

Community Design Matters: Creating Walkable, Healthy, Livable Communities

Paul Zykofsky, AICP, CNU, Assoc. AIA
Local Government Commission

Fresno Downtown Neighborhoods Community Plan and
Fulton Corridor Specific Plan

Fresno, CA
May 11, 2010

Leadership for Healthy Communities

Advancing Policies to Support Healthy Eating and Active Living



The Joint Center
for Sustainable Communities



Cities and Counties Working Together for a Livable Future



NATIONAL LEAGUE OF CITIES

Strengthening & promoting cities as centers of opportunity, leadership and governance



The United States Conference of Mayors

usmayors.org



American Association of
School Administrators

The California Endowment — Building Healthy Communities

The California Endowment

Visit Our Community Networking Site CalConnect

Home About Us Newsroom Publications Resources Public Policy & Advocacy Program

PUBLICATIONS

- Overview
- Annual Reports
- Program Areas
- Evaluation
- Policy
- Other

Building Healthy Communities, Prevention Movement Shifts Into High Gear

After 10 years of working with nonprofit organizations and gathering feedback from community partners on what can create measurable improvements in health status, The California Endowment begins its decade-long effort of *Building Healthy Communities* – places where children and youth are healthy, safe and ready to learn. After much research and deliberation, The Endowment selected 14 communities impacted by poverty, and is now planning to make deep, sustained and community-driven investments in these areas. Wrapped around these investments will be policy and systems-change goals to ensure that healthy communities are sustainable for generations to come.

>> See the selected communities

>> Visit our special Web site www.calendow.org/healthycommunities to learn more about The Endowment's Strategic Vision.

Back to The California Endowment Homepage

The California Endowment

Our Partner Communities

Home Background Documents Newsroom Resources Communities Contact

Welcome to Our New Community Partners

After much consideration, The California Endowment has selected the following 14 places as the primary sites for its 10-year initiative *Building Healthy Communities*.

South Kern County East Salinas Del Norte

Boyle Heights Central/West Fresno City East Oakland

A Message from Robert K. Ross, M.D.: How These Places Were Selected

This 10-year initiative of *Building Healthy Communities* built on the wisdom and past experience of all our grantees and partners throughout California. Their work has demonstrated that the economic, physical, social and service environment in which people live have profound and lasting effects on the health of individuals, families and communities. Prevention is the key to meaningful and sustainable health improvement.

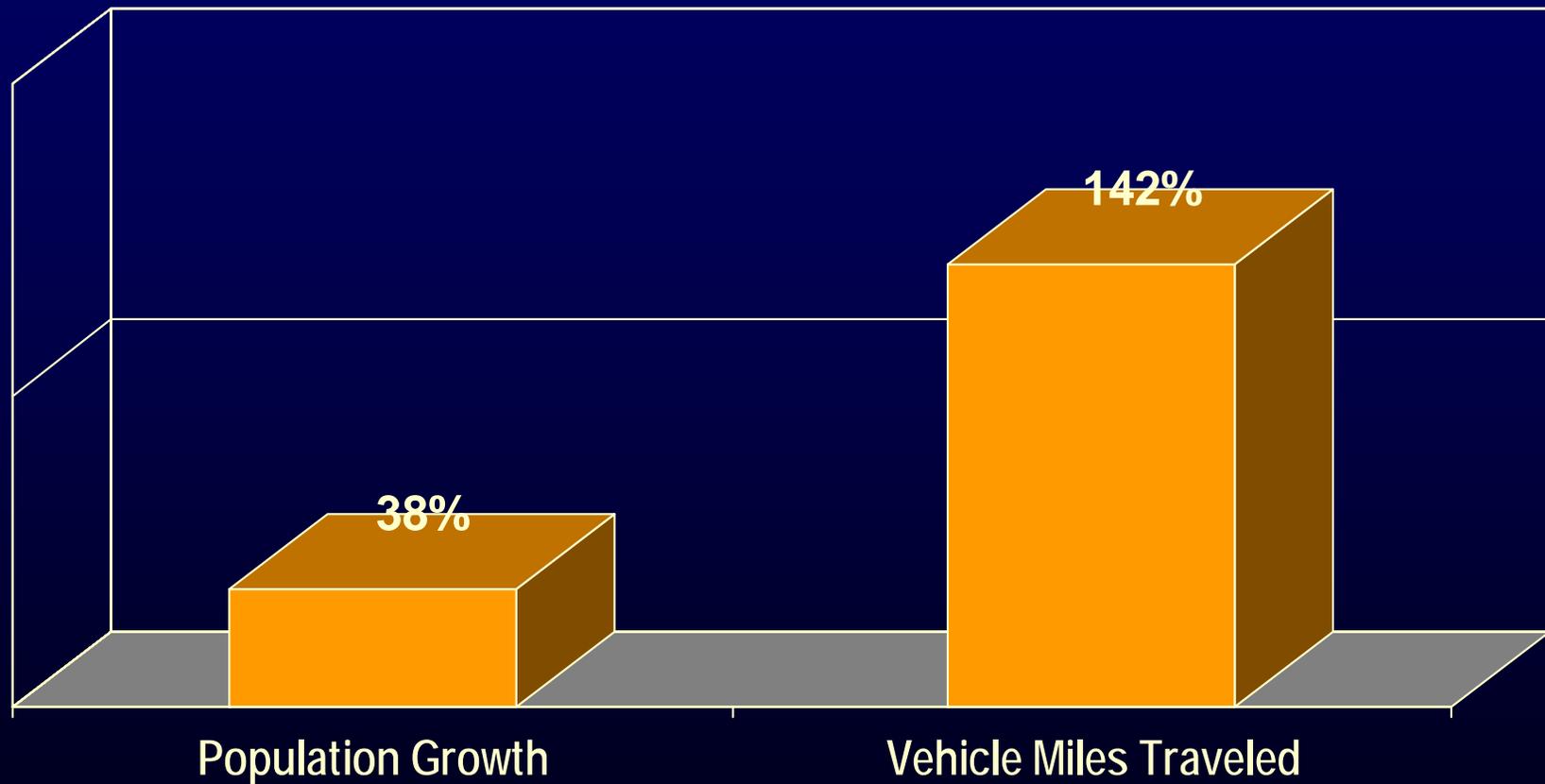
But after conducting research, expert interviews and due diligence, we realized that we could maximize the impact of our funding by targeting a specific number of communities. In this more focused approach, we will aim to address directly the root causes and systems that impact the health of Californians the most.







U.S. Population Growth and Transportation – 1970-2000



Will 23 lanes be enough?

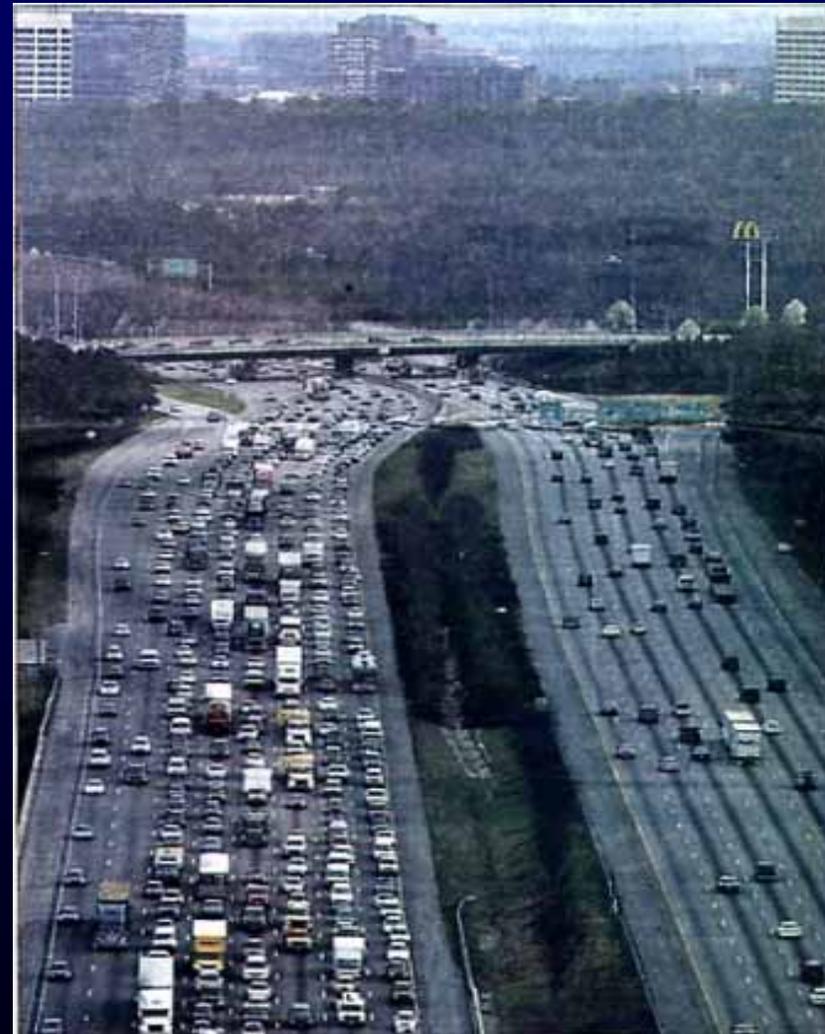
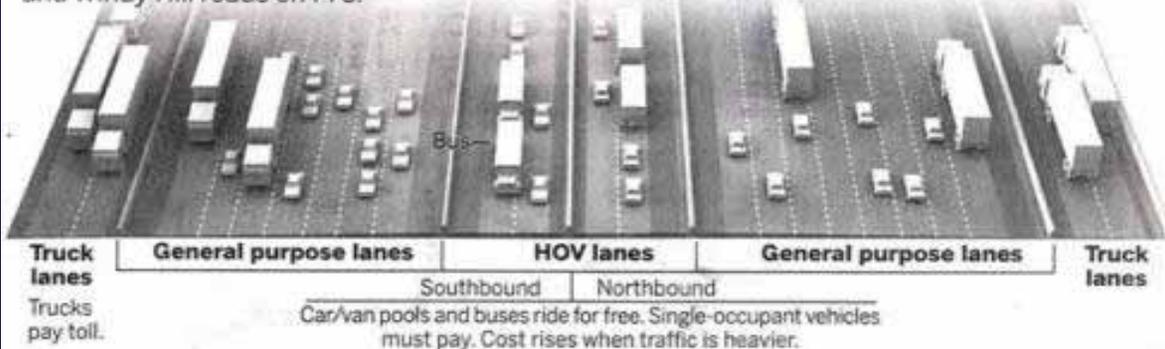
Proposal would put I-75 among country's biggest

By ARIEL HART
ahart@ajc.com

It's wider than an aircraft carrier. Far wider than the carving on Stone Mountain. Wider than the White House stretched end to end, twice.

It's the planned I-75, all 23 lanes, coming soon to Cobb County. As currently conceived it's 388 feet across, wider than a football field is long.

23 LANES: The state Department of Transportation is planning to expand I-75 (below) and I-575 in Cobb and Cherokee counties. The 23-lane stretch would be between Delk and Windy Hill roads on I-75.



Traffic heads north on I-75, just north of I-285, on Thursday. A proposal for the interstate is enough to make a road builder weep with joy, and make others wonder whether it's overkill.

The Health Impacts of Sprawl/Poorly Planned Communities

- ↑ global warming
- ↑ air pollution
- ↑ heat island effect
- ↑ car crashes
- ↑ pedestrian injuries
- ↓ water quality
- ↓ mental health
- ↓ social capital
- ↓ physical activity



Potential Health Effects of Climate Change

Climate change:

- Temperature rise
- Sea level rise
- Hydrologic extremes



- HEAT
- SEVERE WEATHER
- AIR POLLUTION
- ALLERGIES
- VECTOR-BORNE DISEASES
- WATER-BORNE DISEASES
- WATER AND FOOD SUPPLY
- MENTAL HEALTH
- ENVIRONMENTAL REFUGEES

- ➔ Heat stress, cardiovascular failure
- ➔ Injuries, fatalities
- ➔ Asthma, cardiovascular disease
- ➔ Respiratory allergies, poison ivy
- ➔ Malaria, dengue, encephalitis, hantavirus, Rift Valley fever
- ➔ Cholera, cryptosporidiosis, campylobacter, leptospirosis
- ➔ Malnutrition, diarrhea, harmful algal blooms
- ➔ Anxiety, despair, depression, post-traumatic stress
- ➔ Forced migration, civil conflict

Adapted from J. Patz,
Courtesy Dr. Richard Jackson

Carbon loading of Atmosphere: Traveling just one mile

- A good car: 450 grams
- Walk:



Carbon loading of Atmosphere: Traveling just one mile

- A good car: 450 grams
- Walk: 1 gram



Air pollution

Major pollutants of concern:

- Ozone
- NO_x
- CO
- Lead
- SO_x
- Air toxics
- Allergens
- Particulates
- Hydrocarbons

Credit: Dr. Richard Jackson



Air pollution

Major pollutants of concern:

- Ozone
 - NO_x
 - CO
 - Particulates
 - Hydrocarbons
- Produced by cars and trucks
- Lead
 - SO_x
 - Air toxics
 - Allergens

Credit: Dr. Richard Jackson

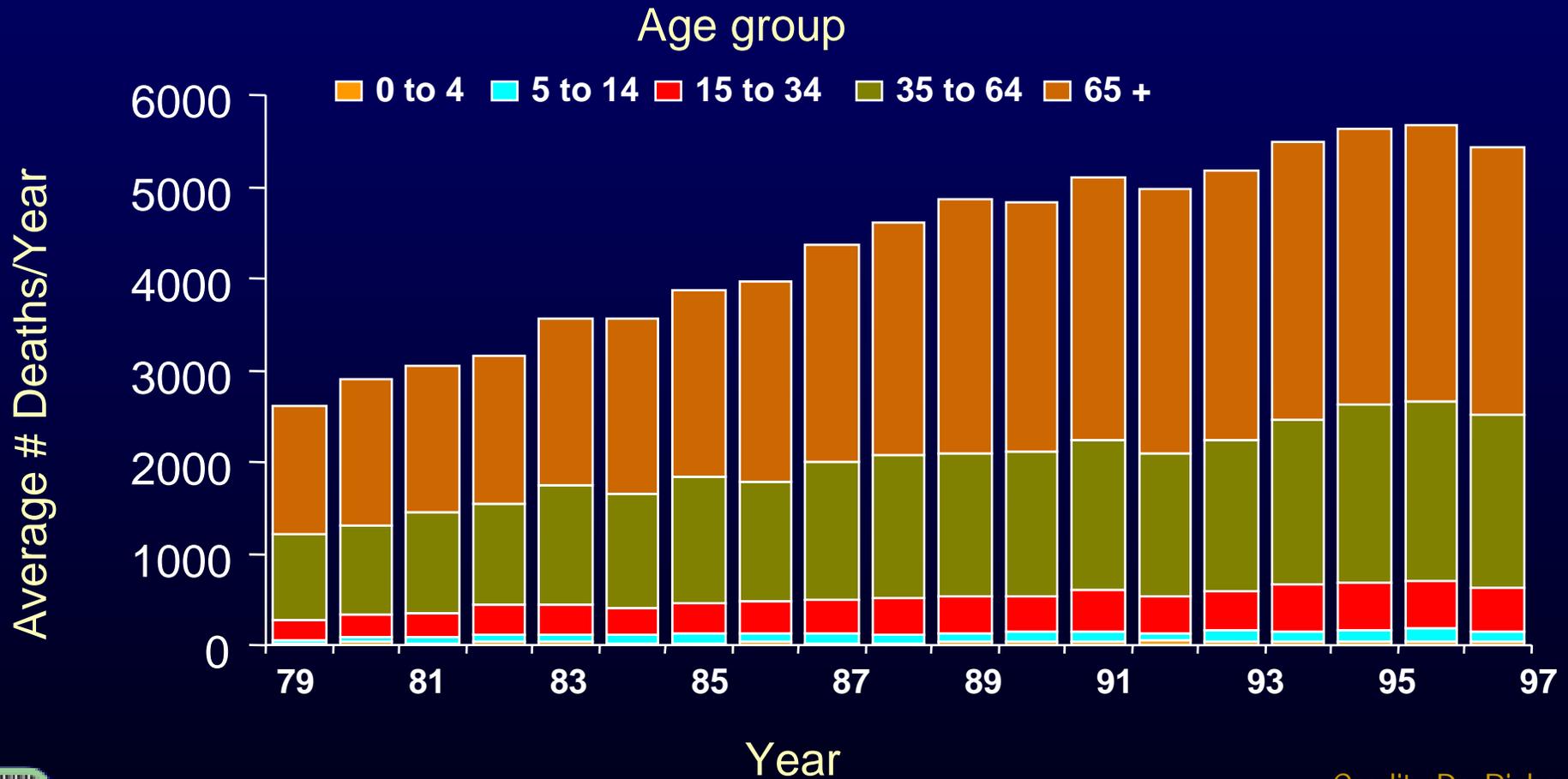


Ozone health effects

- Respiratory effects:
 - Airway inflammation
 - Decreased air flow
 - Increased symptoms, ER visits, medication use, hospitalizations
- Cardiovascular effects:
 - Increased mortality
- Immune effects:
 - Increased susceptibility to infection



Deaths Due to Asthma in the United States, 1979-1997



Credit: Dr. Richard Jackson



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Car crashes

- Leading cause of deaths among persons 1-24 years old
- Each year in the United States, motor vehicle crashes account for:
 - Over 40,000 deaths, 5,000 of them pedestrians (12%)
 - In California 19% of fatalities are pedestrians, 4% bicyclists
 - 3.4 million nonfatal injuries
 - 24 million vehicles
 - estimated \$200 billion in costs

Source: NHTSA

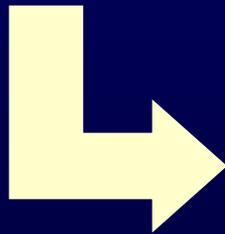
Water quantity and quality

- Quantity:
 - ↑ runoff
 - ↓ groundwater recharge
- Quality:
 - ↑ non-point source pollution
 - ↑ siltation

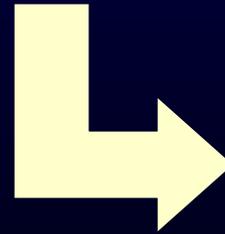


Sprawl and Physical Activity

■ sprawl



- ↑ trip distances
- ↑ vehicle trips
- ↓ walking



↑ overweight
↑ obesity



Rising Sea Levels — An Alternative Theory

Physical Activity

- Concern over impacts of sedentary lifestyle on public health
- 200,000 deaths/year attributable to physical inactivity
- Increase in seriously overweight youth
 - 5% in 1963-70
 - 14% in 1988-94
 - 16% in 2008

Physical Activity and Health

A Report of the Surgeon General
Executive Summary

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
The President's Council on Physical Fitness and Sports



The Nation's Prevention Agency
CDC
Centers for Disease Control and Prevention

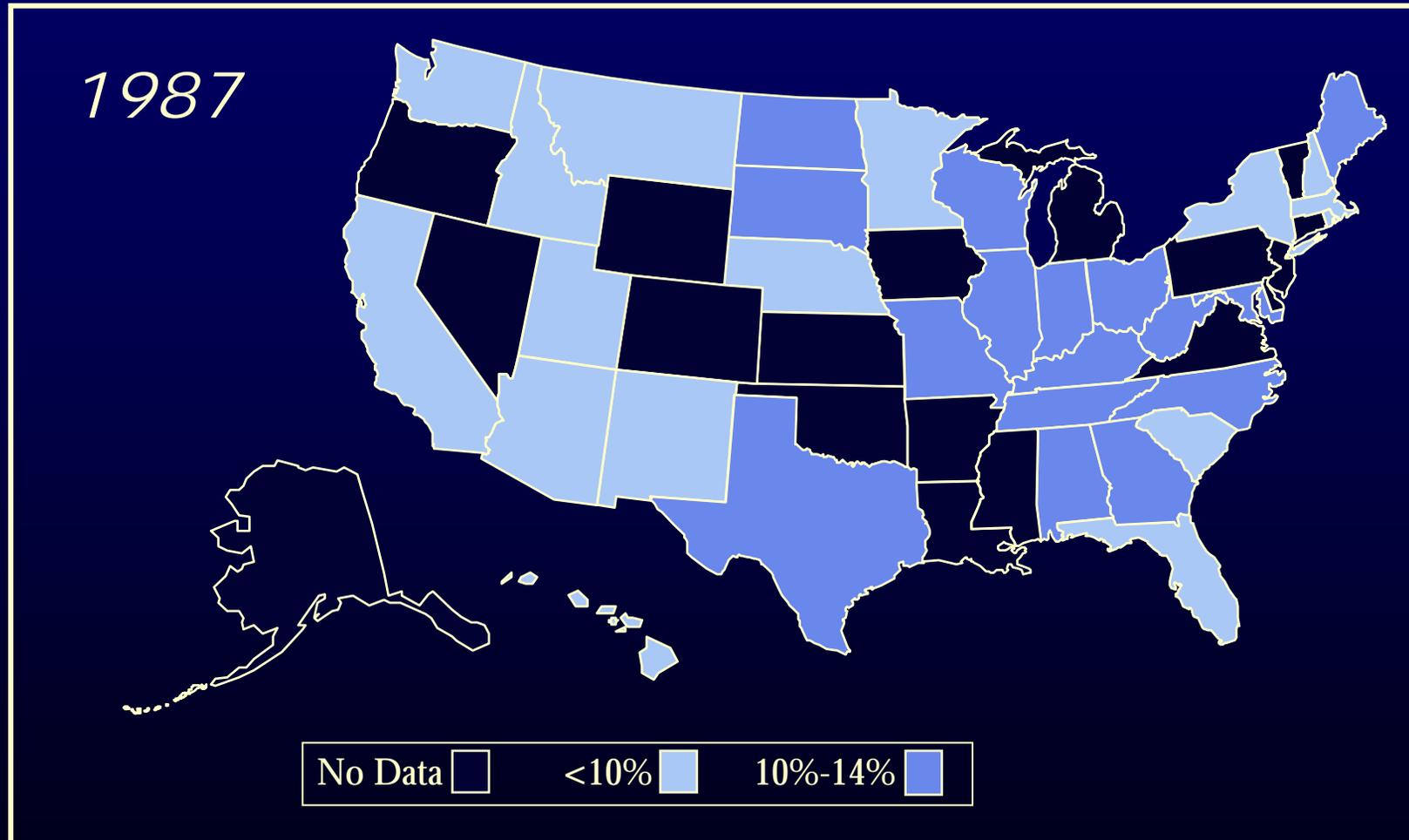


The President's
Council on
Physical Fitness
and Sports



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Obesity* Trends Among U.S. Adults

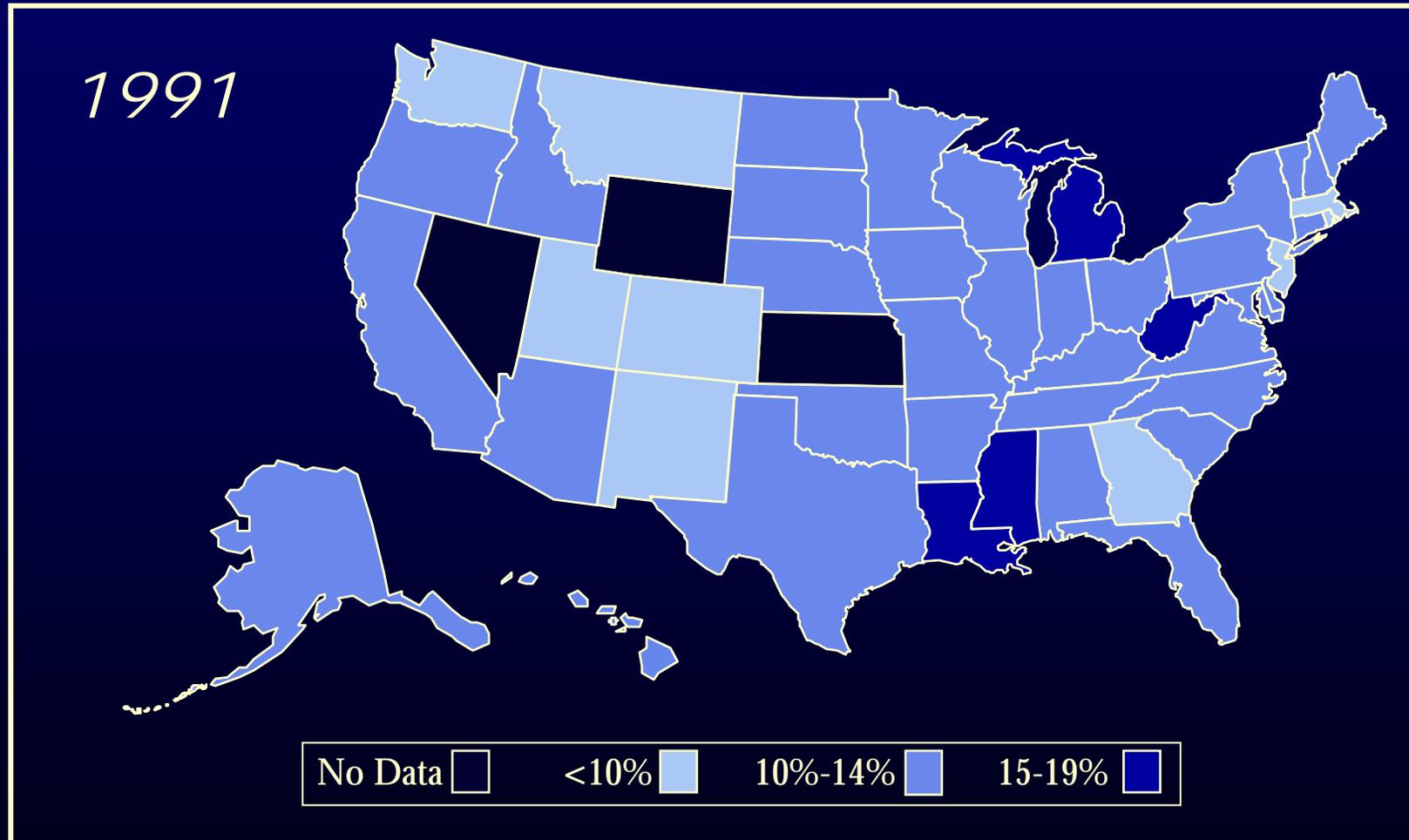


* BMI \geq 30, or
~ 30 lbs
overweight for
5'4" woman



Source: Behavioral Risk Factor Surveillance System, CDC
Source: Mokdad A H, et al. JAMA 2003;289:1

Obesity* Trends Among U.S. Adults

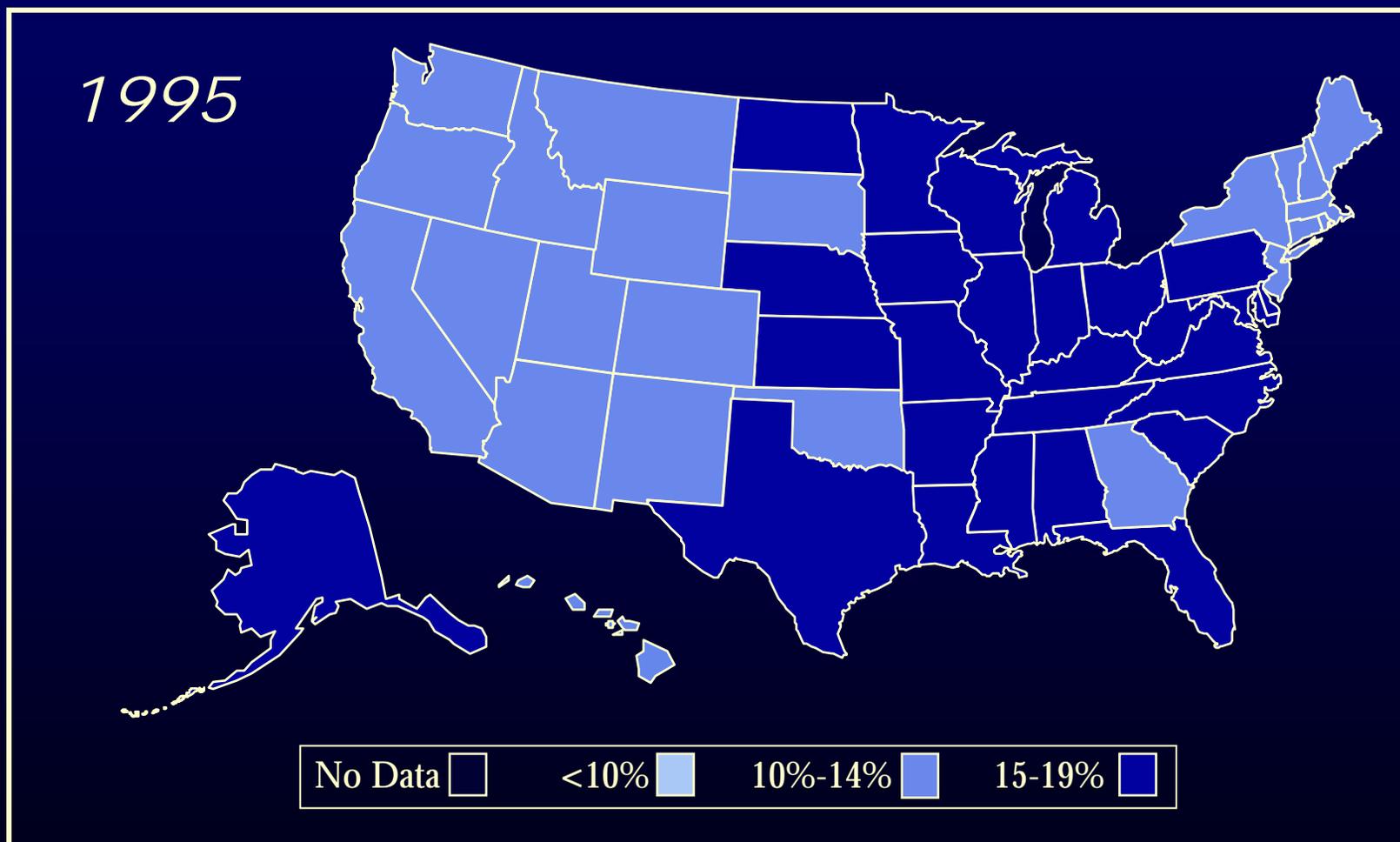


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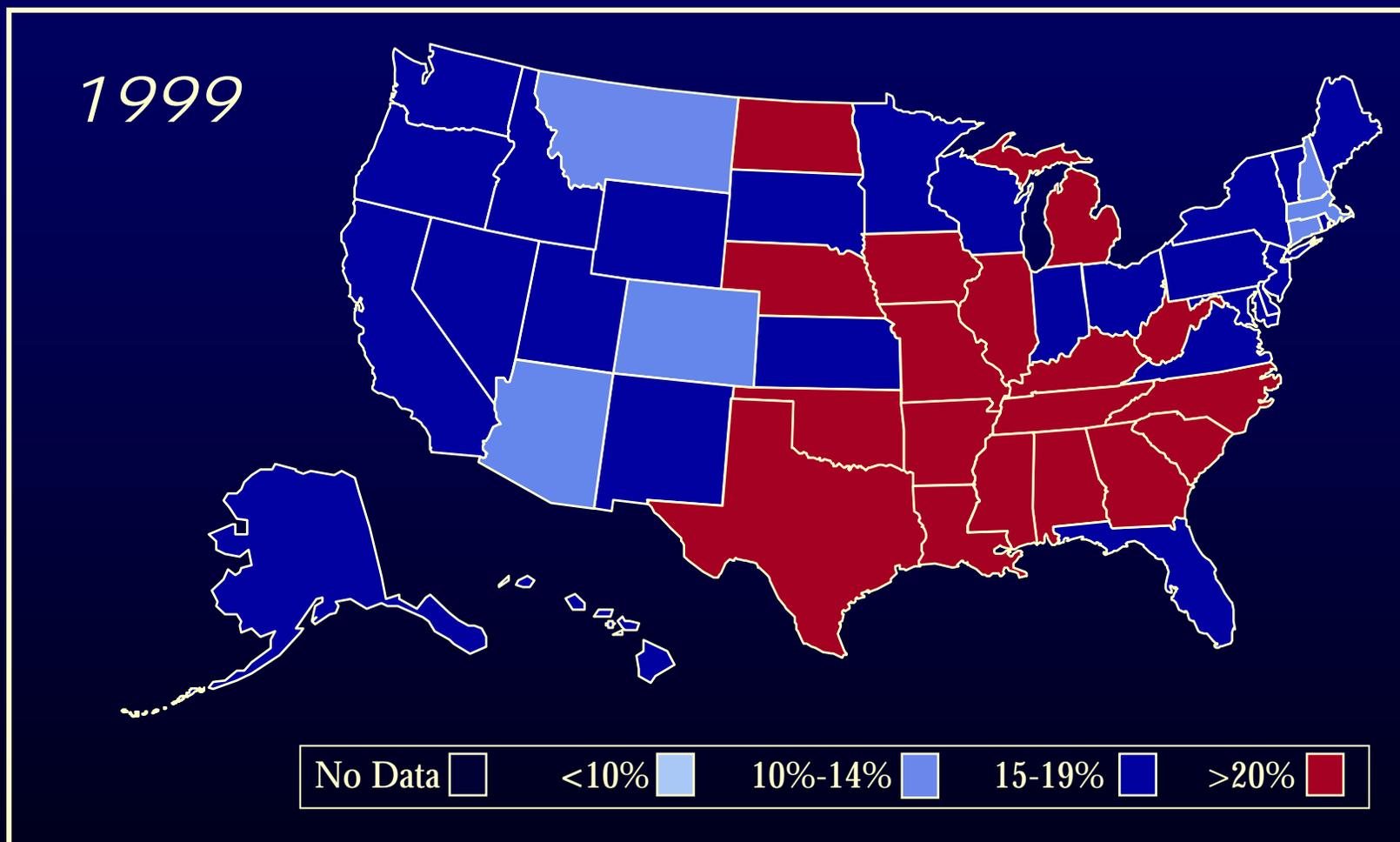


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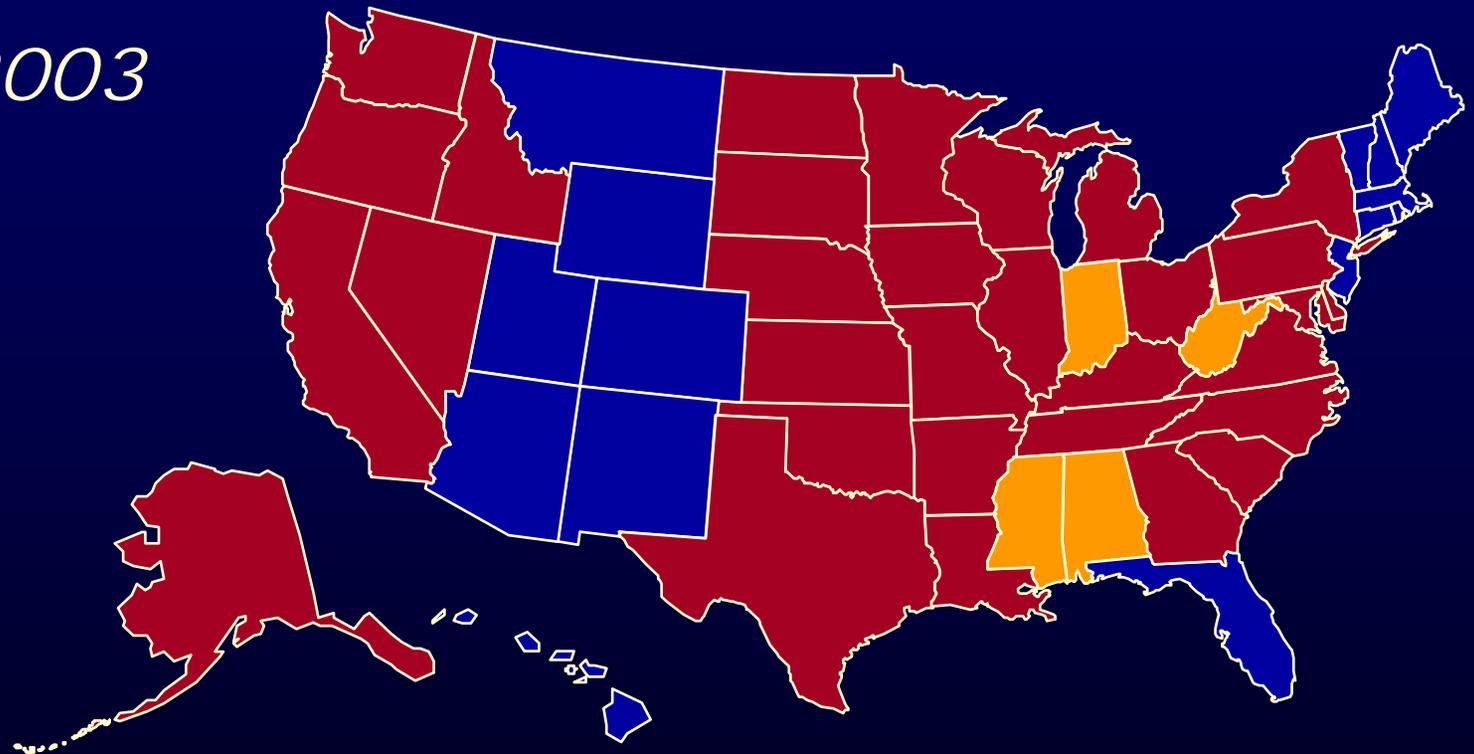
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Source: Behavioral Risk Factor Surveillance System, CDC
Source: Mokdad A H, et al. JAMA 2003;289:1

Obesity* Trends Among U.S. Adults

2003



* BMI \geq 30, or
~ 30 lbs
overweight for
5'4" woman

No Data <10% 10%-14% 15-19% 20-24% >25%



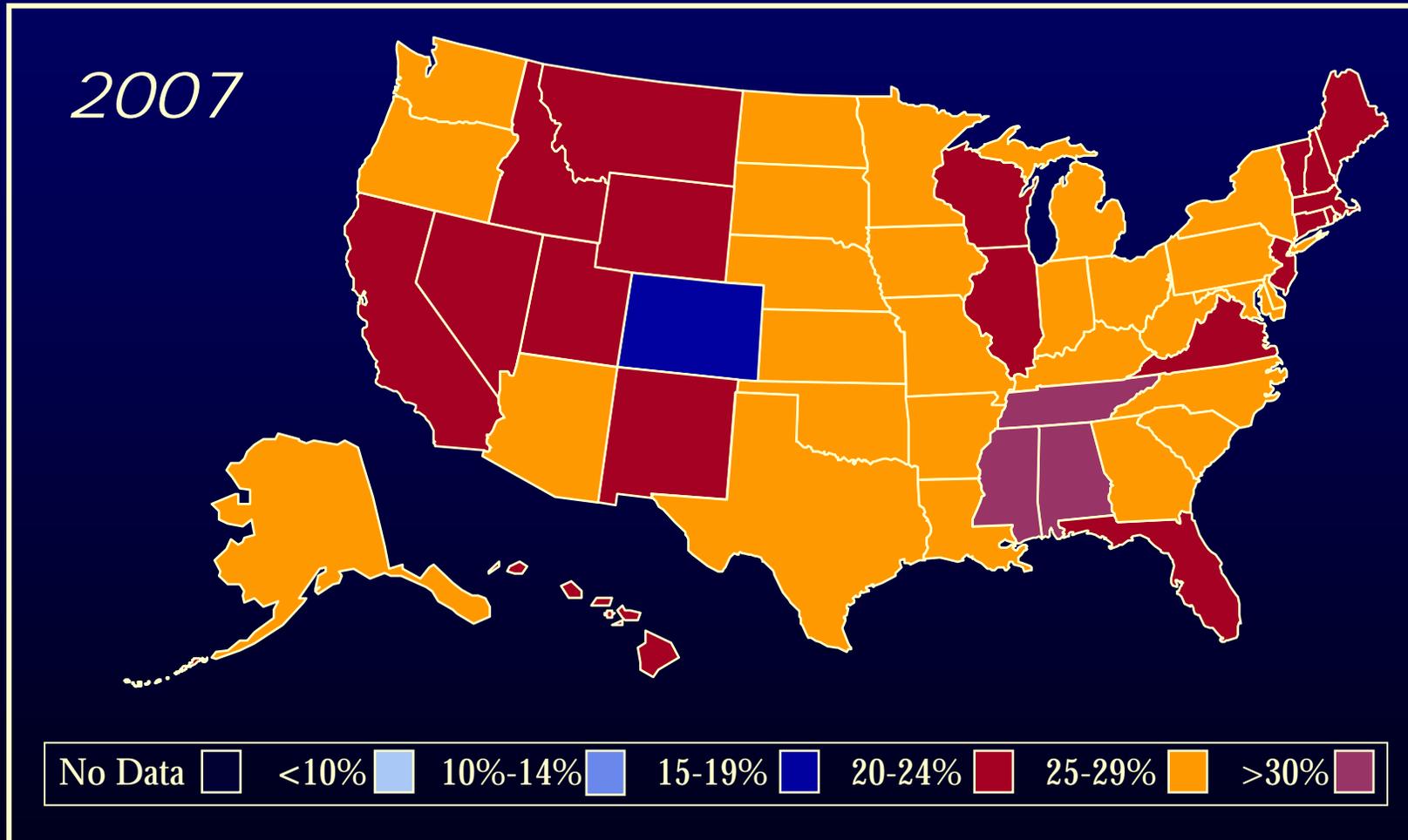
Source: Behavioral Risk Factor Surveillance System, CDC
Source: Mokdad A H, et al. JAMA 2003;289:1

Obesity* Trends Among U.S. Adults

2007

Fresno: 26.3% of adults over 20 years of ages

* BMI \geq 30, or
~ 30 lbs
overweight for
5'4" woman



Source: Behavioral Risk Factor Surveillance System, CDC
Source: Mokdad A H, et al. JAMA 2003;289:1

MICHAEL RAMIREZ



The United State of Obesity

**TAX CUT
SMACKDOWN**

**SAINTLY
POPE**

**BEHIND
CNBC**

newsweek.msnbc.com

DIABETE

It Strikes 16 Million Americans

Are You at Risk?

Computer drawing of a human insulin molecule

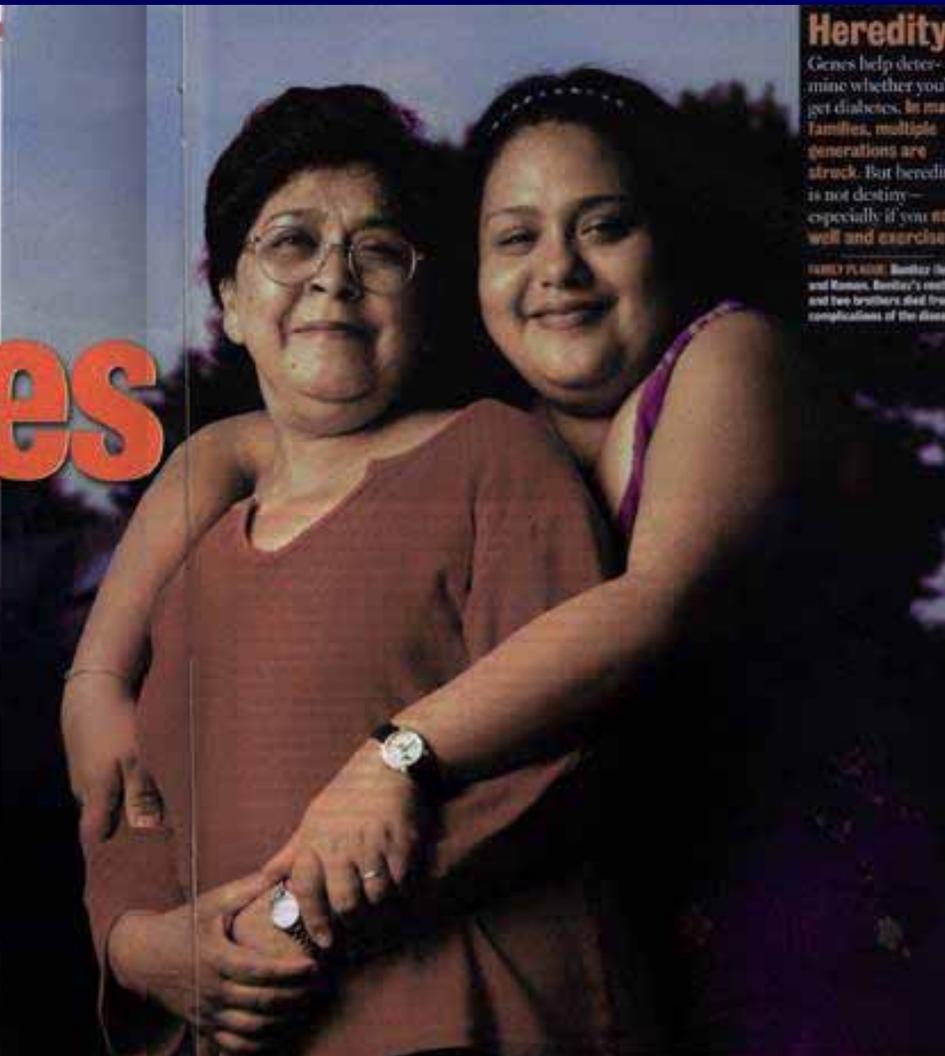
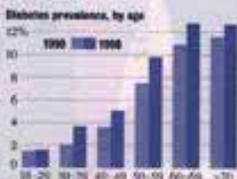
SOCIETY

An American Epidemic

Diabetes

The silent killer: Scientific research shows a 'persistent explosion' of cases—especially among those in their prime
BY JERRY ADLER AND CLAUDIA KALB

SOMETHING TERRIBLE WAS HAPPENING TO YOLANDA BENITEZ'S eyes. They were being poisoned; the fragile capillaries of the retina attacked from within and were leaking blood. The first symptoms were red lines, appearing vertically across her field of vision; the lines multiplied and merged into a haze that shut out light entirely. "Her blood vessels inside her eye were popping," says her daughter, Jannette Roman, a Chicago college student. Benitez, who was in her late 40s when the problem began four years ago, was a cleaning woman, but she's had to stop working. After five surgeries, she has regained vision in one eye, but the other is completely useless. A few weeks ago, awakening one night in a hotel bedroom, she walked into a door, setting off a paroxysm of pain and nausea that hasn't let up yet. And what caused this catastrophe was nothing as exotic as pesticides or emerging viruses. What was poisoning Benitez was sugar.



Heredity

Genes help determine whether you get diabetes. In many families, multiple generations are struck. But heredity is not destiny—especially if you eat well and exercise.

FAMILY PLANE: Benitez (left) and Roman. Benitez's mother and two brothers died from complications of the disease.

Diabetes Projected Risks: For Babies Born in 2000

- Girls: 38% lifetime risk
 - Latino girls: 53%
 - If diabetic before age 40, Lifespan shortened by 14 years (Quality of life by 19 years)
- Boys: 33% lifetime risk
 - Latino boys: 45%
 - If diabetic before age 40, Lifespan shortened by 12 years. (Quality of life by 22 years)

The Atlanta Journal-Constitution / Sunday, June 15, 2003

CDC: Diabetes to afflict 1 in 3 born in 2000

Scientist says
kids must
eat healthier,
exercise more

By JANET McCONNAUGHEY
Associated Press

New Orleans — One in three U.S. children born in 2000 will become diabetic unless many more people start eating less and exercising more, a scientist with the Centers for Disease Control and Prevention warned Saturday.

The odds are worse for African-American and Latino children: Nearly half of them are likely to develop the disease, said Dr. K.M. Venkat Narayan, a diabetes epidemiologist at the CDC.

"I think the fact that the diabetes epidemic has been raging has been well-known to us for several years. But looking at the risk in these terms was very shocking to us," Narayan said.

The 33 percent lifetime risk is about triple the American Diabetes Association's current estimate.

by 2050, to 29 million, an earlier CDC study by Narayan and others found.

"These estimates I am giving you now are probably quite conservative," Narayan said in an interview before the diabetes association's annual scientific meeting here.

Narayan said it would be difficult to say whether undiagnosed cases would rise at the same rate.

If they did, that could push the 2050 figure to 40 million or more.

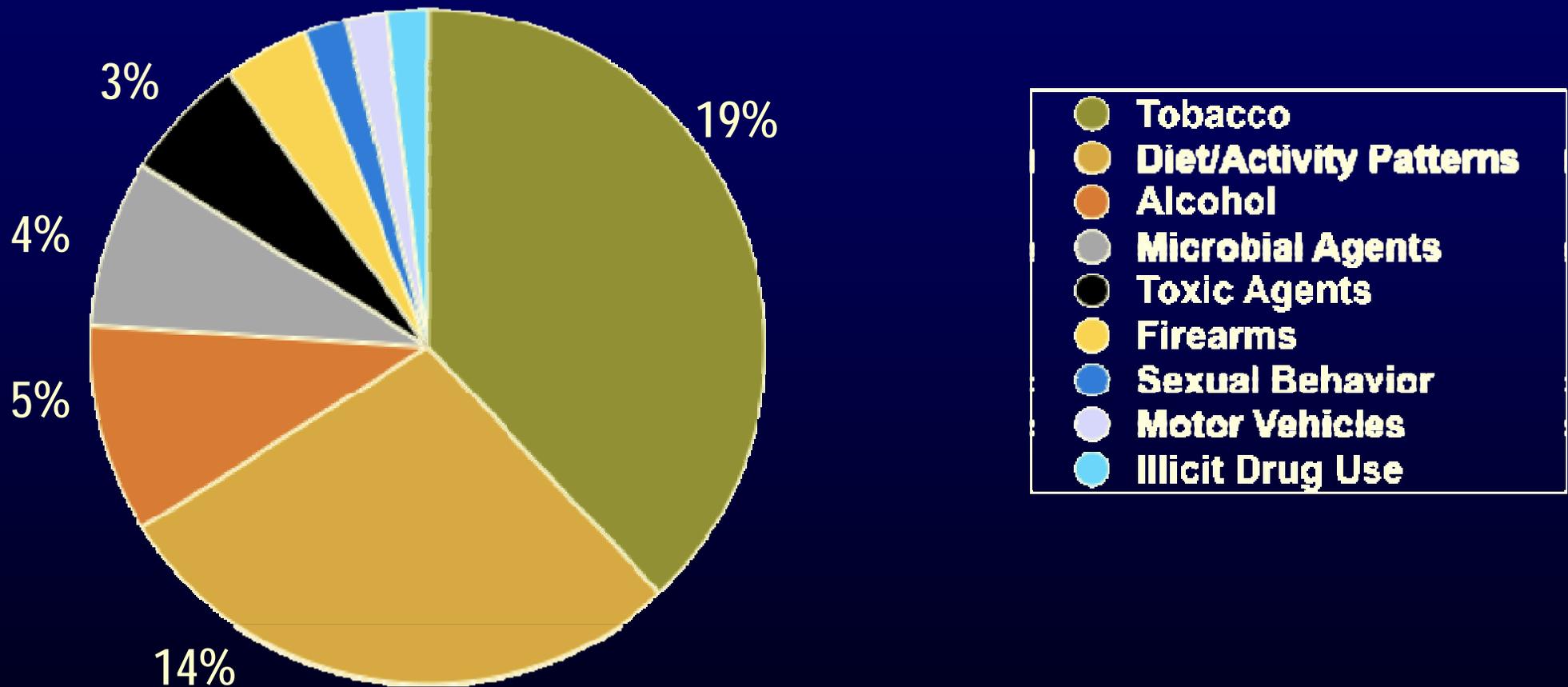
Doctors had known for some time that Type 2 diabetes — what used to be called adult-onset diabetes because it typically showed up in middle-aged people — is on the rise, and that patients are getting younger.

Nobody else had crunched the numbers to look at current odds of getting the disease, Narayan said.

Overall, he said, 39 percent of the girls who now are healthy 2½- to 3-year-olds and 33 percent of the boys are likely to develop diabetes, he said.

For Latino children, the odds are closer to one in two: 53 percent of the girls and 45 percent of the boys. The numbers are about 49 percent and 40 percent for African-American girls

Underlying Causes of Death in the US



Source: McGinnis & Foege, *JAMA*, 270, 1993



Local Government Commission

It's the Community Design...



“Reliance on physical activity as an alternative to car use is less likely to occur in many cities and towns unless they are designed or retrofitted to permit walking or bicycling. The location of schools, work sites, and shopping areas near residential areas will require substantial changes in community or regional design.”

— Journal of the American Medical Association, Editorial, 10/27/99

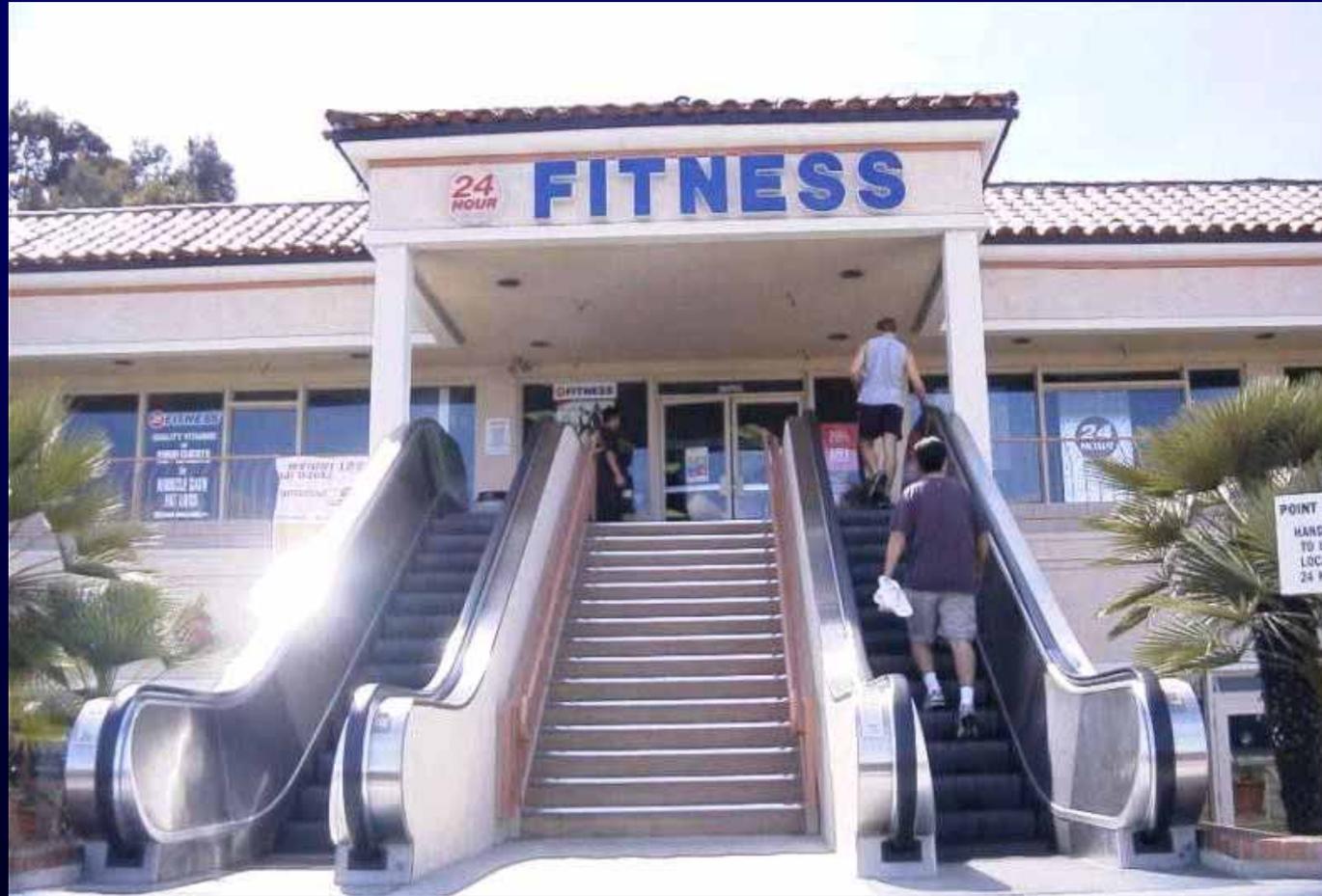


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The good news...

“Physical activity need not be of vigorous intensity for it to improve health.”

— Report of the Surgeon General on “Physical Activity and Health,” 1996



The good news...

- Significant health benefits can be obtained through moderate amount of physical activity on most days of the week:
 - 30 minutes of brisk walking or raking leaves
 - 15 minutes of running
 - 45 minutes of playing volleyball
- Create opportunities for routine physical activity



Factors that Influence Active Living/Health

- Land Use Mix
- Density
- Site Design
- Connectivity
- Street Design



Land Use Mix — Summary of the Literature

- Residents of mixed-use communities have more opportunities to walk and use transit
- For trips less than one mile (28% of trips), mixed-use communities generate up to 4-times as many walk trips.



Compact Development — Summary of the Literature

- Appropriate residential and employment density (>7 units and 100 employees per acre) are associated with increased walk, bike, and transit trips



Site Design — Summary of the Literature

- Design features that promote walk/bike trips
 - Appropriate levels of residential density, land use mix, and street connectivity
 - Short building setbacks
 - Neighborhood parks and greenspace



Connectivity — Summary of the Literature

- Poor connectivity reduces pedestrian mobility and trips
- As the number of intersections and blocks increase the number of walk trips increase
- As the number of cul-de-sacs and loops increase the number of walk trips decrease

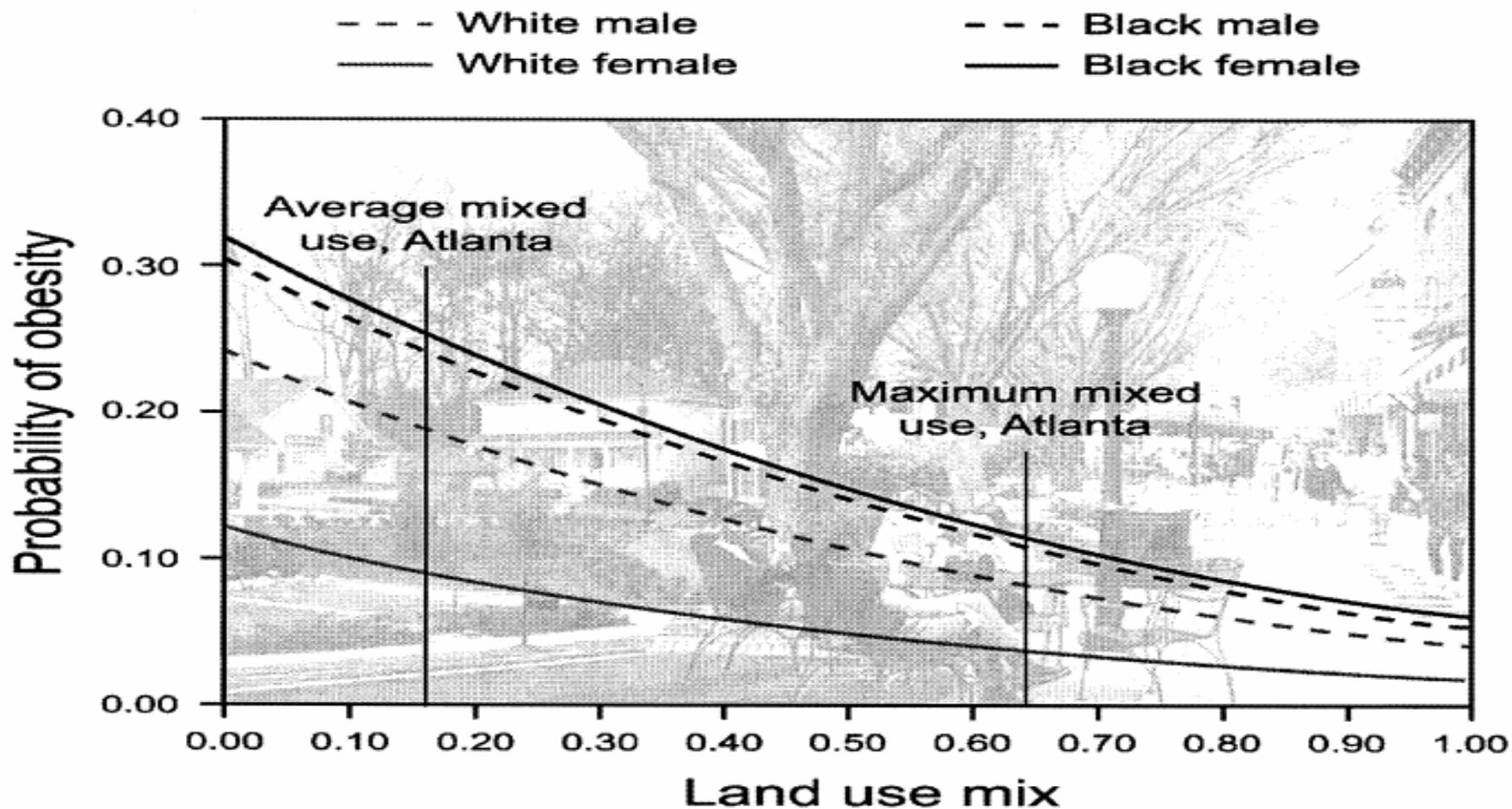


Street Design — Summary of the Literature

- Complete Streets support walking, bicycling and transit
- Good pedestrian environments
 - maintain visual and sensory attention
 - streets are calm, narrow, and complex



Higher density and connectivity: lower obesity — Atlanta study 2004

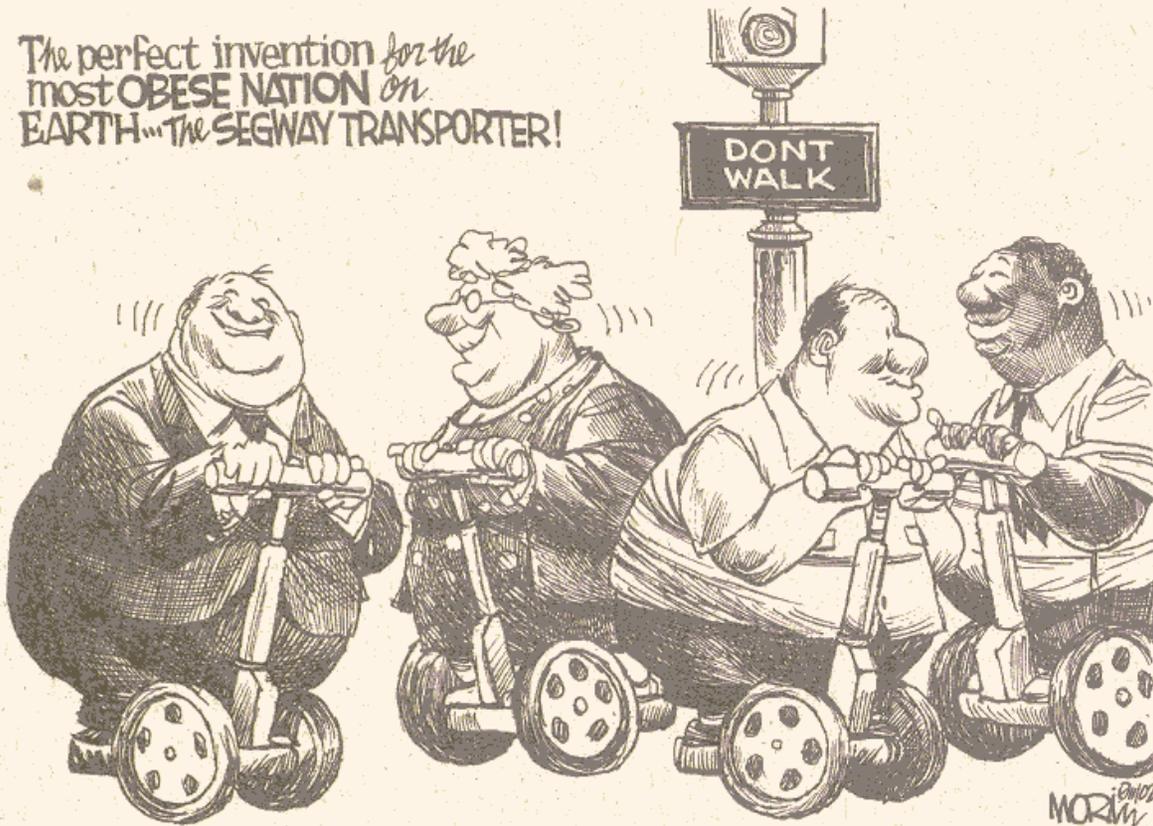


Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars

Lawrence D. Frank, PhD, Martin A. Andresen, MA, Thomas L. Schmid, PhD

Message is getting out

The perfect invention for the most OBESE NATION on EARTH... The SEGWAY TRANSPORTER!



MORIN

The Miami Herald

Morin/Miami Herald

THE NATION'S NEWSPAPER

Flyers send Leafs home

Philadelphia destroys Toronto 6-1 in Game 7. NHL 1.8C

USA TODAY

NO. 1 IN THE USA

Stop Think Them speak

Unless you Wanda Sy

The way cities and suburbs are developed could be bad for your health

The way cities and suburbs are developed could be bad for your health

public agencies into discussions about what neighborhoods should look like.

The argument over whether suburbs are bad for your health will hit many Americans precisely where they live: in a house with a big lawn on a cul-de-sac.

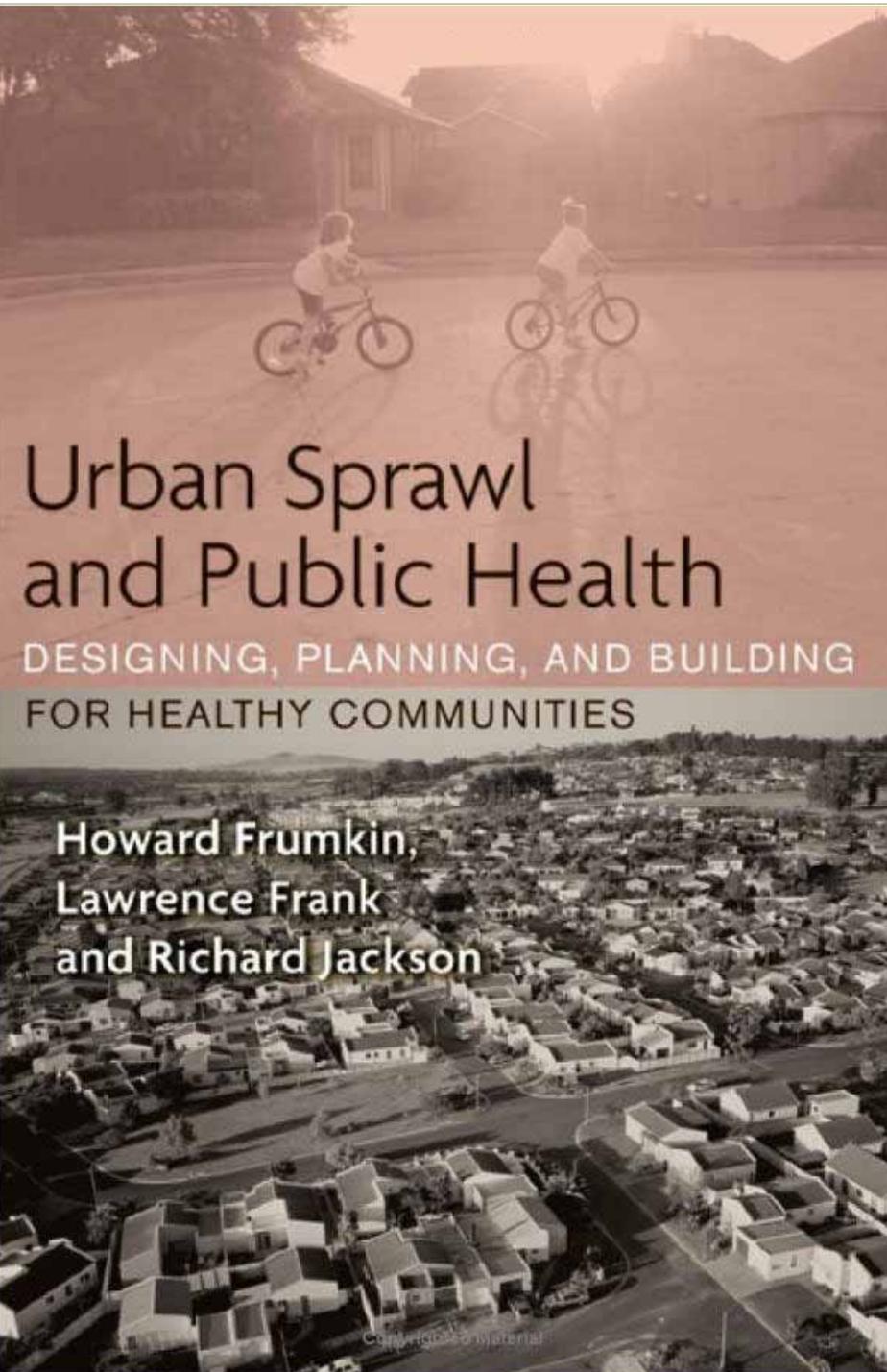
"The potential for actually tackling some of these things, with the savvy of the folks who have tackled tobacco, is enormous," says Ellen Vanderslice, head of America Walks, a pedestrian advocacy group based in Portland, Ore.

A study by the national Centers for Disease Control and Prevention is tracking 8,000 residents of Atlanta to determine whether the neighborhood they live in influences their level of physical exercise. The Robert Wood Johnson Foundation in New Jersey.

Cover story

Please see COVER STORY next page ▶

Message is getting out



Published by Island Press

City of Fresno

LAND USE AND COMMUNITY DESIGN DISEÑO DE LA COMUNIDAD	
Develop land use patterns that encourage physical activity. <i>Diseño de la comunidad que apoye actividad física de los residentes.</i>	
Address concentrations of poverty and overcrowded conditions. <i>Tratar problemas causados por concentración de pobreza y amontonamiento excesivo.</i>	
Beautify the City. <i>Embellecer la ciudad.</i>	
TRANSPORTATION TRANSPORTACIÓN	
Make the transportation system safer. <i>Mejorar la seguridad del sistema de transporte.</i>	
Create a transportation system that supports active living and healthy lifestyles. <i>Crear sistema de transporte que apoye un modo de vivir activo y saludable.</i>	
Create a high quality pedestrian network so residents can walk safely and comfortably. <i>Crear red para peatones para que los residentes puedan caminar comodamente y de manera segura.</i>	
Create a bicycle and multi-use trail network that enables cycling for both recreation and transportation. <i>Crear una red de veredas(para ciclistas y peatones) que se puedan usar para recreo y transporte.</i>	
Ensure that children have safe access to schools and parks. <i>Asegurar que los niños tienen acceso seguro a las escuelas y los parques.</i>	
PARKS, TRAILS AND PUBLIC FACILITIES PARQUES, VEREDAS Y EDIFICIOS PÚBLICOS	
Enhance parks, trails, and open spaces. <i>Mejorar parques, veredas y espacios al aire libre.</i>	
Increase community facilities and programs in Fresno that promote healthy living. <i>Aumentar los programas y centros de la comunidad en Fresno que promueven un modo de vivir saludable.</i>	
AIR QUALITY CALIDAD DEL AIRE	
Reduce air pollution throughout the city. <i>Reducir la contaminación del aire en toda la ciudad.</i>	

City of Fresno

ACCESS TO HEALTHY FOODS ACCESO A COMIDA SALUDABLE	
Facilitate safe, convenient access to healthy foods. <i>Facilitar acceso seguro y conveniente a comida saludable.</i>	
Encourage and support healthy eating habits and eating messages. <i>Animar y apoyar mensajes y hábitos saludables de comer.</i>	
Avoid a concentration of unhealthy food, alcohol, and tobacco retailers. <i>Evitar concentración de vendedores de comida insalubre, de licor, y de tabaco.</i>	
Provide opportunities for community gardens and local food production. <i>Dar oportunidades para crear jardines en la comunidad y para vender comida crecida en la vecindad.</i>	
PUBLIC SAFETY SEGURIDAD PÚBLICA	
Improve public safety. <i>Mejorar la seguridad pública.</i>	
HEALTH CARE AND MENTAL HEALTH CARE SALUD FÍSICA Y MENTAL	
Improve physical access to health care for City residents. <i>Mejorar el acceso a servicios para la salud física y mental de los residentes.</i>	
Support a variety of healthcare and mental health facilities. <i>Crear más centros de salud física y mental en la comunidad.</i>	
PUBLIC INVOLVEMENT AND PARTICIPATION PARTICIPACIÓN DEL PÚBLICO	
Involve the public in local decision making processes. <i>Involucrar a los residentes en el proceso de tomar decisiones que afectan a la comunidad.</i>	
Improve outreach and public education program to improve health. <i>Mejorar programas de educación pública sobre temas relacionados a la salud .</i>	
Foster the health and well-being of residents through collaborations and partnerships. <i>Apoyar la salud y el bienestar de los residentes a través de proyectos colaborativos.</i>	