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**How the Economy Makes Us Fat, If It Matters,
and What to Do About It**

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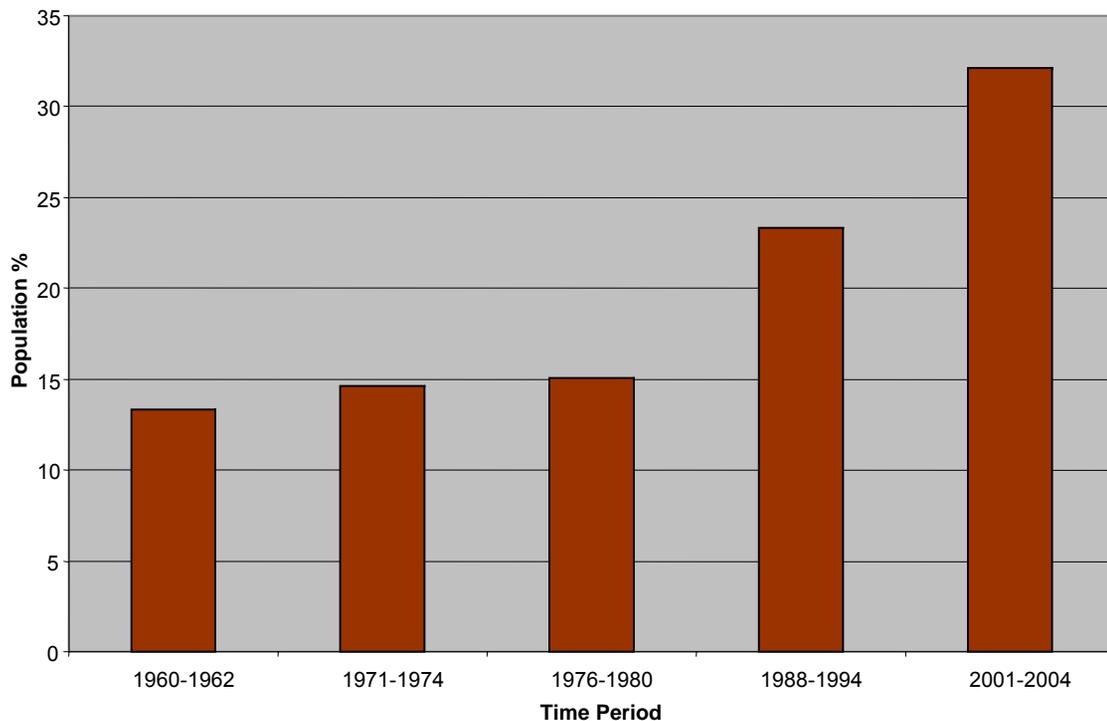
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National Adult Obesity Rates (age 20-74)

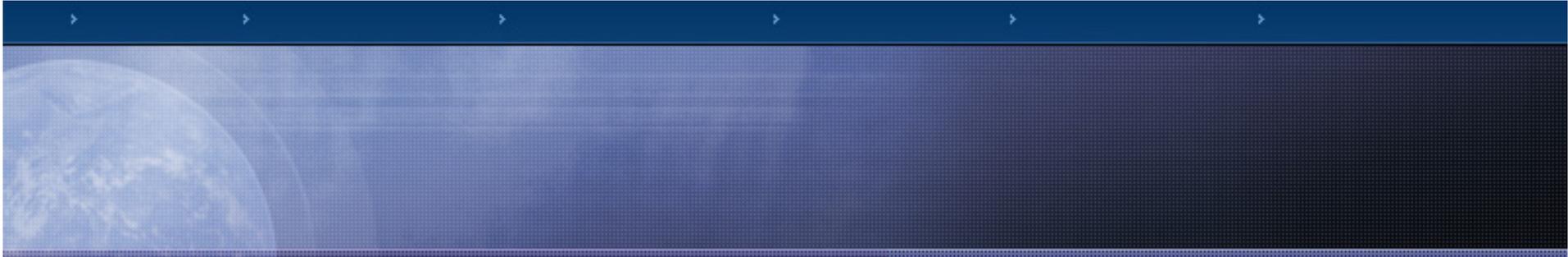
- 2/3rds of Americans are overweight or obese
- Over the past three decades, the number of obese individuals has more than doubled
- The increase occurred for all population subsets, including children, the elderly, and all racial/ethnic groups



Source: "Health, United States, 2006." Centers for Disease Control and Prevention [http://www.cdc.gov/nchs/data/06.pdf#073](http://www.cdc.gov/nchs/data/hus/06.pdf#073)

But Why?

- The Story of Mauritanian Women and the Economics of Obesity



Calories In

Calories In

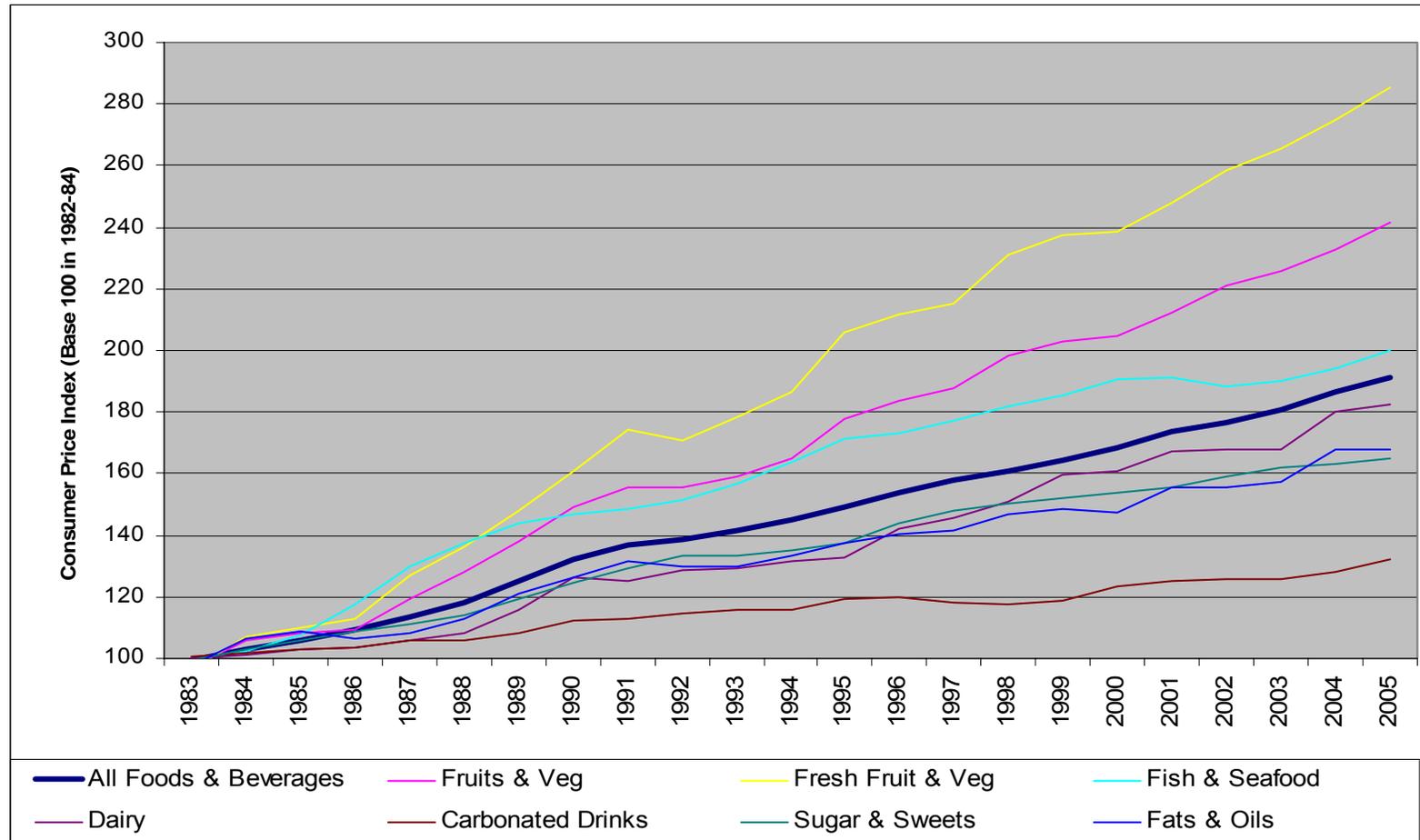
Foods Equivalent to about 100 Calories

- Caloric intake changes from NHANES I (1971-74) to NHANES (1999-2000):
 - Men 2,450 to 2,618 kcal/day: 7% increase
 - Women 1,542 to 1,877 kcal/day: 22% increase
- Carbohydrate changes from (1976-80 through 1999-00)
 - Men 1,039 to 1,283 kcal/day: 24% increase
 - Women 700 to 969 kcal/day: 38% increase
- ***Why the increase in consumption?***

Cheap Food Gets Cheaper

- Food costs (both money and time) have been steadily declining (until recently)
 - Greatest drops are for calorie dense foods
- Between 1960 and 2005, the relative price of food compared with other goods decreased by 16%.
- Since 1983, prices of fresh fruits and vegetables, all fruits and vegetables, fish, and dairy products have increased by 190%, 144%, 100% and 82%, respectively.
- Fats and oils, sugars and sweets, and carbonated beverages increased at much lower rates—by 70%, 66%, and 32%, respectively.

Changes in Relative Prices



Source: Author calculations based on the Consumer Price Index – All Urban Consumers (U.S. City Averages, 1983-2005)

Non-Monetary Costs

- Opportunity cost of preparing foods from scratch continues to increase relative to purchasing prepared and pre-packaged foods
 - Increased prevalence/convenience of fast-food and restaurants lowers acquisition costs.
 - Technology lowers the cost of preparing pre-packaged foods more than it does for foods cooked from scratch.
 - ◆ Consider the microwave
 - 95% of homes have them today
 - 8% had them in 1978



Calories Out

Changes in Caloric Expenditure: Leisure Activity

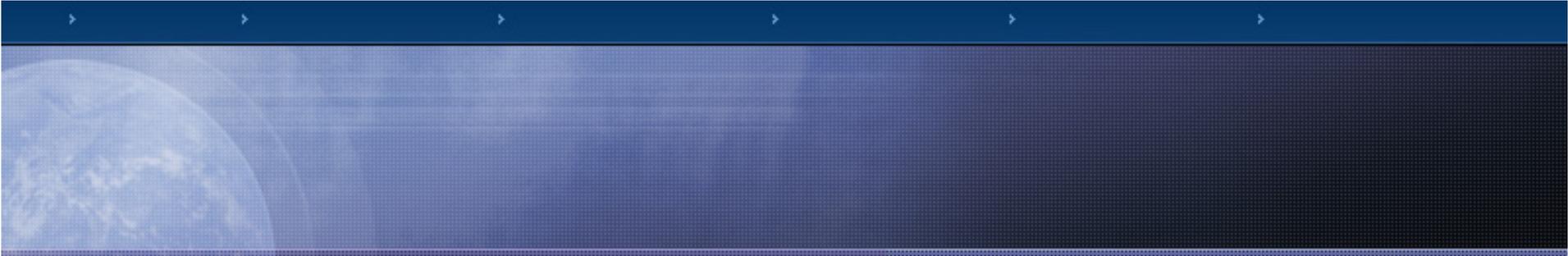
- **The “benefits” of inactive leisure have gone up so we would expect leisure time physical activity to decrease**
 - Internet, computer games, cable TV, ...
 - Between 1970 and 2000, the no. of homes with more than one TV rose from 35% to 75%.
 - Those with cable TV rose from 7% to 76%.
 - 55% of homes now have internet access

Non-Leisure Time Physical Activity

- **The (opportunity) costs of being active on the job have gone up**
- Due to technology, you can accomplish more by doing less (energy expenditure)
 - ◆ More physical activity would decrease productivity (and wages)
 - Who wants that?
- Non-leisure time physical activity has been declining
 - Although very hard to measure
 - ◆ 'Accidental exercise' is almost non-existent

Non-Leisure Time Physical Activity

- After 18 years, an average male worker will weigh 25 pounds more if he works in the lowest-fitness demanding jobs than if he had worked in the highest fitness-demanding jobs.
 - We used to get paid to exercise, we now have to pay to exercise (Lakdawalla & Phillipson, 2007)
- Note: a 30-minute jog followed by 8 hours on the computer falls short of the '10,000 Steps' recommendation



One More Potential Cause of Rising Obesity Rates: Moral Hazard

Moral Hazard

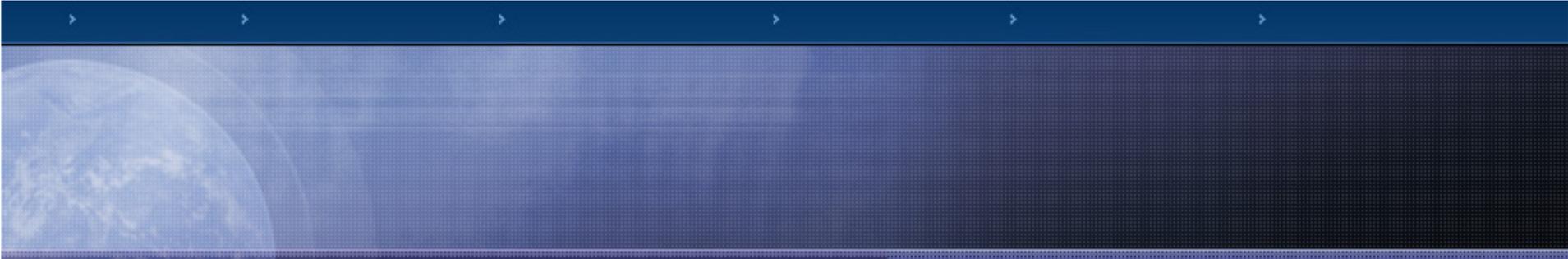
- Over the past few decades, there has been a tremendous increase in medical, pharmacological and surgical treatments for the risk factors and diseases that are promoted by obesity
 - Statins for cholesterol
 - Metformin for diabetes
 - Many new BP meds
 - Over 1.5 million procedures performed last year in the U.S. aimed at opening up clogged arteries

Moral Hazard

- Among today's obese population, the prevalence of high cholesterol and high blood pressure are now 21, and 18 percentage points lower, respectively, than among obese persons 30 to 40 years ago (Gregg et al)
- Today's obese population has better BP and Cholesterol values than normal weight adults had a few decades ago (Gregg et al)
- Maybe being obese is not so costly anymore

Recap: It's the Economy, Stupid

- Obesity is the result of technological advancements that have changed relative costs of food consumption, physical activity, and obesity:
 - Decreased cost of food consumption
 - Increased cost of physical activity
 - Decreased health costs of being obese
- Technology (or a growing economy) is responsible for (or at least exacerbates) rising rates of obesity
- Obesity is a side-effect of our own success
 - **These changes reflect consumer preferences**



We may be fatter,
but are we worse off?

Utility Maximizing

- It is not that a growing waistline is not bad for one's health
- But diet and exercise have their own costs
 - And these costs are getting bigger all the time
- For many, weight gain is the **optimal** outcome given the changing environment
 - We could weigh less but the sacrifices required are just too great

So What To Do?

- A successful obesity prevention program should make it cheaper and easier to be thin—not fat
 - Interventions that change marginal costs and benefits are likely to be followed by changes in behavior
- It also needs to be profit maximizing for an employer to finance it
- Incentive-based programs are increasingly common and show some evidence of success (Finkelstein et al JOEM)
- Information campaigns are unlikely to have large impacts

Conclusion

- Obesity is a side-effect of our own success
- Given a changing world, many individual's may optimally choose to weigh more than public health officials would like
- Government efforts should focus on revisiting past policies that may have inadvertently promoted rising rates of obesity
- Optimal response may be to use incentives or other strategies that make it cheaper and easier to be thin, not fat
- Technology is part of the problem but will also be part of the solution