

## Think Medically, Act Socially

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## Feeling Helpless?

- *The Diseases* – Asthma, Obesity, Diabetes  
you can't keep up with it all because of...
- *The Dilemma* – You can't heal your patient  
until we also heal our communities
- *The Therapy* – Your New Practice extends  
beyond your patients individually.
- *YOU'VE DONE IT BEFORE !!!*
  - Think "Lead" and "Tobacco".

## Community Adjuvant Therapy

### "Structural Prevention"

- evoke more physical activity
- Improve access to fresh fruits and vegetables
- reduce short car trips
- prevent disaster-related injuries (drowning,  
trauma).

## Public Health

- Achieve goals of social justice utilizing scientific methods
- Emphasis on *primary* prevention

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## Scientific methods

- Epidemiology
- Statistics
- Survey research
- Laboratory methods
- etc.

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## Parallels to medicine

### Medicine

- individual patient
- physical exam
- history
- chief complaint
- diagnosis
- behavioral treatment
- surgery

### Public Health

- a community; the state
- monitor air, water
- policy evaluation
- prevalent conditions
- community diagnosis
- laws, regs, education,
- engineering

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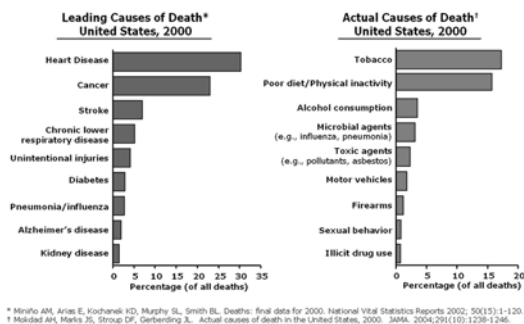
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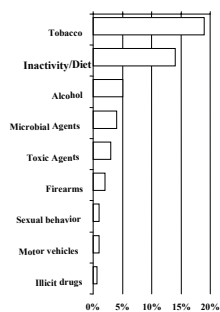
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### Death Certificate Vs Actual Cause of Death US 2000

### Root Causes of Death in the US, 1990

McGinnis & Foege. JAMA 1993;270:2207-2212



### New Epidemics

#### Asthma

- Deaths increasing since 1970s
- Apparent link to exposure to air pollution

#### Obesity

- Prevalence increasing since 1960s
- Apparent link to physical inactivity
- And perhaps to Super-sizing!

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### Obesity Trends\* Among U.S. Adults BRFSS, 1998

(\*BMI ≥ 30, or ~ 30 lbs overweight for 5'4" woman)



No Data ☐ <10% ☐ 10%-14% ☐ 15-19% ☐ ≥20% ☐

Source: Mokdad AH.




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## Statistics Never Lie



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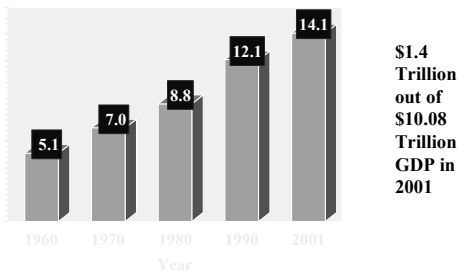
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## US Health Care Expenditures as Percent of GDP 1960 to Present



[www.cms.hhs.gov/statistics/nhe/](http://www.cms.hhs.gov/statistics/nhe/)

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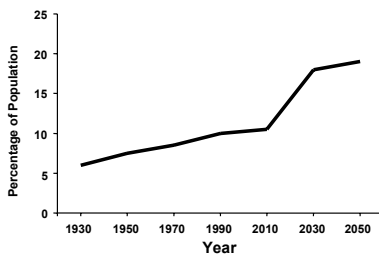
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## An Aging Population Percentage of U.S. Population > Age 65



Source: From Baby Boom to Elder Boom: Providing Health Care for an Aging Population  
Copyright 1996, Watson Wyatt Worldwide.

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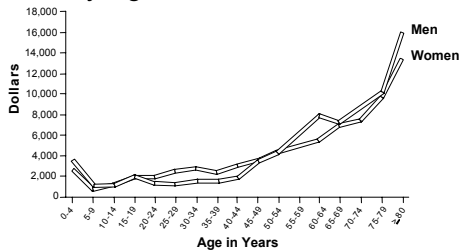
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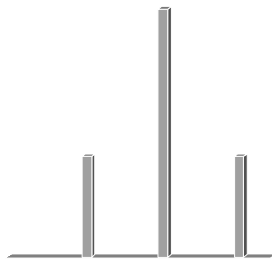
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## Estimated Per Capita Health Expenditures by Age and Sex, 1995



Source: From Baby Boom to Elder Boom: Providing Health Care for an Aging Population  
Copyright 1996, Watson Wyatt Worldwide.

## California's Obesity-Attributable Health Care Costs (Billions)



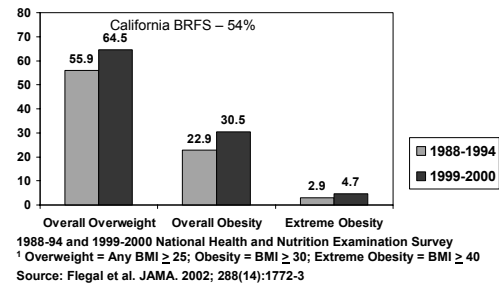
Source: CDC, January 2004

## Cost of Overweight, Obesity & Physical Inactivity California, 2000

	Billions
Health Care	\$10.172
Lost Productivity	\$11.168
Workers Comp.	\$ .338
Total	\$21.678

Source: CDHS, Unpublished report, 2004

Measured Overweight for Adults Increased **15%**, Obesity Increased **33%**, and Extreme Obesity Increased **62%** Between 1988 and 2000!<sup>1</sup>



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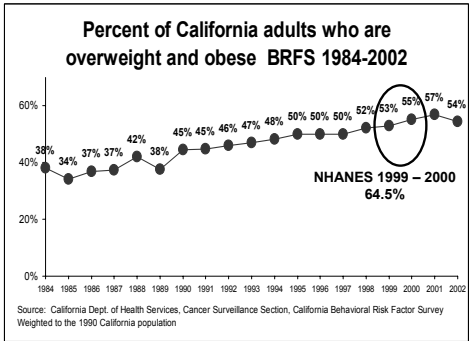
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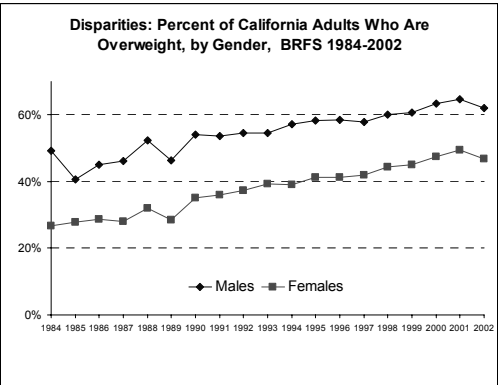
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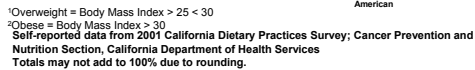
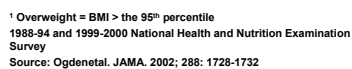
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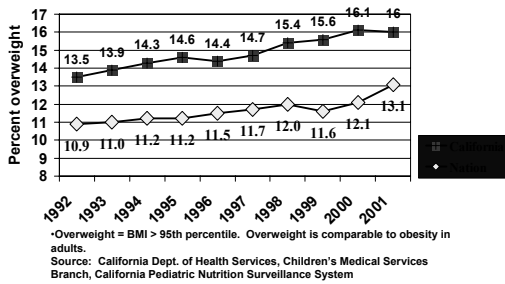
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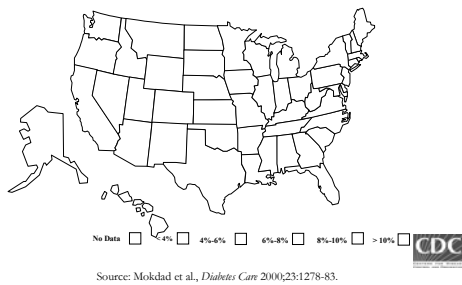
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[illegible]

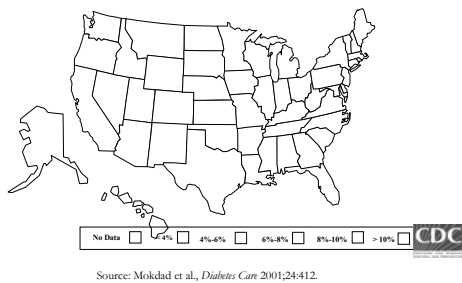
### Prevalence of Overweight\* for Low-income Children Aged < 5 Years 19% Increase, 1992 - 2001



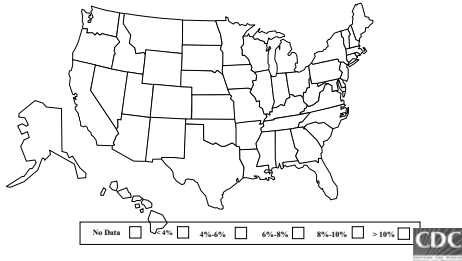
### Diabetes Trends\* Among Adults in the U.S., (Includes Gestational Diabetes) BRFSS 1995



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## Diabetes Trends\* Among Adults in the U.S., (Includes Gestational Diabetes) BRFSS 2001



Source: Mokdad et al., *J Am Med Assoc* 2001;286:10.

## Diabetes Projected Risks: For Babies Born in 2000

Girls: 38% lifetime risk

- If diabetic before age 40, Lifespan shortened by 14 years (Quality of life by 19 years)

Boys: 33% lifetime risk

- If diabetic before age 40, Lifespan shortened by 12 years. (Quality of life by 22 years)



V Narayan et al: JAMA 8 Oct 2003

## US Obesity Woes Put a Strain on Hospitals

THE WALL STREET JOURNAL  
HEALTH  
May 1, 2003  
U.S.'s Obesity Woes Put a Strain On Hospitals in Unexpected Ways

When an extremely heavy man goes to a hospital, it's not just his weight that's a problem. It's the strain it puts on the hospital's equipment, staff, and facilities. A study by researchers at the University of California, San Francisco, found that hospitals are not prepared for the challenges of caring for obese patients. The study found that hospitals are not equipped with the necessary equipment, such as gurneys and operating tables, to handle patients who weigh more than 300 pounds. The researchers also found that hospital staff are not trained to care for obese patients, and that hospitals are not aware of the risks of obesity-related complications. The study calls for hospitals to invest in the necessary equipment and staff training to better serve obese patients.



## A New Super-Sized Market Segment



New York Times: Sept 28, 2003

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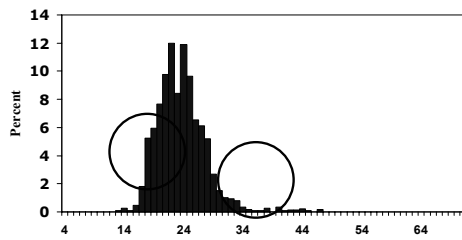
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### Distribution of BMI for California adults, BRFs 1984



Source: California Dept. of Health Services, Cancer Surveillance Section, California Behavioral Risk Factor Survey  
Age-adjusted to the 1990 California population

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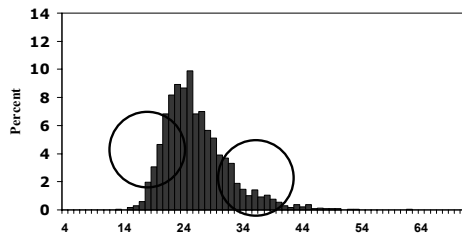
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### Distribution of BMI for California adults, BRFs 2003



Source: California Dept. of Health Services, Cancer Surveillance Section, California Behavioral Risk Factor Survey  
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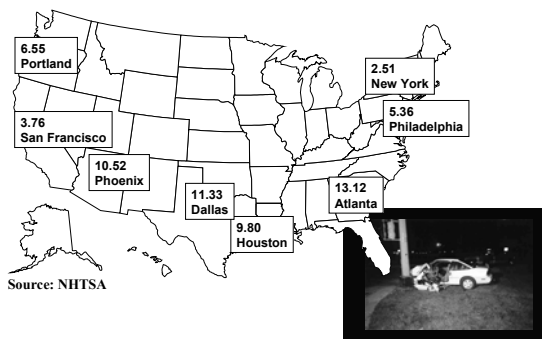
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## Prevalent and Relevant

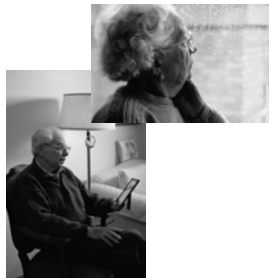
**Automobile fatality rates by city, 1998**  
(excluding pedestrian fatalities; deaths/100,000/year)



## Depressive Disorders

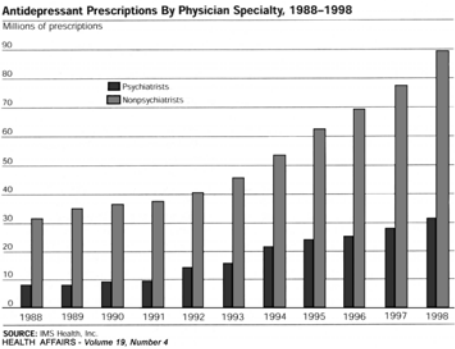
19 million American adults

- Leading cause of disability in the U.S. and worldwide
- Treatment:



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

# Antidepressant Rx in US



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“personal responsibility” ?

Or a toxic environment ?

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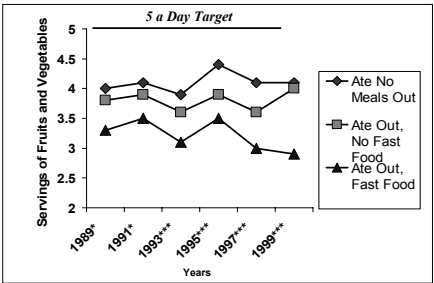
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## Eating Fast Food Is Consistently Associated With Eating Fewer Fruits and Vegetables California Adults, 1989-1999



Differences in servings of fruits and vegetables are statistically significant at the p<.05 level (\*) or the p<.001 level (\*\*\*).  
Source: California Dietary Practices Survey; California Department of Health Services, 2002

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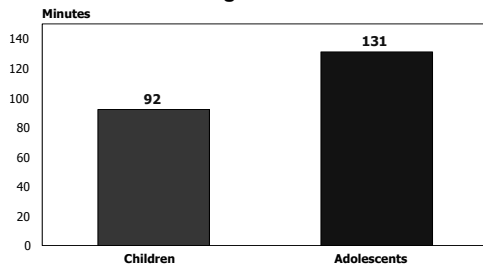
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**Average Number of Minutes California Children Age 9-11 and Adolescents Spend Watching Television**



CalCHEEPS, 1999; CalTEENS, 1998; Public Health Institute

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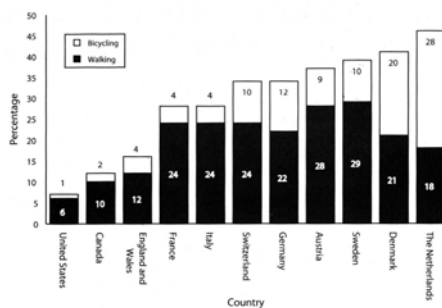
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**Percentage of Trips in Urban Areas by Walking and Bicycling: North America and Europe 1995**




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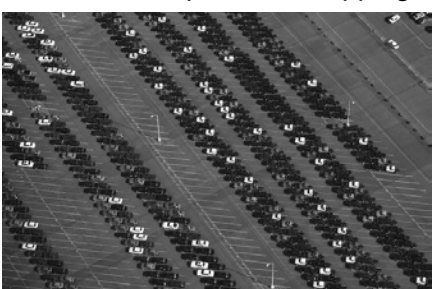
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Local government has incentives to build auto-dependent shopping



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CANINE CONSTITUTIONAL

A brisk walk is the park dog's Muesli. It is shape between dog shows. The owner, Columbus resident Cathy Muesli, got up early to give her 3-year-old Doberman his regular workout. They typically jog 10 miles in Berlin Park.

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## Communities



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## Whatever happened to walking?

- Average US household makes 12 trips per day
- 1/4 of all trips are < 1 mile, yet 3/4 of them are made by car



1893 invention, 1908 Buick

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## Walking and Biking

- Not safe
- Not perceived as safe
- Not acceptable
- Not encouraged



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**Overall: Compared to 1969**  
Americans drive:  
- 88% farther to shop  
- 137% farther for errands



### Mega-Mileage Moms

• Family “chauffeur”

- Average minutes per day spent in car:
  - Women overall: 64 minutes
  - Single mothers: 75 minutes

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## Exercise

From the  
OP-ED Page  
of the New  
York Times

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## Children's Contact with Nature

- School age children with ADHD who had higher contact with nature showed better concentration, task completion, and following of directions.

*Coping with ADD: The Surprising Connection to Green Play Settings"*  
*Environment and Behavior*, 33 (1), 54-77 AF Taylor, FE Kuo, WC  
Sullivan, 2001

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## Places of the Heart

The common denominator

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## Cities? Health?

Cities may not have health departments, but what they do has perhaps the single greatest influence on health of any sector or level of government.

Period.

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## Place

- Associated with risk of
  - hypertension
  - homicide
  - illiteracy
  - and almost everything else

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## Place

- All politics is local
- All emergency response is local
- All public health is local
- “Local Control”
- The role of government -- to do for the community what it cannot do for itself
  - environmental quality, transportation options, land use planning, safety, etc.

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## Determinants of Risk

- Hardware
- Software
  - Operating system
  - Applications
- The built environment
- How it works together
  - Laws
  - “Programs”

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## A Tale of Two Catastrophes

- The Big One (earthquake) is expected to bring 20,000 deaths and 100,000 nonfatal casualties *at once* during the next 30 years.
- During those same 30 years, over 180,000 Californians will die of Diabetes alone, not including the excess deaths from stroke, heart attack, and others related to obesity.

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## Why Structural Prevention?

- As a society, we have decided we are willing to plan and to control how we build to avoid the risks of earthquakes, fires, and floods.

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## Why Structural Prevention?

- We should be even more willing to plan and control how we build to avoid the risks related to physical and social inactivity...  
*because these risks are **greater, more pervasive**, and threaten our children with being the first generation in American history not to outlive their parents.*

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## Why Structural Prevention?

- Because, unlike programs that work 40 hours per week,
- The physical environment is on duty

24 . 7 . 365

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## Impossible? Not !

- Tobacco Control
  - Lung Cancer down 15% in California
  - Lung Cancer down <2% in the U.S.
  - Cost = \$ Hundreds of Millions / year x 10 yr from Prop 99 Tobacco Tax revenues

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## Impossible? Not !

- Fluoridation of Drinking Water
  - In 1995, 17% of Californians had Fluoridated water
  - In 2004, >90% do
  - Cost = Zero General Fund \$\$, about \$15 Million from Foundations for capital costs [local utilities pay for systems' maintenance]

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## But this is harder

- Unlike tobacco, not a single product on which to blame all of it
- Unlike fluoridation, not a either-or situation [either you have it, or you don't]

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## Medical Consequences

- More deaths, illnesses, medical treatments
- Higher insurance costs
- More crowded emergency departments
- Disproportionate burden on low-income, older ages, minorities, infants and children
- Reduced quantity and quality of life

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## Health Sector can't do it Alone

- Just a few of the “Non-health” factors :
  - Shopping for fresh produce – often much less accessible than getting “fast food.”
  - Sedentary transportation favored over walking.
  - Parents need to know their kids are safe walking to school (both injury and violence).
  - Employees need to be physically active and have access to healthy foods at work.
  - Local government has incentives to build auto-dependent shopping over pedestrian-related commerce and new housing, which could be potentially near transit.

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## FOOD & AGRICULTURE



Support Including Fresh Fruits & Vegetables in WIC food package

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## TRANSPORTATION



Walking/Cycling Accessibility Plans

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Safe Routes to School

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Comprehensive Transportation Planning

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## Resources



Safe Parks & Playgrounds

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## Physical Activity Guidelines

- All adults should perform 30 or more minutes of moderate-intensity physical activity on most, and preferably all, days--either in a single session or accumulated in multiple bouts, each lasting at least 8-10 minutes. (CDC-ACSM, 1995)
- Youth should accumulate 60 min per day (UK Consensus Group, 2001)

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## Benefits of Physical Activity

- Increases life span by 2 years
- Reduces risk of CVD by 40%
- Prevents/manages high BP and Diabetes
- Decreases risk of breast and colon cancers
- Improves mood and mental health
- Contributes to weight control
- Health care costs for active adults are \$300-\$400 less per year
- Surgeon General's Report, 1996

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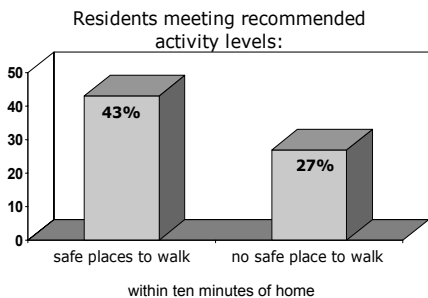
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## Access to facilities helps people get enough activity



Powell et al., AJPH, 9/03

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## Environmental Correlates of Recreational Physical Activity

- People living in areas without many public outdoor recreation facilities were more likely to be overweight.
- Catlin, T.K. Am. J. of Health Promotion 2003



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## Schools



*Healthy Kids Make  
Better Students.  
Better Students Make  
Healthy Communities.*



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Availability of Good Food

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Well-located new schools

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Parents need to know their kids are safe walking to school (both injury and violence)



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After School Programs

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### Access to Fresh Foods at Work

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### Changes at all levels

- Individual
- Provider
- Community
- Environmental
- Policy
- Social Norms

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### Field Building: Cultivating New Relationships

- Architecture and Urban Design
- Landscape Architecture
- Parks and Recreation
- Land Use Planning
- Transportation Engineering
- Advocacy
- Policy
- Criminal Justice/Law Enforcement
- Media



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## Non-traditional Partners

<u>Domain</u>	<u>Discipline</u>
• Urban design	Planners
• Roads	Transportation Engineers
• Stairwells	Architects/Designers
• Parks	Landscape Architects
• Safe Streets	Criminal Justice/Law

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## Autonomous bodies

- 
- School Districts
  - Flood Control Districts
  - Mosquito Abatement Districts
    - Other Special Districts
    - City Government
  - County Government
    - State Government
  - Federal Government

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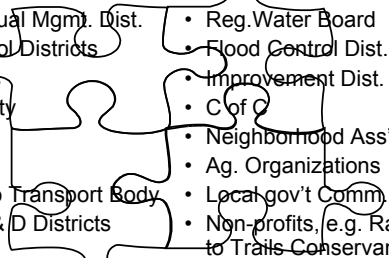
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## Integrated Area-Wide Planning

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- Air Qual Mgmt. Dist.
  - School Districts
  - Cities
  - County
  - State
  - Feds
  - Metro Transport Body
  - R C & D Districts
  - Reg. Water Board
  - Flood Control Dist.
  - Improvement Dist.
  - C of C
  - Neighborhood Ass'n
  - Ag. Organizations
  - Local gov't Comm
  - Non-profits, e.g. Rails to Trails Conservancy

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## Universal Everything

- Easy for elders, kids, people who use:
  - Bicycles
  - Baby strollers
  - Walkers
  - Canes
  - Wheelchairs
- Saves cost of retrofit later
- Reduces need to rezone, rebuild.
- Allows residents to stay at home longer.

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## Medicine's role

- Individual Physicians' roles
- CMA's role
- Local Medical Societies' roles

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## Doctors as Leaders

- MDs viewed as role models by:
  - Patients
  - Neighbors
  - Parents
  - Politicians
- Remember -- MDs quit smoking before just about everyone else !

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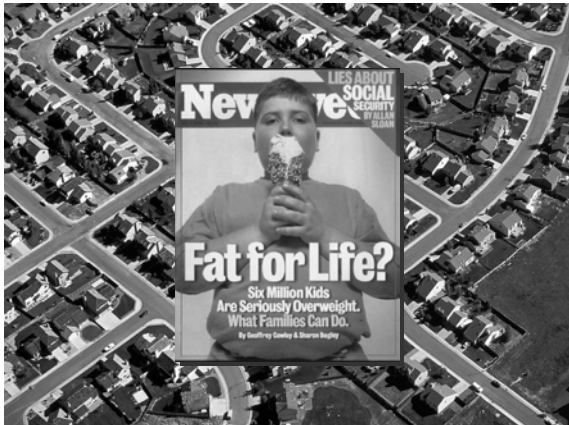
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To Preserve Rural Lifestyle...

- ...Create a more urban lifestyle –

*you decide where !*



*Healthier At Any Weight*