

FOOD AT WORK

WORKPLACE SOLUTIONS FOR MALNUTRITION,
OBESITY AND CHRONIC DISEASES



International
Labour
Office
Geneva



CHRISTOPHER WANJEK

Food At Work: Workplace Solutions for Malnutrition, Obesity and Chronic Diseases

by

Christopher Wanjek

for the International Labour Organization

*The Prudent Prevention Dividend—
The Economics and Public Finances of
Nutrition-Related Chronic Disease*

Championing Public Health Nutrition 2010

Ottawa, Ontario

October 25–26, 2010

Christopher Wanjek, wanjek@post.harvard.edu

Is Food a Luxury?

XVIII World Congress on Safety and Health at Work
- Global Forum for Prevention -

Safety and Health : A Societal Responsibility
June 29 ~ July 2, 2008
COEX Convention Center, Seoul, Korea



Hot topics at Korea's international safety and health meeting...

- * fumes
- * fires
- * noise
- * protective equipment
- * ergonomics
- * food?!

*Why was I talking about food?
Sound like a luxury, not a necessity.*

Just like a chemical spill... Just like protective equipment...

Food At Work is about safety:

- * low iron means fatigue, poor mental acuity, weakness
- * low blood sugar means sleepiness, confusion, blurry vision
- * obesity means lack of dexterity, exceeded weight limit for gear

Food At Work is about health:

- * short-term: food-poisoning from street vendor; site-wide poisonings
- * long-term: malnutrition, obesity, circulatory disease, cancer

Food At Work is about productivity:

- * morale, absenteeism, sick days

Causes of Poor Health... Genetic?

- ✓ *heart disease*
- ✓ *stroke*
- ✓ *cancers*
- ✓ *cirrhosis*
- ✓ *renal failure*
- ✓ *diabetes*
- ✓ *obesity*
- ✓ *underweight*
- ✓ *blood iron anemia*

What scientists say:

JAMA[®]
The Journal of the American Medical Association

Vol. 304 No. 8, August 25, 2010 TABLE OF CONTENTS

Original Contribution

Genetic Variants of the Protein Kinase C- β 1 Gene and Development of End-Stage Renal Disease in Patients With Type 2 Diabetes

Ronald C. W. Ma, MB BChir; Claudia H. T. Tam, MPhil; Ying Wang, PhD; Andrea O. Luk, MB ChB; Cheng Hu, PhD; Xilin Yang, PhD; Vincent Lam, BSc; Alfred W. H. Chan, MPhil; Janice S. K. Ho, MPhil; Chun-Chung Chow, MBBS; Peter C. Y. Tong, PhD; Weiping Jia, MD, PhD; Maggie C. Y. Ng, PhD; Wing-Yee So, MD; Juliana C. N. Chan, MD

JAMA. 2010;304(8):881-889. doi:10.1001/jama.2010.1191

ABSTRACT

Context Protein kinase C- β (PKC- β) is a cell-signaling intermediate implicated in development of diabetic complications.

Objective To examine the risk association of PKC- β 1 gene (*PRKCB1*) polymorphisms and end-stage renal disease (ESRD) in an 8-year prospective cohort of Chinese patients with type 2 diabetes.

Design, Setting, and Participants We genotyped 18 common tag single-nucleotide polymorphisms (SNPs) that span the *PRKCB1* gene ($r^2 = 0.80$) in 1172 Chinese patients (recruited 1995-1998) without renal disease at baseline. A validation cohort included an additional 1049 patients with early-onset diabetes who were free of renal disease at baseline and were recruited after 1998.

Main Outcome Measures Associations of *PRKCB1* polymorphisms under additive, dominant, and recessive genetic models with new onset of ESRD (defined as estimated glomerular filtration rate <15 mL/min/1.73 m² or dialysis or renal-related death) were assessed by Cox proportional hazard regression, adjusted for all conventional risk factors including use of medications.

Results After a mean (SD) of 7.9 (1.9) years, 90 patients (7.7%) progressed to ESRD. Four common SNPs were associated with ESRD ($P < .05$). The closely linked T allele at rs3760106 and G allele rs2575390 ($r^2 = 0.98$) showed the strongest association with ESRD (hazard ratio [HR], 2.25; 95% confidence interval [CI], 1.31-3.87; $P = .003$, and HR, 2.26; 95% CI, 1.31-3.88; $P = .003$, respectively). Four common variants predicted ESRD in separate models. The HR for ESRD increased with increasing number of risk alleles ($P < .001$) in the joint effect analysis. The adjusted risk for ESRD was 6.04 (95% CI, 2.00-18.31) for patients with 4 risk alleles compared with patients with 0 or 1 risk allele. Incidence was 4.4 per 1000 person-years (95% CI, 0.5-8.2) among individuals with 0 or 1 risk allele compared with 20.0 per 1000 person-years (95% CI, 8.8-31.1) in those carrying 4 risk alleles (6.9% of the cohort).

What the news media says:

REUTERS

Gene variants put diabetics at risk of kidney disease

Tue Aug 24, 2010 4:00pm EDT

Aug 25 (Reuters) - Some diabetics are at risk of developing chronic kidney disease if they have mutations of a certain gene, a long-term study in Hong Kong has found.

Kidney failure is an important cause of death for people with type 2 diabetes, and ethnic Chinese diabetics are more prone to developing chronic kidney disease than Caucasians.

The finding would help identify diabetes patients prone to developing kidney disease so they could be rigorously monitored and given more intensive preventive treatment, wrote the lead researcher in reply to questions from Reuters.

"Identification of those genetically at risk of developing renal complications can help identify these subjects for intensive management, and also may help to motivate individuals to be more compliant to treatment," wrote Ronald Ma of the Chinese University and Prince of Wales Hospital in Hong Kong.

In a paper published in the Journal of the American Medical Association on Wednesday, Ma and colleagues said they tracked for nine years 1,172 diabetes patients in Hong Kong who were free of kidney disease at the start of the study.

Is it genetics, or is it (no) choice?

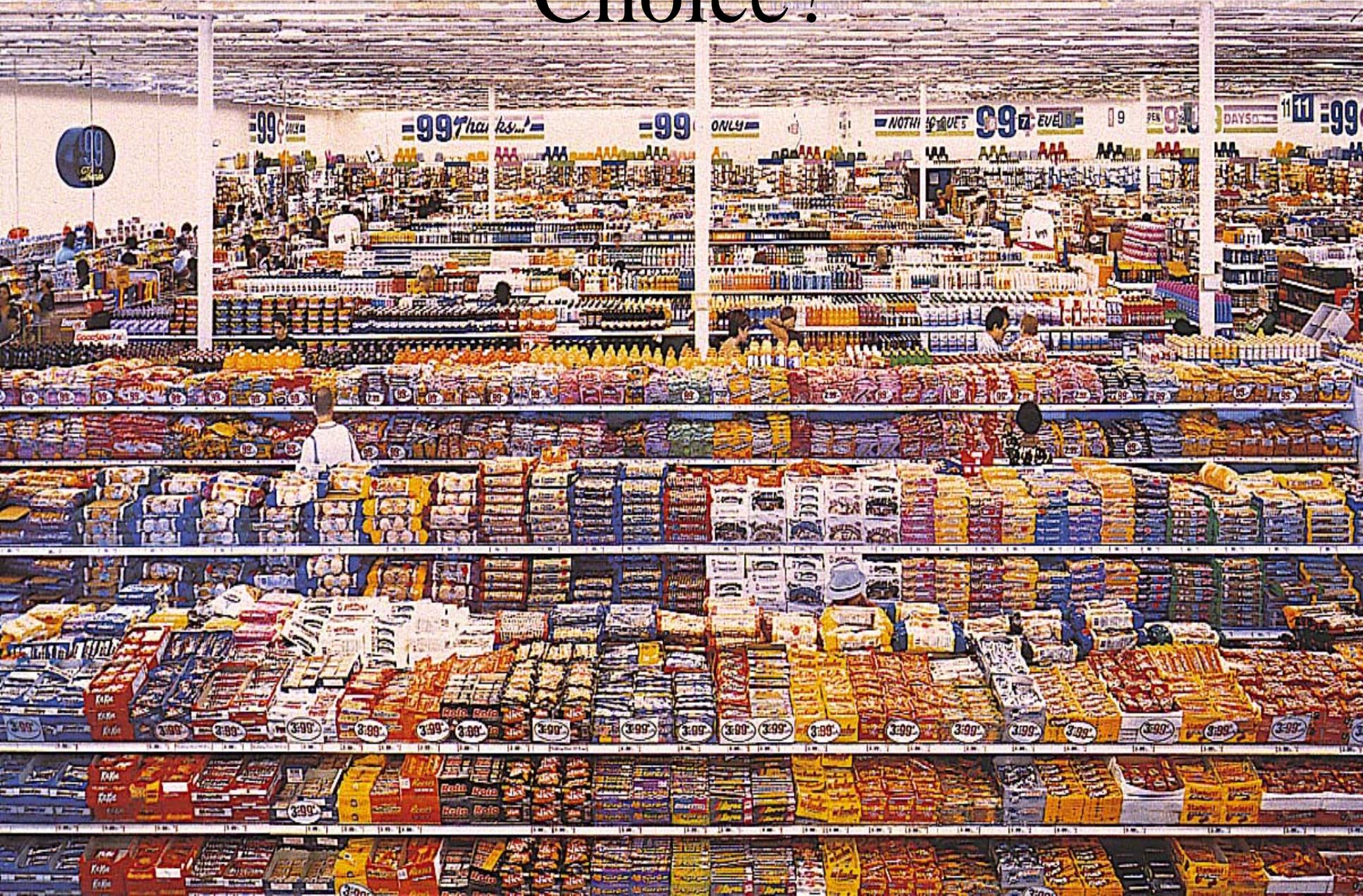


Main Street, USA



Afghanistan

Choice?



Genetics?

Same genes today as a generation ago...

New lifestyle:
high-calorie, highly processed foods
and minimal activity

Proactive Approach

Food At Work is about opportunity -- use the workplace as the point of intervention (hey, just like schools).

Food At Work is about solutions -- meal plans that fit a variety of budgets.

Food At Work is about choice -- offering workers healthy food alternatives.

Workplace Nutrition Concerns

workers in poorer nations...

- * the agricultural worker: exposed to weather, exposed to chemicals
- * the construction worker: builds the cafeterias, but none for himself
- * the factory worker: no time for breaks, no money for food

workers in “developed” nations...

- * the agricultural worker: exposed to weather, exposed to chemicals
- * the construction worker: builds the cafeterias, but none for himself
- * the factory worker: lousy, unhealthy (expensive) cafeteria
- * the office worker: no cafeteria, few options outside
- * the gas station attendant, the retail-store clerk, the night-shift worker, the fast-food worker...
- * food at meetings

A group of approximately ten people, including men and women of various ages, are sitting on a grassy field. They are dressed in casual, outdoor attire like t-shirts, tank tops, and shorts. Some are looking towards the camera, while others are looking slightly away. The background is a bright, open field under a clear sky. The text "Why does it matter?" is overlaid in the center of the image in a dark, serif font.

Why does it matter?

Poor Nutrition Isn't Cheap

Obesity in United States costs US\$99.2 billion annually — \$51.6 billion direct medical costs; billions in lost productivity (39.2 million days of lost work; 239 million restricted-activity days; 89.5 million bed-days; 62.6 million physician visits).

- Obese workers twice as likely to miss work.
- Obesity accounts for up to 7% total health costs in industrialized countries.

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Diabetes in United States costs US\$174 billion annually, nearly as much as all cancers combined.

- Mexico: top killer, US\$15.1 billion annually; will bankrupt health system.
- Canada: 9 million (25% of population) with diabetes or pre-diabetes.

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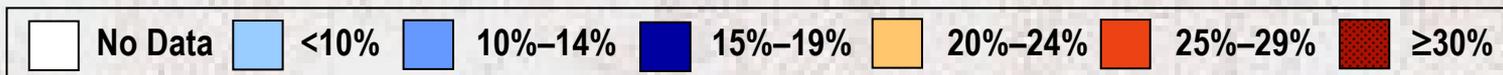
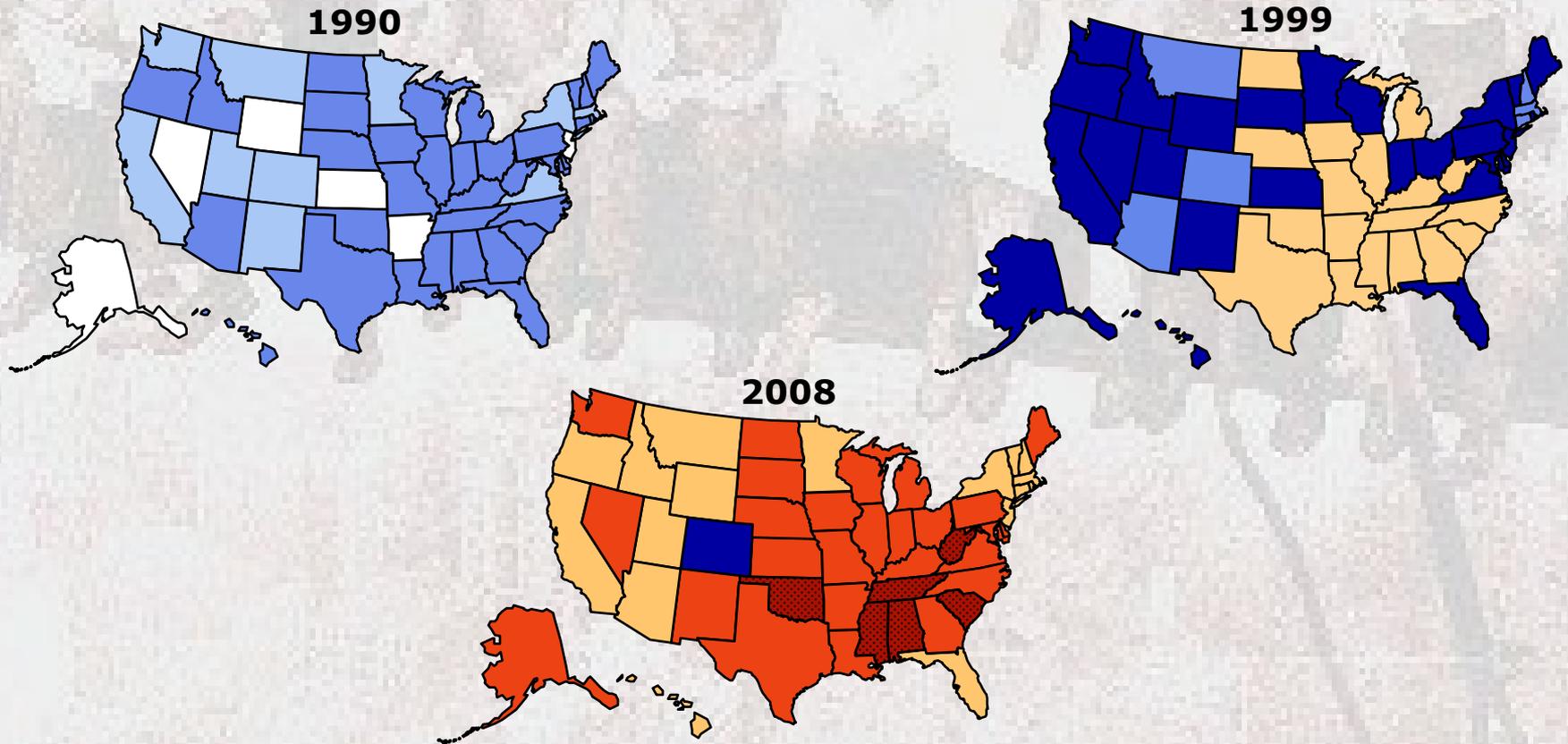
Cardiovascular disease costs US\$329.2 billion in the United States — \$199.5 billion in direct costs, \$30.9 billion for morbidity, and \$98.8 billion for mortality.

- Canada: declining but still 30% of all deaths; CAN\$22.2 in morbidity.

Obesity Trends* Among U.S. Adults

BRFSS, 1990, 1999, 2008

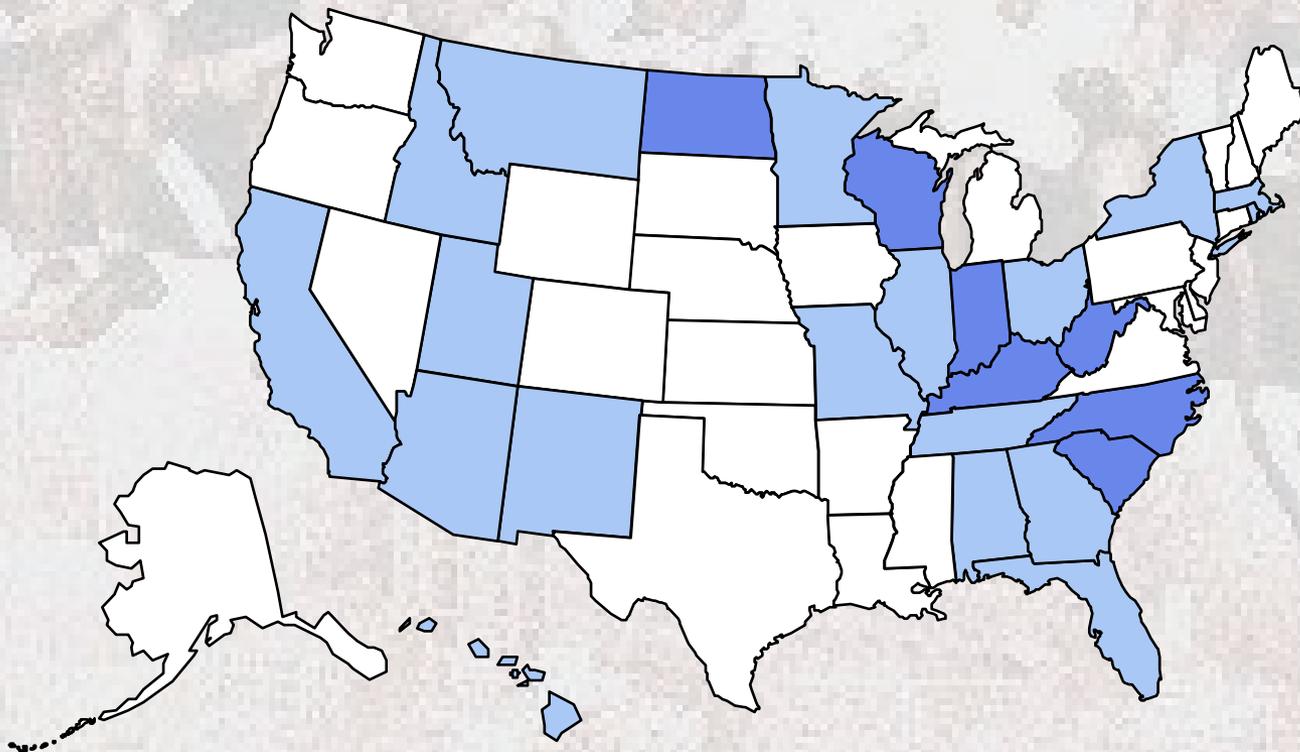
(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1986

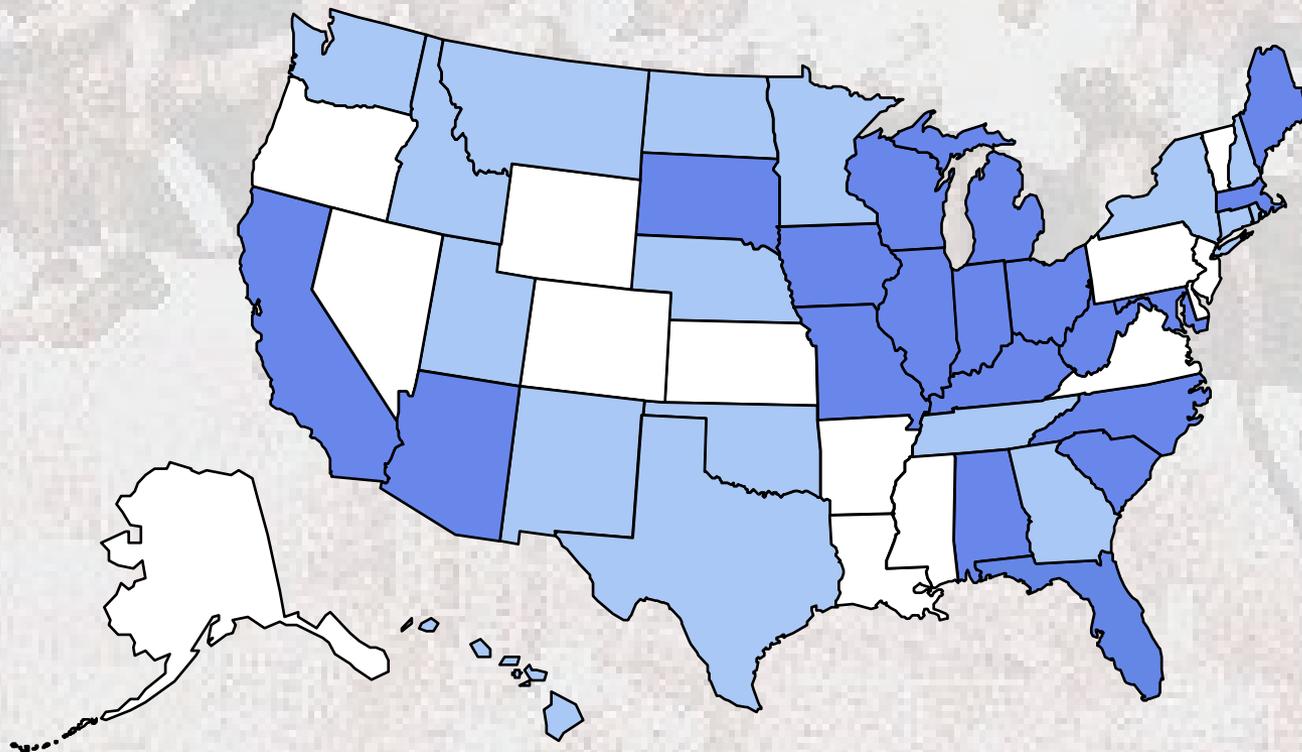
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Obesity Trends* Among U.S. Adults

BRFSS, 1988

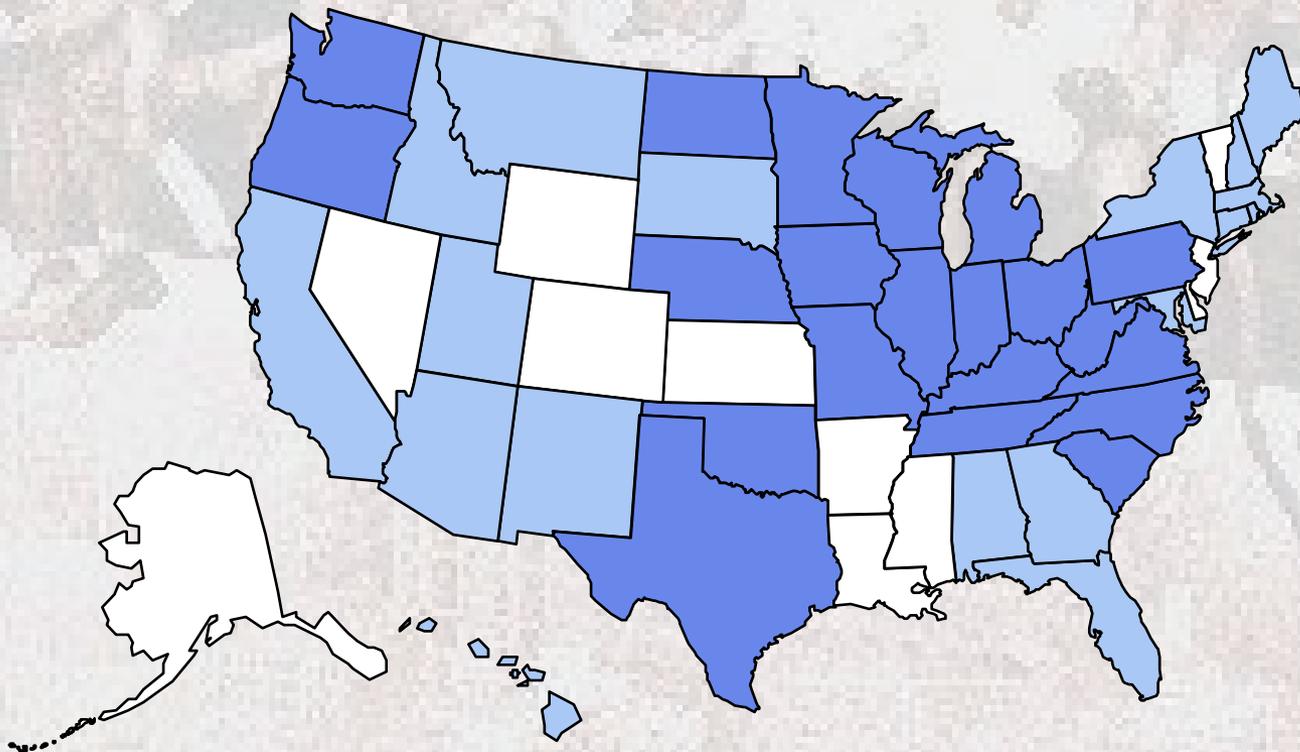
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1989

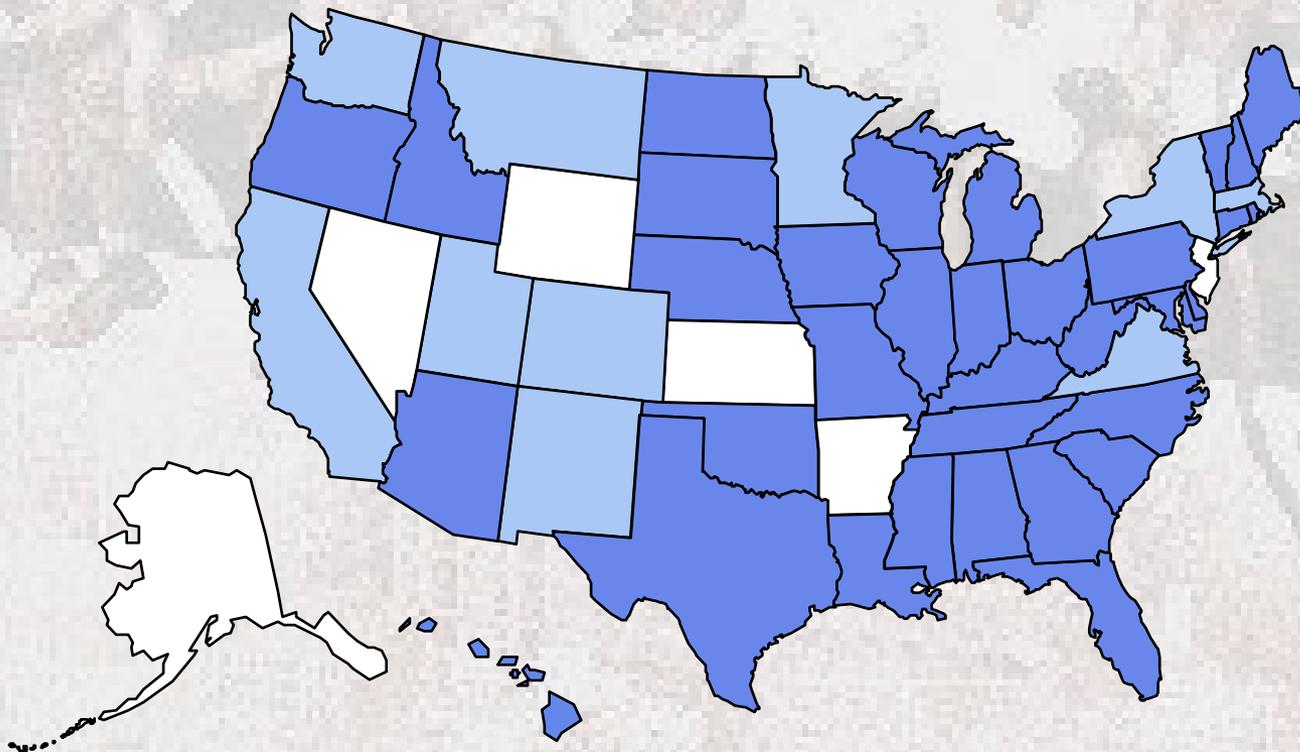
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Obesity Trends* Among U.S. Adults

BRFSS, 1990

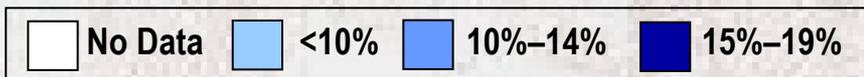
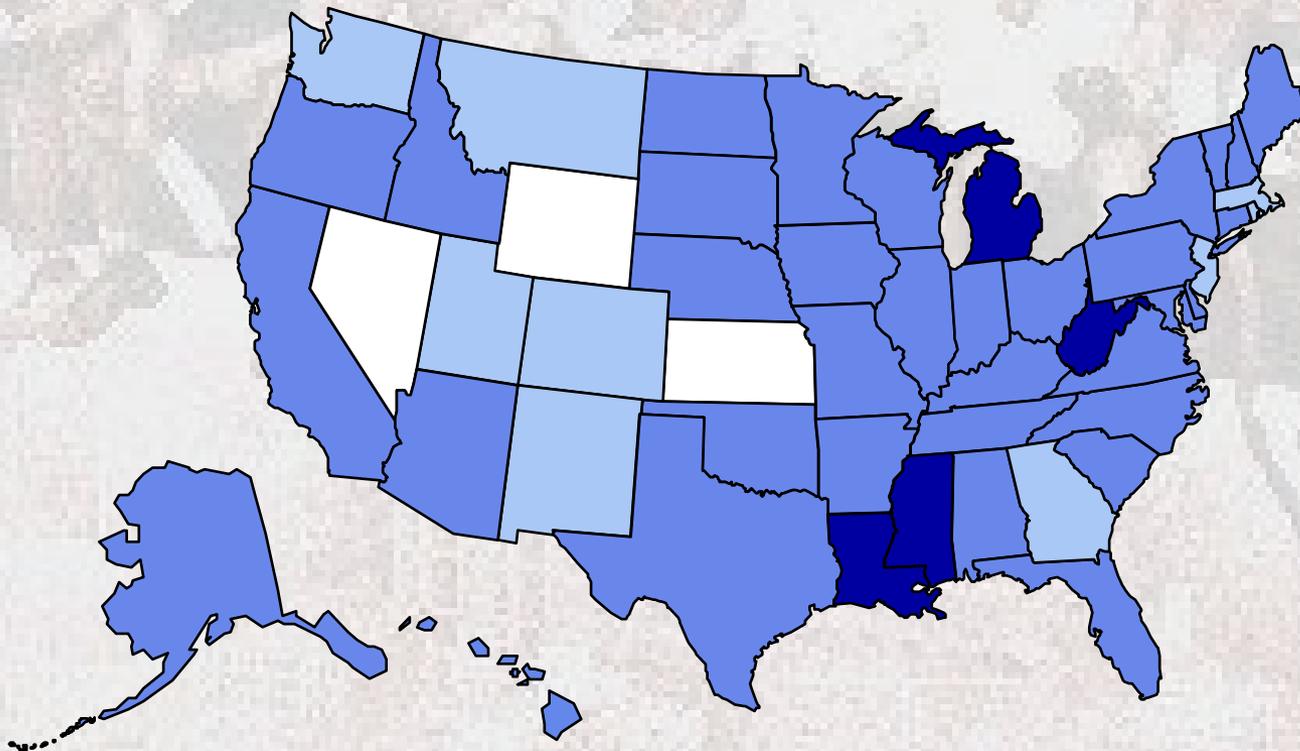
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Obesity Trends* Among U.S. Adults

BRFSS, 1991

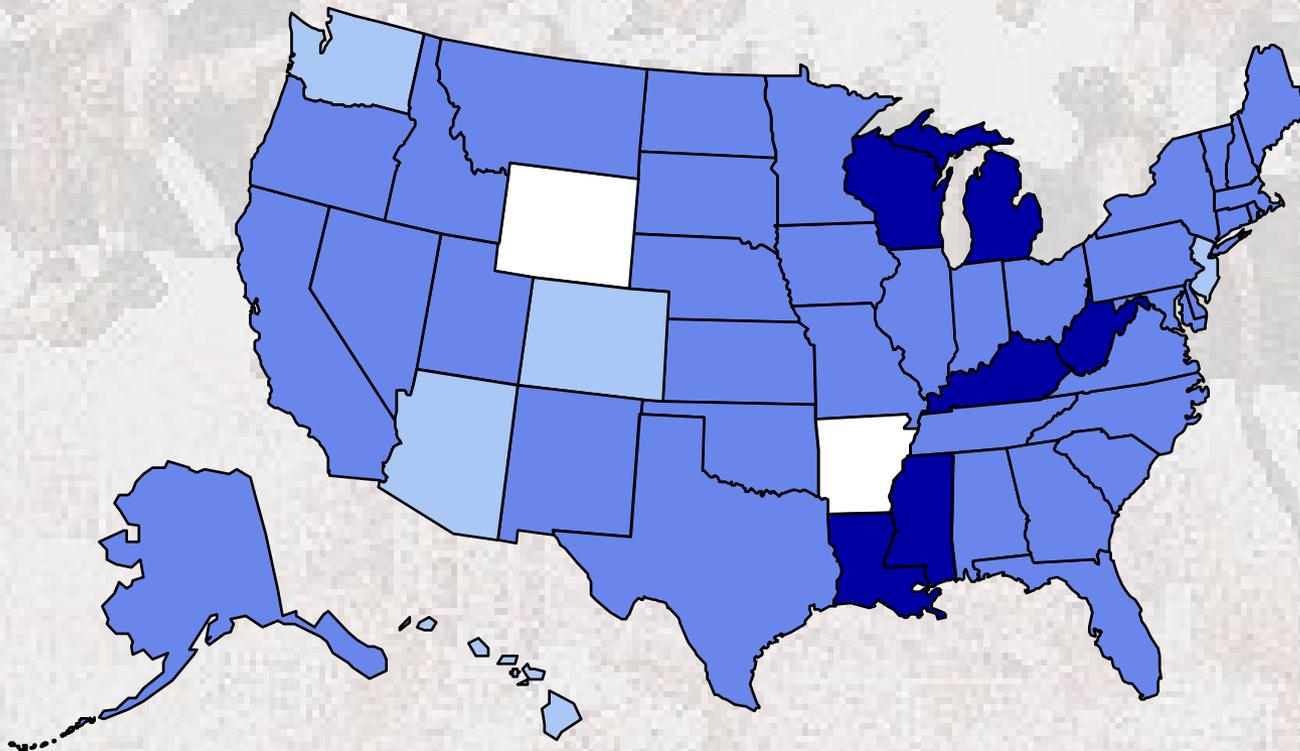
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Obesity Trends* Among U.S. Adults

BRFSS, 1992

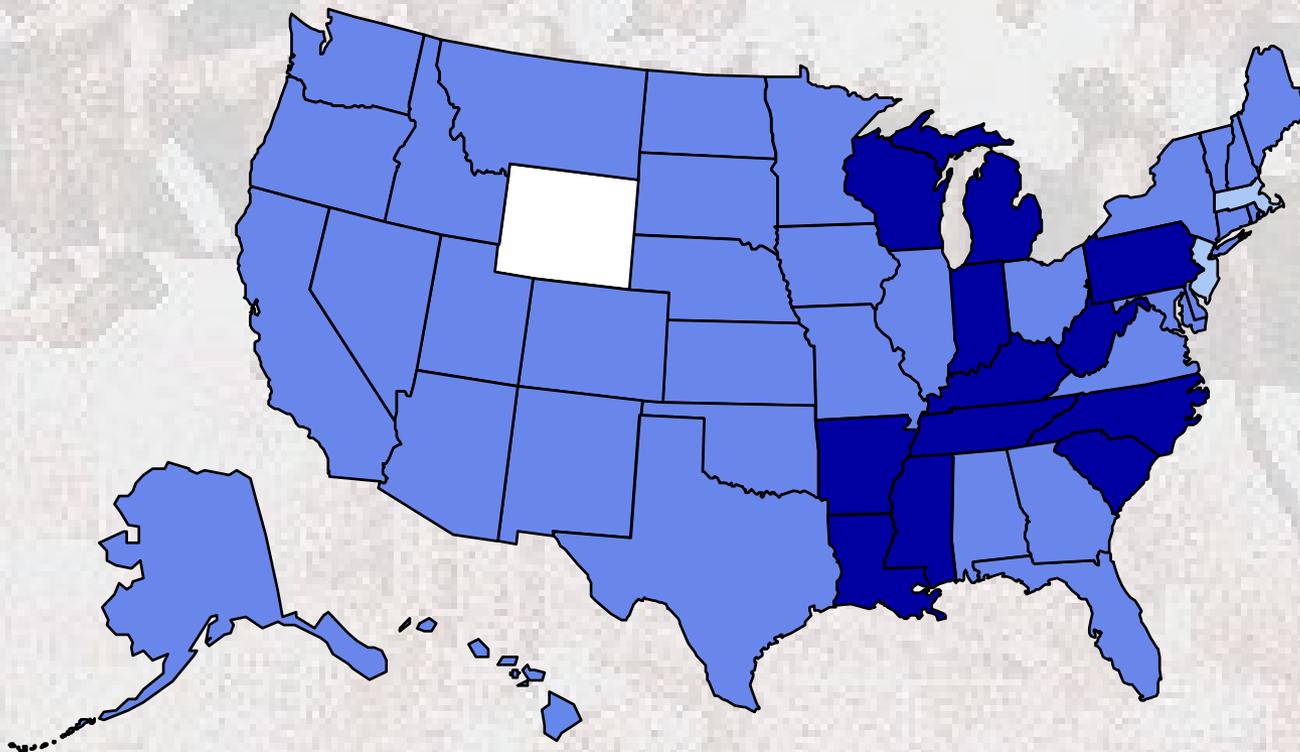
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Obesity Trends* Among U.S. Adults

BRFSS, 1993

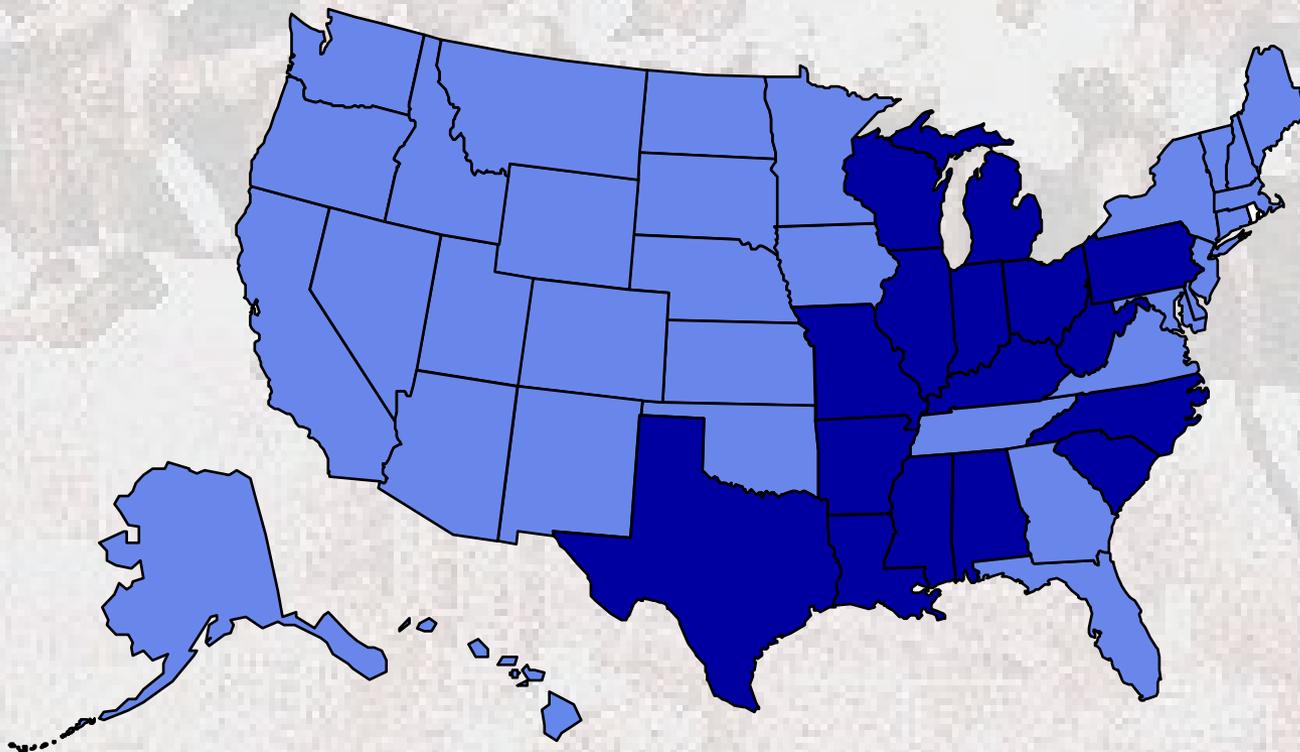
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Obesity Trends* Among U.S. Adults

BRFSS, 1994

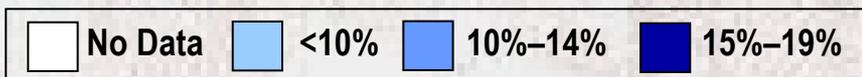
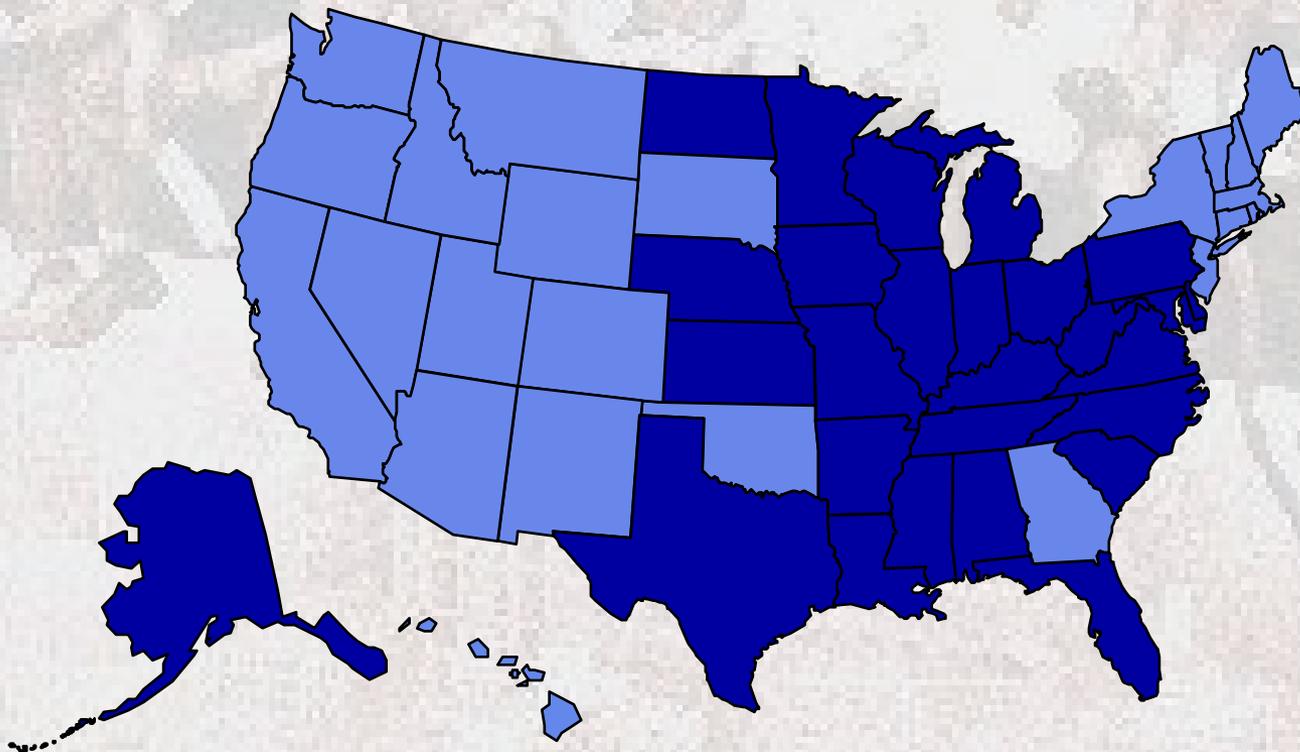
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1995

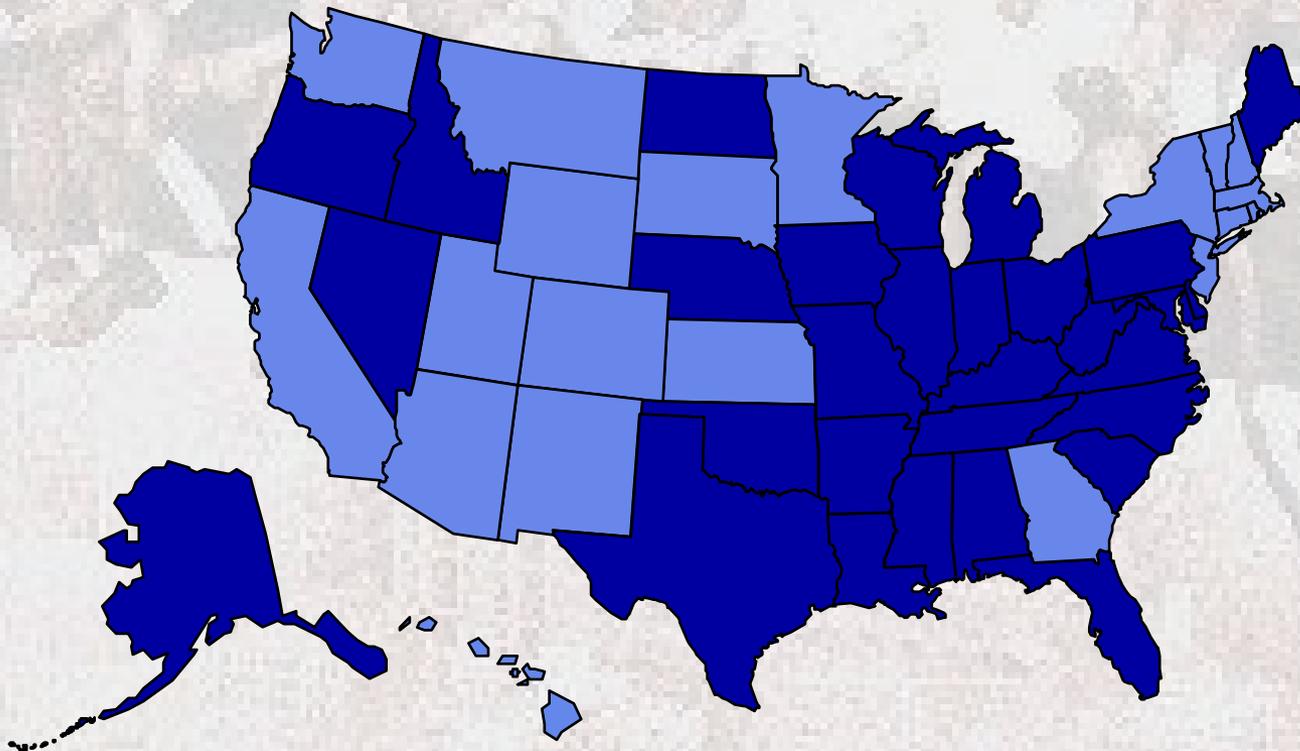
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1996

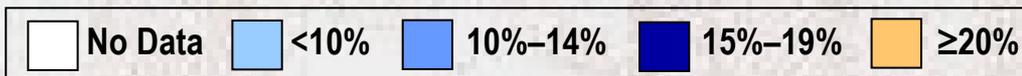
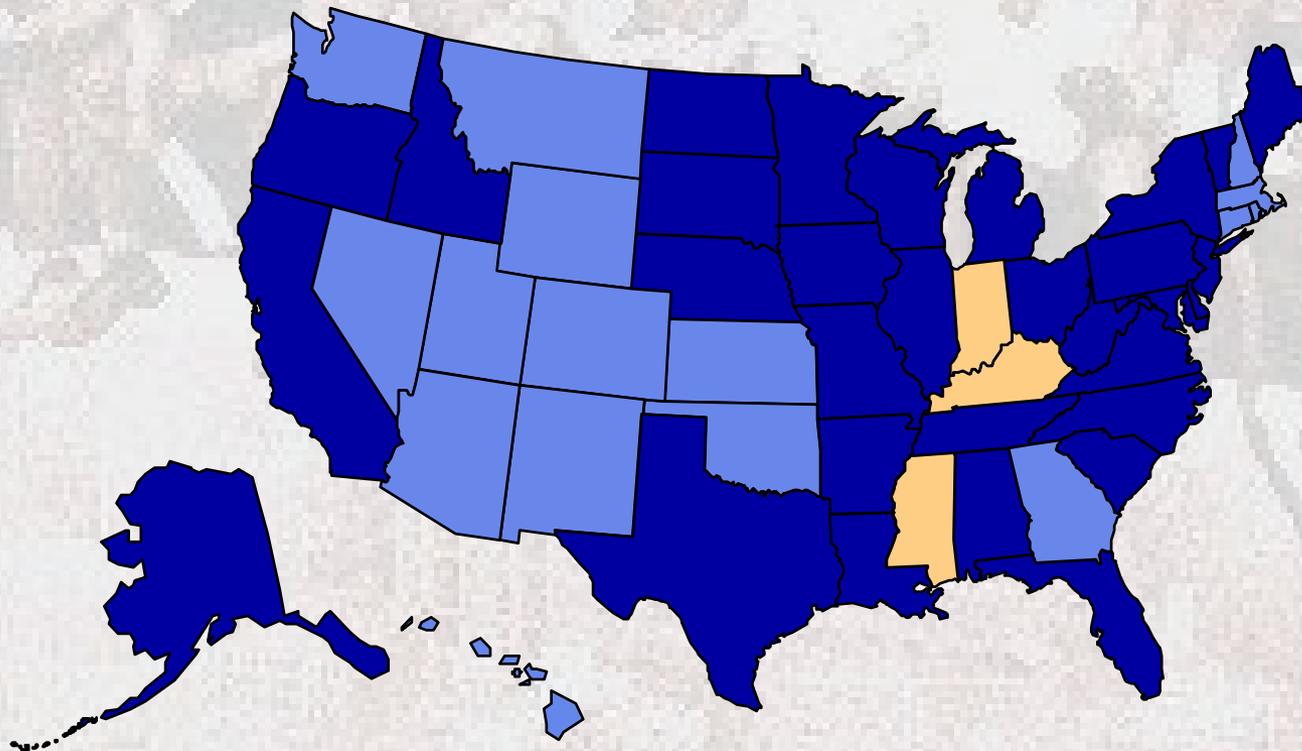
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1997

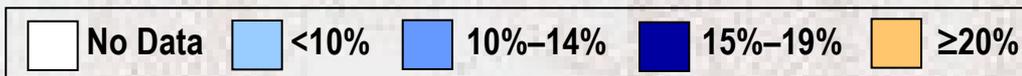
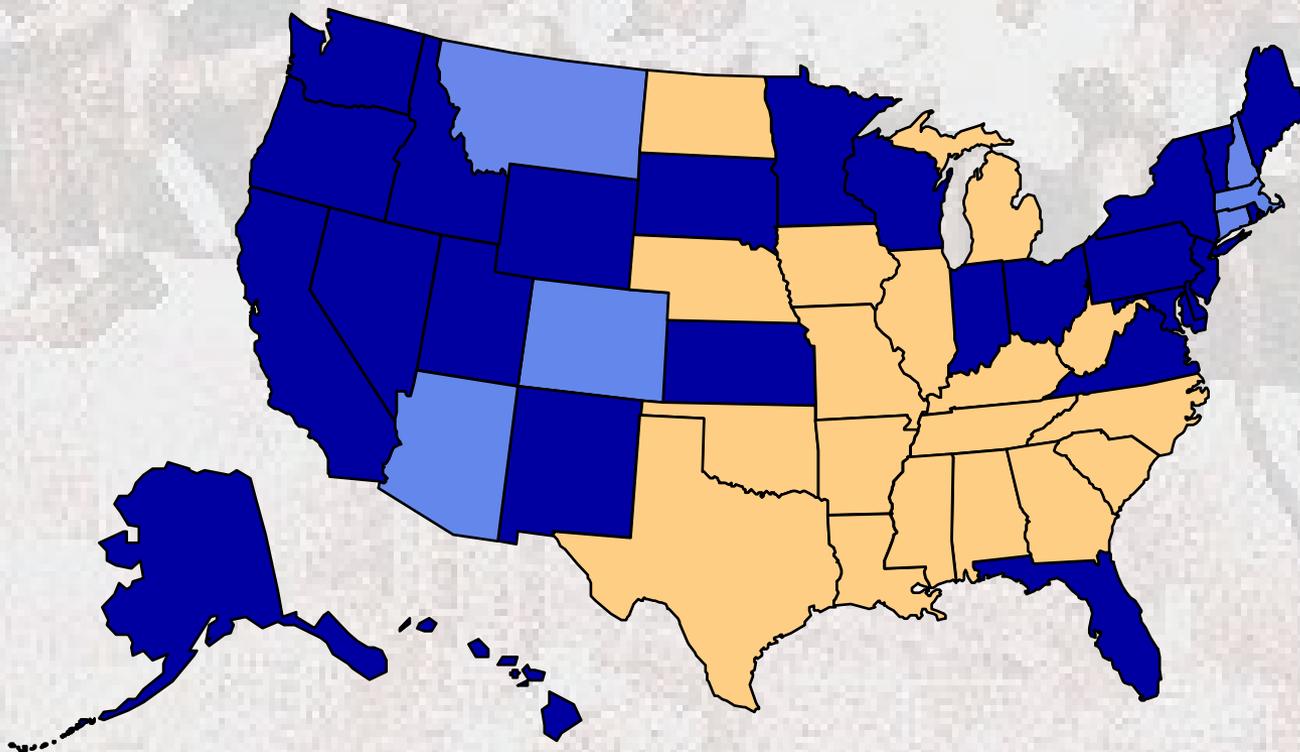
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Obesity Trends* Among U.S. Adults

BRFSS, 1999

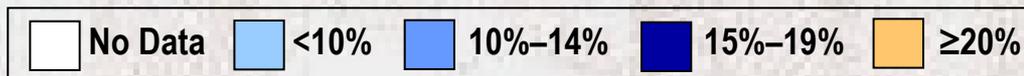
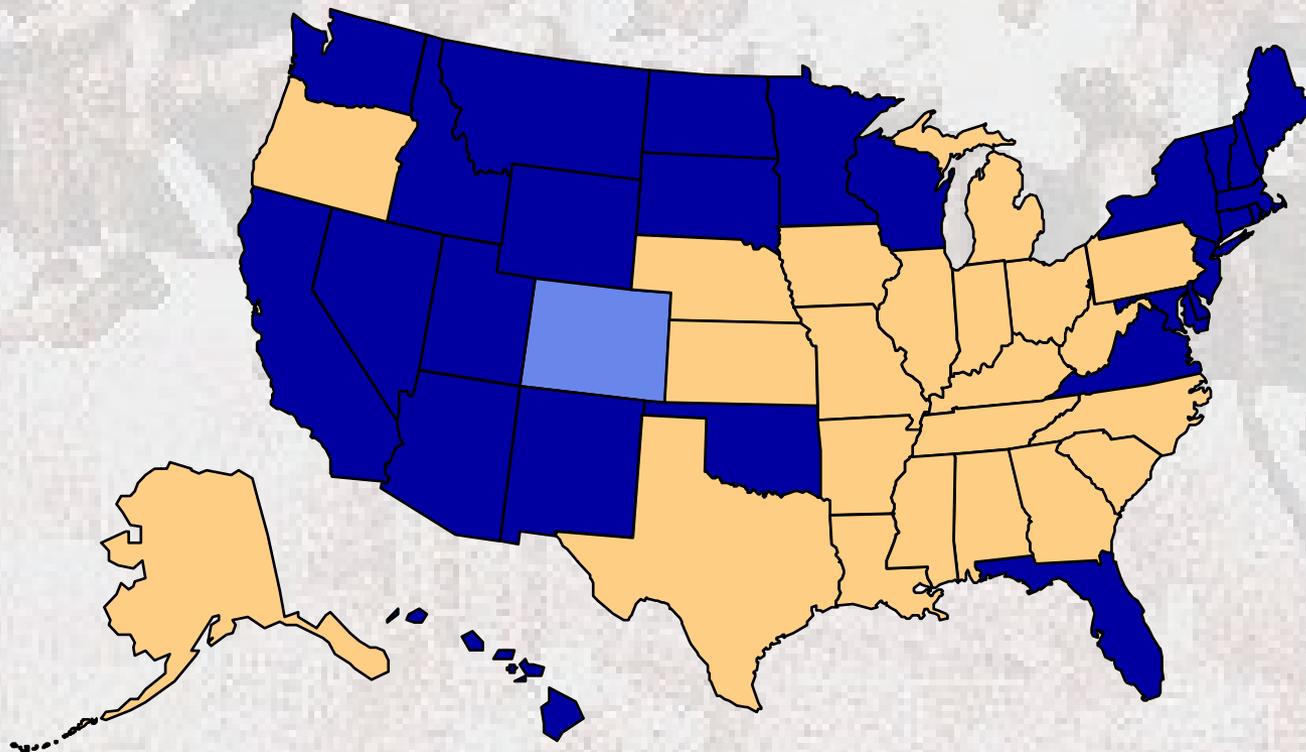
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Obesity Trends* Among U.S. Adults

BRFSS, 2000

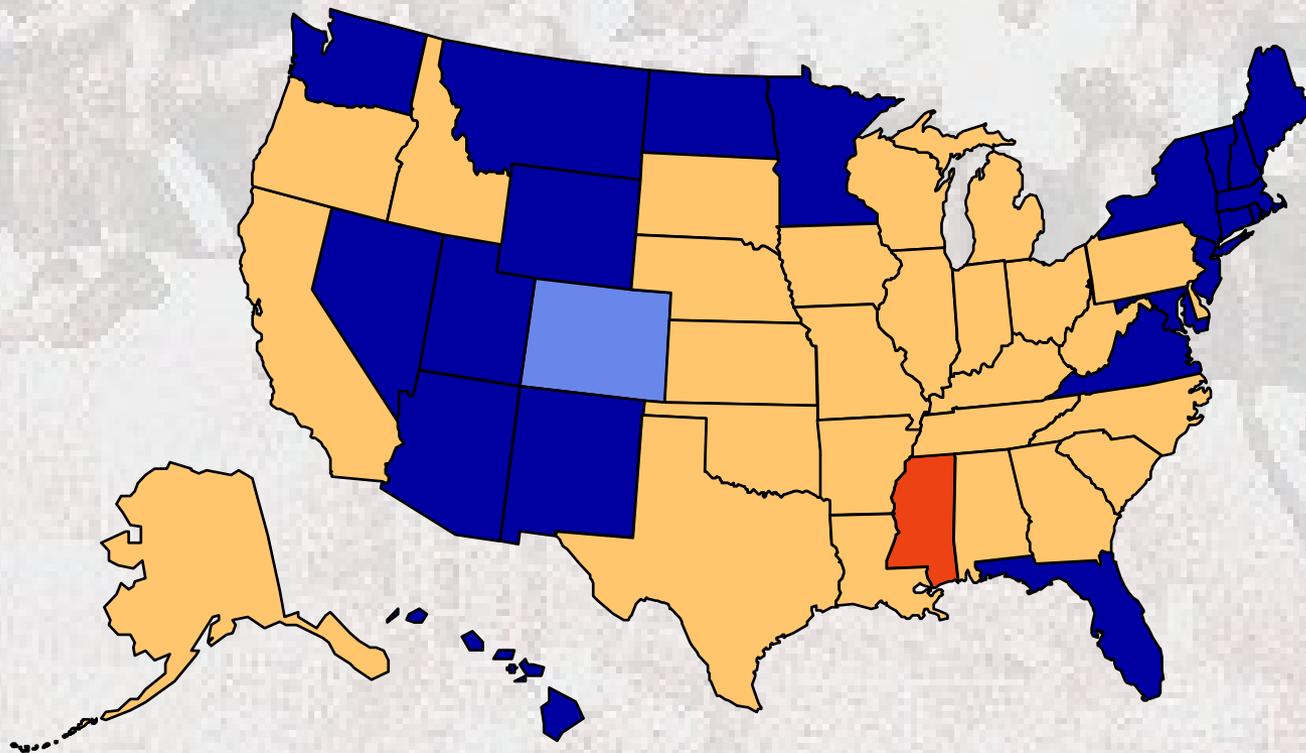
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Obesity Trends* Among U.S. Adults

BRFSS, 2001

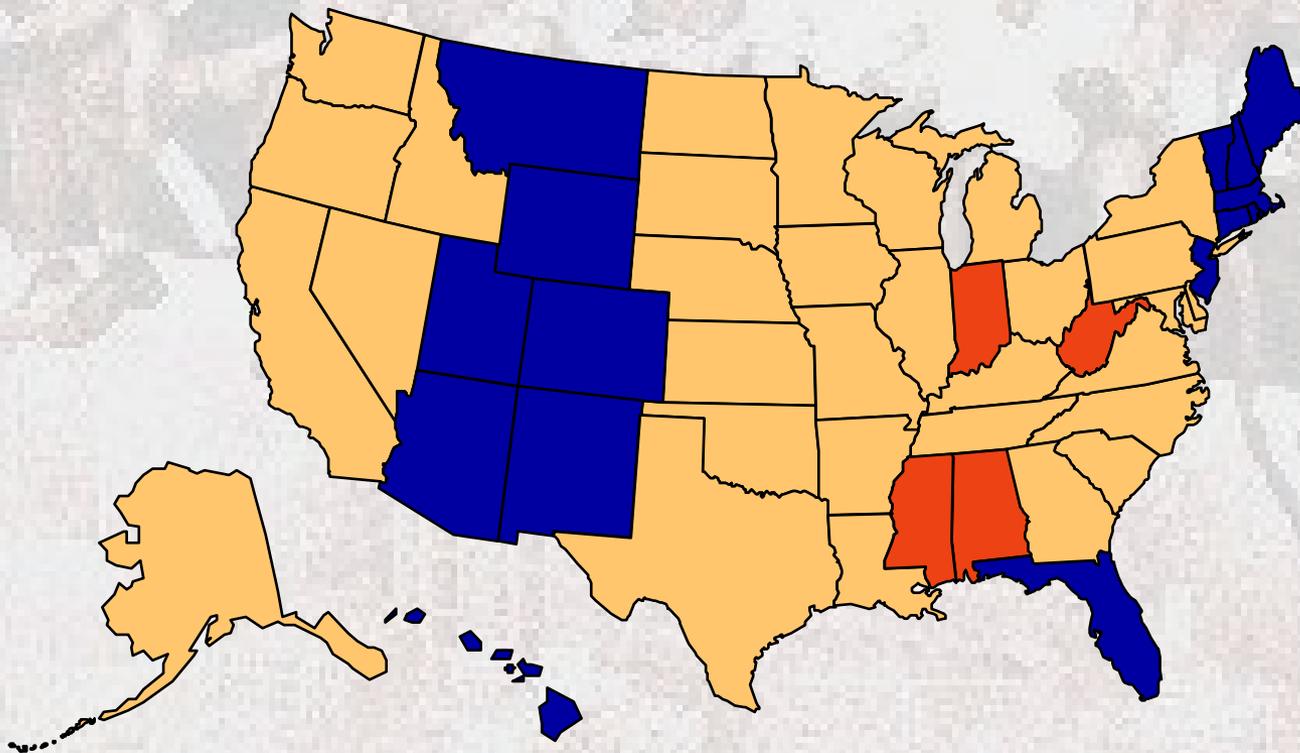
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Obesity Trends* Among U.S. Adults

BRFSS, 2003

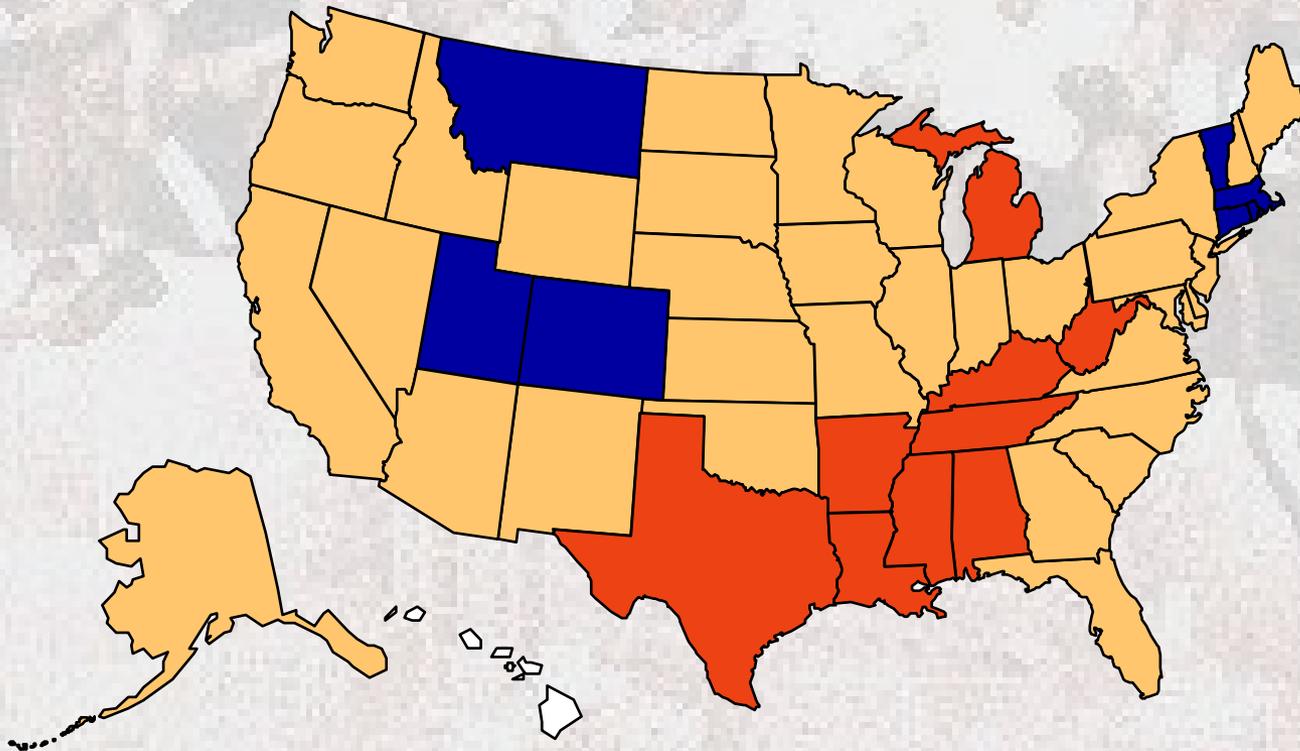
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Obesity Trends* Among U.S. Adults

BRFSS, 2004

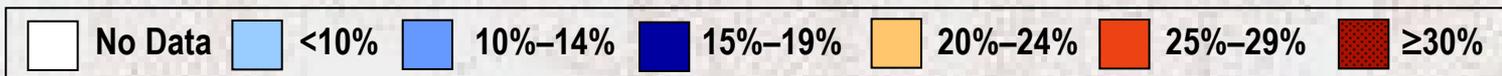
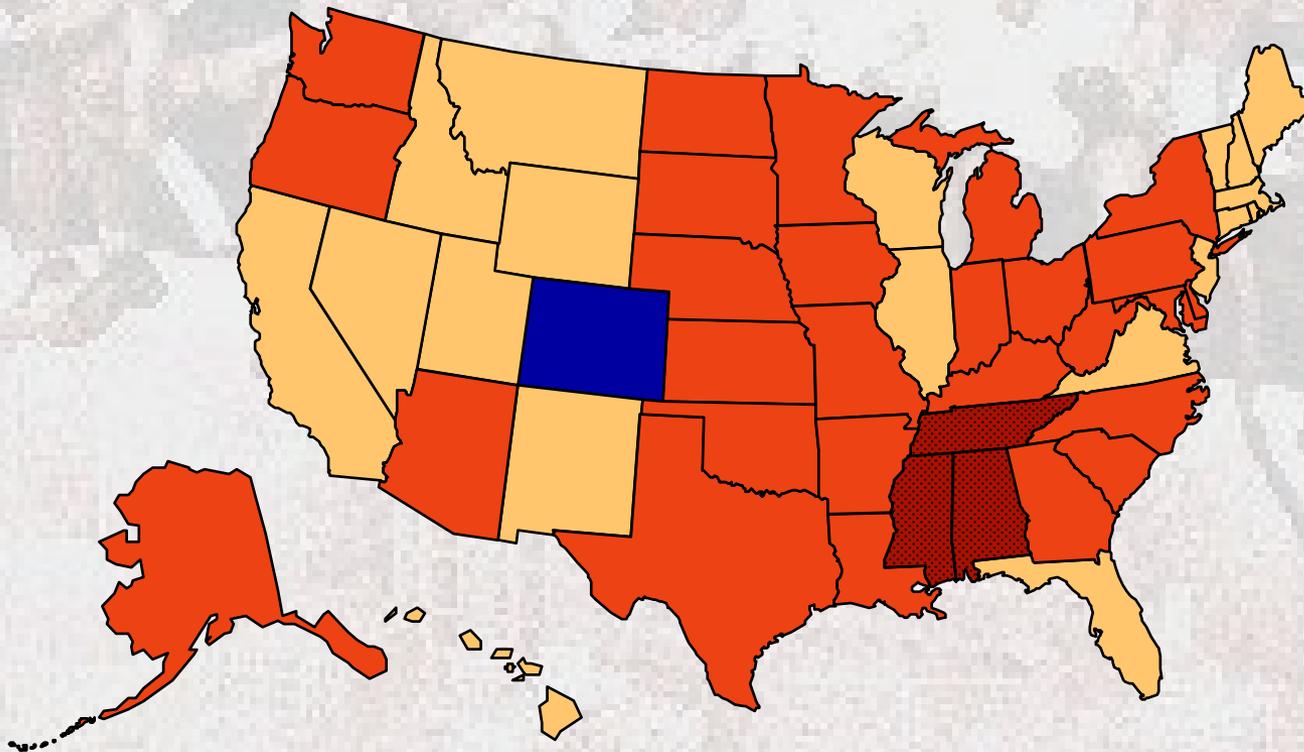
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Obesity Trends* Among U.S. Adults

BRFSS, 2007

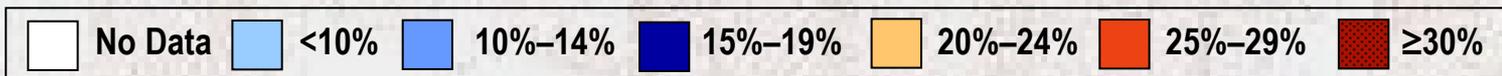
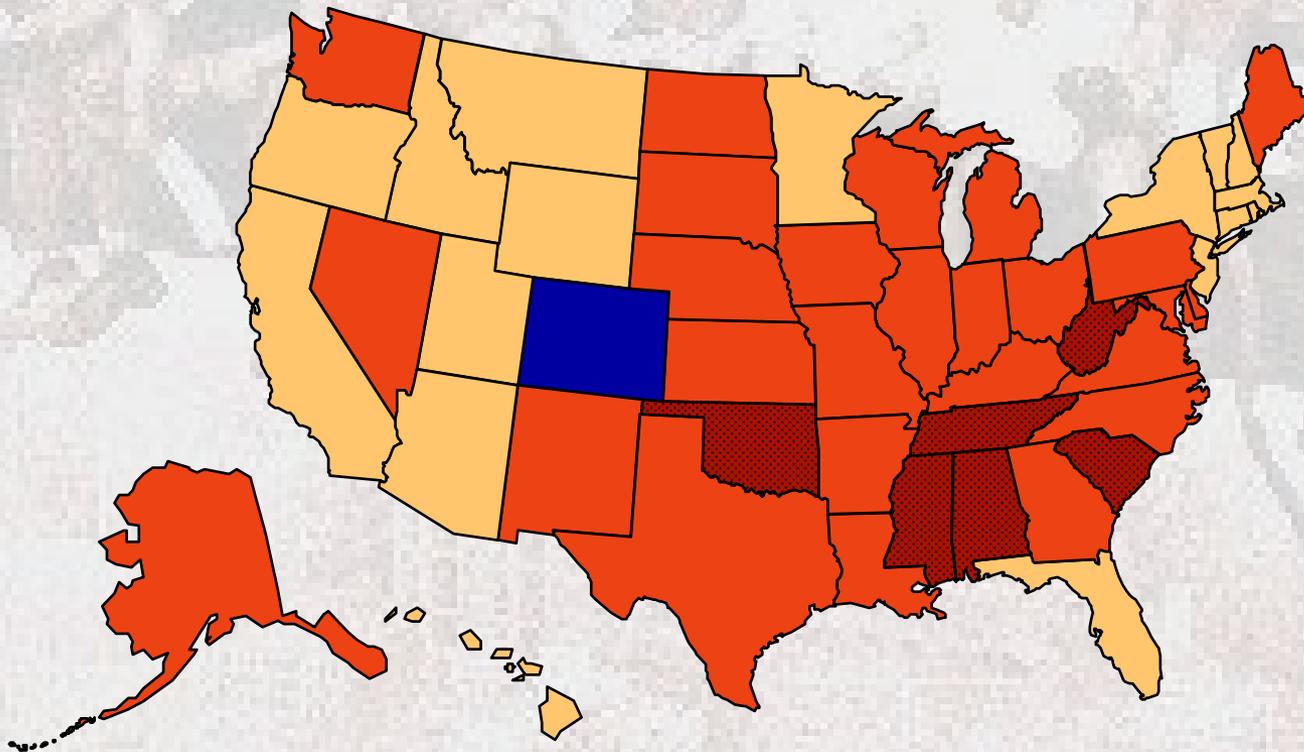
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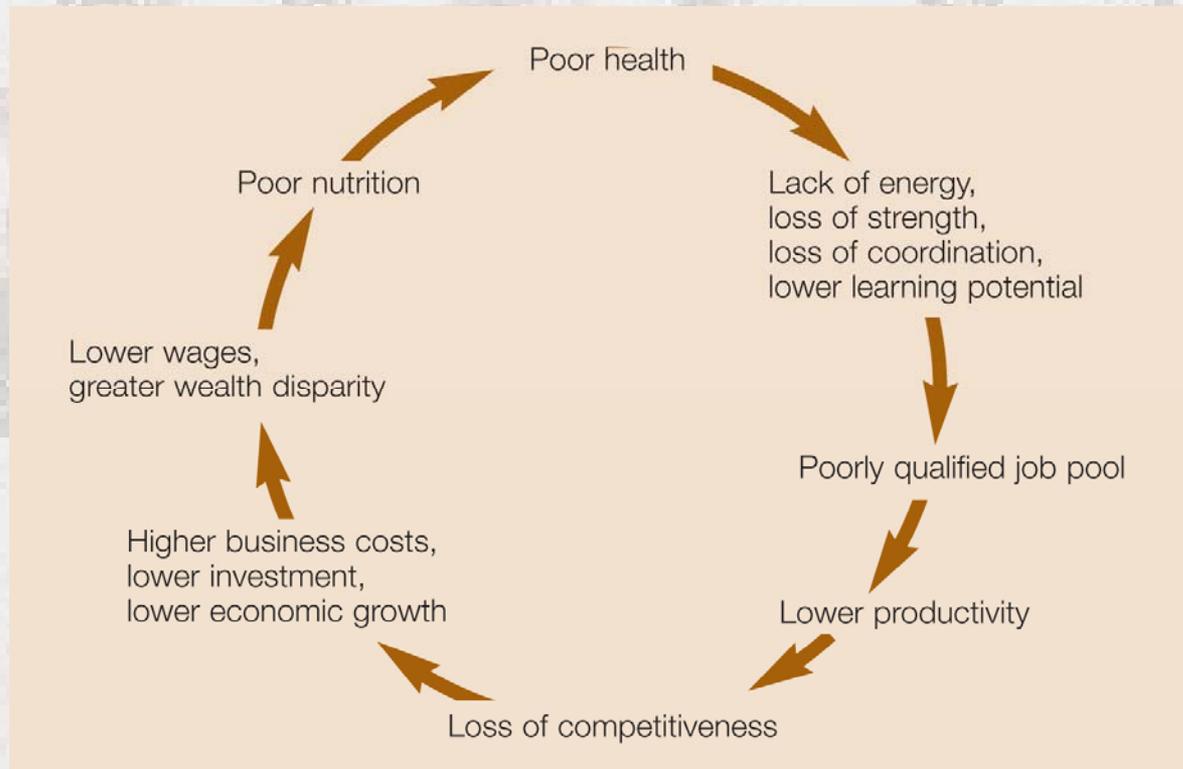
Obesity Trends* Among U.S. Adults

BRFSS, 2008

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



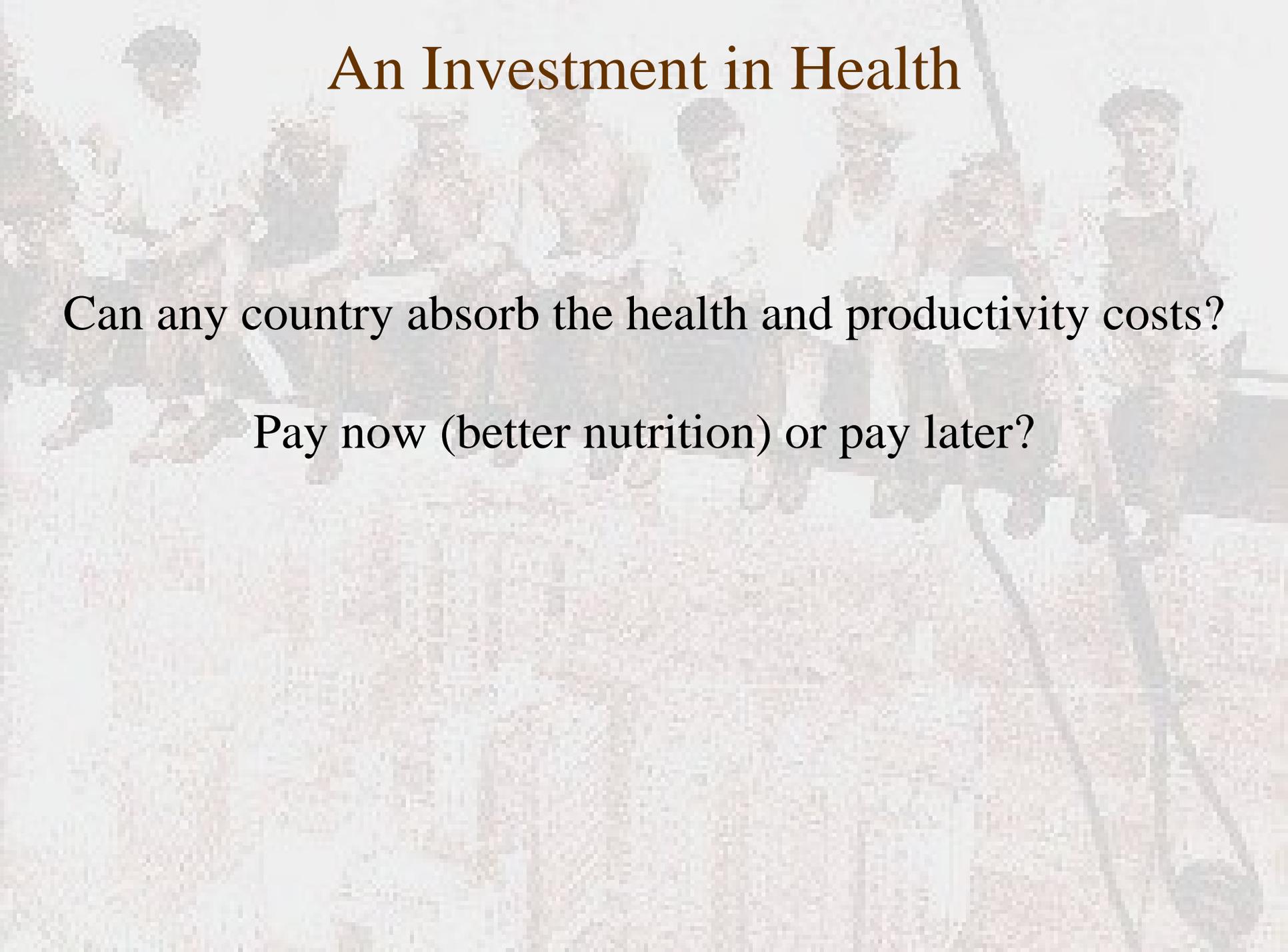
The Cycle of Poverty



but...

Adequate nourishment can raise national productivity levels by 20%.

An Investment in Health

A group of children are sitting on the floor in a classroom, looking at books. The children are of various ethnicities and are dressed in simple clothing. The background shows a classroom setting with a whiteboard and some furniture.

Can any country absorb the health and productivity costs?

Pay now (better nutrition) or pay later?

A group of approximately ten people, including men, women, and children, are sitting on the ground in a rural, outdoor setting. They are arranged in a loose circle, some looking towards the camera and others looking down. The ground is dry and dusty. The background shows a simple, open area with some structures in the distance. The overall scene suggests a community gathering or a food distribution point in a rural area.

A food solution is needed...

FOOD AT WORK

WORKPLACE SOLUTIONS FOR MALNUTRITION,
OBESITY AND CHRONIC DISEASES



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The Incarnation

International Labour Organization (ILO)

-- Social Protection Sector

François Eyraud, Director

William Salter, Senior Advisor

The ILO Decent Work Agenda

"The primary goal of the ILO today is to promote opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and human dignity."

-- *ILO Director-General Juan Somavia*

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FOOD AT WORK

WORKPLACE SOLUTIONS FOR MALNUTRITION,
OBESITY AND CHRONIC DISEASES



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The Plan

Part I (chapters 1-3)

- why nutrition is important
- health, safety, productivity

Part II (chapters 4-9)

- what are worksites doing about it
- global perspective
- large and small enterprises

Part III (chapters 10-12)

- what resources are there
- checklists, policies, standards, programs

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Food Solutions

* Canteen / Cafeteria

- healthy, subsidized (i.e. the incentive) foods [\$\$\$]
- structural improvements: fans, windows, nice tables, clean & relaxing [\$\$]
- simple, healthy common meal served in bulk [\$]

* Meal Vouchers

- ideal for variety of settings: no cafeteria space, mobile workers, small companies
- spurs urban development (new restaurants); generates tax revenue; eliminated black market
- success stories in Brazil, Hungary, France

* Mess Rooms / Kitchenettes

- mess rooms cheaper than cafeterias; just a clean room where food is brought in
- kitchenettes provide options: cook, refrigerate, relax

* Local Vendors

- success stories with farmers markets, safe street foods, relationships with local shops

* Low-Cost Shops

- no-profit or low-profit company stores selling bulk grains or other necessities
- solutions for the worker and the family

- NO ONE SIZE FITS ALL -

- NO SINGLE SOLUTION FOR ALL BUSINESSES EVERYWHERE -

Husky & Voestalpine Stahl

Husky Injection Molding Systems, Ltd. (Bolton, Ontario)

- mix of blue-collar, white-collar workers
- former CEO Robert Shad is health nut (retired in 2007, sold to Onex)
- impossible to get unhealthy food at the worksite
- wellness program budget US\$2.5 million; cafeteria US\$480,000
- US\$6.8 million savings (health, safety, productivity)
- high morale; lowest absenteeism and accident rates in the industry



San Pedro Diseños

San Pedro Diseños (Guatemala City)

- textile company, low-wage earners
- Guatemala saw dramatic cut in food supply and income starting in 1995
- 60% homes cannot afford required calories and nutrients
- most diets entirely corn tortilla, rice and beans
- most workers at San Pedro weak and sluggish

The Solution

- health evaluation; nutritional education
- free sweet bread in morning (pan dulce, pan de manteca)
- hour-long meal break; subsidized meals; workers pay 1/3 value (US\$0.75)
- varied menu with meat and fresh vegetables; 1,100 kcal
- free meal for Saturday workers

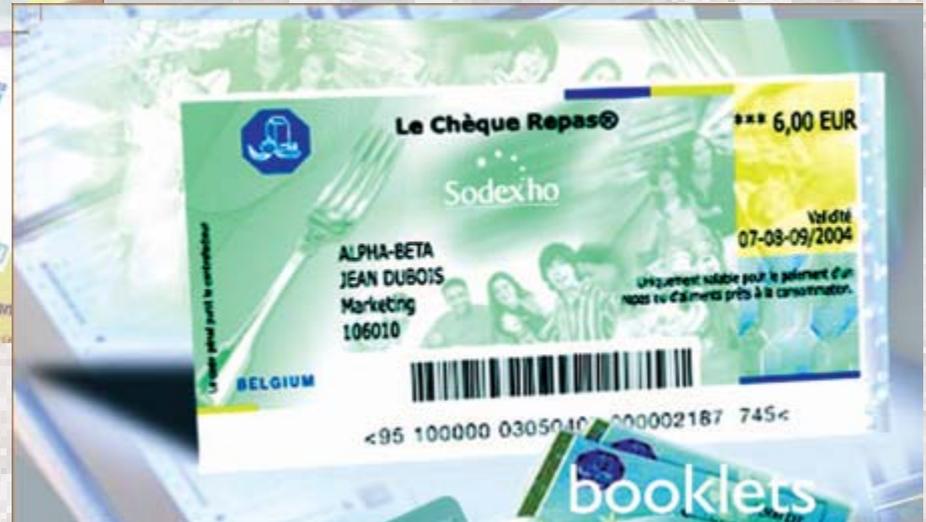
The Payoff

- cost company US\$640 a day for all 250 employees
- 70% production increase; 20% profit increase

San Pedro Diseños



Meal Vouchers



Brazilian Experience

Programa de Alimentação do Trabalhador (PAT)

- established in Brazil in 1976; goal of providing food to low-wage workers
- doubled the number of restaurants from 1980s to 1990s
- agricultural workers use vouchers for food baskets
- PAT constitutes 1% of GDP; hundreds of thousands of new jobs
- fewer workplace accidents; fewer sick days; productivity up... *significantly*
- excellent white paper: Prof. José Afonso Mazzon, University of São Paulo

“Is it possible, still, to emulate Brazil?” asked a headline over a column by Mariano Grondona in La Nación.

Argentina’s former president Nestor Kirchner said that Argentina could learn from Brazil because they “showed the results of a serious investment policy.”

Mess Rooms

Anything but a mess...

- simply a big room where food is brought in
- food can be catered; offered for free or at a discount
- zero to minimal food storage; zero to minimal food preparation
- low cost to company; little infrastructure needed

- ***Case Study #1: American Apparel in Los Angeles, California...***
- worked with university; serves boxed lunches prepared externally
- culturally appropriate, nourishing, inexpensive

- ***Case Study #2: MexMode in Atlixco, Mexico...***
- strike led to major changes at this Korean-owned garment factory
- five vendors offer meals; only 14 pesos, which is paid by company

QuickTime™ and a decompressor are needed to see this picture.

Kitchenettes

Build it and they will come...

- refrigerators, microwave ovens, small sink
- small investment enables employees to bring, store, cook healthy food
- *Case Study #1: BonCafe in Singapore...*
- management wanted employees not to eat street food
- converted empty room into kitchenette for 60 employees
- saw modest gains in health screening results
- *Case Study #2: Me in Washington, D.C....*
- I make soup on weekend, freeze in five portions
- defrost and heat in office microwave, US\$0.50 per serving
- alternative is \$7 unhealthy meal



Fruit at Work

Firmafrugt

- Denmark's novel workplace fruit program
- free fruit at work
- 621 workplace in 2001; nearly 10,000 workplaces today
- 96% of employees now eating fruit daily
- candy consumption down
- program has created 40 new companies selling fruit just to companies



Fruit at Work

Workplace Farmers' Markets

- popular in United States
- company invites local farmers onto property
- fresh fruit, vegetables, wholesome breads
- convenient for workers
- workers have little "excuse" not to buy fresh fruits and vegetables
- cost to company is zero



Street Foods



Street Food: Not a Dirty Word

- street food is inexpensive, tasty
- street food can be healthy
- street food can be safe
- South Africa is a good model

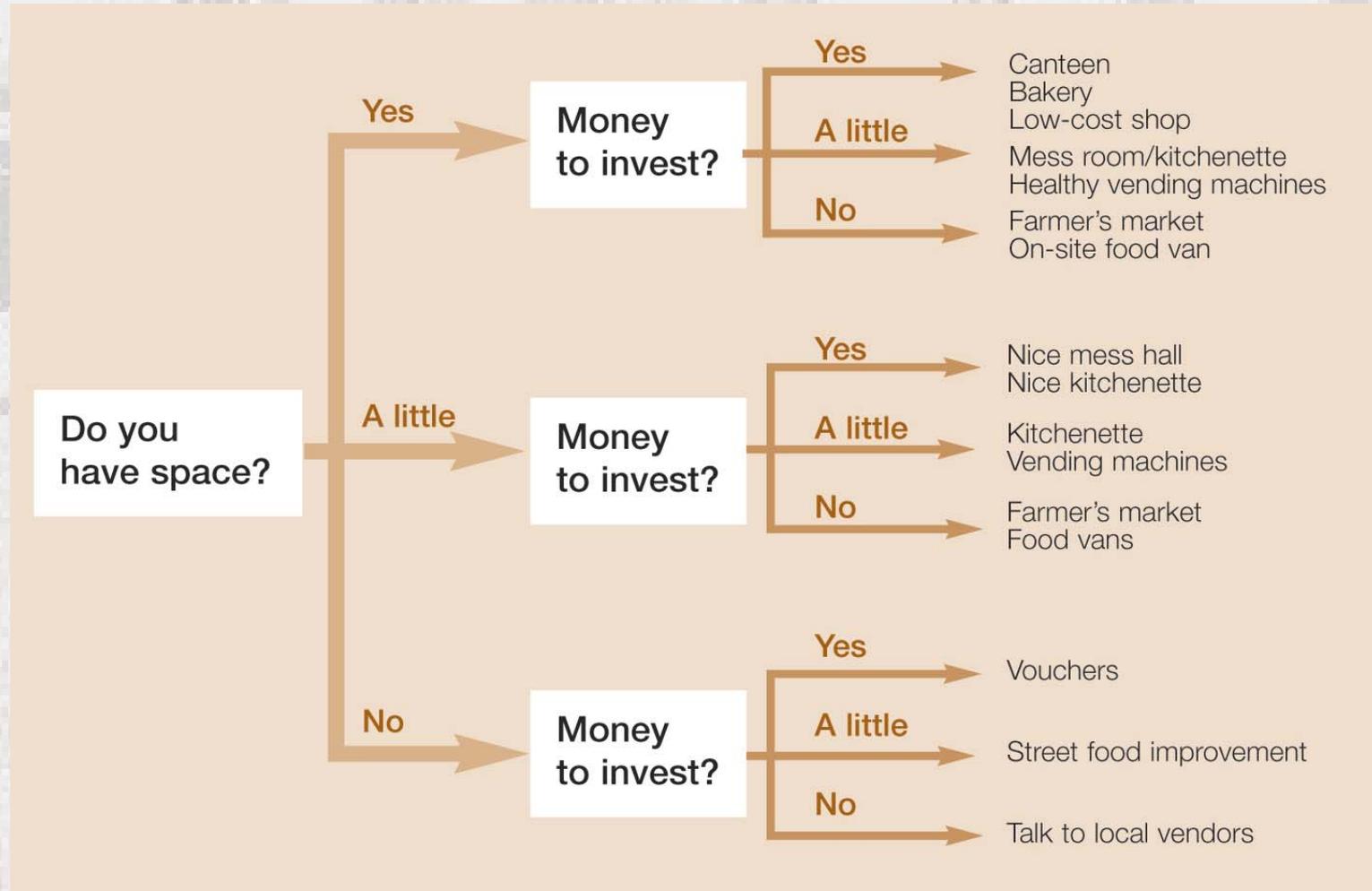
Make Street Foods Safe

- invite the vendor on company grounds
- provide clean water, clean utensils
- provide safe food storage, ice
- educate vendors about food safety
- vouchers can be used for "safe" vendors

Make Street Foods Healthy

- educate workers about nutrition
- vouchers can be used for "healthy" vendors

Making a Plan



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Conclusions

Workplace meals largely are a missed opportunity.

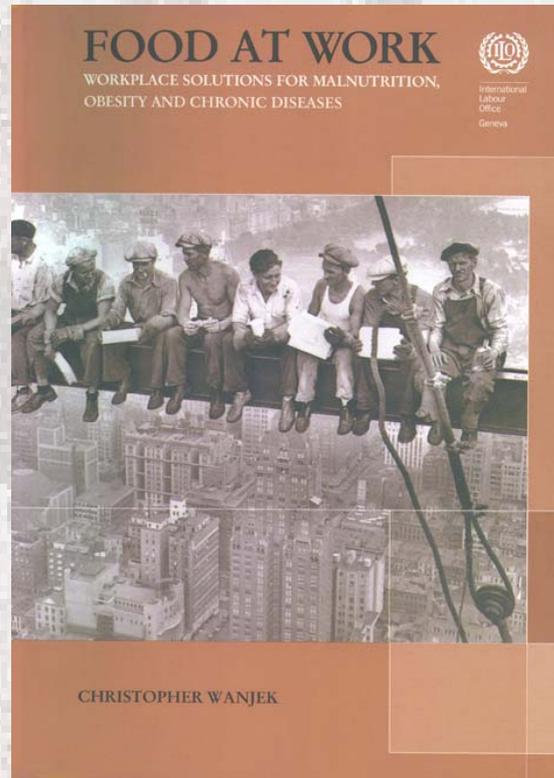
The workplace, instead of being accommodating, is frequently a hindrance to proper nutrition.

✓ *for governments* -- a well-nourished population, reduction in health costs, increase in tax revenue from higher productivity

✓ *for employers* -- nutrition is an issue of productivity, absenteeism, morale, sickness, safety

✓ *for the social good* -- feeding our fellow man is what makes us human; eliminating hunger is among the noblest of causes

Merci pour votre temps.



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Food at Work available for free download at
http://www.ilo.org/global/What_we_do/Publications/ILOBookstore/Orderonline/Books/lang--en/WCMS_PUBL_9221170152_EN/index.htm

Spanish summary at <http://www.christopherwanjek.com/foodatwork>