When is a person obese?

- **Q:** Is a man who weighs 180 pounds obese?
- **A:** That depends whether the person is five feet tall or seven.
  - Clearly, some accounting must be made for height in defining obesity.
  - The canonical way to do this is calculate the **body mass index** or BMI:

Definition	22.1

Body Mass Index: $\text{BMI} = \dfrac{\text{Weight in kilograms}}{(\text{Height in meters})^2} = 4.9 \times \dfrac{\text{Weight in pounds}}{(\text{Height in feet})^2}$

- A person is considered clinically obese if his or her BMI is 30 or greater.

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What explains increasing obesity?

- **Theory 1: Genetics**
- Evidence suggests that genetics plays a key role in determining body weight for both children and adults.
- While genetics may predispose some to being heavy, they cannot be the reason for the *rise* in body weight.

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What explains increasing obesity?

- **Theory 2: The food industry**
- One popular theory for explaining obesity levels is that fast food restaurants and agricultural corporations push unhealthy, fattening foods and large serving sizes on an unwary populace.
  - There is evidence that living close to fast food restaurants increases bodyweight, especially among children.
  - But even if the popularity of fast food restaurants has contributed to rising obesity since World War II, bodyweight has been increasing since at least the mid 19th-century.

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What explains increasing obesity?

- **Theory 3: Food price trends**
  - Since WWII, improvements in the technology of agriculture have made food production substantially cheaper and driven down its price.
  - The law of demand says that a decline in the price of a normal good will be met with an increase in the quantity consumed of that good—and people have responded to these price decreases just as expected.
  - While some have pointed to rising portion sizes at meals as a cause of rising body weight, those rising portions are themselves a consequence of falling food prices.

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What explains increasing obesity?

- **Theory 4: Changing lifestyles**
  - *Sedentary Jobs*: The labor economy in the developed world, which previously consisted largely of agricultural jobs, has become dominated by service and manufacturing jobs, which require less physical activity.
  - *Heating and AC*: Bodies expend energy to cope with hot and cold temperatures, so air conditioning and central heating may be contributing to fat staying on bodies rather than being burned off.
  - *Automobile use*: The automobile is credited with dramatically reducing average daily walking exercise in developed countries.

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What explains increasing obesity?

- **Theory 5: Labor force participation**
  - In the Western world, the increase in labor force participation by women, and the simultaneous decline in the average time spent preparing meals at home, has contributed to rising body weight.
    - This same force has contributed to the rising share of food dollars spent on restaurant food, which is often more calorically dense and fattening than food prepared at home.
  - Technological changes that make housework less onerous, such as the invention and dissemination of dishwashers and microwaves, have also decreased the relative price of labor force participation.

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Obesity is a side effect of good things

- Lower food prices
- Labor-saving technological innovations
- Modern conveniences (air conditioning, cars)
- Economic opportunities for women

The costs of obesity

- *Higher health care costs*:
  - Annual medical expenditures in the U.S. are 36% higher for obese people than thinner people.
- *Reduced life expectancy*:
  - A 40-year-old white male with BMI 35 has a life expectancy three years shorter than one with BMI 24.
- *Increased risk of chronic diseases* such as heart disease, diabetes, and hypertension.
- *Reduced physical mobility and function*
- *Lower wages*
- *Social stigma*
- *Crucial question: are these public or private costs?*

Is obesity a public health crisis?

- For an economist, it is the distinction between *public* and *private costs* that determines whether obesity is a *public* health crisis rather than a significant but *private* problem.

Justifications for public health intervention

- So far, we have argued that a government intervention against obesity is not justified unless obesity causes a social loss through **externalities**.
- This is the *welfarist* point of view, because welfare economics assumes that individual choices should be respected by the government as long as they do not harm others
- If we relax that assumption, there may be additional justification for government action.

Justifications for public health intervention

Inadequate nutritional information

- There is evidence that consumers are woefully unaware of the nutritional content of much of the food they eat.
- This lack of knowledge has been proposed as a justification for public intervention, such as nutrition facts labels and calorie posting requirements at restaurants.
- However, the effectiveness of such measures has been questioned, as many consumers do not respond to this information.
- And even with perfect nutrition information, consumers may have trouble translating their food choices into health outcomes.

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Justifications for public health intervention

Childhood obesity

- Obesity during childhood is associated not only with obesity during adulthood but also with elevated rates of heart disease later in life and a shorter life span.
- Welfare economics starts from the premise that people know what is best for them, and that their actions reveal their true preferences.
  - But this assumption is less likely to hold when it comes to children, who may be uninformed about health risks, ill-equipped to think long-term about health decisions, and especially vulnerable to advertising for unhealthy foods.

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Justifications for public health intervention

Impatience and addiction

- Another critique of the welfare economics argument posits that even adults do things that are bad for them.
  - What if people gorge on cookies but regret it later?
  - What if people become addicted to french fries and cannot stop even if they do not want to gain weight?
  - These kinds of scenarios are the focus of an emerging field called *behavioral economics.*
- A ban on unhealthy midnight snacks would certainly reduce obesity—it may even be supported by the very people whose midnight snacks would be outlawed.
  - But this kind of muscular government intervention raises profound questions about liberty and the fundamental assumptions of welfare economics.

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