


ENVIR 202: Lesson No. 17



Sprawl & Health


February 13, 2006

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Cities in Early History

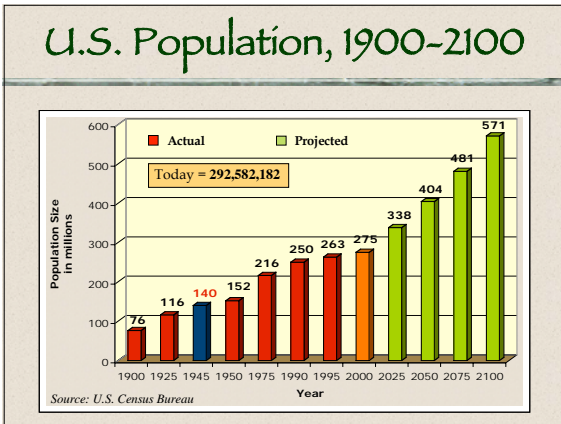
- ❖ Dense settlement
- ❖ Clear distinction between city and country
- ❖ Mixture of functions
- ❖ Short distance from home to work
- ❖ Most fashionable addresses at the center

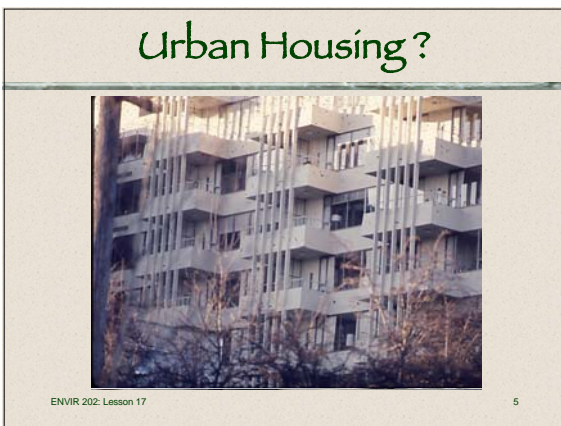


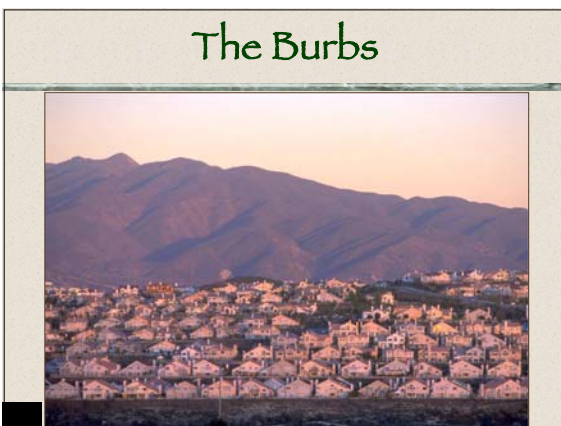
Modern Cities



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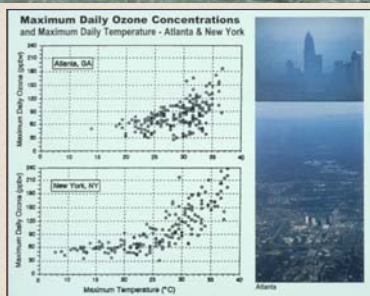


Leveling Atlanta



Metro Atlanta loses 50 acres of forested land a day to "development," according to the Georgia Department of Natural Resources.

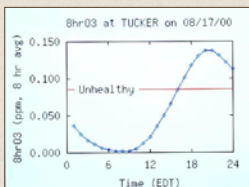
Air Quality



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Ozone




Ozone levels increase in late afternoon as traffic and temperature peak

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Asthma

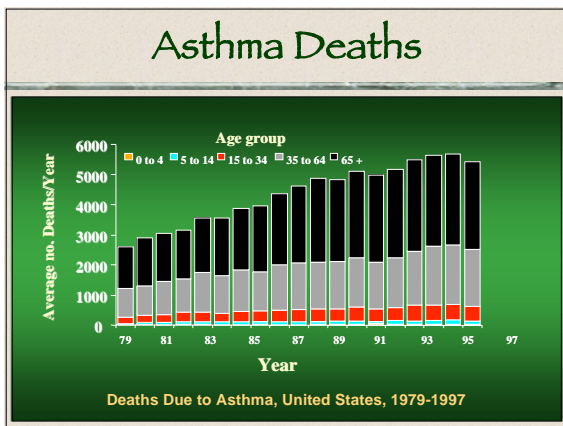
**Asthma outbreak hits kids
RISKS OF THE 'RED ZONE'**



Asthma outbreak: Tyrone Johnson, 5, inhales fresh air Friday at the youth Sports Therapy center from an Atlanta's English Speaking Club's "Red Zone." High ozone readings in metro Atlanta have produced a flare-up of asthma cases, especially among children. AP/WIDEWORLD

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The Atlanta Journal-Constitution SATURDAY, AUG. 19, 2002

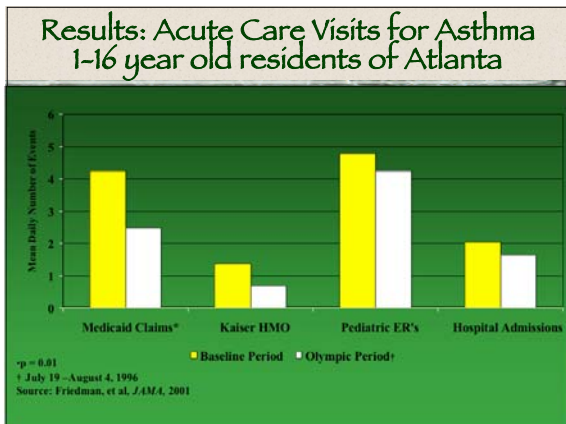


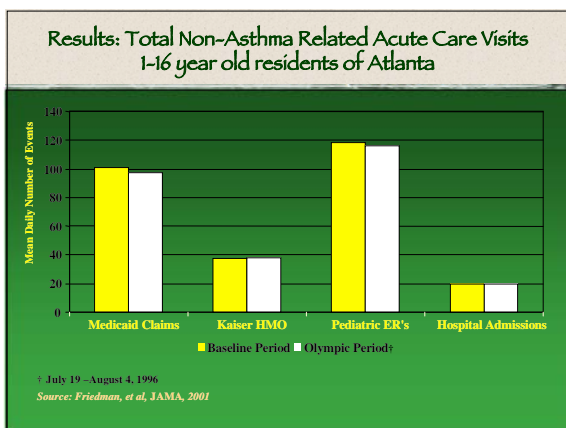
Impact of Changes in Transportation and Commuting Behaviors During the 1996 Summer Olympic Games in Atlanta on Air Quality and Childhood Asthma

Abstract: Asthma prevalence is rising globally in urban and other air-polluted areas. The high level of air pollution during the 1996 Summer Olympic Games in Atlanta, Georgia, provided an opportunity to study the impact of changes in transportation and commuting behaviors on air quality and childhood asthma. We conducted a case-control study of children with asthma who were hospitalized during the 1996 Summer Olympic Games in Atlanta, Georgia. We compared the frequency of use of public transportation and walking and biking to school during the Olympic Games with the frequency of use of these modes of transportation during the non-Olympic period. We also compared the frequency of use of these modes of transportation during the Olympic Games with the frequency of use of these modes of transportation during the non-Olympic period. We found that the frequency of use of public transportation and walking and biking to school during the Olympic Games was significantly higher than during the non-Olympic period. We also found that the frequency of use of these modes of transportation during the Olympic Games was significantly higher than during the non-Olympic period. We found that the frequency of use of public transportation and walking and biking to school during the Olympic Games was significantly higher than during the non-Olympic period. We also found that the frequency of use of these modes of transportation during the Olympic Games was significantly higher than during the non-Olympic period.



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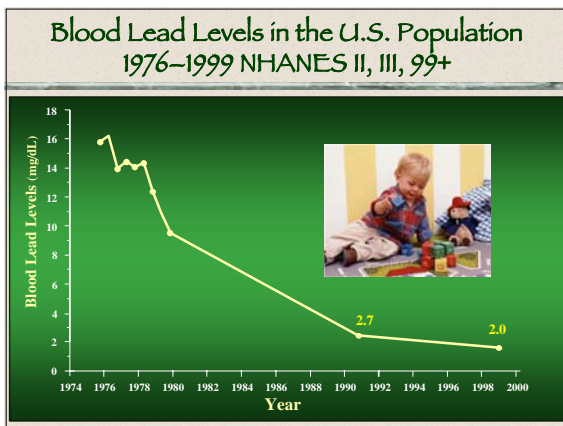
Lead-Based Paint in Housing

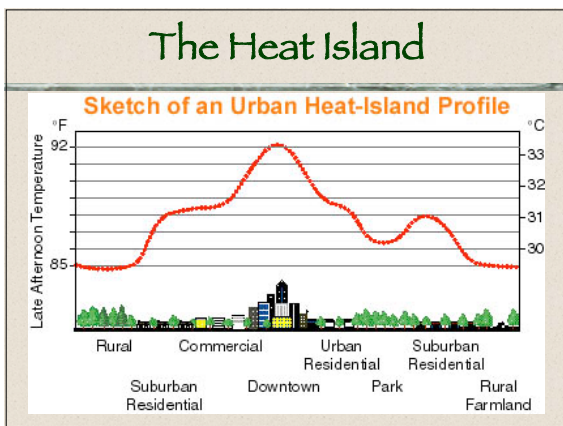
- ❖ Nearly 38 million housing units contain lead-based paint
- ❖ 24 million housing units (25% of the nation's housing) have significant lead-based paint hazards
- ❖ 1.2 million homes with significant lead-based paint hazards housed low income families with children < age of 6

Source: National Lead-Based Paint Survey (1998-2000)

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Urban Heat Islands

- ❖ Affect Energy Use, the Environment, and Public Health
 - Increased Smog Production
 - The incidence of smog events may increase by 10 percent for a 5°F increase in temperature
 - Increased Electricity Demand
 - Increased Emission of CO₂ and other pollutants

Maximum Temperature (°C)	Percentage
10	10
15	20
20	30
25	40
30	50
35	60
40	70

Source: U. S. Environmental Protection Agency

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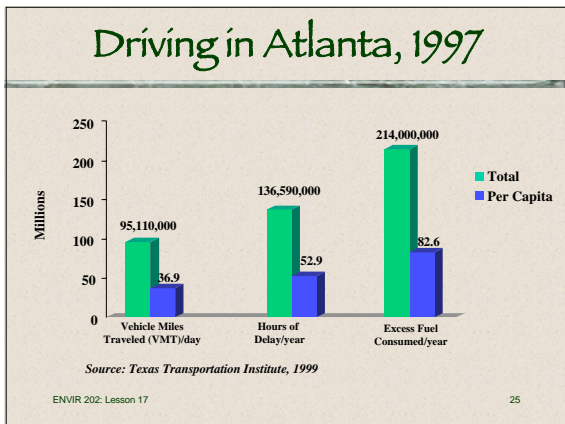


From 1983-1995 —

- ❖ Average length of driver's trip to work increased by 37%.
- ❖ Average time it took to get to work went up by 14%.
- ❖ Average speed getting there (in mph) increased by 20%.


Source: Federal Highway Administration, Nationwide Personal Transportation Study.

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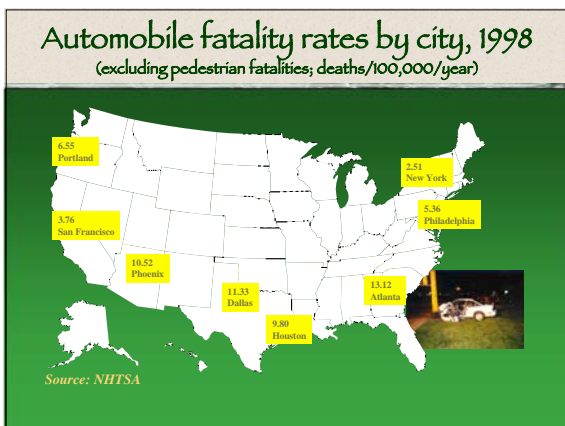
Motor Vehicle Crashes

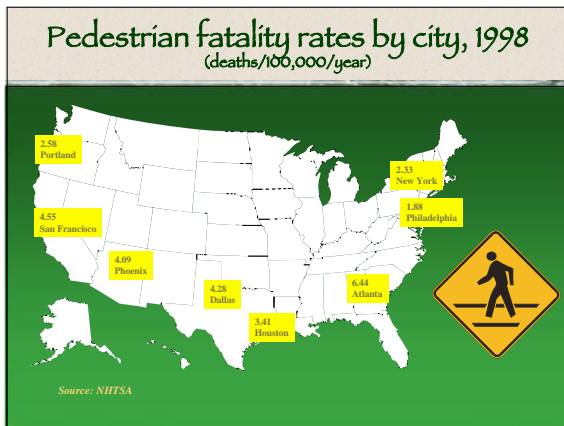
- ❖ Leading cause of deaths among persons 1-24 years old
- ❖ Each year in the United States, motor vehicle crashes account for:
 - > 42,000 deaths
 - > 3.4 million nonfatal injuries
 - > 24 million vehicles
 - > estimated \$200 billion in costs

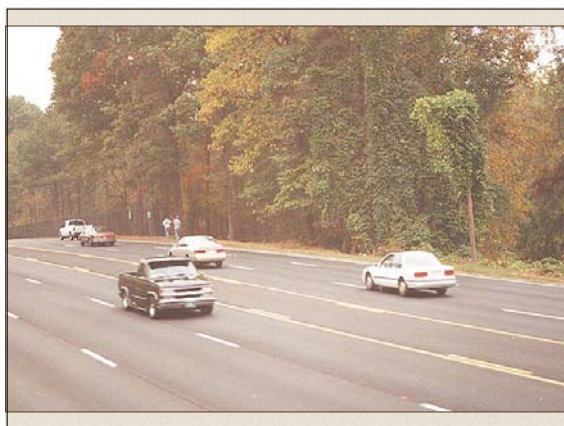


Source: NHTSA

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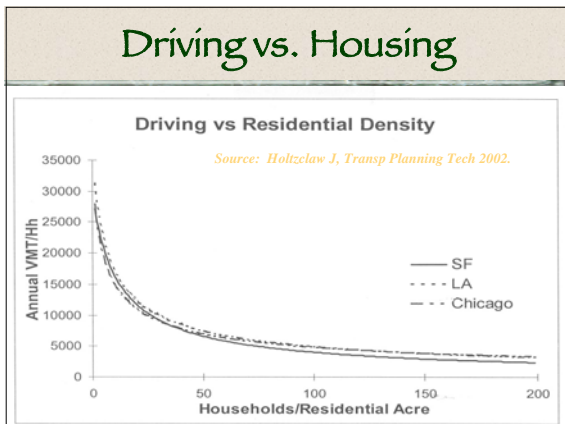
Neglect for Pedestrian Safety

- ❖ Trips made on foot: 5.4%
- ❖ Traffic fatalities that are pedestrians: 13%
- ❖ Federal transportation spending for pedestrians: 0.6%



Surface Transportation Policy Project
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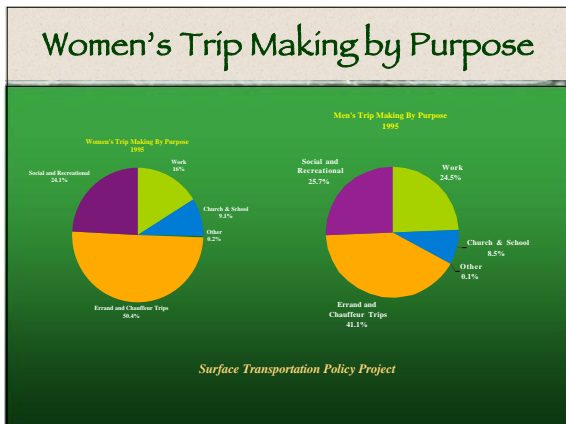


Mega-Mileage Moms

- ❖ Average minutes per day spent in car:
 - > Women overall: 64 minutes
 - > Single mothers: 75 minutes
 - > Married mothers with school-aged children: 66 minutes
- ❖ Equates to more than 15 days/year
- ❖ Family "chauffeur" for children/elderly parents
- ❖ By 2050, 20-25% of Americans will be >65 years old
- ❖ Compared to 1969, Americans drive farther:
 - > 88% farther to shop
 - > 137% farther for family/personal errands

Surface Transportation Policy Project

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Overweight

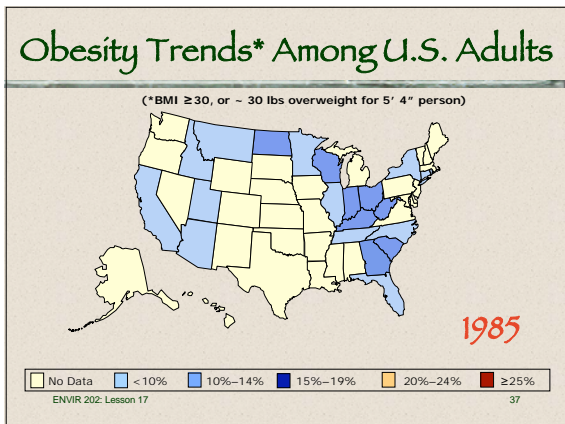
- ❖ 2.5-fold risk of overall mortality*
- ❖ 4-fold risk of cardiovascular mortality*
- ❖ 5-fold risk of diabetes
- ❖ Risk of hypertension, gall bladder disease, and some cancers

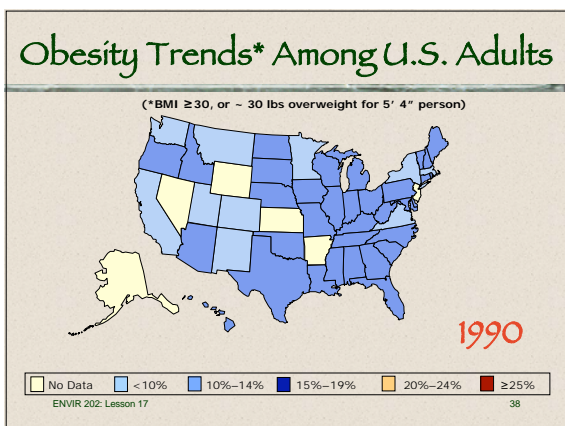
(*30-44 age group, less at older ages)

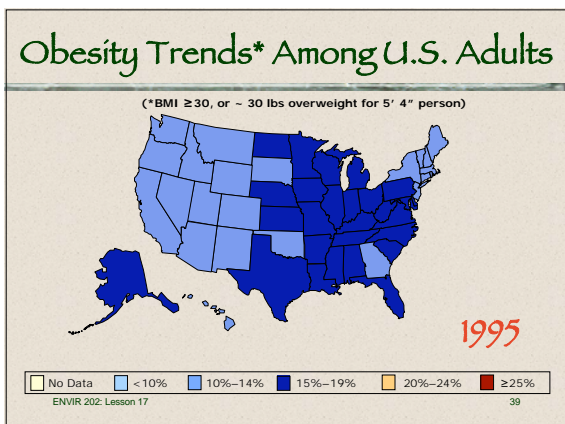


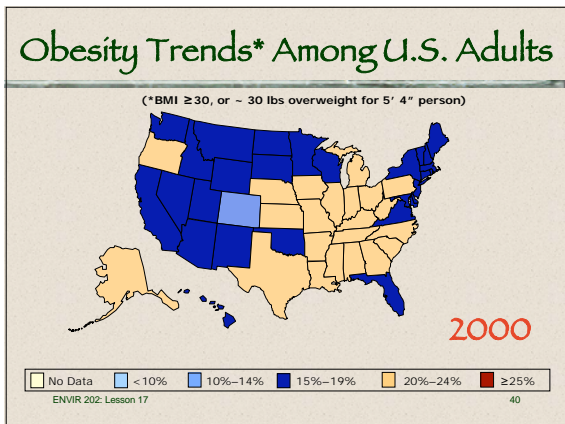
Source: Willet et al., *New Eng J Med*, 1999

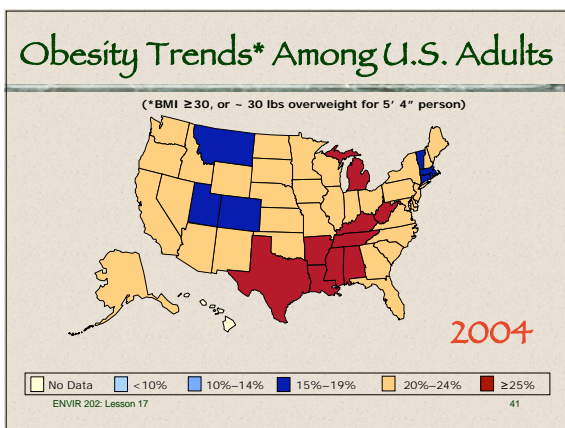
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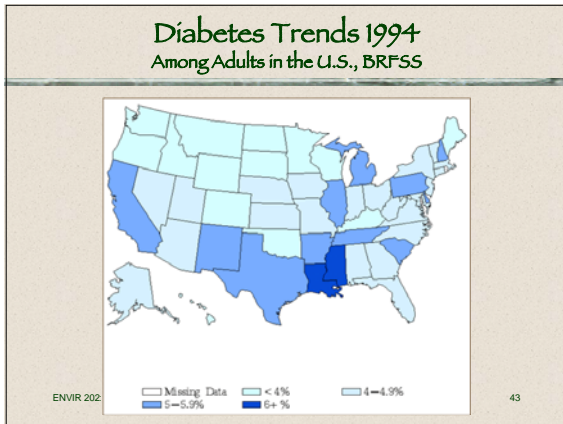


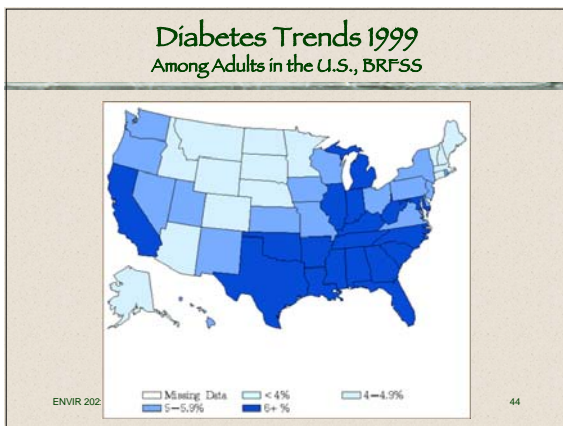
Diabetes Mellitus

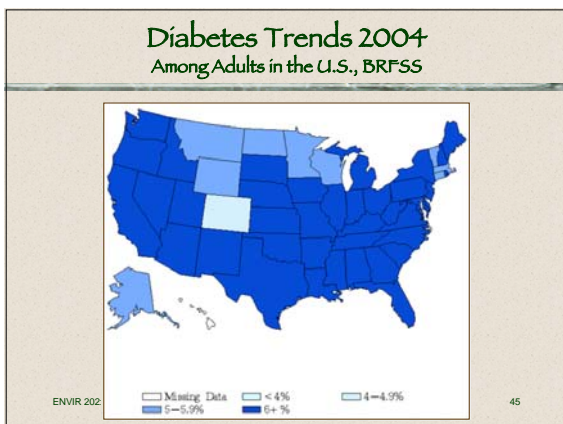
- ❖ Afflicts close to 16 million people
- ❖ 7th leading cause of death in the U.S.
- ❖ One-third of cases are undiagnosed
- ❖ Type 2 diabetes accounts for approximately 90% to 95% of all diagnosed cases of diabetes
- ❖ Contributing factors are autoimmune, genetic and environmental influences
- ❖ Costs more than \$105 billion annually in direct and indirect costs (i.e. disability, work loss, and premature death)

Source: National Institute of Diabetes and Digestive and Kidney Disease (NIDDK), 2000


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Mental Health



"We drive up and down the gruesome, tragic suburban boulevards of commerce, and we're over-whelmed at the fantastic, awesome, stupefying ugliness of absolutely everything in sight — the fry pits, the big-box stores, the office units, the lube joints, the carpet warehouses, the parking lagoons, the jive plastic townhouse clusters, the uproar of signs, the highway itself clogged with cars — as though the whole thing had been designed by some diabolical force bent on making human beings miserable. And naturally this experience can make us feel glum about the nature and future of civilization."

James Howard Kunstler,
"Home from Nowhere"

Stress



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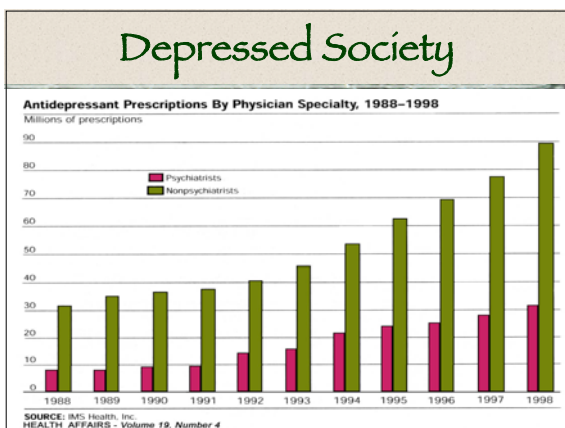
Depression

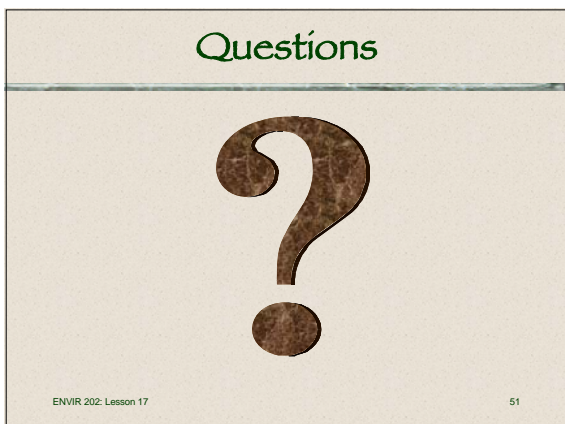
- ❖ Depressive Disorders
 - Affects approximately 19 million American adults
 - Leading cause of disability in the U.S. and worldwide
 - Nearly twice as many women as men are affected
 - Often untreated or inadequately treated

Source: National Institute of Mental Health (NIMH), 2001
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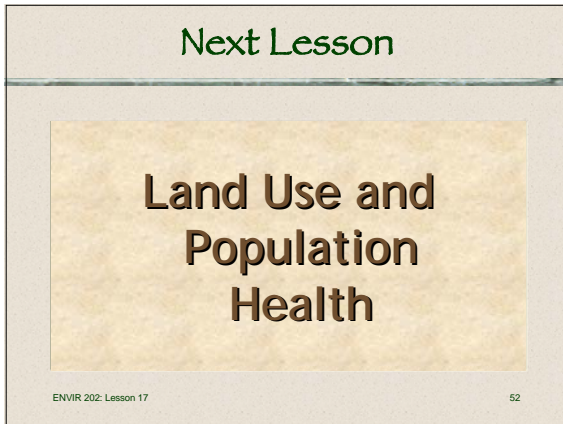
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Next Lesson



**Land Use and
Population
Health**

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