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
U.S. Population, 1900-2100

Source: U.S. Census Bureau

Urban Housing?

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

Air Quality

Ozone levels increase in late afternoon as traffic and temperature peak.
Asthma

Asthma outbreak hits kids
RISKS OF THE ‘RED ZONE’

Asthma Deaths

Deaths Due to Asthma, United States, 1979-1997

Impact of Changes in Transportation and Commuting Behaviors During the 1994 Summer Olympic Games in Atlanta on Air Quality and Childhood Asthma
Results: Acute Care Visits for Asthma 1-16 year old residents of Atlanta

- Medicaid Claims
- Kaiser HMO
- Pediatric ER's
- Hospital Admissions

<table>
<thead>
<tr>
<th>Baseline Period</th>
<th>Olympic Period†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

\( p = 0.01 \)  
† July 19 – August 4, 1996  
Source: Friedman, et al, JAMA, 2001

Results: Total Non-Asthma Related Acute Care Visits 1-16 year old residents of Atlanta

<table>
<thead>
<tr>
<th>Medicaid Claims</th>
<th>Kaiser HMO</th>
<th>Pediatric ER's</th>
<th>Hospital Admissions</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

†† July 19 - August 4, 1996  
Source: Friedman, et al, JAMA, 2001

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

Childhood Lead Poisoning

Blood Lead Levels in the U.S. Population

The Heat Island
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

Source: U. S. Environmental Protection Agency

Death by Design

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.
Lesson 17: Sprawl & Health

Driving in Atlanta, 1997

<table>
<thead>
<tr>
<th>Total Vehicle Miles Traveled (VMT)/day</th>
<th>Per Capita Vehicle Miles Traveled (VMT)/day</th>
<th>Hours of Delay/year</th>
<th>Excess Fuel Consumed/year</th>
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</thead>
<tbody>
<tr>
<td>95,110,000</td>
<td>92,8</td>
<td>36.9</td>
<td>214,000,000</td>
</tr>
<tr>
<td>136,590,000</td>
<td>127,6</td>
<td>52.9</td>
<td>214,000,000</td>
</tr>
</tbody>
</table>

Source: Texas Transportation Institute, 1999

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

Automobile fatality rates by city, 1998
(excluding pedestrian fatalities; deaths/100,000/year)

Source: NHTSA
Pedestrian fatality rates by city, 1998
(deaths/100,000/year)

- New York: 4.55
- San Francisco: 2.58
- Portland: 3.41
- Houston: 4.09
- Phoenix: 4.28
- Dallas: 6.44
- Atlanta: 1.88
- Philadelphia: 1.88

Neglect for Pedestrian Safety

- Trips made on foot: 5.4%
- Traffic fatalities that are pedestrians: 13%
- Federal transportation spending for pedestrians: 0.6%
Driving vs. Housing

Driving vs Residential Density


Driving vs Residential Density

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

Mega-Mileage Moms

Surface Transportation Policy Project

**Women’s Trip Making by Purpose**

**Work**

- Church & School
- Errand and Chauffeur Trips
- Social and Recreational
- Other
- Work

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)

**Obesity Trends* Among U.S. Adults**

(*BMI ≥ 30, or ~ 30 lbs overweight for 5’ 4” person)

<table>
<thead>
<tr>
<th>Year</th>
<th>No Data</th>
<th>&lt;10%</th>
<th>10%–14%</th>
<th>15%–19%</th>
<th>20%–24%</th>
<th>≥25%</th>
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</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**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
Diabetes Trends 1994
Among Adults in the U.S., BRFSS

Diabetes Trends 1999
Among Adults in the U.S., BRFSS

Diabetes Trends 2004
Among Adults in the U.S., BRFSS
Mental Health

“We drive up and down the gruesome, tragic suburban boulevards of commerce, and we’re overwhelmed 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 sprawl 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

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