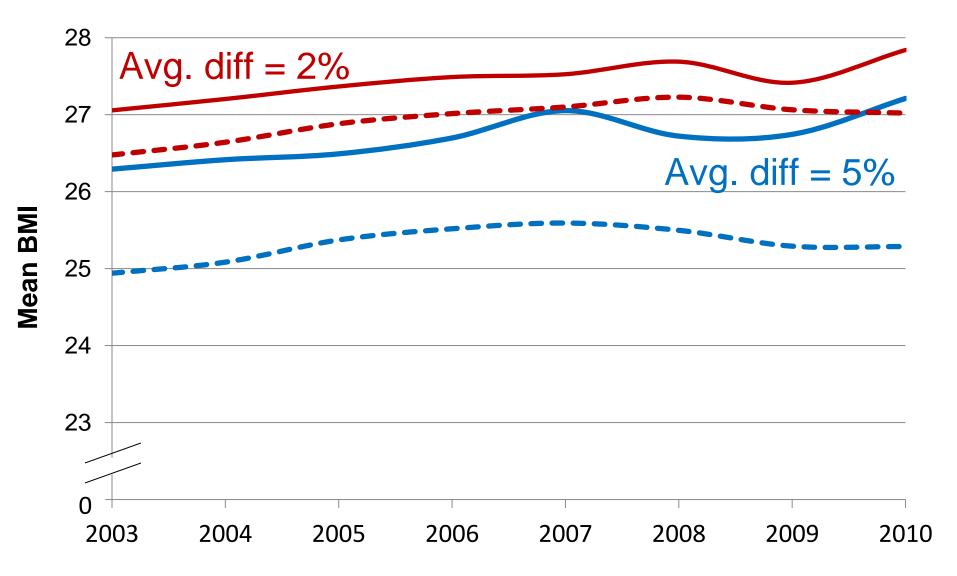


Don't people lie about their weight?



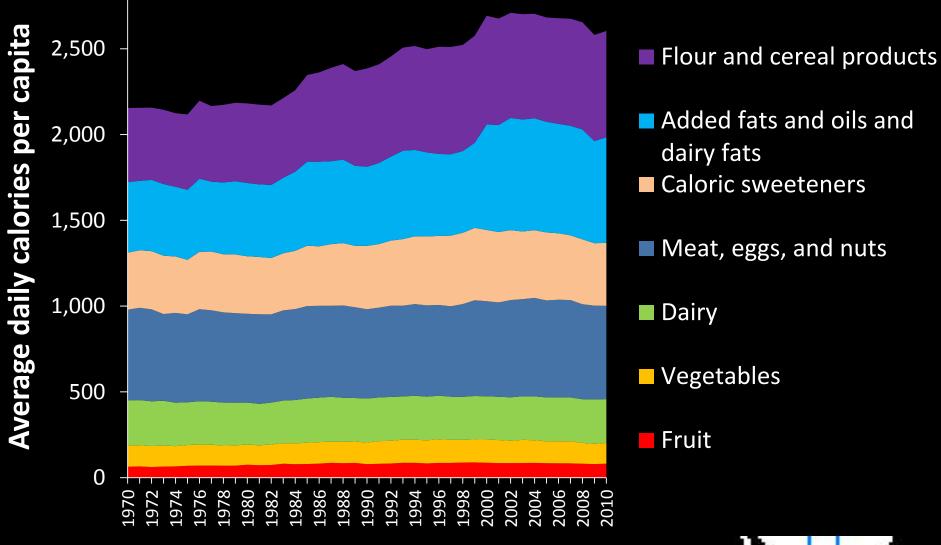
Mean BMI, Oregon BRFSS and DMV

--Women DMV ---Women BRFSS ---Men DMV ---Men BRFSS



Age-adjusted estimates from Oregon BRFSS and DMV records, adults ages 18-84

Food consumption



Average daily per capita calories from the U.S. food availability, adjusted for spoilage and other waste (USDA)



What changed?*

Agriculture policies favoring overproduction

Shareholder value movement

Reagan-era deregulation

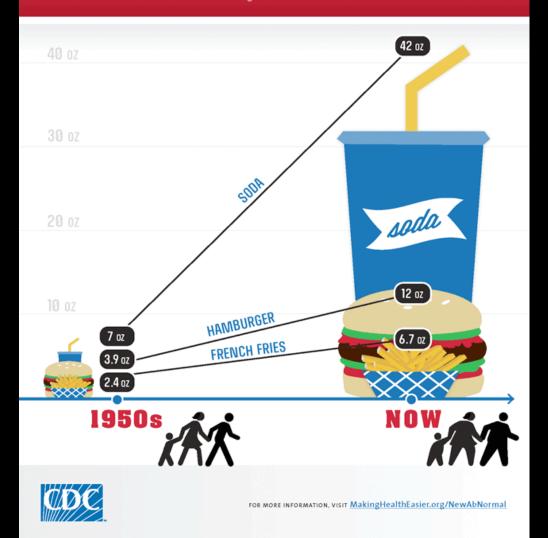
*According to Marion Nestle

http://www.foodpolitics.com/wp-content/uploads/Dissent_Nestle_12.pdf



THE NEW (AB)NORMAL

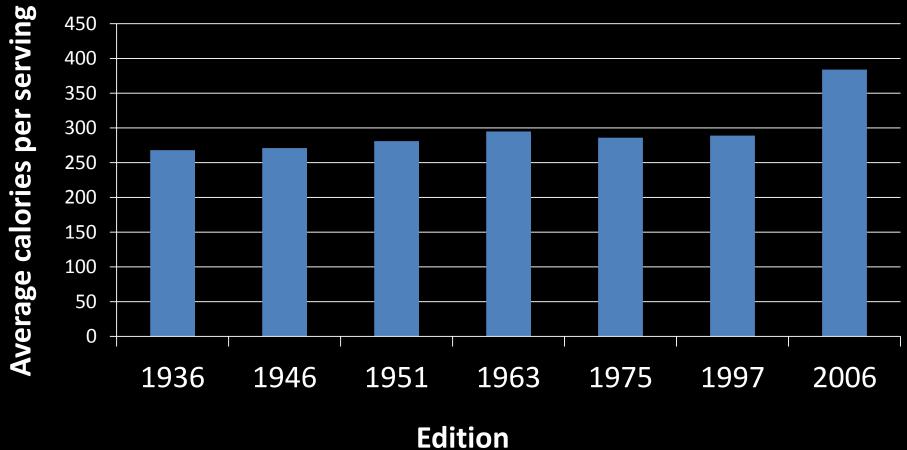
Portion sizes have been growing. So have we. The average restaurant meal today is more than four times larger than in the 1950s. And adults are, on average, 26 pounds heavier. If we want to eat healthy, there are things we can do for ourselves and our community. Order the smaller meals on the menu, split a meal with a friend, or, eat half and take the rest home. We can also ask the managers at our favorite restaurants to offer smaller meals.



Restaurant portion sizes quadrupled since the 1950s



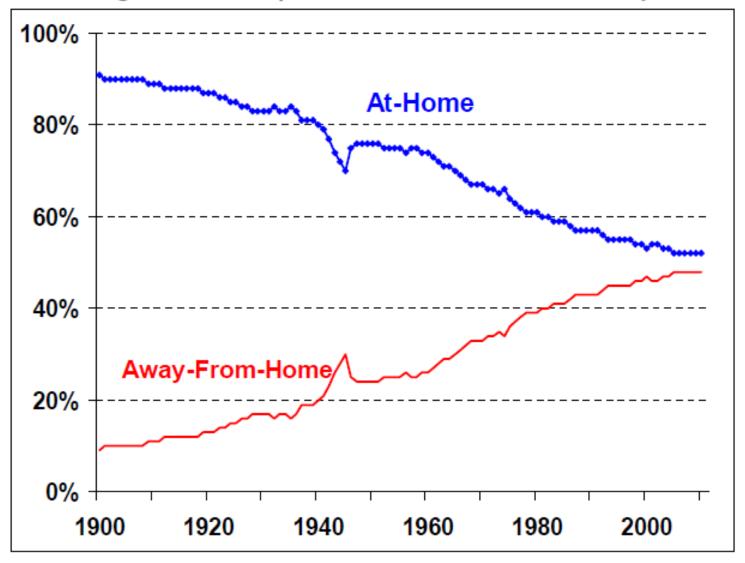
Average calories per serving in 18 classic recipes in The Joy of Cooking



Wansink, Brian and Collin R. Payne (2009), "The Joy of Cooking Too Much: 70 Years of Calorie Increases in Classic Recipes, "Annals of Internal Medicine, 150, 291-291.

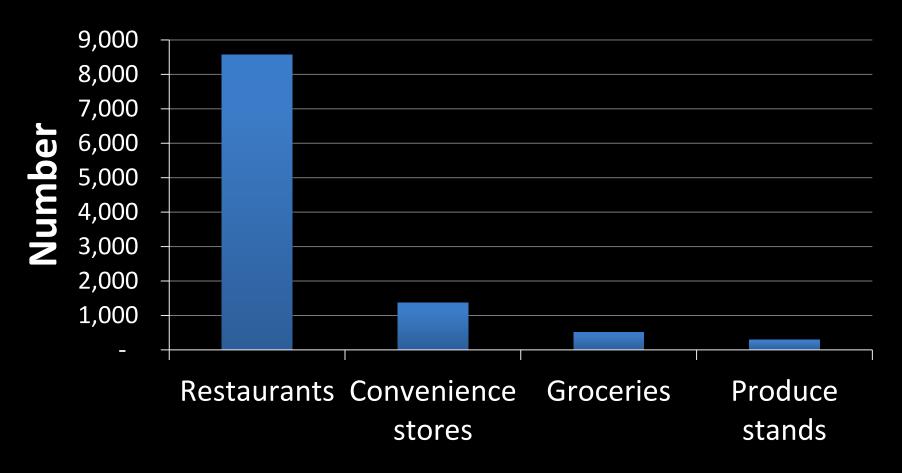


Figure 5. Average U.S. Food Expenditure Shares: At-Home vs. Away-from-Home



Source: Table 7, "Food CPI, Prices and Expenditures Briefing Room," Food Expenditure Tables, ERS, USDA, available at http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/.

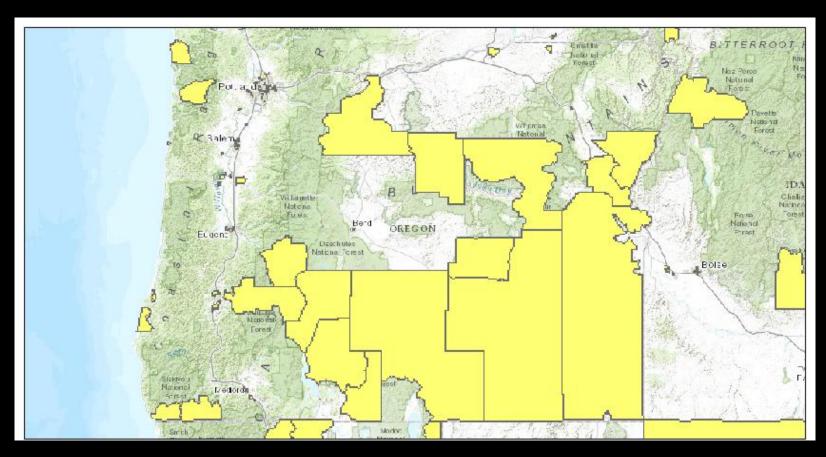
Food environment in Oregon



Oregon Employment Department, 2010 Oregon Farmer's Market Association



Food deserts or food swamps?



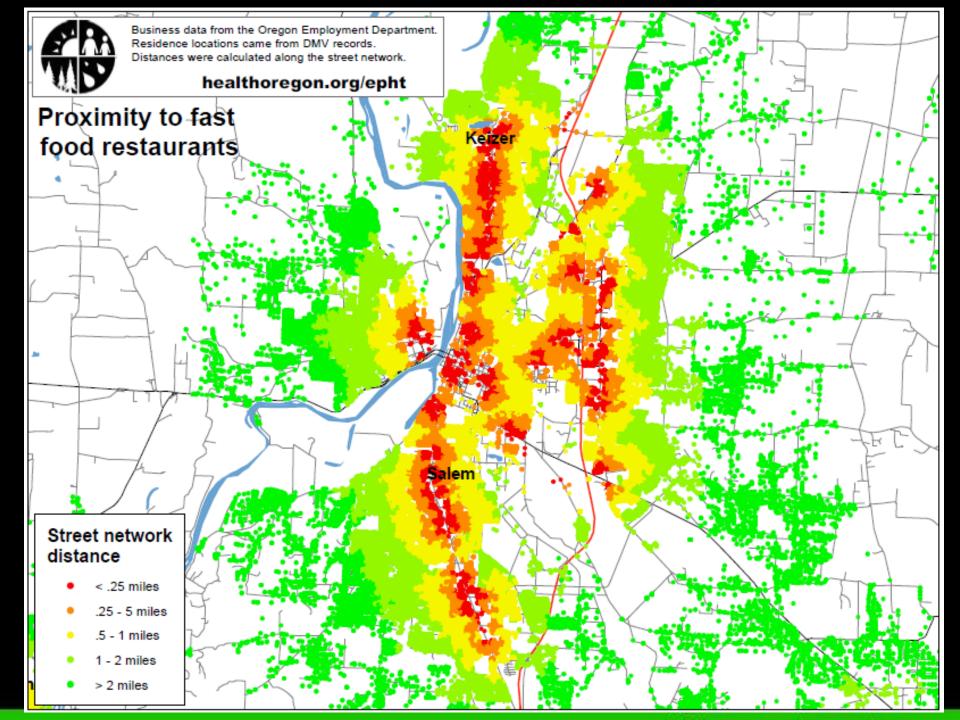
USDA Food Access Research Atlas

Low income census tracts where a significant number of households have low vehicle access or a significant number or share of residents are more than 20 miles from the nearest supermarket





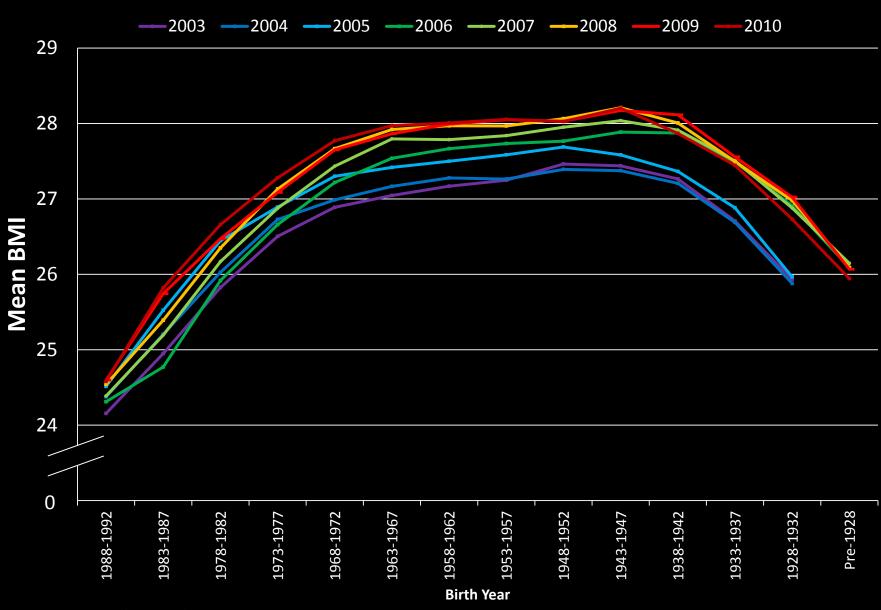




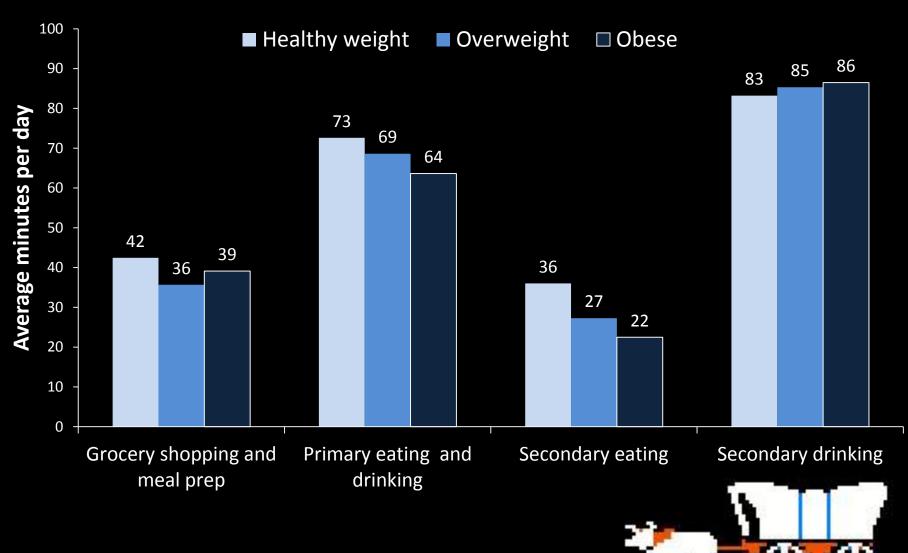
I haven't updated my weight since high school

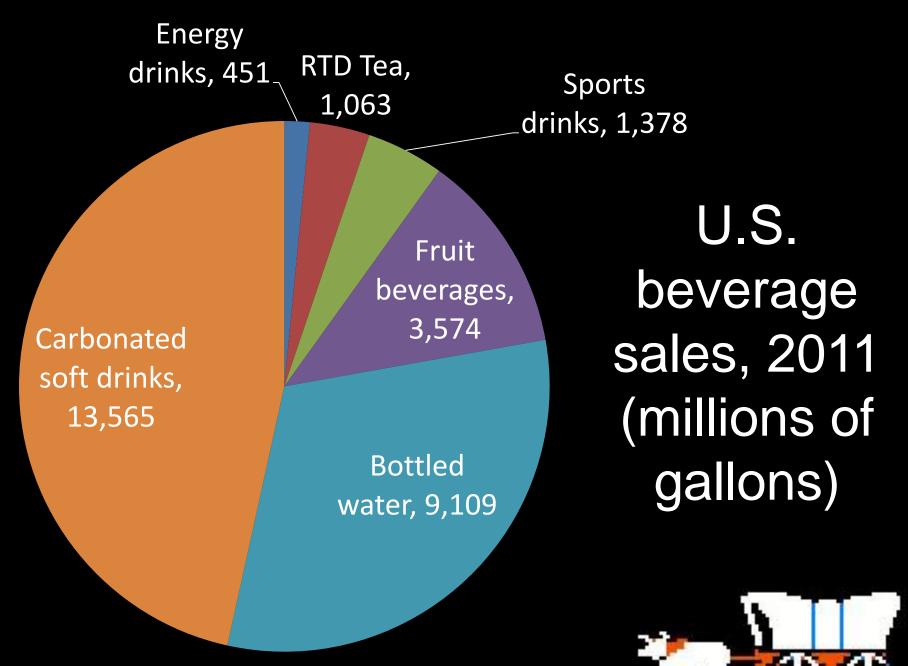


BMI by Birth Cohort and Year, Males



American Time Use





Sugary drinks



7 ounces 82 calories 22g sugar 12 ounces 140 calories

38 g sugar 49 g sugar

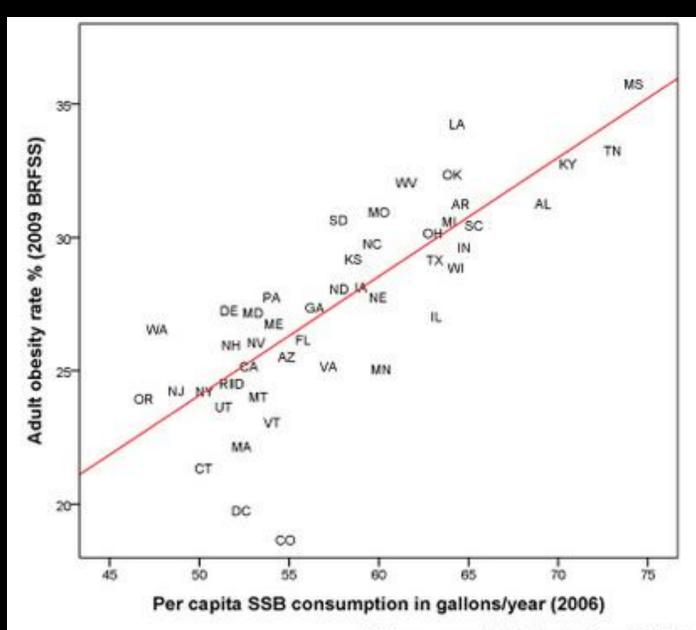
16 ounces

180 calories

32 ounces 374 calories 102g sugar

Note: values based on fountain Pepsi-Cola product; using 2.3g sugar cubes





Data sources: USDA Food Atlas, BRFSS



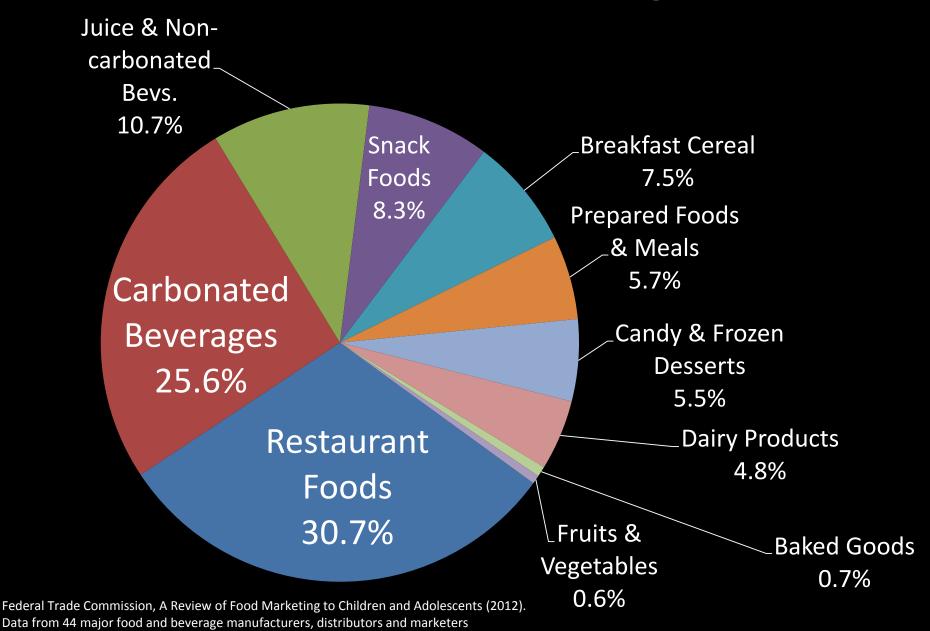
About half of 2-yearolds in Oregon have a soda or other sugary drink at least once a week

Bernice Raveche Garnett, Kenneth D Rosenberg and Daniel S Morris. Consumption of soda and other sugar-sweetened beverages by 2-year-olds: findings from a population-based survey. Public Health Nutrition, available on CJO2012. doi:10.1017/S1368980012004399.

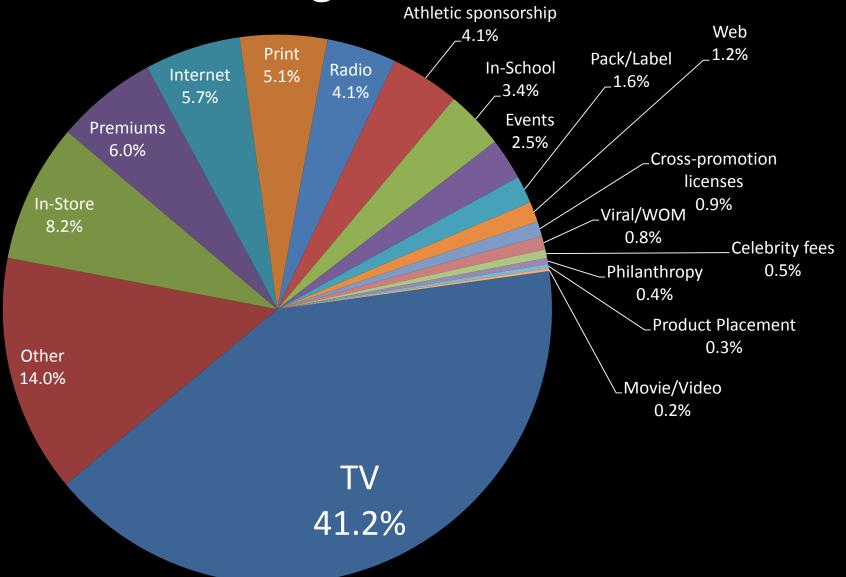


Photo: Associated Press

\$9.6 billion in food marketing in 2009

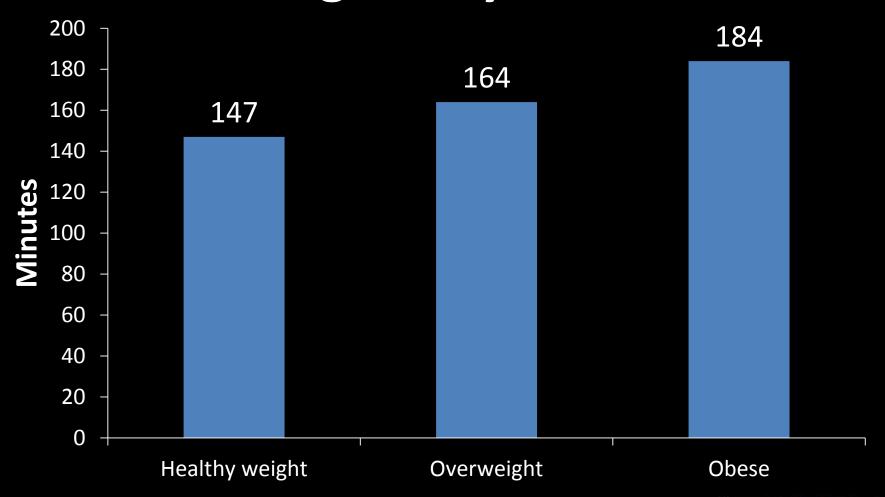


Marketing \$ distribution



Federal Trade Commission, A Review of Food Marketing to Children and Adolescents (2012). Data from 44 major food and beverage manufacturers, distributors and marketers. Companies were required to report spending for "All Ages" only when they had child- or teen-directed marketing for the product. Thus, the "All Ages" data reported here do not include any spending for products that did not have child- or teen-directed marketing.

Average daily TV time

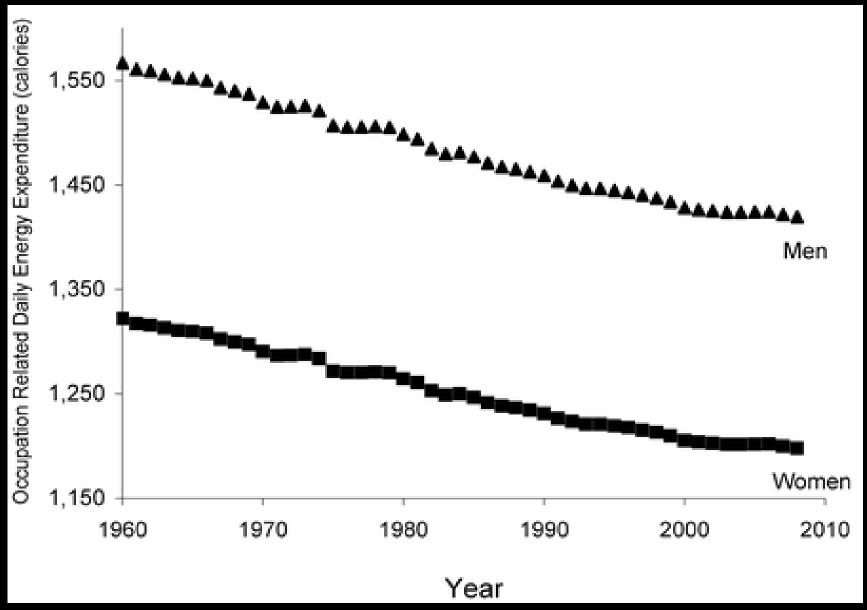


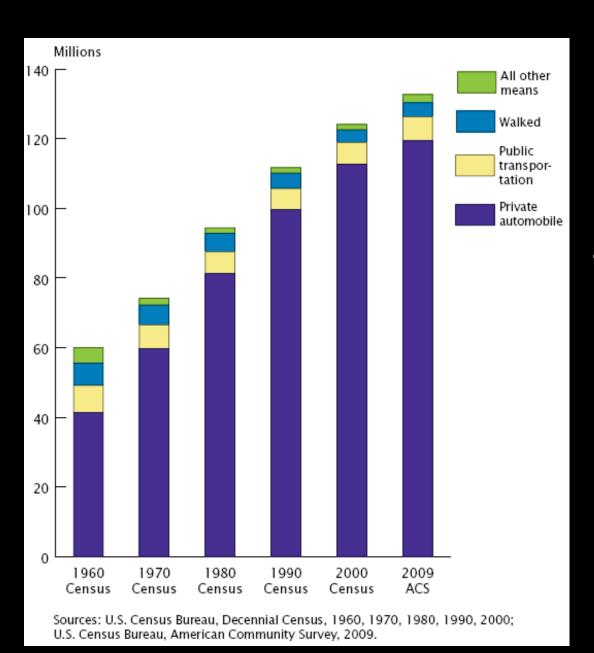


Physical activity



Trends in energy expended at work





Transportation to work 1960 - 2009

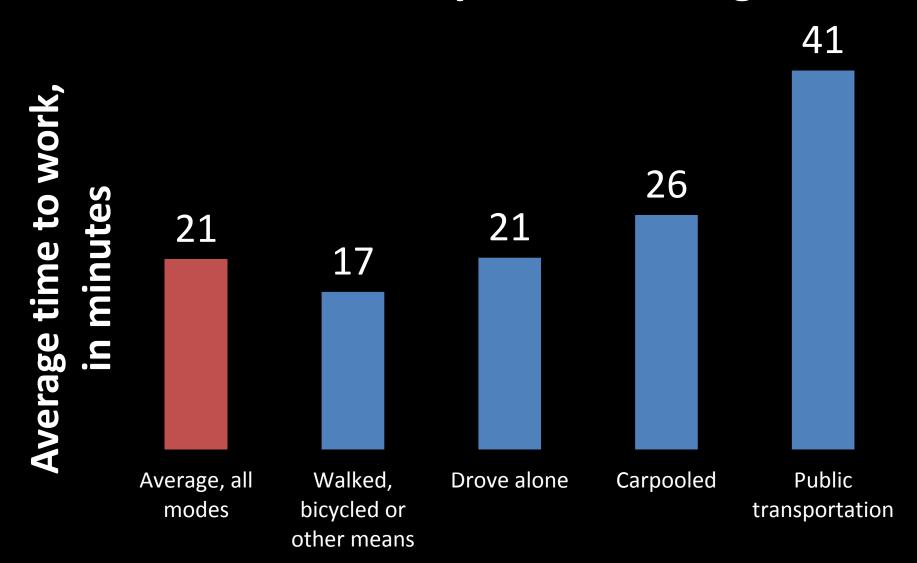






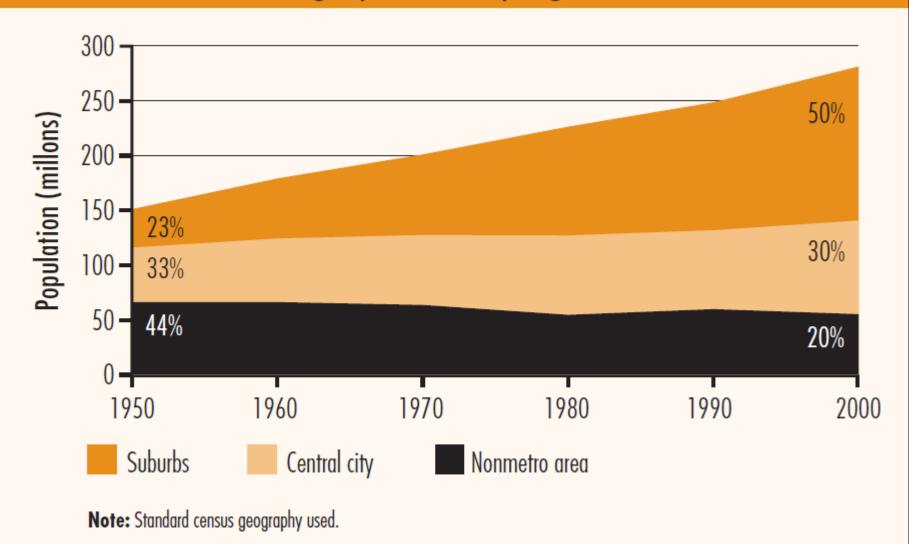
Photo from onemorecyclist.wordpress.com, credited to e france

Commute time by mode in Oregon

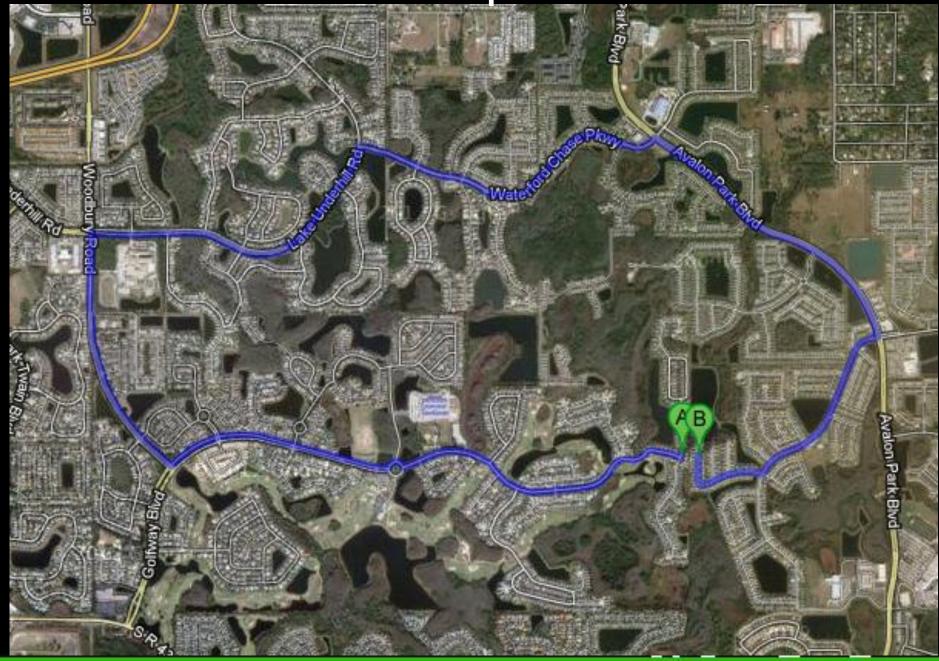


Data source: American Community Survey 2006-2010

FIGURE ES-1 Long-Term Population Trends by Major Geographic Groupings



Urban sprawl





Community design for health



Investment

 Cost to acquire data from DMV: \$900

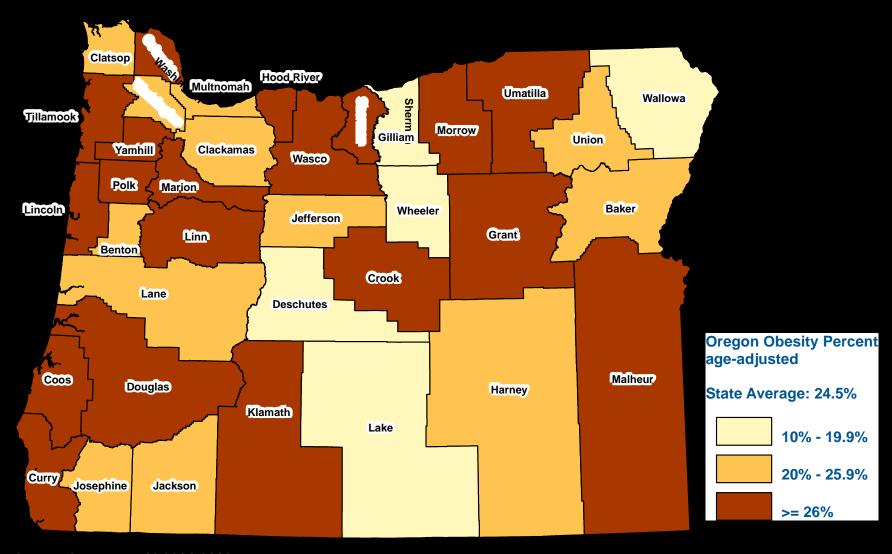
Staff time to geocode
 1.5 million addresses

Simple, standard analysis



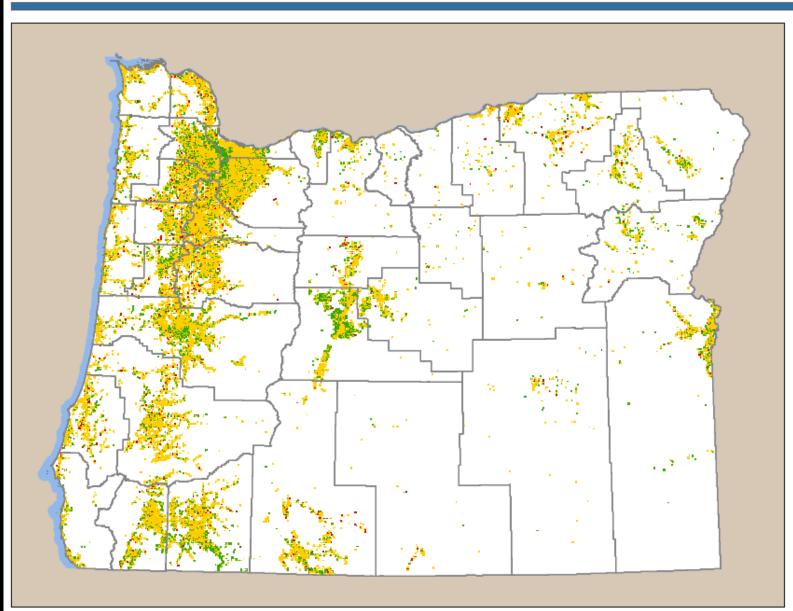


Obesity in Oregon, 2006-2009



Data Source: Oregon BRFSS 2006-2009





Average Adult Body Mass Index (kg/m^2)

Healthy Weight 18.5 - 24.9 kg/m^2

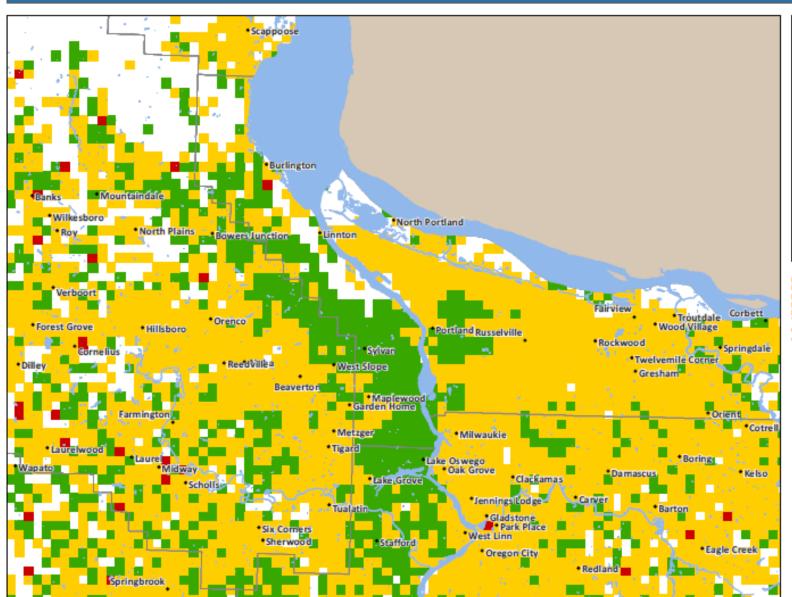
> Overweight 25.0 - 29.9 kg/m^2

Obese ≥30 kg/m^2

No areas were classified as underweight (BMI < 18.5 kg/m^2)

Daniel Morris, Epidemiologist
Laura Rose, GiS Intern
Eric Main, GiS Specialist
Mary Dinsdale, Senior Research Analyst
Marina Counter, Research Analyst
Tara Chebock, Health Communicator
Curtis Cude, Tracking Program Manager
Jervices Manager





Average Adult Body Mass Index (kg/m^2)

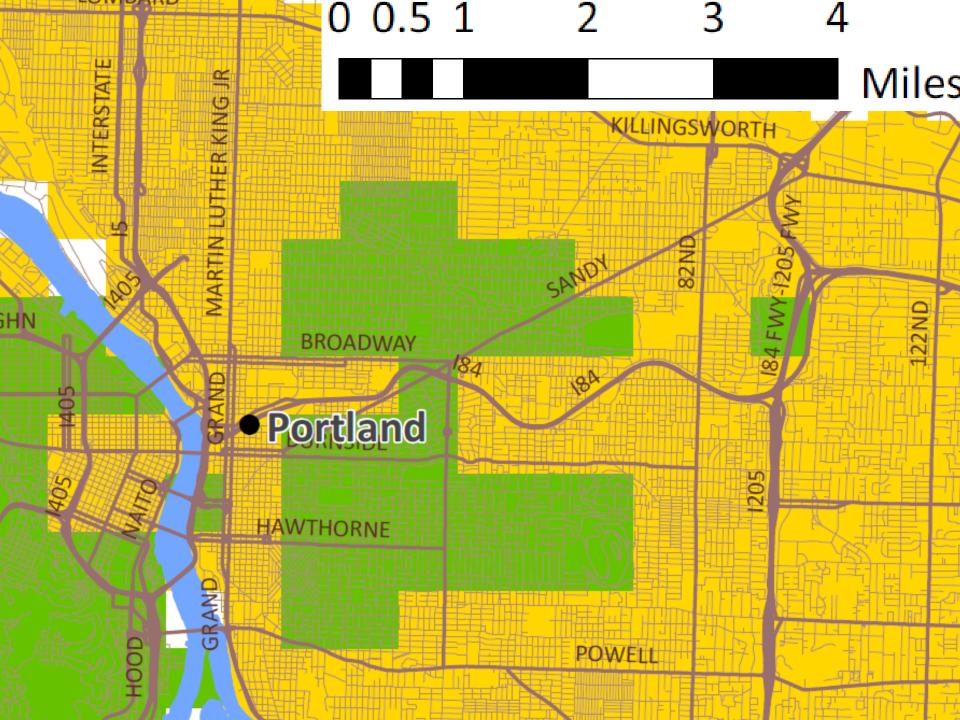
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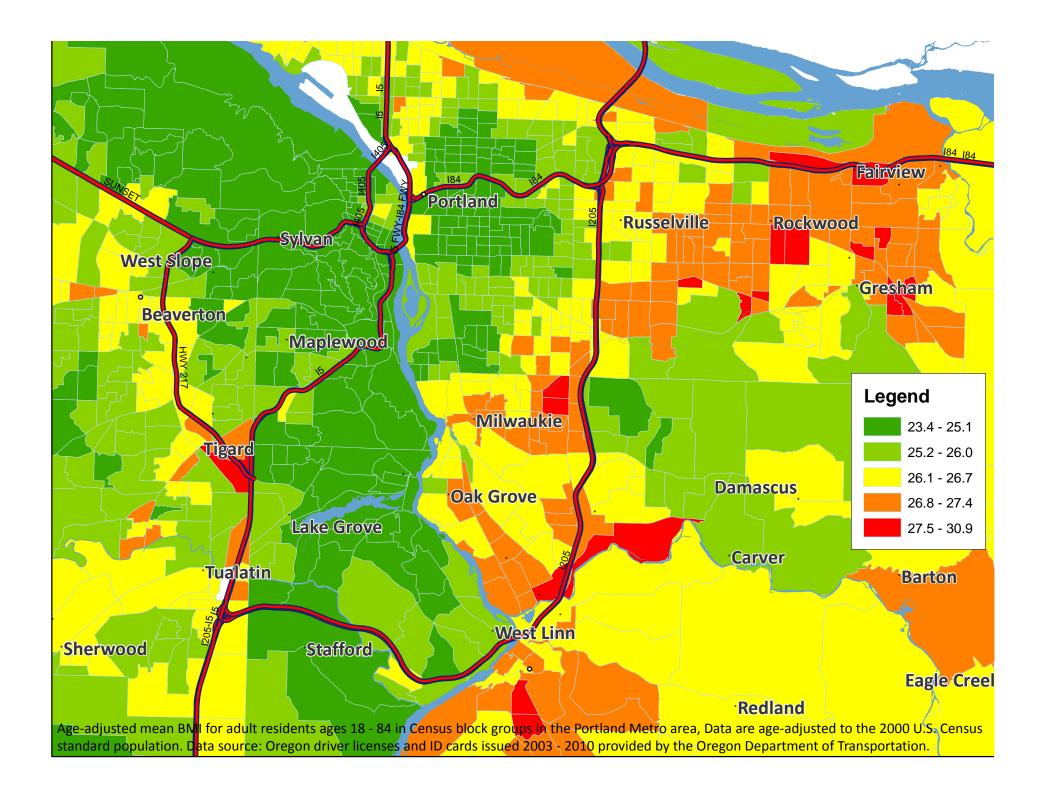
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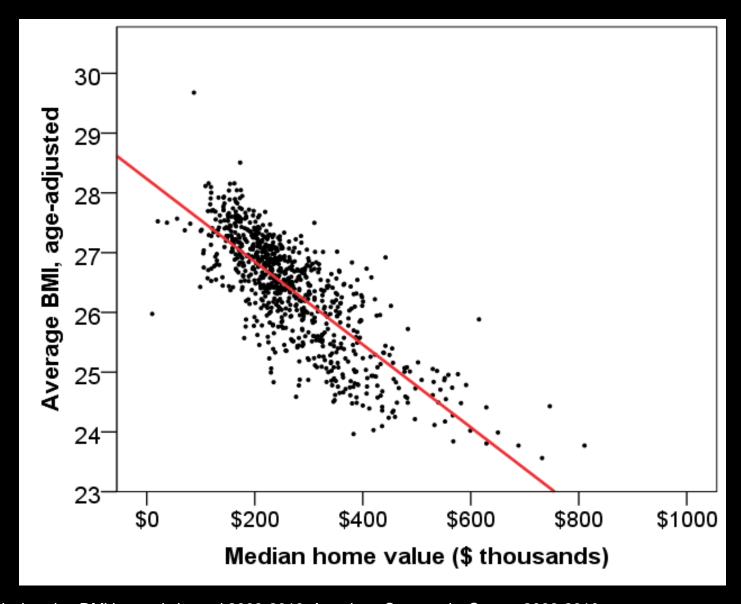
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Deniel Morris, Epidemiologist
Laura Rose, GIS Intern
Eric Main, GIS Specialist
Mary Dinsdale, Serior Research Analyst
Marina Counter, Research Analyst
Tara Chetock, Health Communicator
Curtis Cude, Tracking Program Manager
Jae Douglas, Research & Education
Services Manager





BMI and economic status





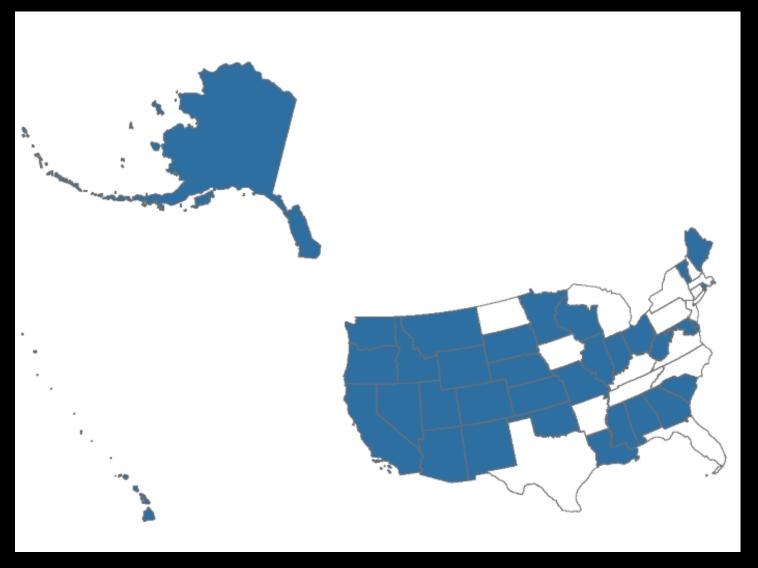
Protecting personal information

Only publish aggregate statistics

Strict policies on data access



39 states & territories collect height and weight



DMV data

Valuable resource for public health

10,000X greater resolution than survey data

Reliably inaccurate



Thanks

Public Health Division

- Eric Main
- Mary Dinsdale
- Tara Chetock
- Marina Counter
- Jill Brackenbrough
- Curtis Cude
- Jae Douglas
- Dan Rubado
- Stacey Schubert
- Duyen Ngo
- Sami Stuchell

Oregon DMV

Susie Hanlon

Oregon Department of Administrative Services

Erik Endrulat

Texas A & M University



Questions?

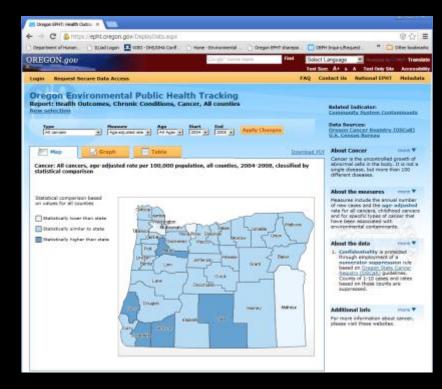
Daniel Morris, MS, PhD

Epidemiologist

Oregon Tracking Program

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healthoregon.org/epht
Data Portal: epht.oregon.gov
facebook.com/OregonEPHT

