We Are What We Eat, and…
We Are What We Build!

DESIGNING HEALTHY COMMUNITIES

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The 2012 PBS 4-Part Series

Dr. Richard Jackson, former head of Environmental Public Health for the Centers for Disease Control, explains the link between health and the way our communities – especially our suburbs – are designed. Obesity, asthma, diabetes and heart disease are aggravated by the auto-centric way we live today. It’s no secret that today’s young people are likely to have shorter lives than their parents due to unhealthy lifestyles. It doesn’t have to be this way. Well-designed communities can improve both physical and mental health.

Special Offer, courtesy of the Fund for the Environment & Urban Life:

Purchase the Complete Designing Healthy Communities Series (4 DVDs, 1 hour each, plus 4 bonus videos) to share with colleagues. Normally $99, the series is available at $20.

For this special offer, visit: www.DesigningHealthyCommunities.org/oram

Limited supply available at discount. So a/h added.

http://designinghealthycommunities.org/oram/
U.S. “Health” Care Expenditures as Percent of GDP

Keehan et al: *Health Affairs*  
March/April 2008 27: 145-155
Male Life Expectancy

US Life Expectancy is #49 Worldwide – CIA Chartbook
“...of the 30 years of increased life expectancy 1890 -1990... 5 years can be attributed to medical care.”

The rest has come from:

- Infrastructure (including housing)
- Public Health (esp. immunization)

Bunker cited in *Prescription for a Healthy Nation* Farley and Cohn 2004
• And these disorders are being shaped by the Built Environment – how we build our homes, workplaces, towns, cities and world
For every age group from 3 through 33--crashes were the No. 1 cause of death.
Pedestrian Fatality Rates for Collisions at Different Speeds

Zegeer et al 2002
Clean Air Is Important
Asthma Study in 12 Southern California High Schools

- 3535 children with no history of asthma in 6 high and 6 low air pollution high schools
- 5 years later: 265 developed asthma.
  - High ozone high schools:
    - asthma rate was 3.3x higher in children playing three or more sports.
  - Low ozone high schools:
    - sports had no effect on asthma rates
Obesity Trends* Among U.S. Adults

BRFSS, 1991

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1997
(*BMI ≥30, or ~30 lbs. overweight for 5’4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2004

(*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2009
(*BMI ≥ 30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2010
(*BMI \geq 30, or \sim 30 lbs. overweight for 5' 4" person)
• ...by 2030 obesity rates will rise to 42%
• The US will need to care for ... 32 million more obese people than in 2010.

Forecast: by 2030 the prevalence of the US population with a BMI over 40 (~100 pounds overweight) will be 11%
“Supersizing” a fast-food meal – the real costs

• Paying 67 cents to supersize an order — 73 percent more calories for 17 percent more money — adds an average of 36 grams of adipose tissue. The future medical costs for that bargain would be $6.64 for an obese man and $3.46 for an obese woman.
Supersizing Jet Fuel Use

Average weight gain of Americans in 1990s:
- 10 pounds

Airline distance flown in 2000 in US:
- 515 billion passenger-miles

Weight transported 1 mile by 1 gallon of fuel:
- 7.3 tons (passengers or cargo)

Jet fuel to transport added weight in 2000:
- 350 million gallons

Cost of extra fuel: $1.4 billion (Sept 2008)

CO₂ emissions from extra fuel:
- 3.8 million tons

Data sources: NCHS; US Dept. of Transportation
Relationship Between BMI and Risk of Type 2 Diabetes

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<th>Men</th>
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Percentage of US Adults with Diagnosed Diabetes - 1994
Percentage of US Adults with Diagnosed Diabetes - 2001

- Missing data
- 4.5 - 5.9%
- 6.0 - 7.4%
- 7.5 - 8.9%
- ≥9.0%
Percentage of US Adults with Diagnosed Diabetes - 2007
By the year 2050—21% of the US population will have diabetes

--33% if everyone receives good treatment
“[over 30 years] the percentage of new-onset type 2 diabetes in adolescence has increased from 3% to ~50% today”.
These data imply that most youth with type 2 diabetes will require multiple oral agents or insulin therapy within a few years after diagnosis.
• “Fifty years ago, children did not avoid obesity by making healthy choices; they simply lived in an environment that provided fewer calories and included more physical activity for all.”

David B Allen MD
New England Journal of Medicine
April 29, 2012
• [We need]… economic incentives to produce and purchase healthy foods and to build safe environments that require physical movement—and not simply the prescription of more and better pills….”

Dr Allen
Percentage of Trips in Urban Areas Made by Walking and Bicycling: North America and Europe 1995

Pucher J and Dijkstra L. Promoting Safe Walking and Cycling to Improve Public Health: Lessons From The Netherlands and Germany. AJPH, September 2003;93(9):1509-16.
We have changed how much we walk or bike

- Percent of children who walk or bike to school:
  - 1974 → 66%
  - 2000 → 13%

(CDC, 2000)
Fitness of California Children
Annual Fitnessgram Results
Conducted in Grades 5, 7, and 9
Measures 6 major fitness areas
(e.g. aerobic capacity, body composition, flexibility)
2011 Results: Who passed all standards?

Grade 5: 25%
Grade 7: 32%
Grade 9: 37%

http://www.cde.ca.gov/nr/ne/yr11/yr11rel95.asp#tab1
Atlanta Population Study

More Time in a Car $\rightarrow$ Higher Probability of Obesity

More Walking $\rightarrow$ Less Obesity

Higher Density and Connectivity $\rightarrow$ Lower Obesity

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**Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars**

Lawrence D. Frank, PhD, Martin A. Andresen, MA, Thomas L. Schmid, PhD
“Keeling Curve”
What the world needs to watch

Global warming is mainly the result of CO₂ levels rising in the Earth’s atmosphere. Both atmospheric CO₂ and climate change are accelerating. Climate scientists say we have years, not decades, to stabilize CO₂ and other greenhouse gases.

To help the world succeed, CO2Now.org makes it easy to see the most current CO₂ level and what it means. So, use this site and keep an eye on CO₂. Invite others to do the same. Then we can do more to send CO₂ in the right direction.

Watch CO₂ now and know the score on global warming, practically in real time.

Earth's CO₂ Home Page

391.76 ppm

Atmospheric CO₂ for February 2011

Atmospheric CO₂
February 1958 – February 2011

www.co2now.org
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Former Commander-in-Chief of U.S. Central Command (CENTCOM)

SHERRI W. GOODMAN
Executive Director, Military Advisory Board
The CNA Corporation
Price Shifts 1978 to 2002
Fresh fruit and vegetables, sugars and sweets, and soft drinks

Figure 10. Relative price changes for fresh fruits and vegetables, sugars and sweets, and soft drinks, using the period 1982–84 as the baseline (index = 100), 1978–2002. Data from Food Consumption Data System, Economic Research Service, U.S. Department of Agriculture (7).
Ages 2 to 7 viewed 4400 TV food ads per year
Ages 8 to 12 viewed 7600 TV food ads per year
Likely Results of a Sugar Sweetened Beverage (SSB) Tax

• “A national tax of 1 cent per ounce on sugar-sweetened beverages (SSBs) would decrease consumption by 23% and raise $14.9 billion in the first year alone.”

Exercise compares favorably to antidepressant medications as a first-line treatment for mild to moderate depression and has also been shown to improve depressive symptoms when used as an adjunct to medications.”

Gain in Longevity for a 45-Year Old Male

Years of added life

- Moving from Low to Moderate Fitness -- 5.8 years
- From Low to High -- 8.7 years.
The Need for Health Impact Assessment (HIA)

- Big decisions are made without examining potential health impacts (both positive and negative) over the life cycle.
Cooper River Bridge
Charleston SC

• If you build a walkway on a major bridge, how many pedestrians and bicyclists will use it?
Walkway on Cooper River Bridge, Charleston SC
Marketplace is Shifting

• Today more than 56% of US home buyers want a home that is in a walkable neighborhood with as little need for driving as possible.
• The Chenoggye freeway ran through the center of Seoul ~1970-2005
- Cheonggyecheon -- 8.4 km long downtown Seoul, South Korea.
  - The $900 million project initially attracted much public criticism.
Charlotte, NC, Light Rail Opened November, 2007
Light Rail Transit Users Had

…an average reduction of 1.18 BMI points \((p<0.05)\) and

…an 81% reduced odds of becoming obese over time.

For a person who is 5’5” --equivalent to a weight loss of 6.45 lbs.
Goal 1: Make physical activity an integral and routine part of life.

Recommendation 1: Communities, transportation officials, community planners, health professionals, and governments should make promotion of physical activity a priority by substantially increasing access to places and opportunities for such activity.
Strategy 1-1: Enhance the physical and built environment. Communities, organizations, community planners, and public health professionals should encourage physical activity by enhancing the physical and built environment, rethinking community design, and ensuring access to places for such activity.

Potential actions include:

- communities, urban planners, architects, developers, and public health professionals developing and implementing sustainable strategies for improving the physical environment of communities that are as large as several square miles or more or as small as a few blocks in size in ways that encourage and support physical activity; and
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RICHARD J. JACKSON WITH STACY SINCLAIR

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Let’s Think About Policy Solutions

• “Health in all policies”
• Tax things that are unhealthy.
• Use Permitting Power
• Regulate Land Uses
• Focus on Children
Let’s Think About Policy Solutions

• Focus on Children
• “Health in all policies”
• Tax things that are unhealthy.
• Use Permitting Power
  – Codes, Master Plan, General Plan
• Regulate Nuisances
Let’s Think About Policy Solutions

• Active Design Guidelines
• Create Solutions that Solve Multiple Problems
• Health Impact Assessment
• Corporations are NOT people
Let’s Think About Policy Solutions

• Local is Good
• Make places that are as good as the places people want to visit
• Make the healthy option the default option.
• Engage the “Practice” community