

***Torah and Science:
Spiritual and Clinical
Insights into Healthy
Eating and Nutrition***

Alan Rozanski, M.D.

December 13, 2015

GOALS

1. To explore the changing nature of health problems in America
2. To delineate healthy eating according to evidence-based nutritional science
3. Provide a Torah based perspective regarding healthy eating

Leading causes of death in 1900

#1 Pneumonia

#2 Tuberculosis

#3 Diarrhea/enteritis

#3 Diarrhea/enteritis

The Bio-Medical Revolution



The decline of communicable diseases

- *Sanitation*
- *Chlorination*
- *Safer food*
- *Vaccinations*
- *Antibiotics*

Leading causes of death in 1960

#1 Heart Disease

#2 Cancer

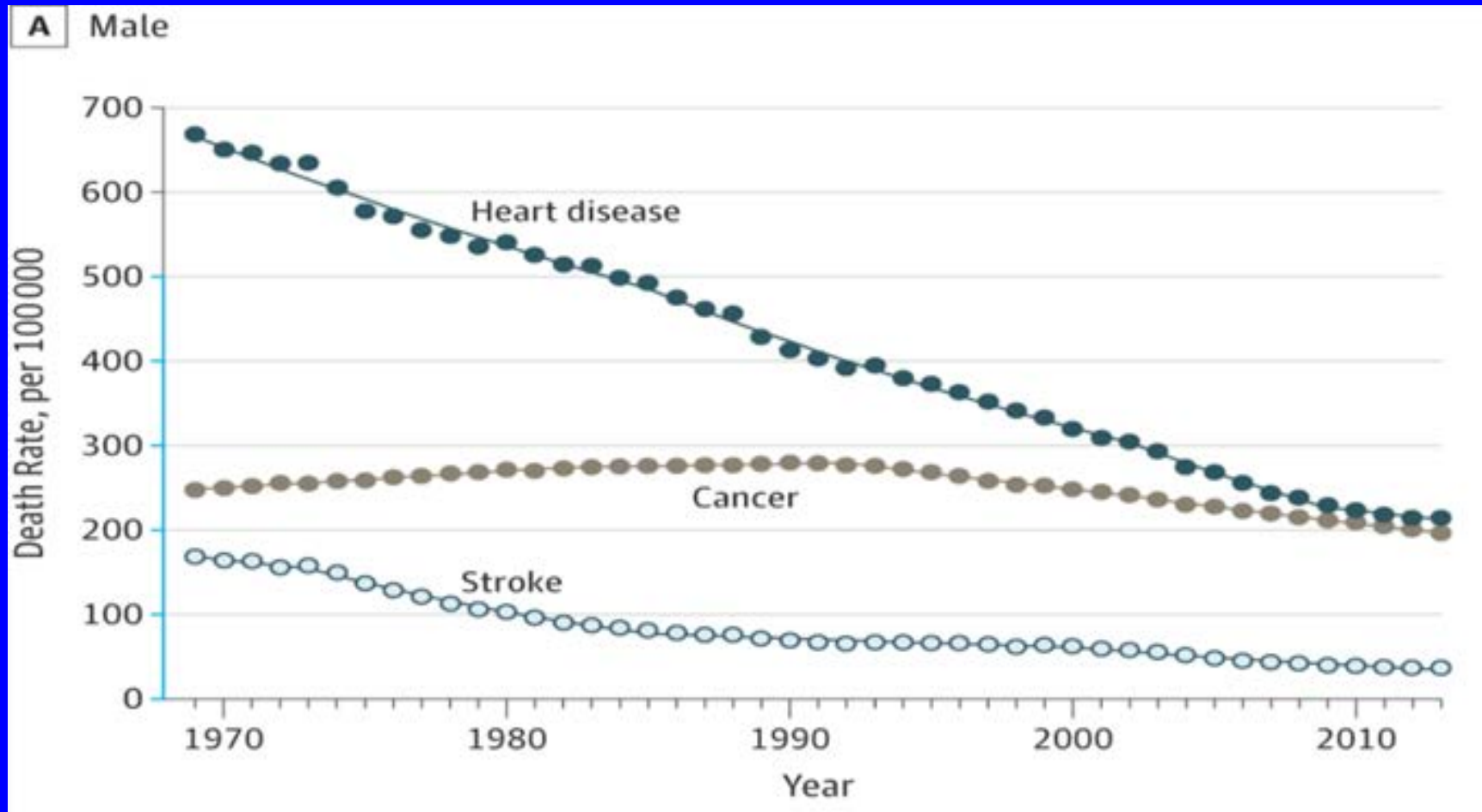
#3 Stroke

#3 Stroke

Original Investigation

Temporal Trends in Mortality in the United States, 1969-2013

Jiemln Ma, PhD, MHS; Elizabeth M. Ward, PhD; Rebecca L. Siegel, MPH; Ahmedin Jemal, DVM, PhD



*Advances in
medical
care*

~50%

Advances in Cardiovascular Medicine

- Stress testing
- Cardiac imaging (Echo, MUGA, SPECT, PET, CT, MRI)
- Acute cardiac care units
- Telemetry units
- Holter and event monitors
- Multi-chamber pacemakers
- IABP
- Ventricular Assist devices
- Defibrillators
- Arrhythmia/ Ablations
- Cardiac catheterization
- Angioplasty, stenting
- Coronary bypass, valve and aortic surgery, TAVR
- Cardiac transplant
- Cardiac rehabilitation, EECPP
- Hypothermia
- Hypertensive medications
- Lipid lowering medications
- Diabetic medications
- Anti-arrhythmic medications
- Anti-coagulants
- Heart failure medications

*Advances in
medical
care*

~50%

Prevention

~50%

Success in Prevention

- War on smoking
- Dietary policies and initiatives
- Lipid lowering meds
- Hypertension meds
- Diabetic meds
- Aspirin

Rise in Life expectancy

<u>Year</u>	<u>All</u>
1930	59.7
1940	67.9
1950	68.2
1960	69.7
1970	70.8
1980	73.7
1990	75.4
2000	77.0
2010	78.7

People live 20 years longer today than they did 80 years ago!

για 80 χρόνια αθροί

High Hanging Fruit



TIME

The Obesity Epidemic in America

The Real Payoff **Loans for the Masses** **Home Depot** **Make-or-Break Year for AOL's Partners**

FORTUNE

IS FAT THE NEXT TOBACCO?

THE NEXT

The war over obesity will be fought in the courts. That's bad news for Big Food.

TIME

The Obesity Epidemic in America

*Percentage of obese adult population, 2009

State	Percentage
AK	16.4%
AL	23.3%
AR	24.6%
CA	17.7%
CO	18.5%
CT	19.2%
DC	20.8%
DE	27.5%
FL	23.5%
GA	24.6%
HI	18.5%
IA	19.2%
ID	19.2%
IL	23.5%
IN	23.5%
KS	19.2%
KY	24.6%
LA	24.6%
MA	19.2%
MD	24.6%
ME	19.2%
MI	23.5%
MN	19.2%
MO	24.6%
MS	24.6%
MT	19.2%
NC	24.6%
ND	19.2%
NE	19.2%
NH	19.2%
NJ	23.5%
NM	19.2%
NV	19.2%
OH	23.5%
OK	24.6%
OR	19.2%
PA	24.6%
RI	19.2%
SC	24.6%
SD	19.2%
TN	24.6%
TX	24.6%
UT	19.2%
VA	24.6%
VT	19.2%
WA	19.2%
WI	23.5%
WV	24.6%
WY	19.2%

JUNE 7, 2004 **SPECIAL ISSUE**

TIME

OVERCOMING OBESITY IN AMERICA

- WHY WE EAT SO MUCH
- THE ANTI-FAT CRUSADERS
- WEIGHT-LOSS HEROES
- WHAT TO TELL YOUR KIDS
- A GUIDE TO DIET BOOKS

Michael Lindsay-Hogg, Moby, Madonna, and Peter Dinklage

China's Quiet Takeover of Africa

Christopher Hitchens On the Dark Side of Barack

FAT NATION

IT'S WORSE THAN YOU THINK. HOW TO DEAT OBESITY.

THE AUSTRALIANS ARE COMING • BEIJING BACKLASH

Newsweek

Fat World

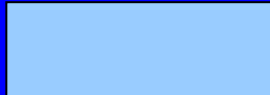
We're Eating More Junk And Getting Less Exercise.

Obesity Is The Globe's Newest Epidemic.

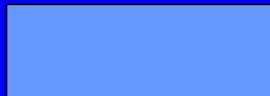
Color Scale for obesity maps



No Data



<10%



10%-14%



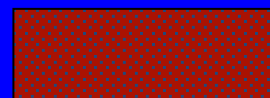
15%-19%



20%-24%



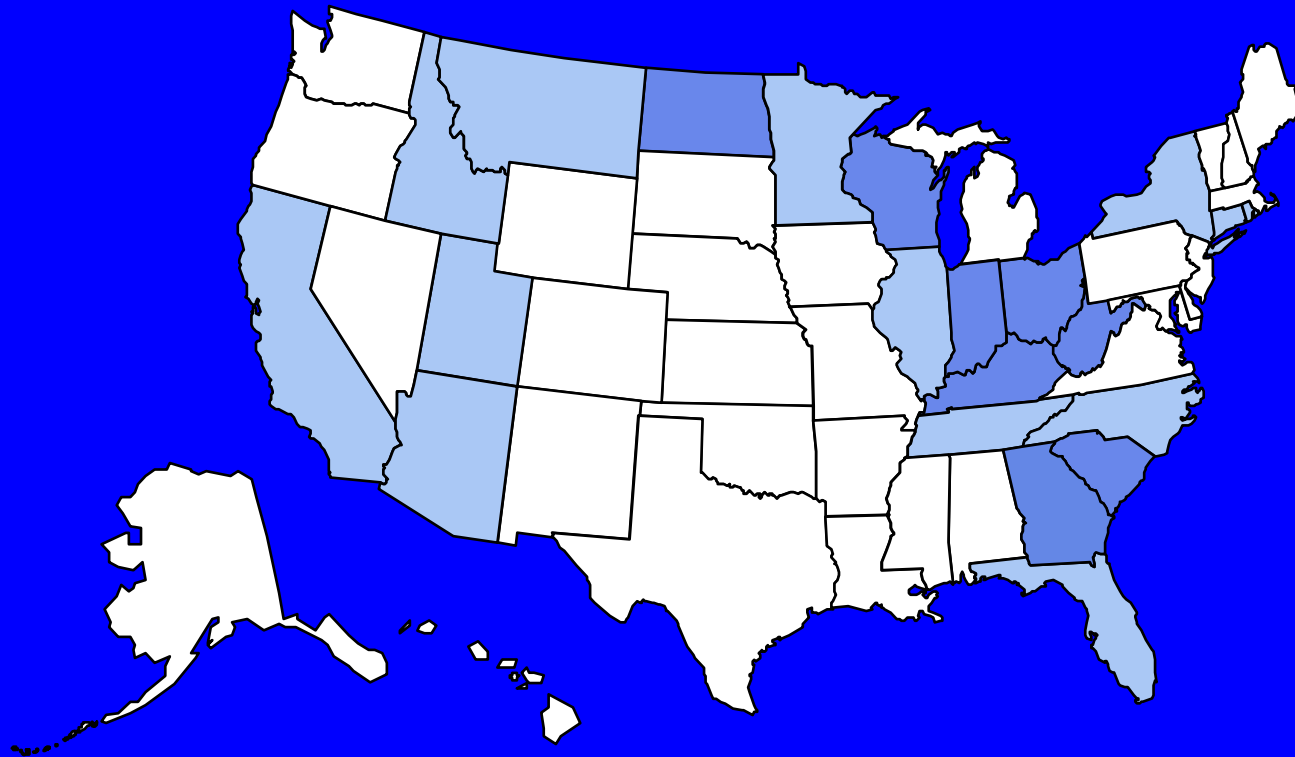
25%-29%



≥30%

Obesity Trends* Among U.S. Adults BRFSS, 1985

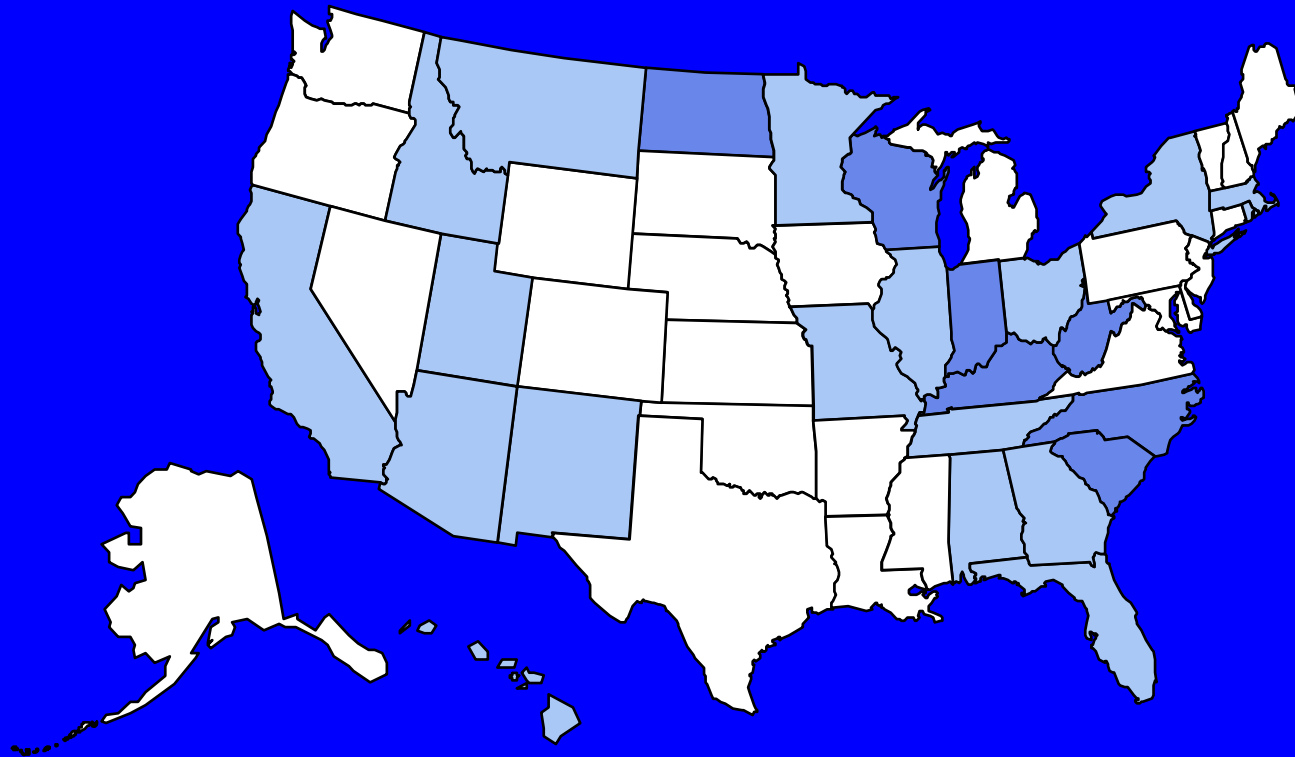
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14%

Obesity Trends* Among U.S. Adults BRFSS, 1986

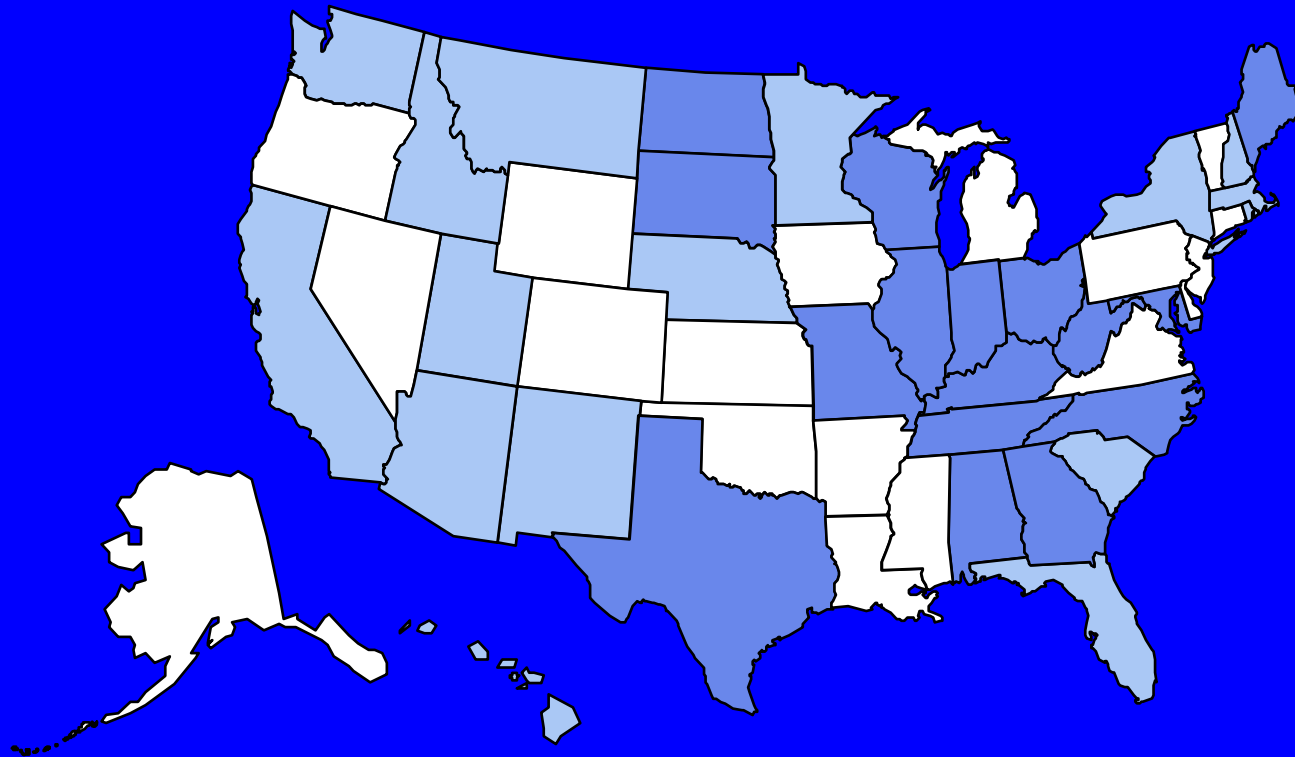
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19

Obesity Trends* Among U.S. Adults BRFSS, 1987

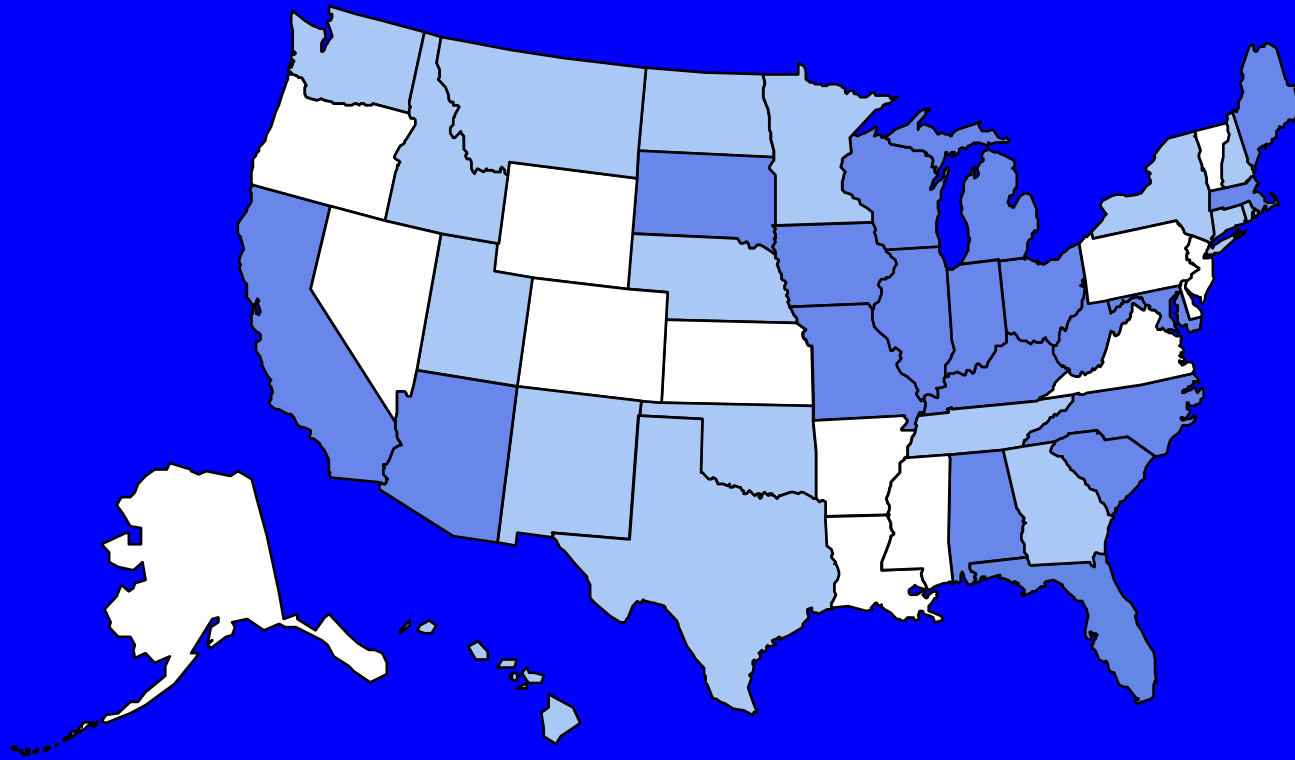
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%–14% ■ 15%–19

Obesity Trends* Among U.S. Adults BRFSS, 1988

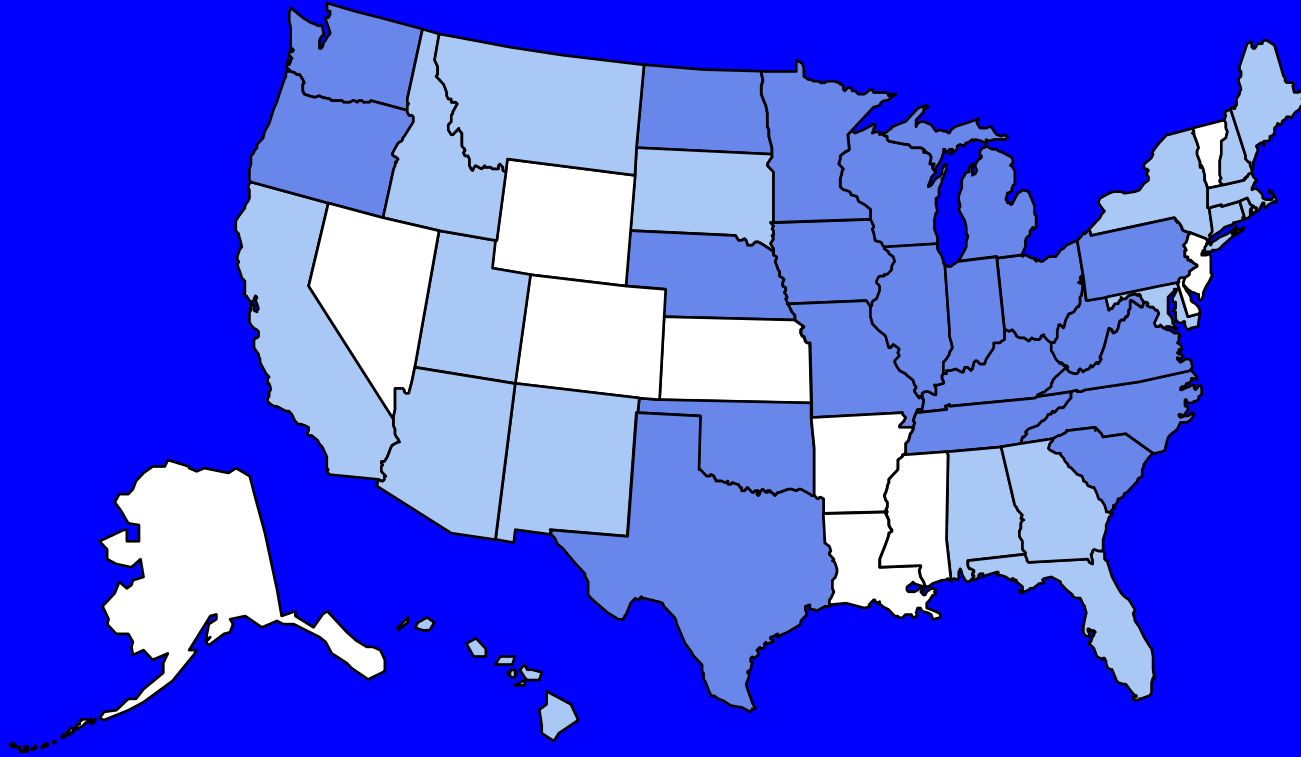
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19%

Obesity Trends* Among U.S. Adults BRFSS, 1989

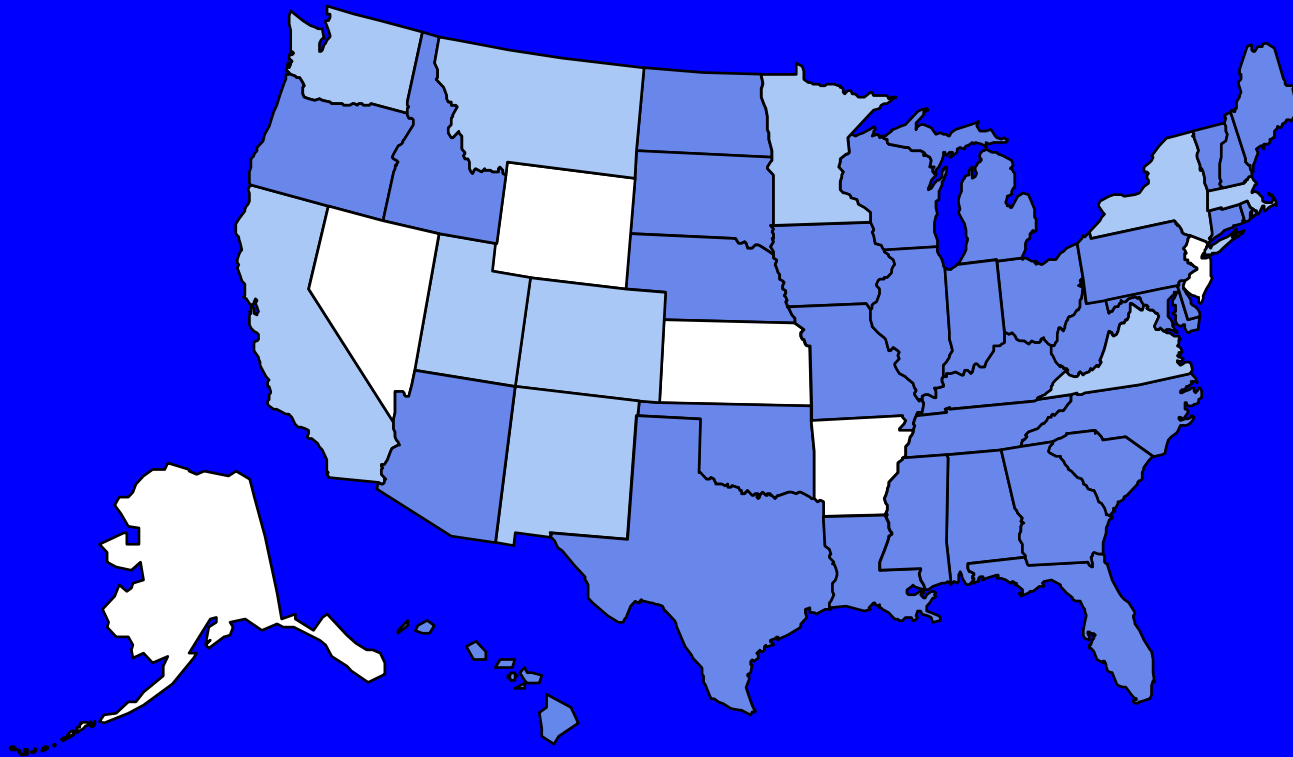
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19

Obesity Trends* Among U.S. Adults BRFSS, 1990

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

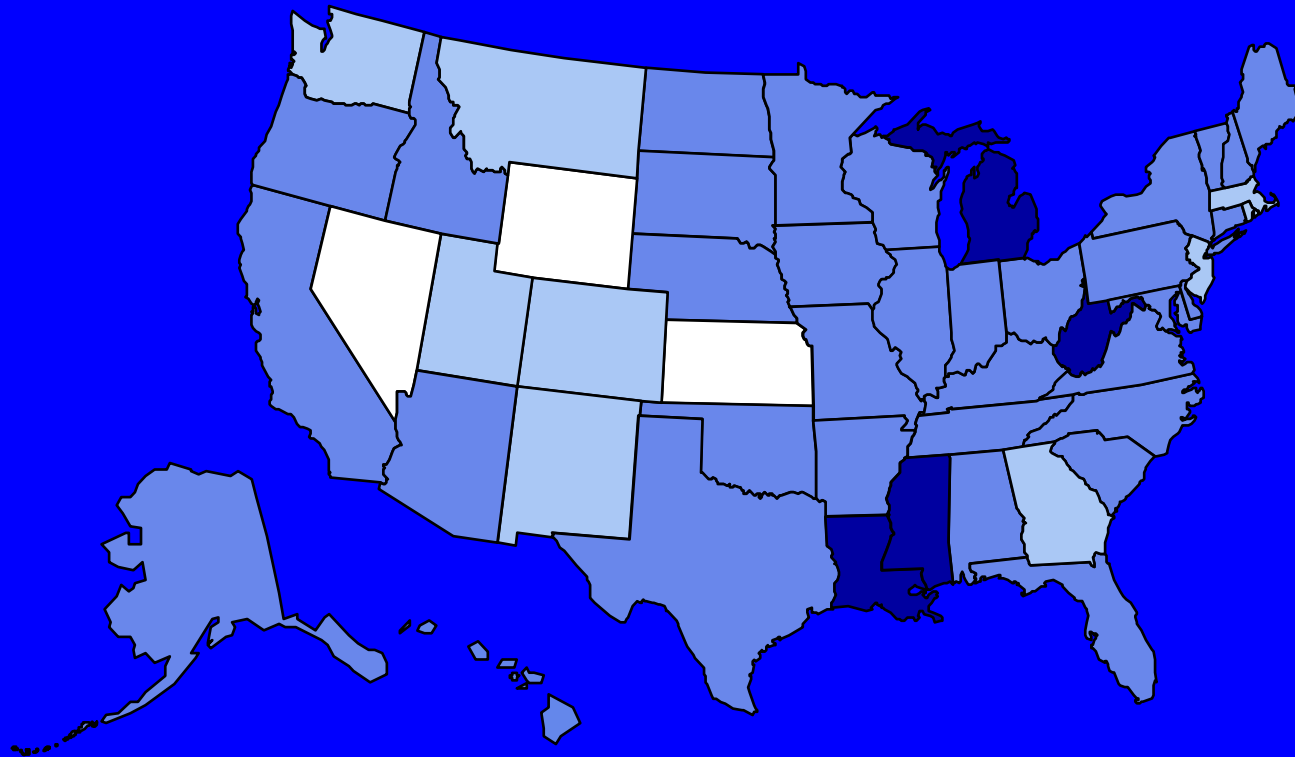


■ No Data ■ <10% ■ 10%-14% ■ 15%-19



Obesity Trends* Among U.S. Adults BRFSS, 1991

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

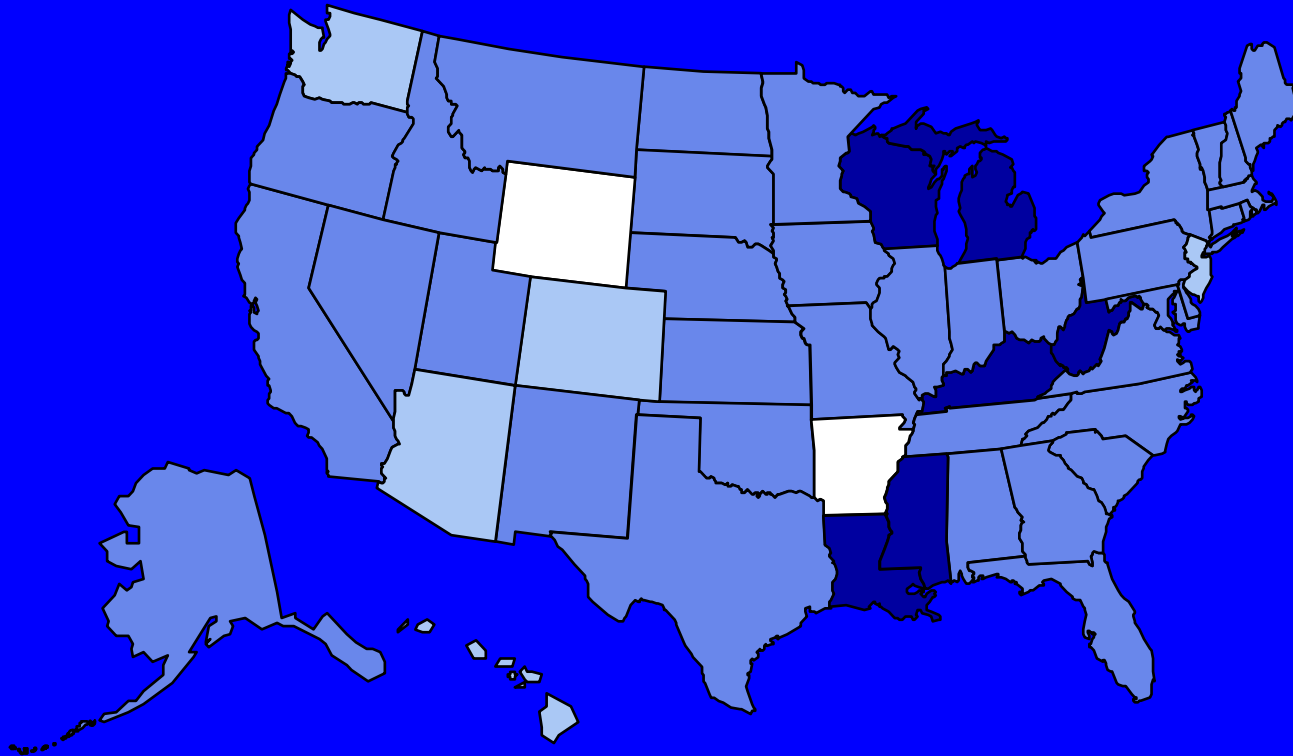


■ No Data ■ <10% ■ 10%-14% ■ 15%-19%

Obesity Trends* Among U.S. Adults

BRFSS, 1992

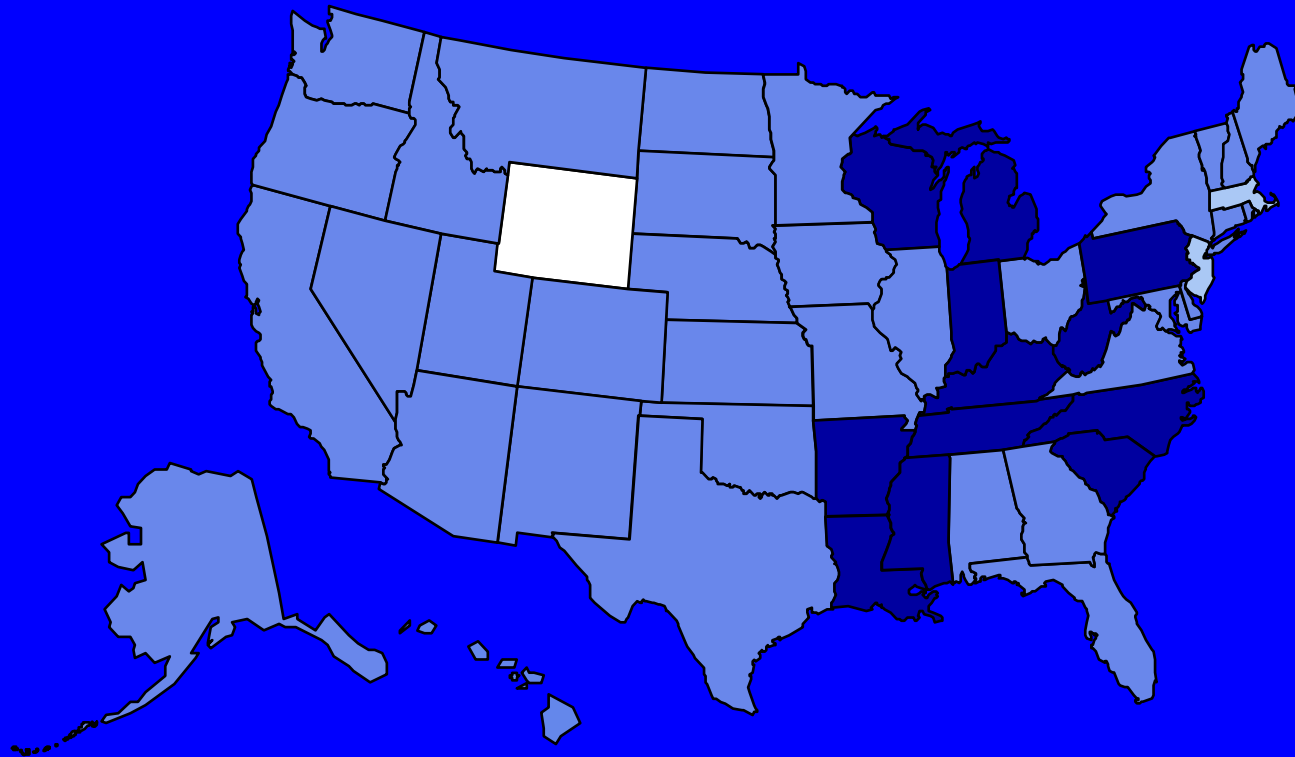
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%–14% ■ 15%–19

Obesity Trends* Among U.S. Adults BRFSS, 1993

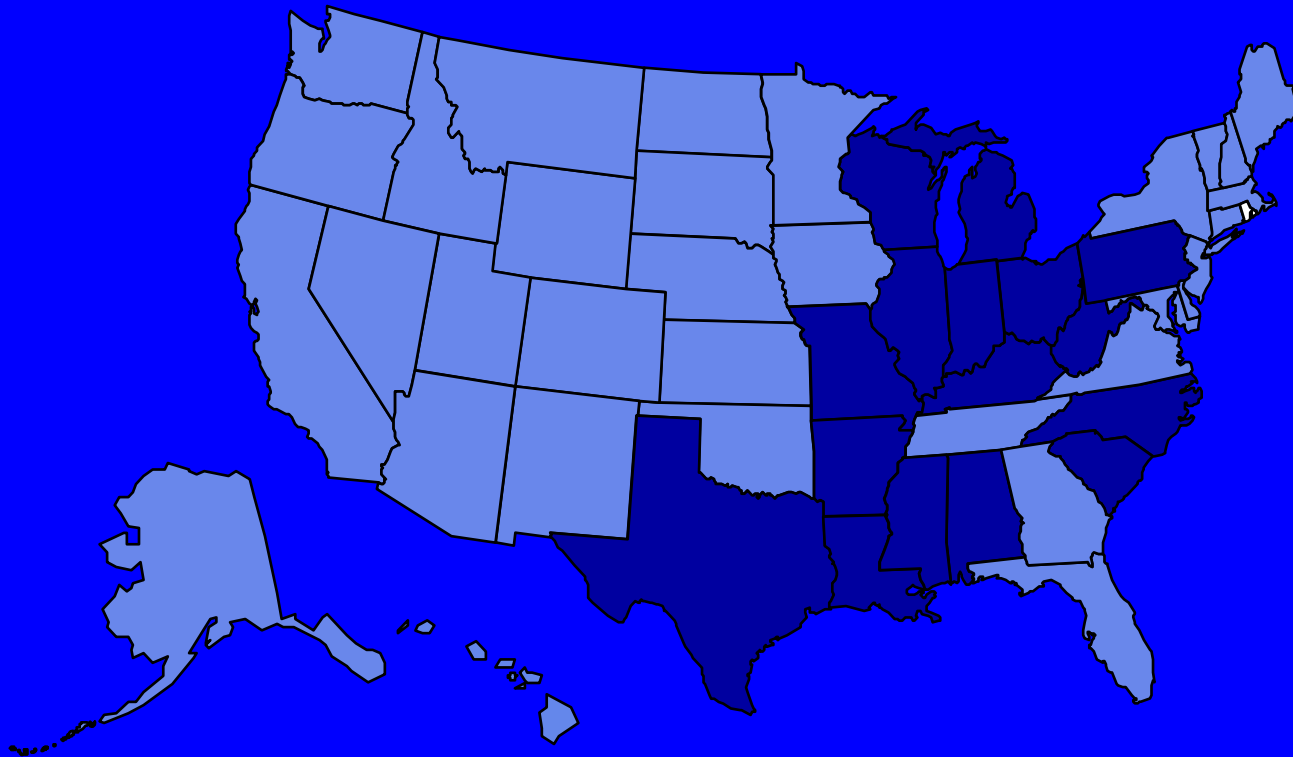
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19%

Obesity Trends* Among U.S. Adults BRFSS, 1994

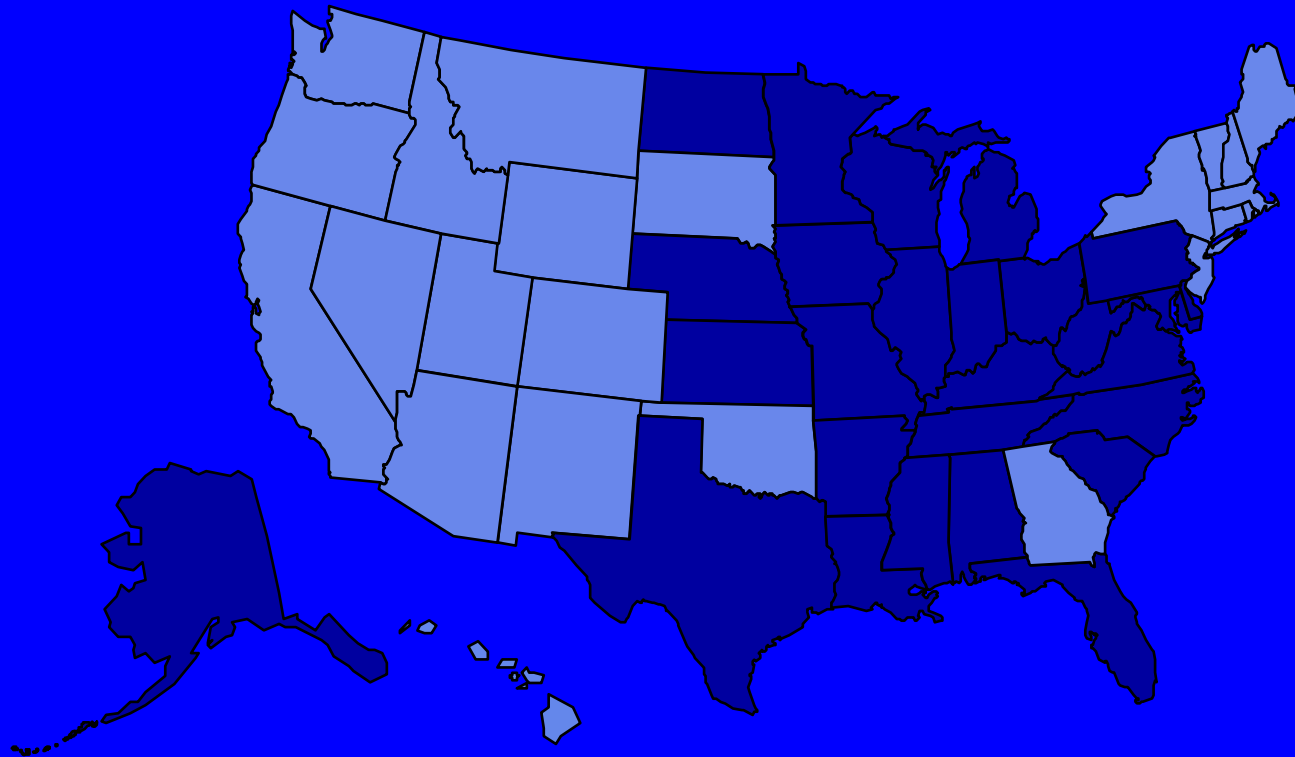
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19

Obesity Trends* Among U.S. Adults BRFSS, 1995

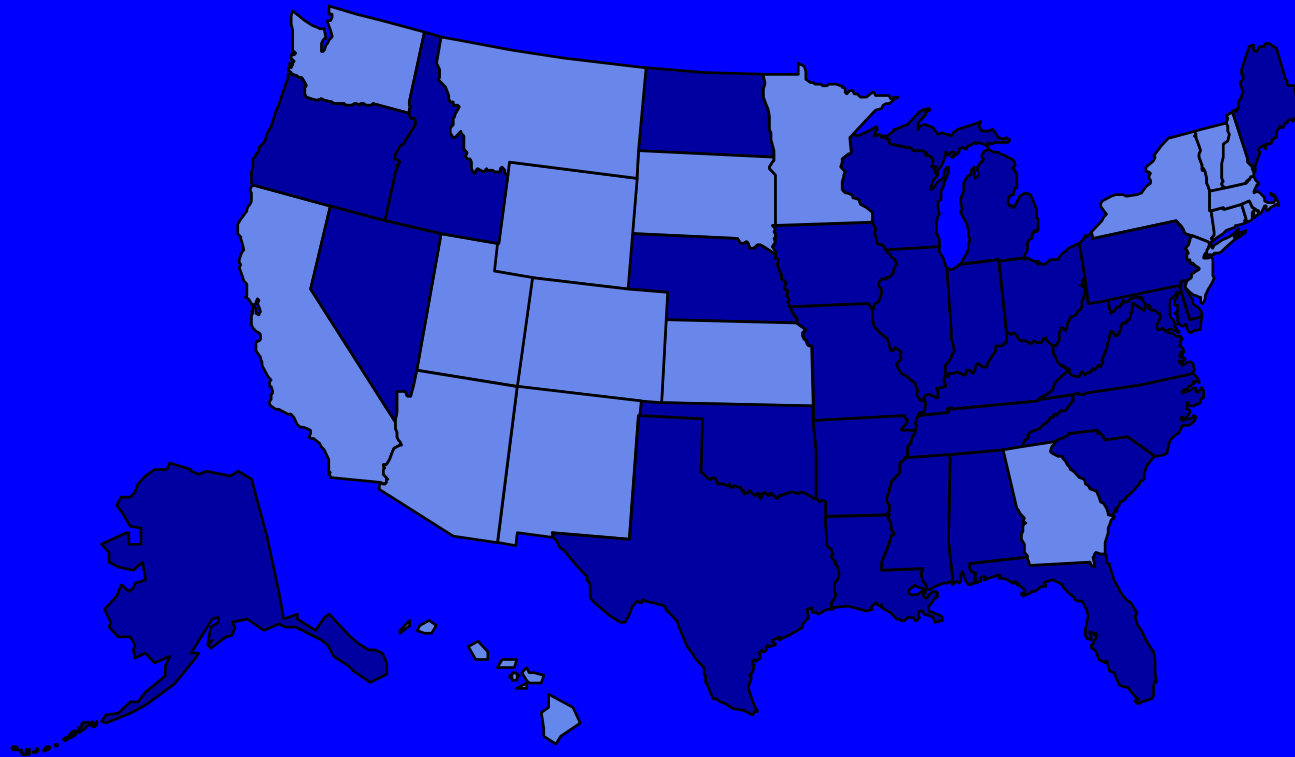
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19

Obesity Trends* Among U.S. Adults BRFSS, 1996

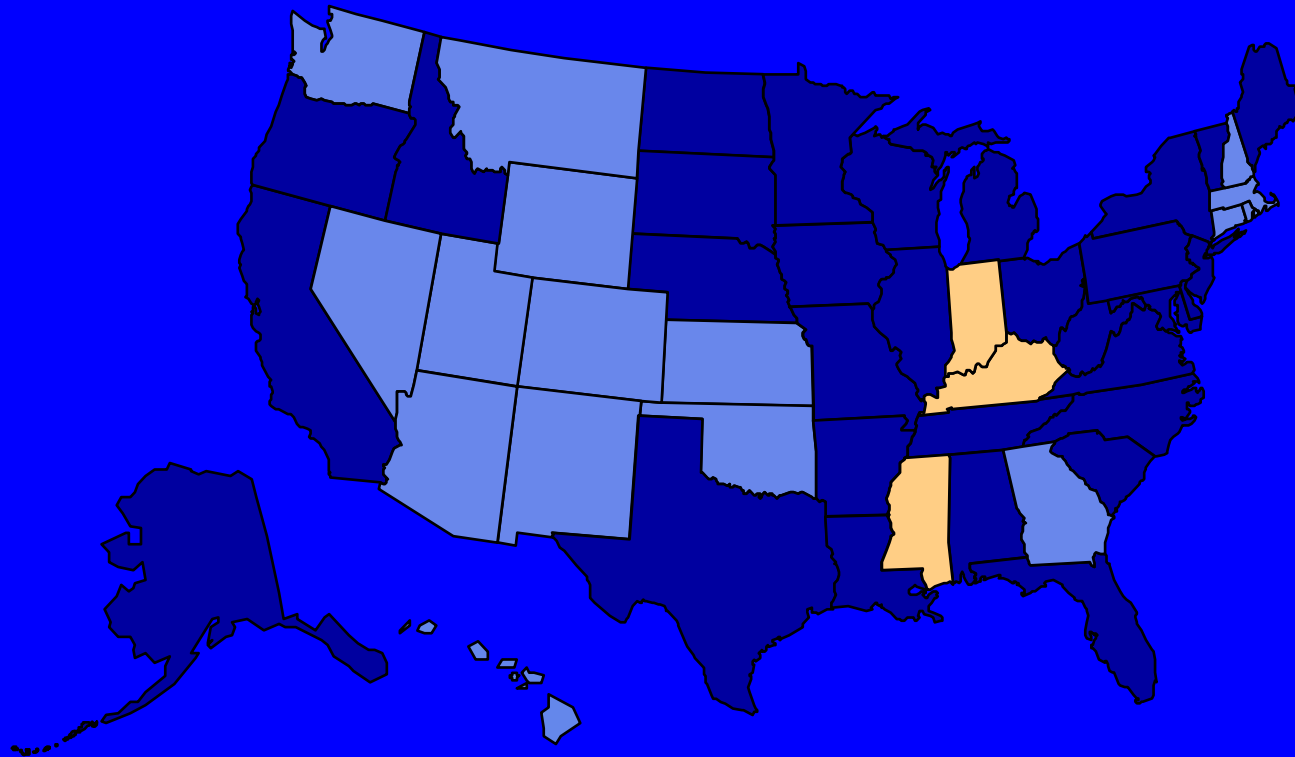
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19

Obesity Trends* Among U.S. Adults BRFSS, 1997

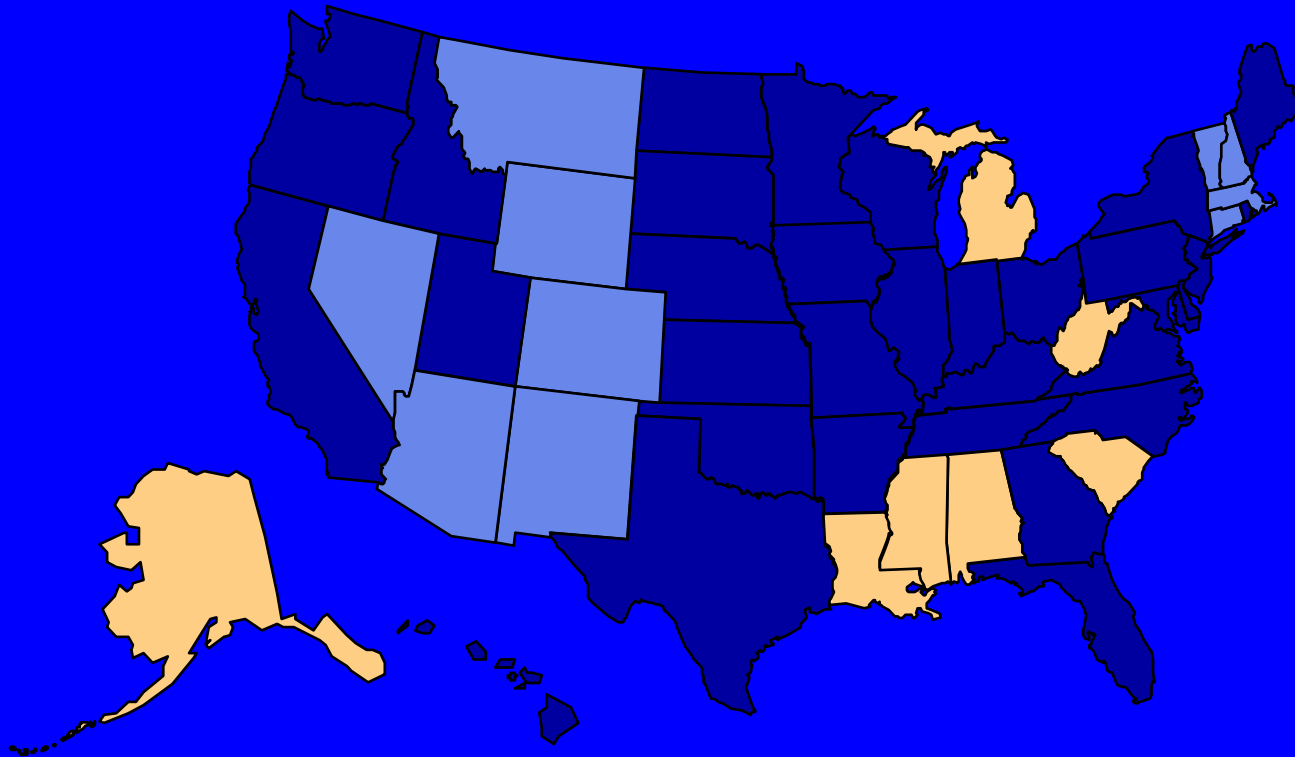
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



■ No Data ■ <10% ■ 10%-14% ■ 15%-19% ■ 20%-24%

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

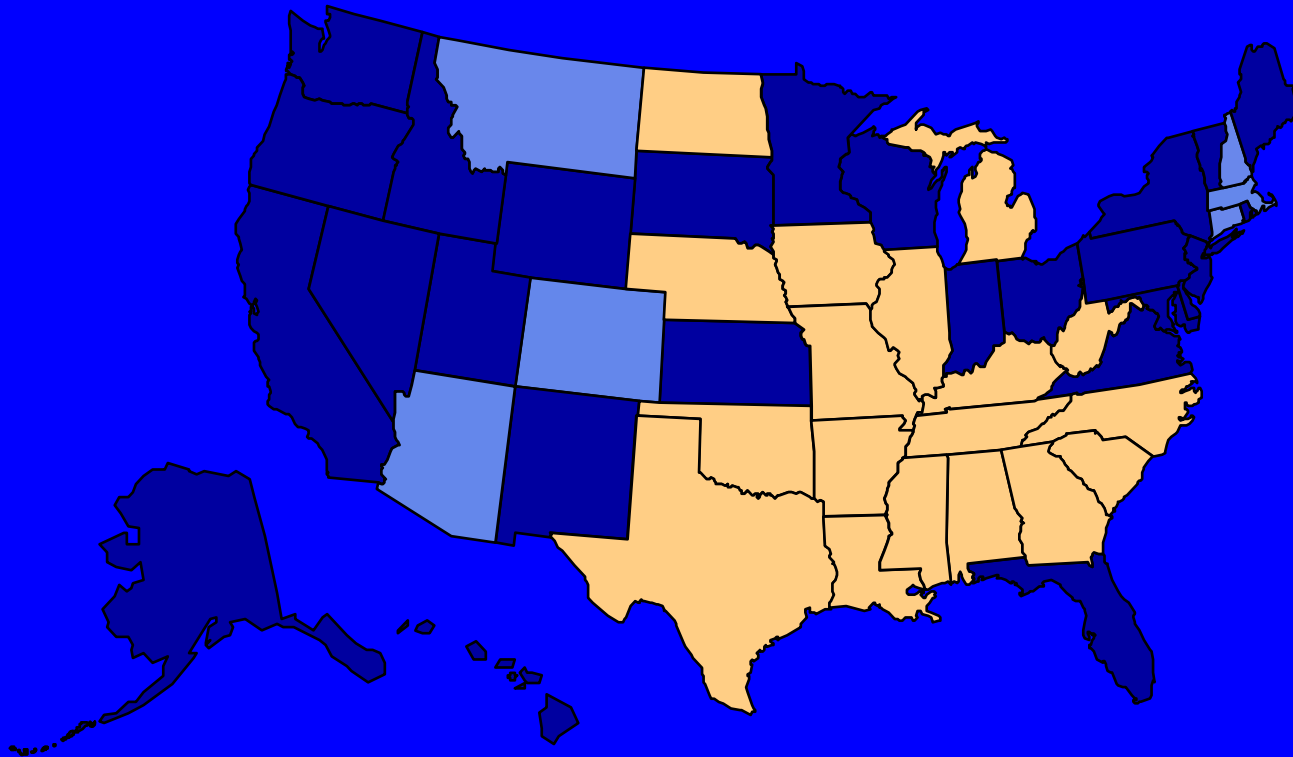
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



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

Obesity Trends* Among U.S. Adults BRFSS, 1999

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

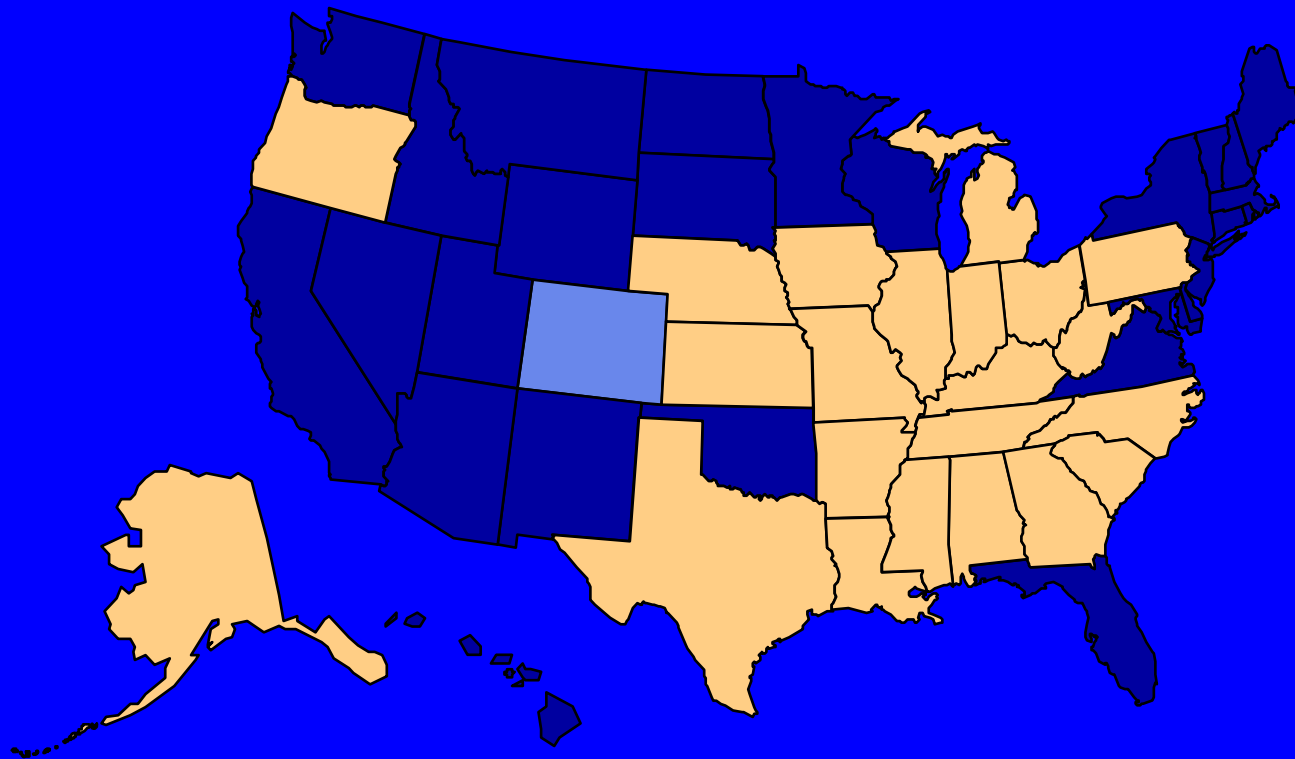


■ No Data ■ <10% ■ 10%-14% ■ 15%-19% ■ 20%-24%

Obesity Trends* Among U.S. Adults

BRFSS, 2000

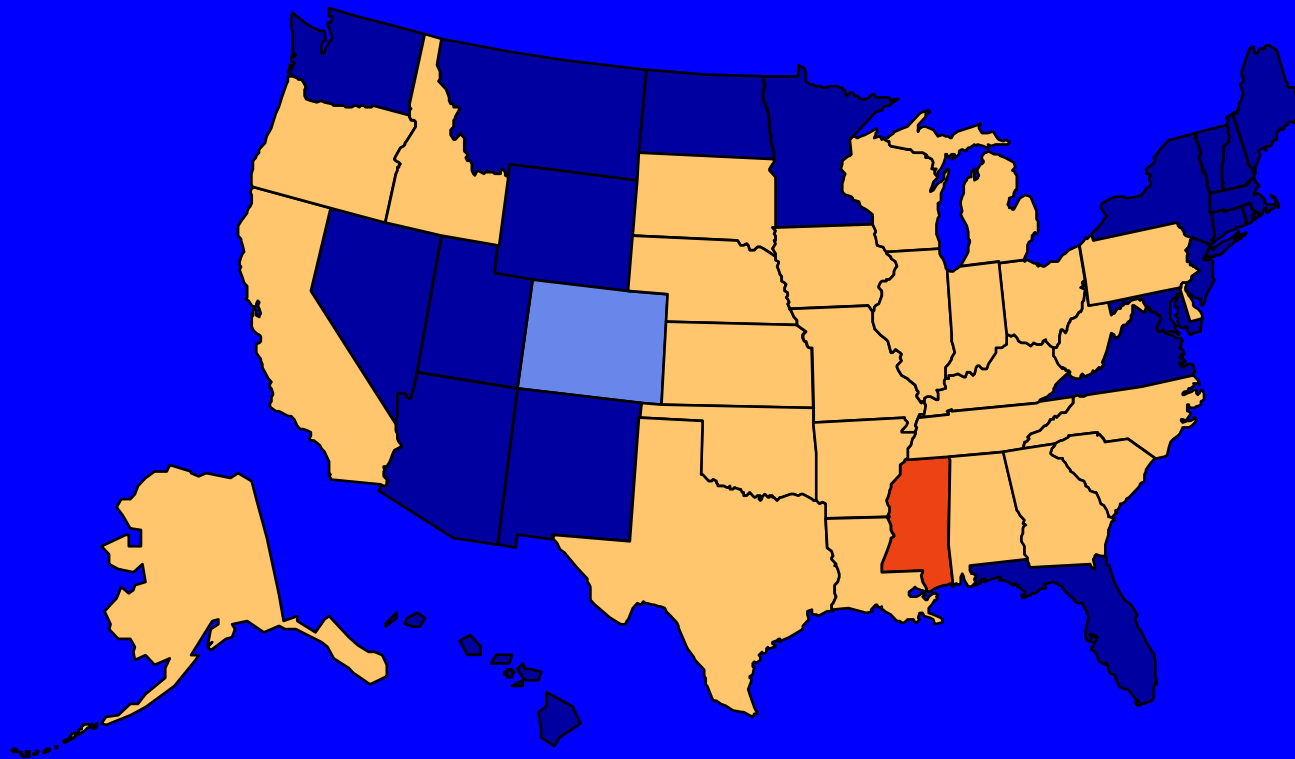
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Legend: No Data, <10%, 10%-14%, 15%-19%, 20%-24%

Obesity Trends* Among U.S. Adults BRFSS, 2001

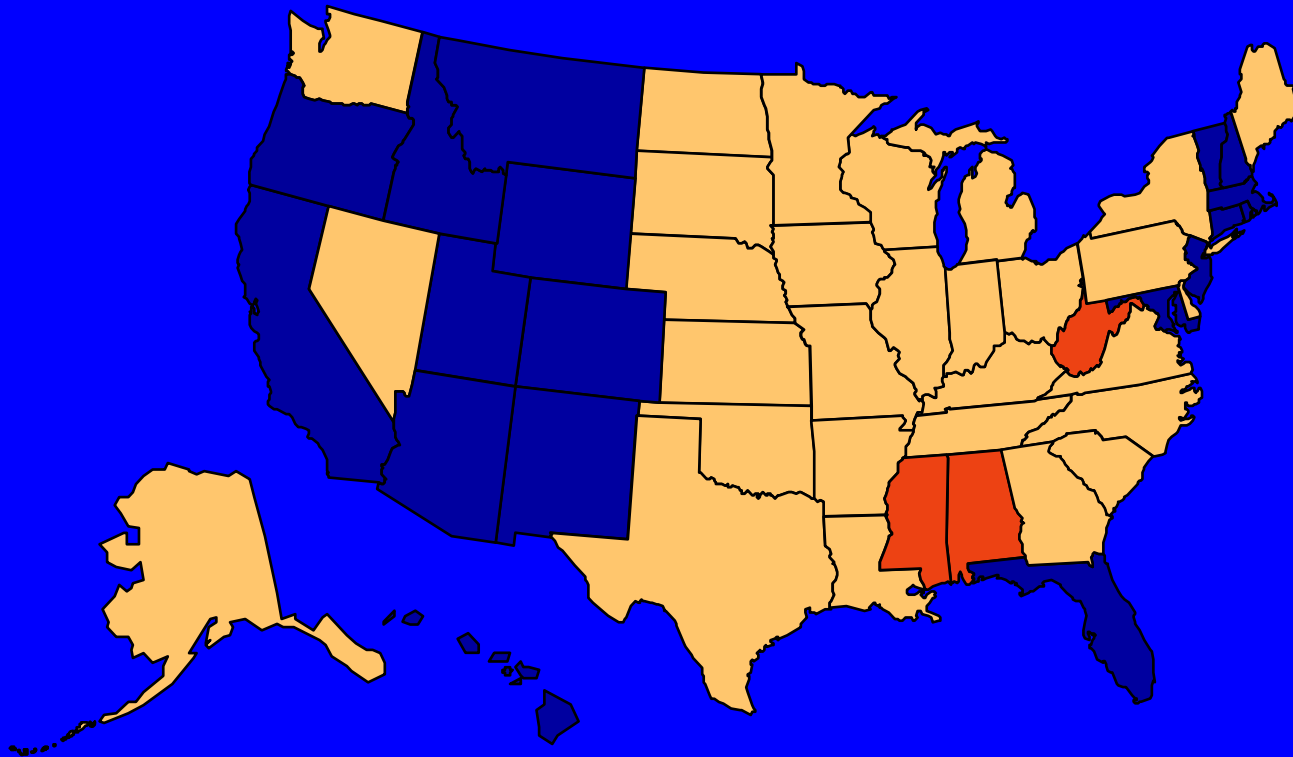
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Legend: No Data, <10%, 10%–14%, 15%–19%, 20%–24%, 25%–29%

Obesity Trends* Among U.S. Adults BRFSS, 2002

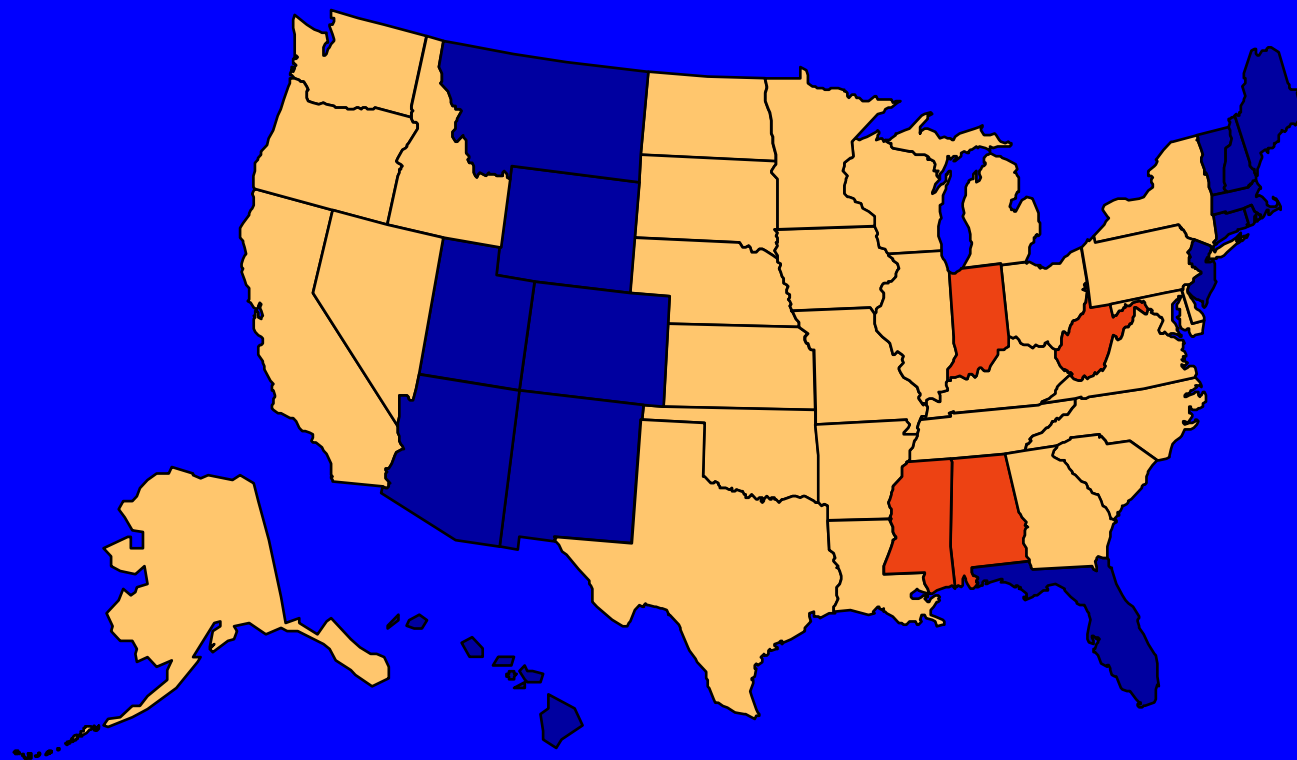
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Legend: No Data, <10%, 10%-14%, 15%-19%, 20%-24%, 25%-29%

Obesity Trends* Among U.S. Adults BRFSS, 2003

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

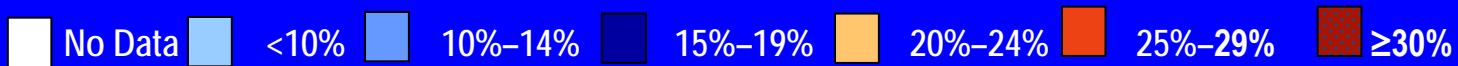
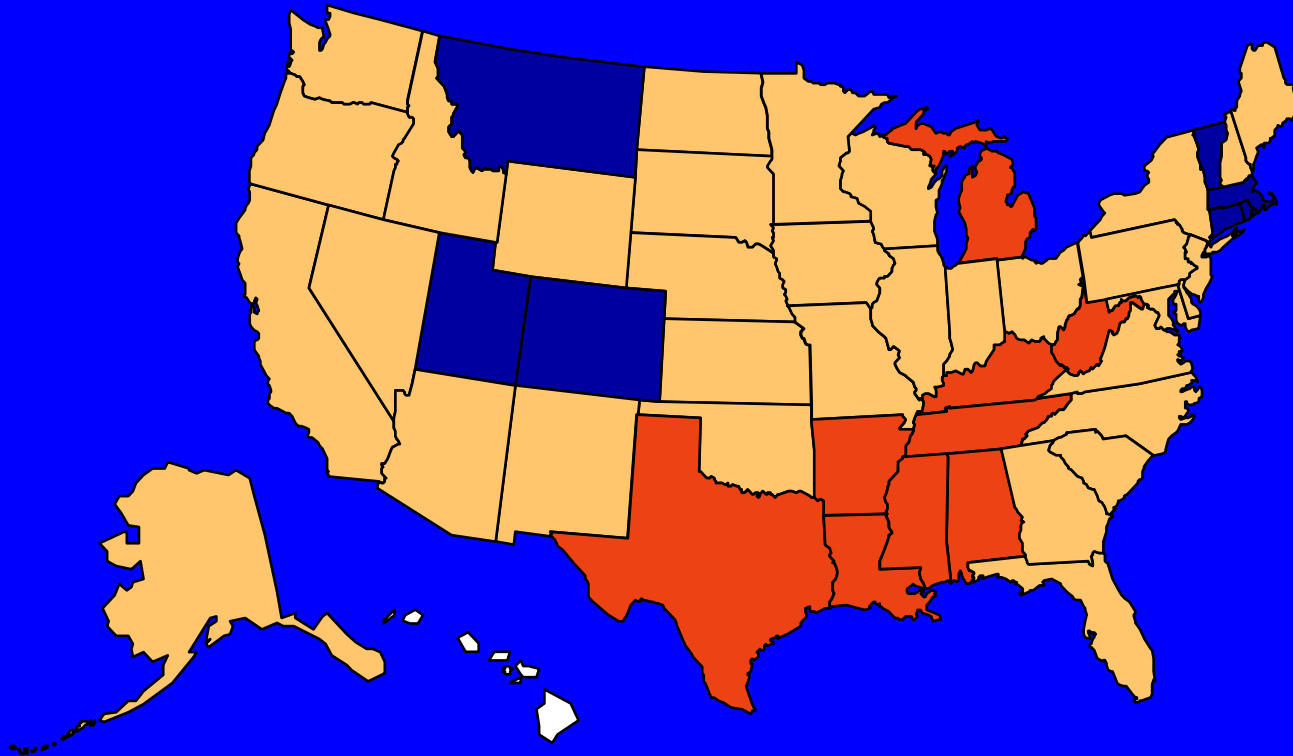


No Data <10% 10%–14% 15%–19% 20%–24% 25%–29% $\geq 30\%$

Obesity Trends* Among U.S. Adults

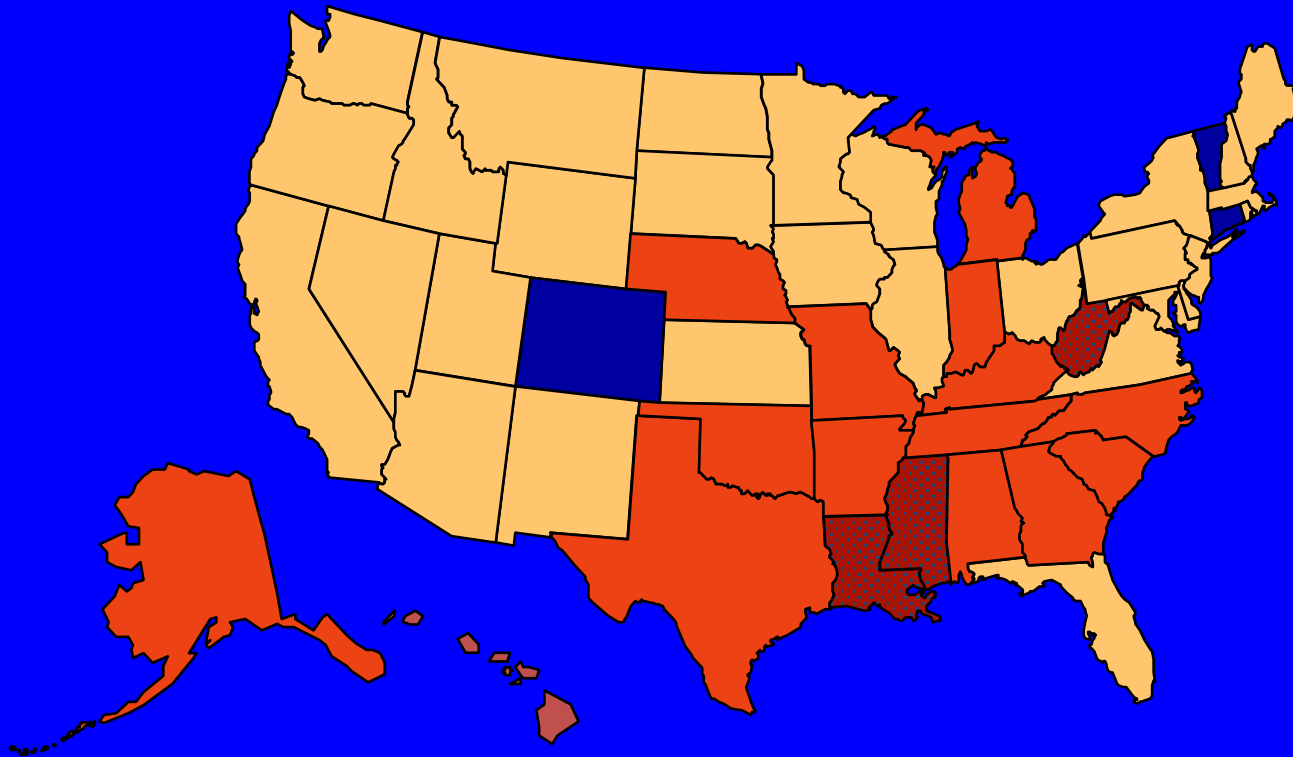
BRFSS, 2004

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



Obesity Trends* Among U.S. Adults BRFSS, 2005

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

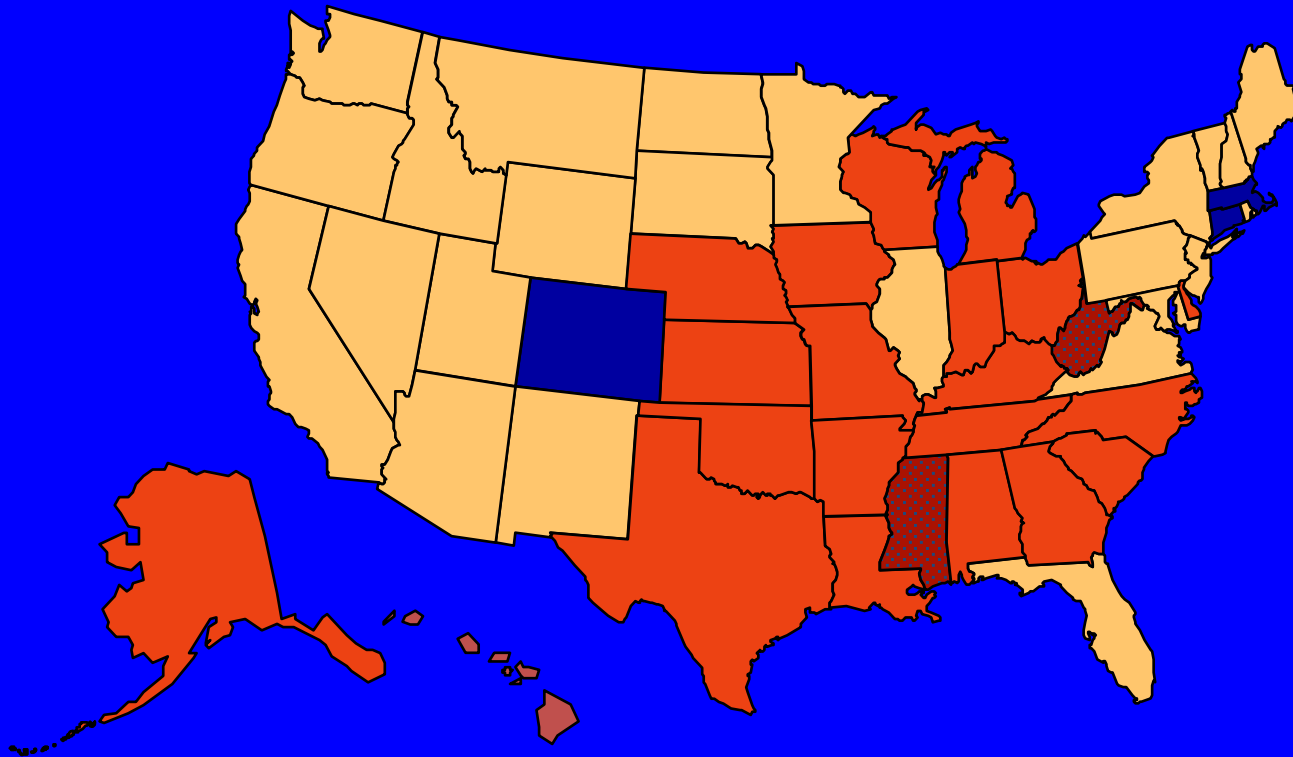


Legend for Obesity Prevalence:

No Data	<10%	10%–14%	15%–19%	20%–24%	25%–29%	$\geq 30\%$
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Obesity Trends* Among U.S. Adults BRFSS, 2006

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



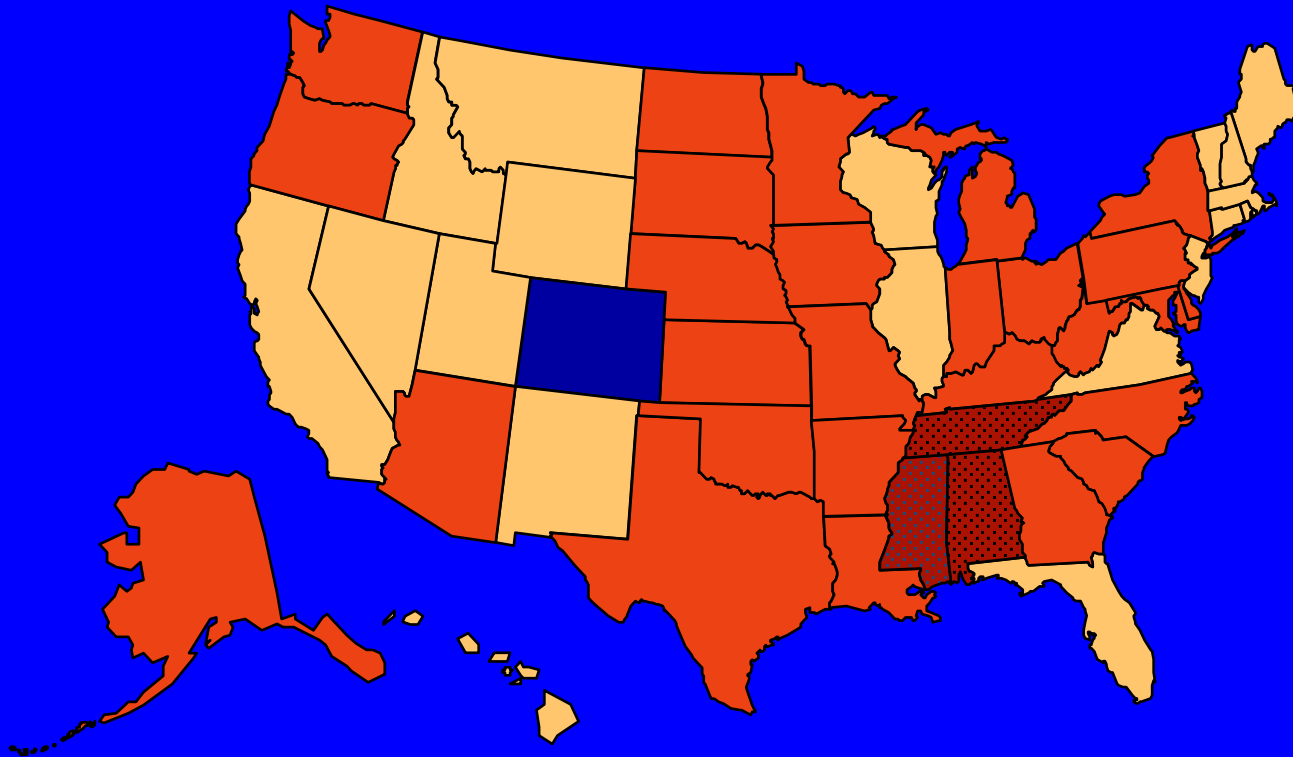
Legend for obesity prevalence among U.S. adults (BRFSS, 2006):

- No Data
- <10%
- 10%–14%
- 15%–19%
- 20%–24%
- 25%–29%
- $\geq 30\%$

Obesity Trends* Among U.S. Adults

BRFSS, 2007

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

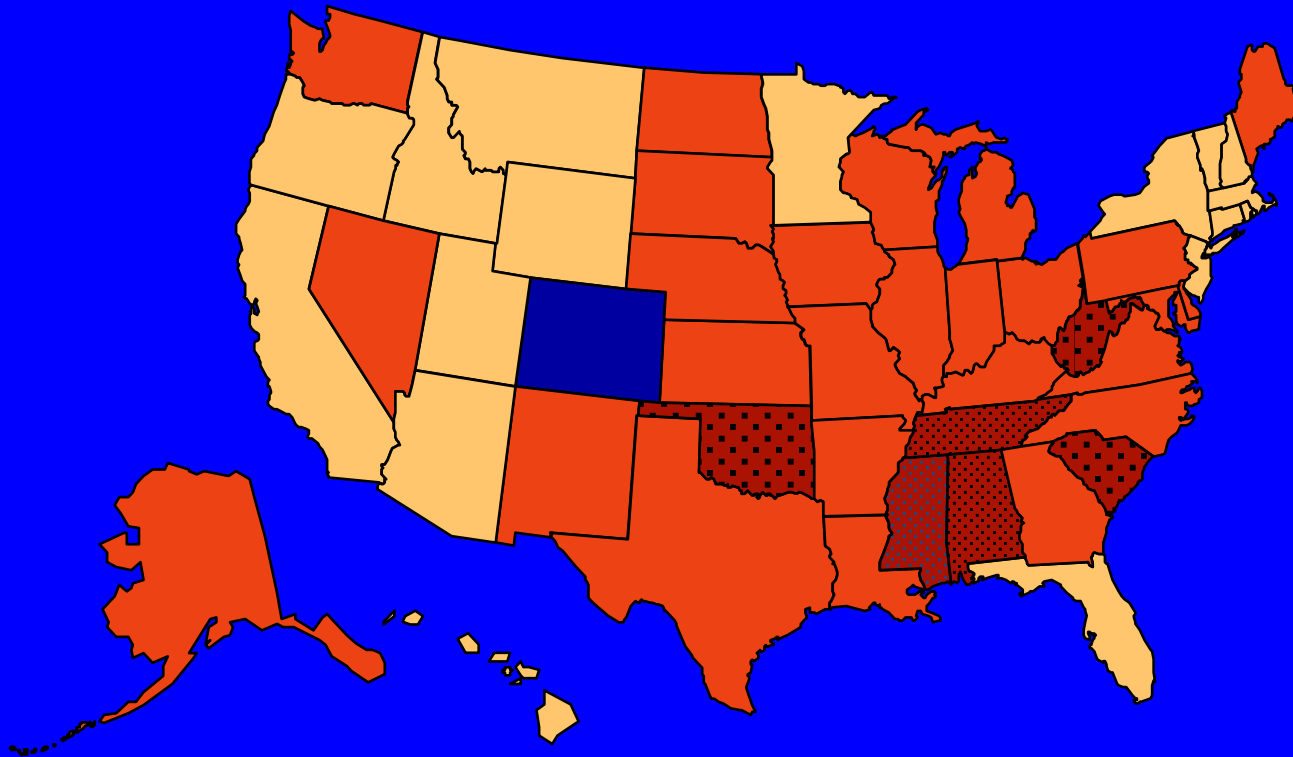


Legend: No Data, <10%, 10%-14%, 15%-19%, 20%-24%, 25%-29%, $\geq 30\%$

Obesity Trends* Among U.S. Adults

BRFSS, 2008

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

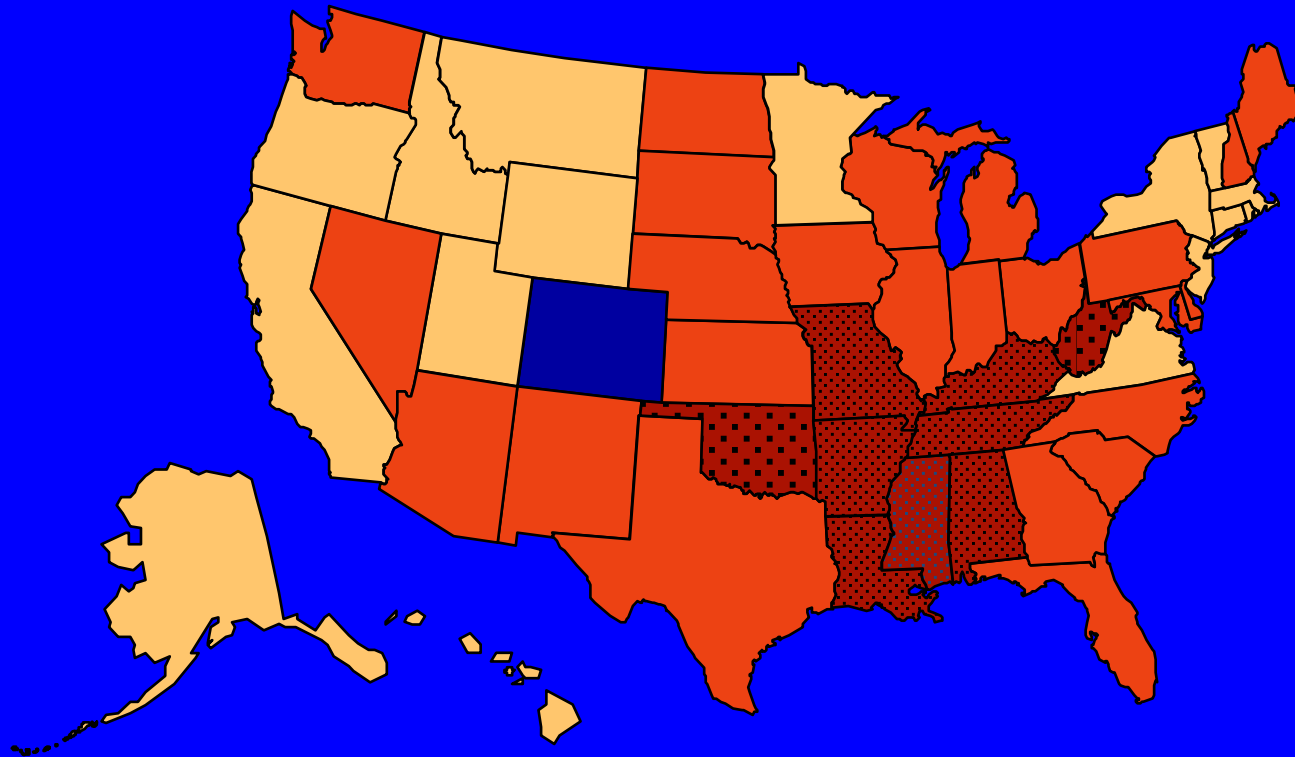


Legend for Obesity Prevalence:

- No Data
- <10%
- 10%–14%
- 15%–19%
- 20%–24%
- 25%–29%
- ≥30%

Obesity Trends* Among U.S. Adults BRFSS, 2009

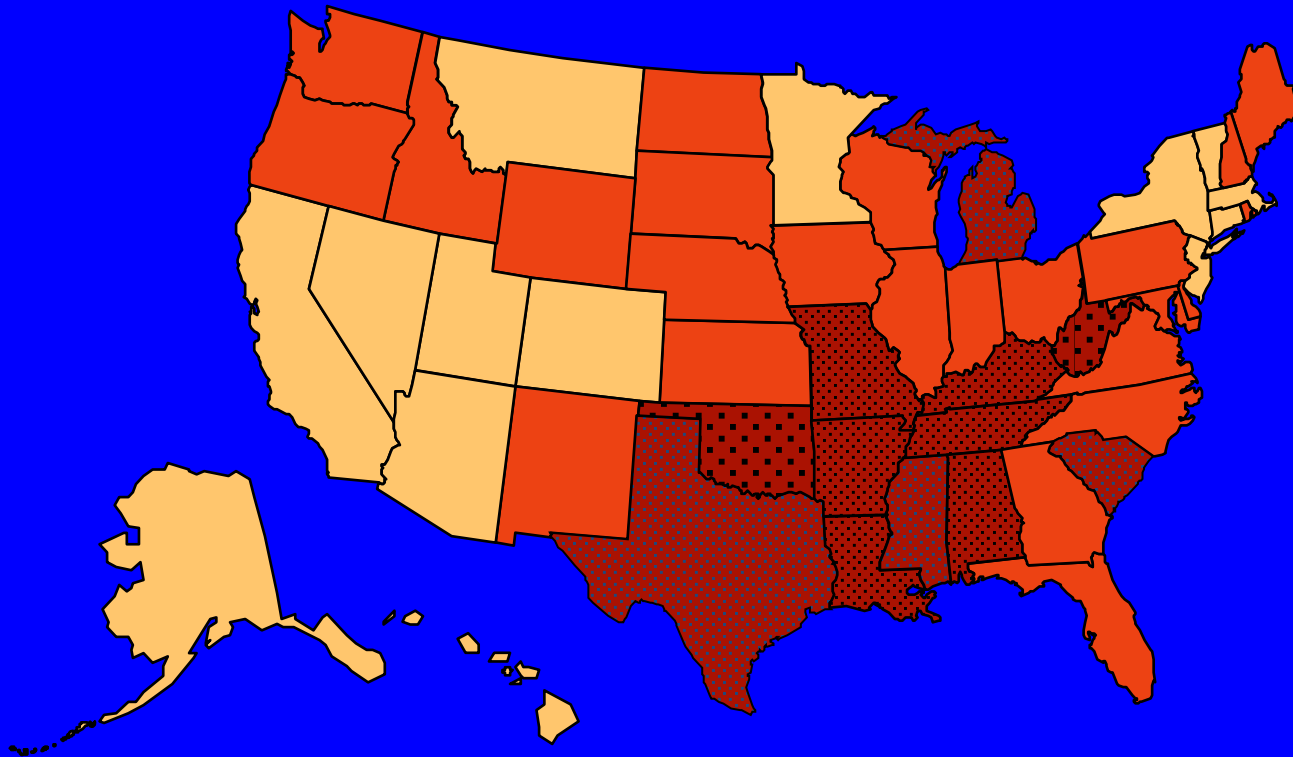
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Legend: No Data, <10%, 10%-14%, 15%-19%, 20%-24%, 25%-29%, $\geq 30\%$

Obesity Trends* Among U.S. Adults BRFSS, 2010

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



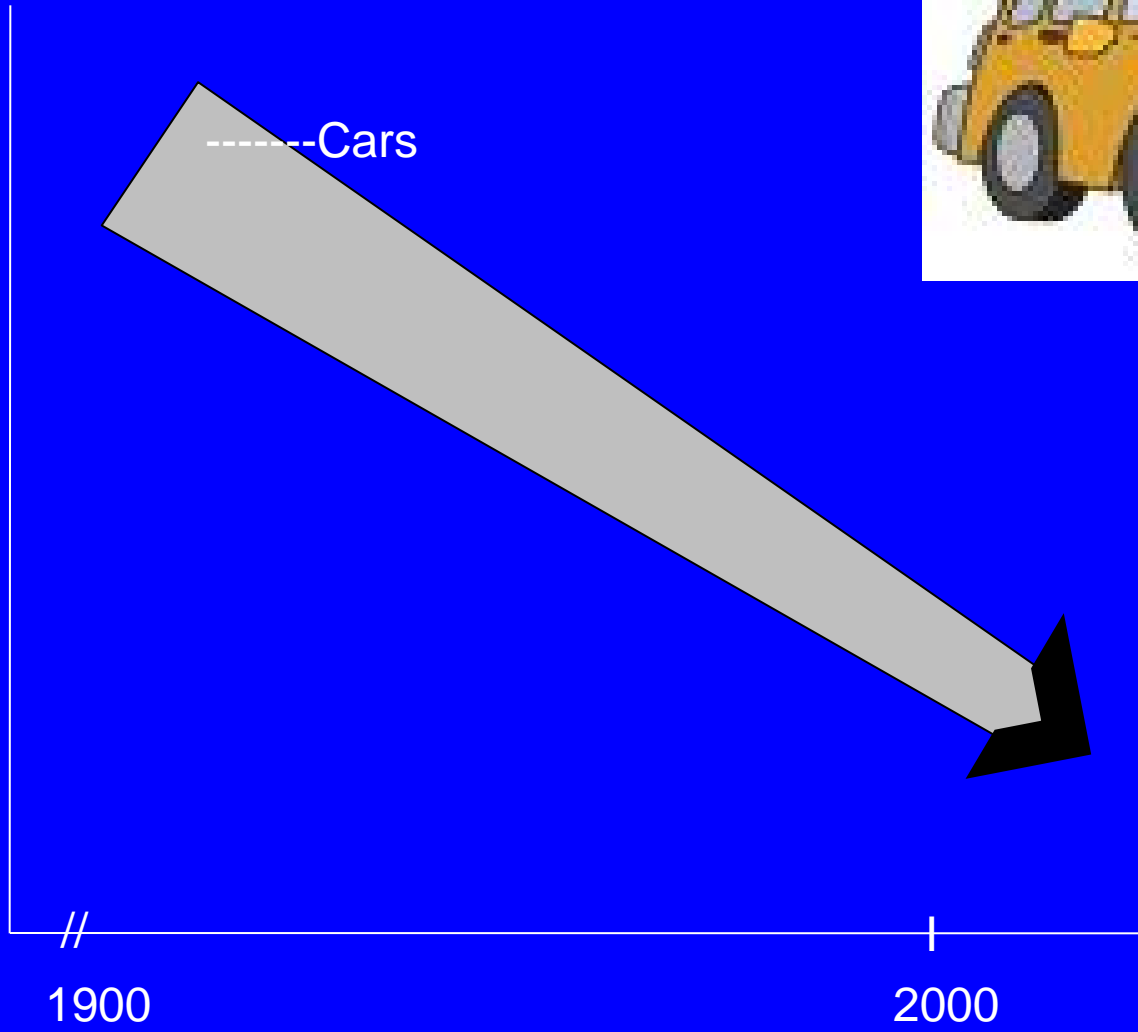
Legend: No Data, <10%, 10%–14%, 15%–19%, 20%–24%, 25%–29%, $\geq 30\%$

A large iceberg is shown floating in a dark blue ocean. The top of the iceberg is a small, sharp peak, while the rest of the iceberg is a much larger, rounded mass submerged below the water line. The word "OBESITY" is written in bold, red, capital letters across the top peak of the iceberg. The background is a clear blue sky with a few white clouds and a dark horizon line.

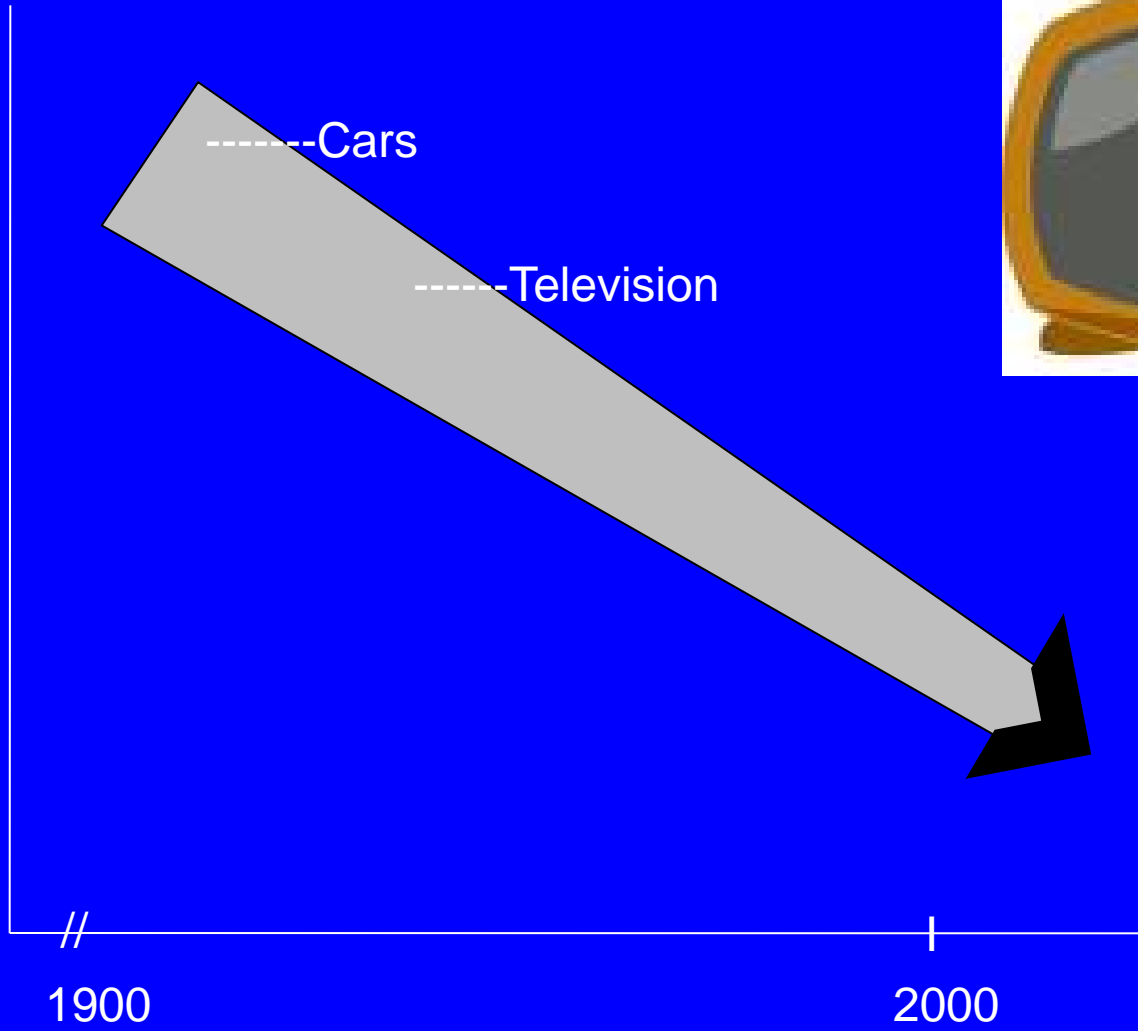
OBESITY

THE SEDENTARY EPIDEMIC

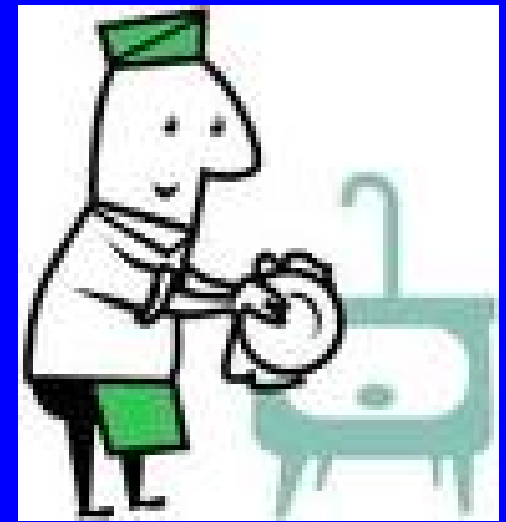
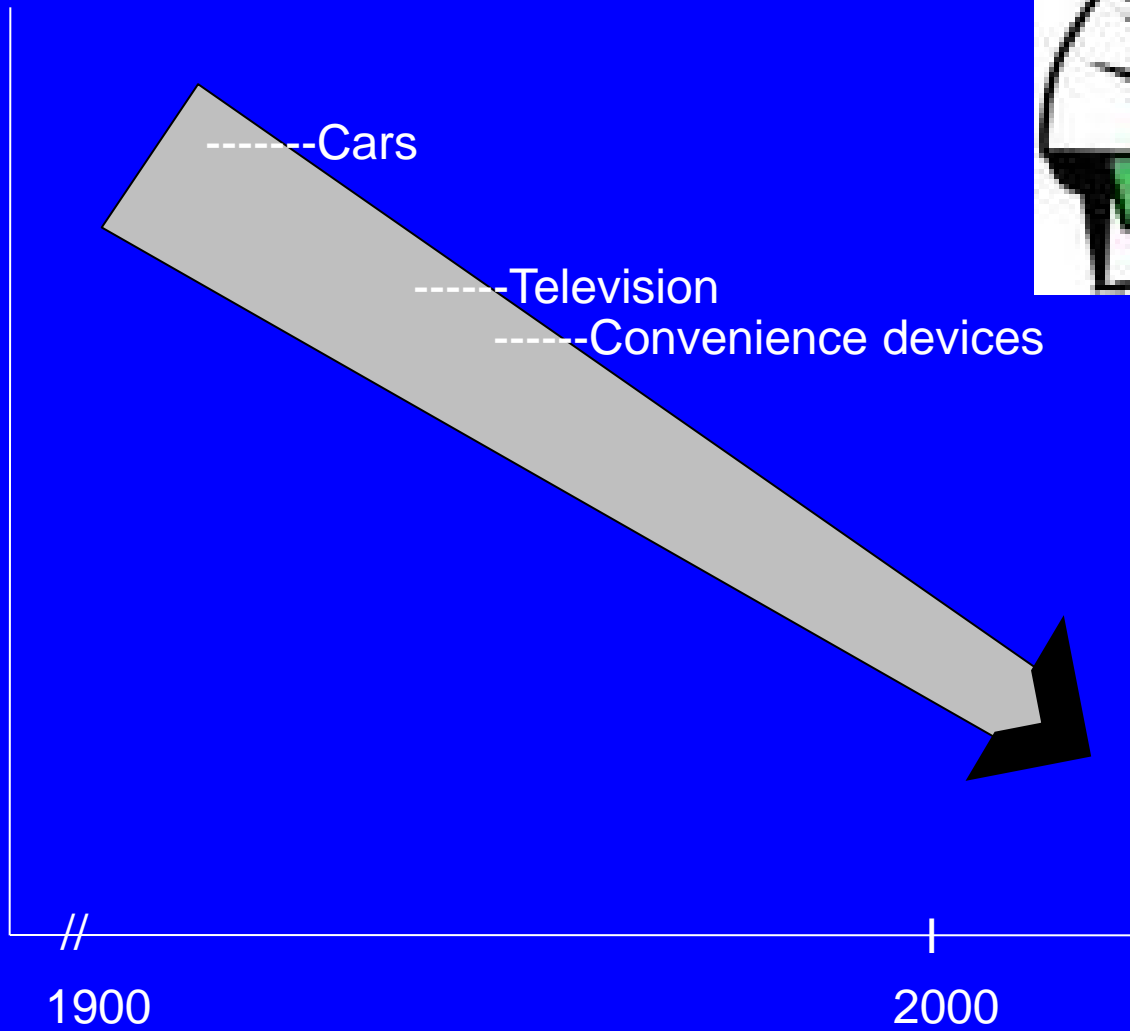
PHYSICAL ACTIVITY



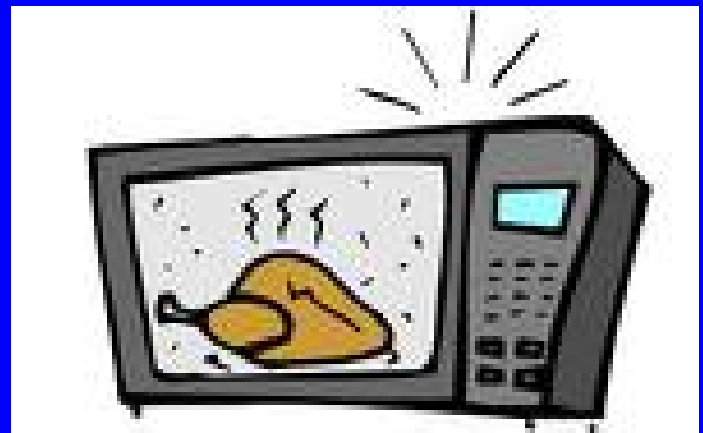
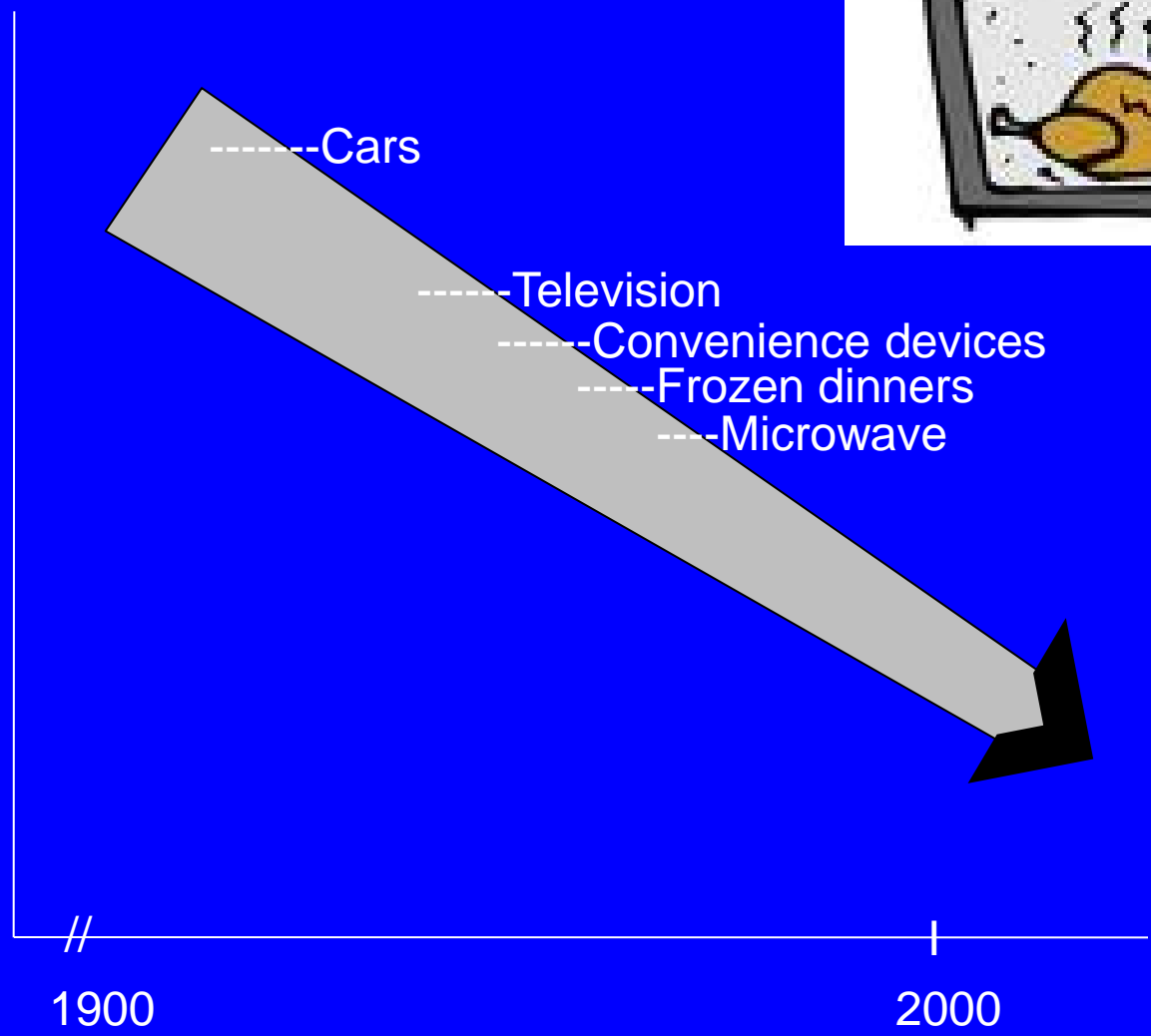
PHYSICAL ACTIVITY



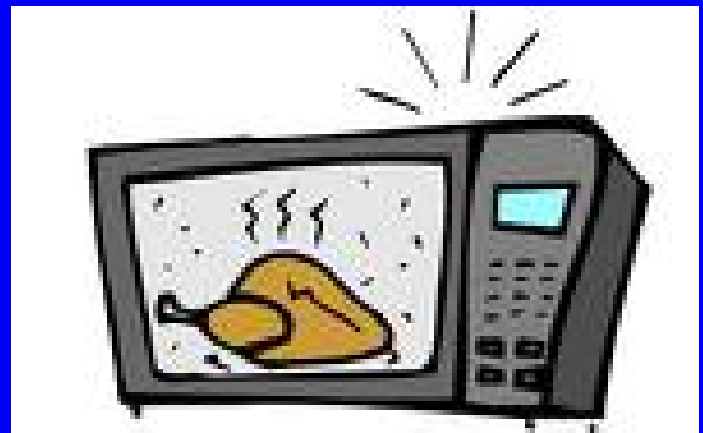
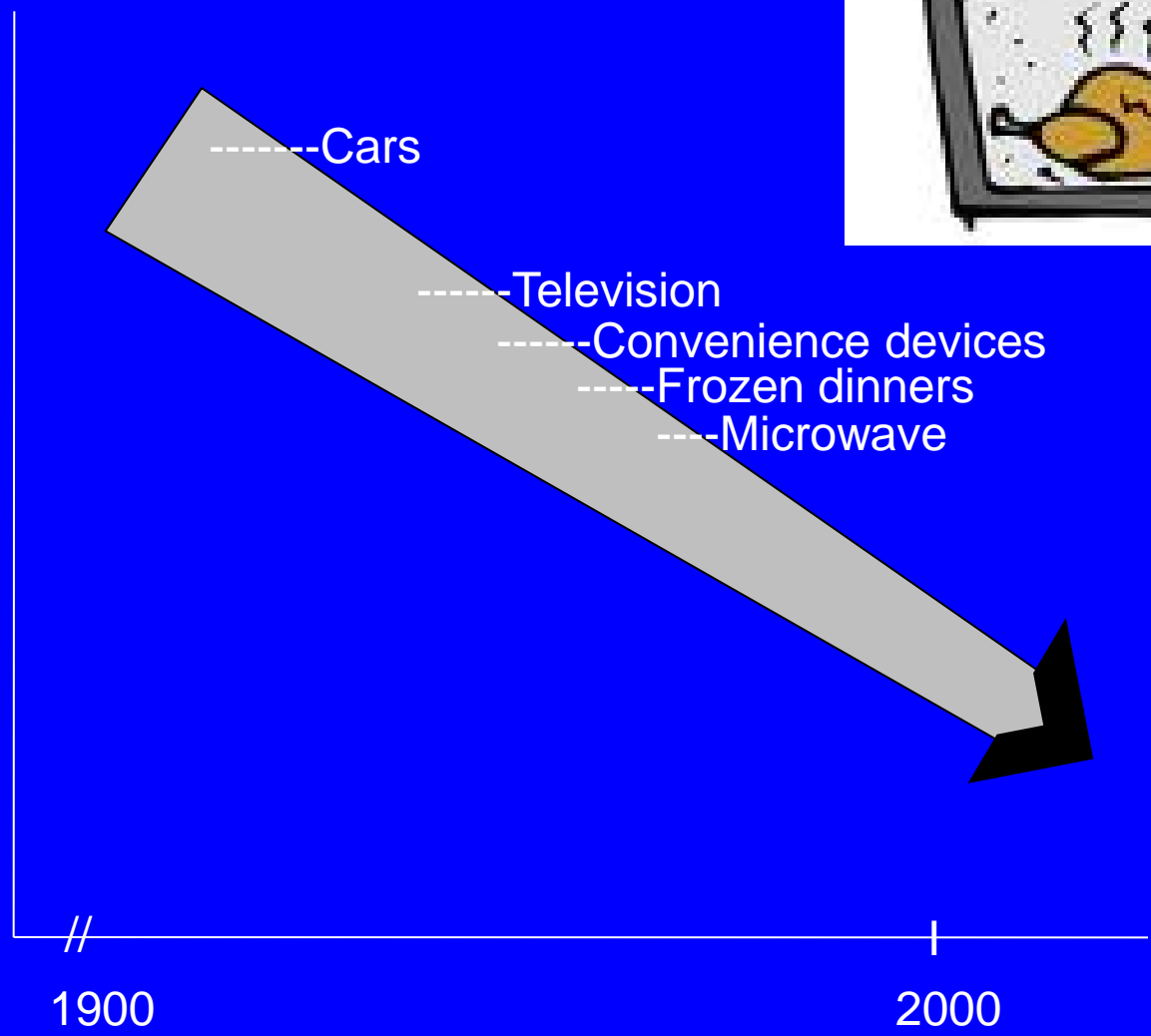
PHYSICAL ACTIVITY



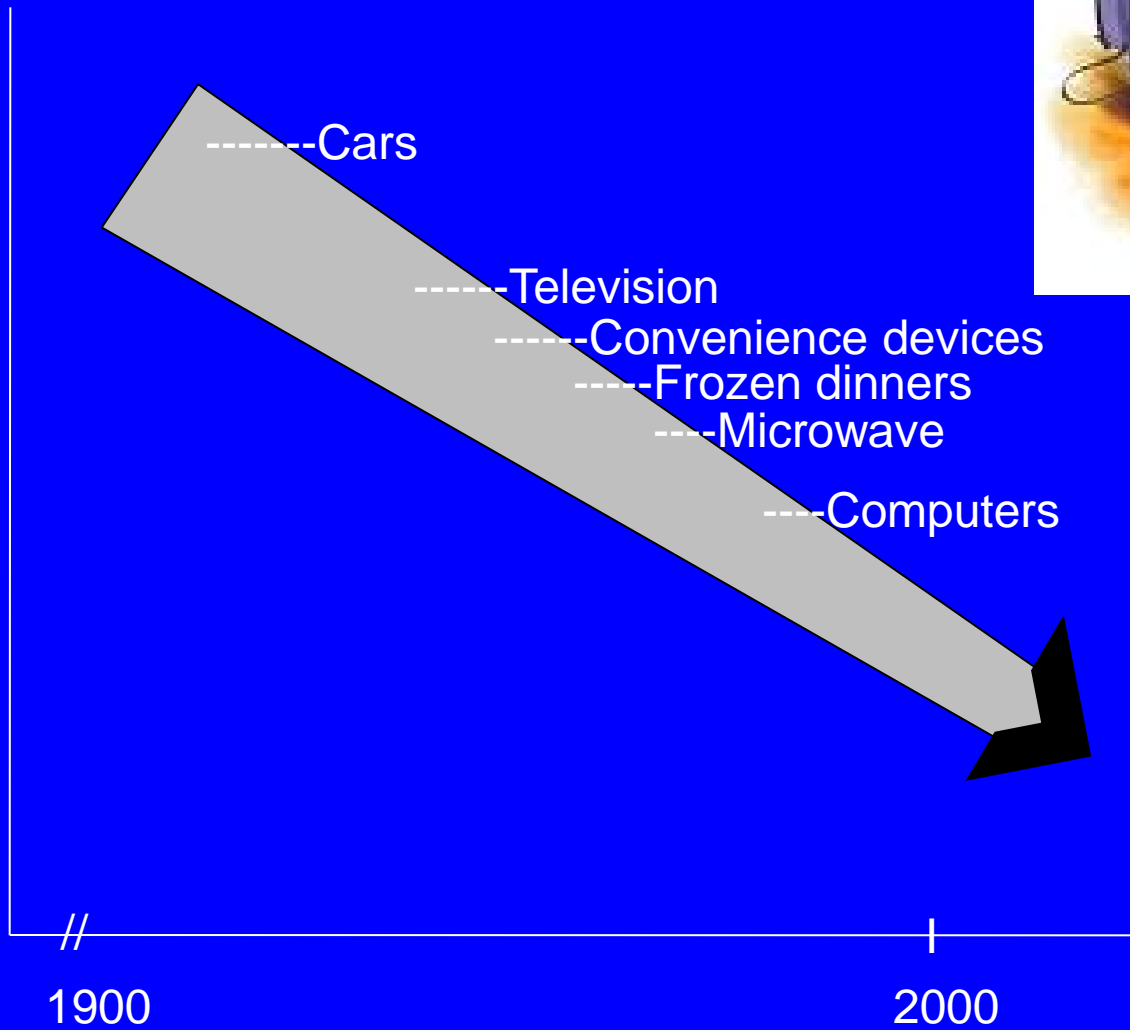
PHYSICAL ACTIVITY



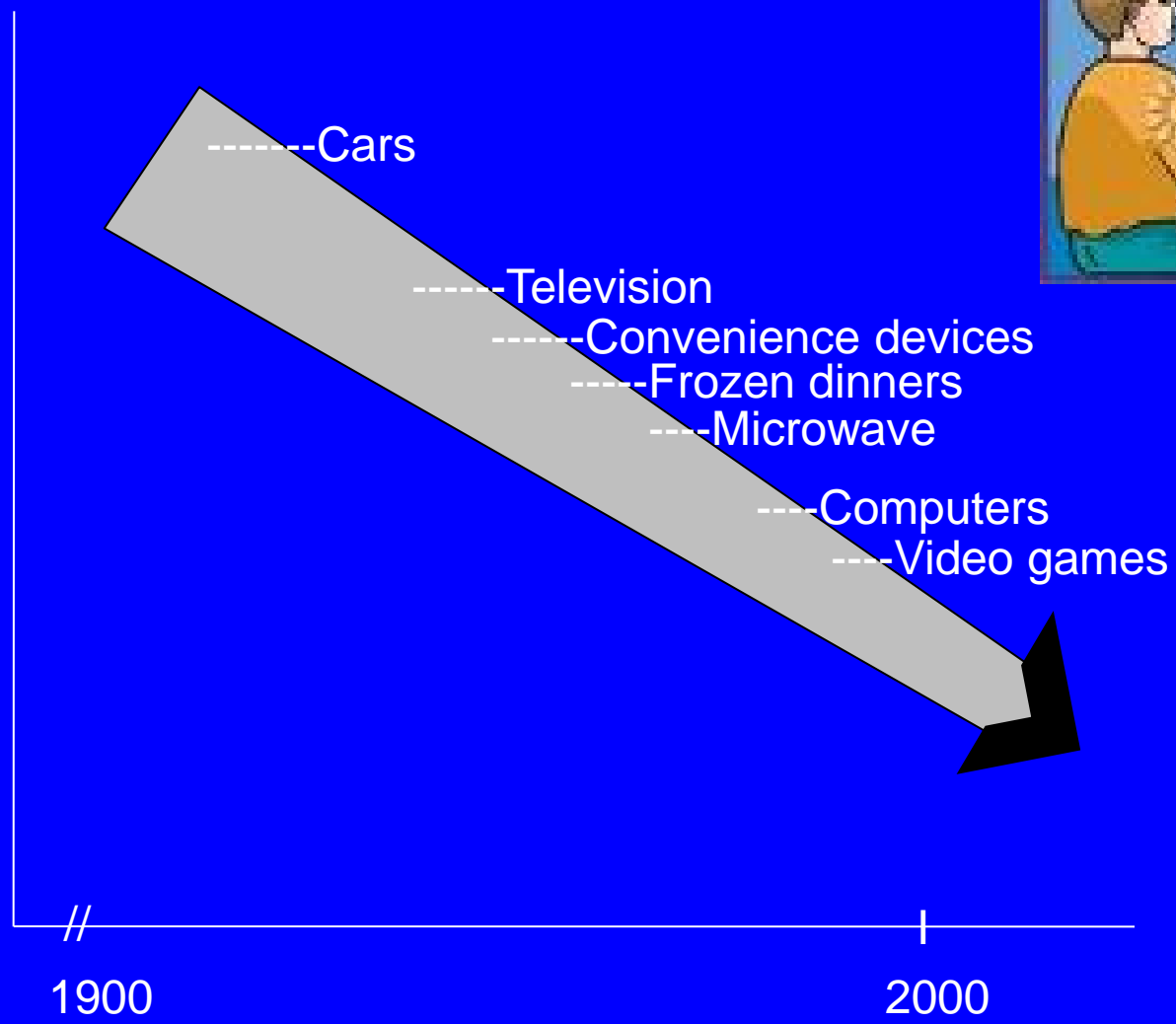
PHYSICAL ACTIVITY



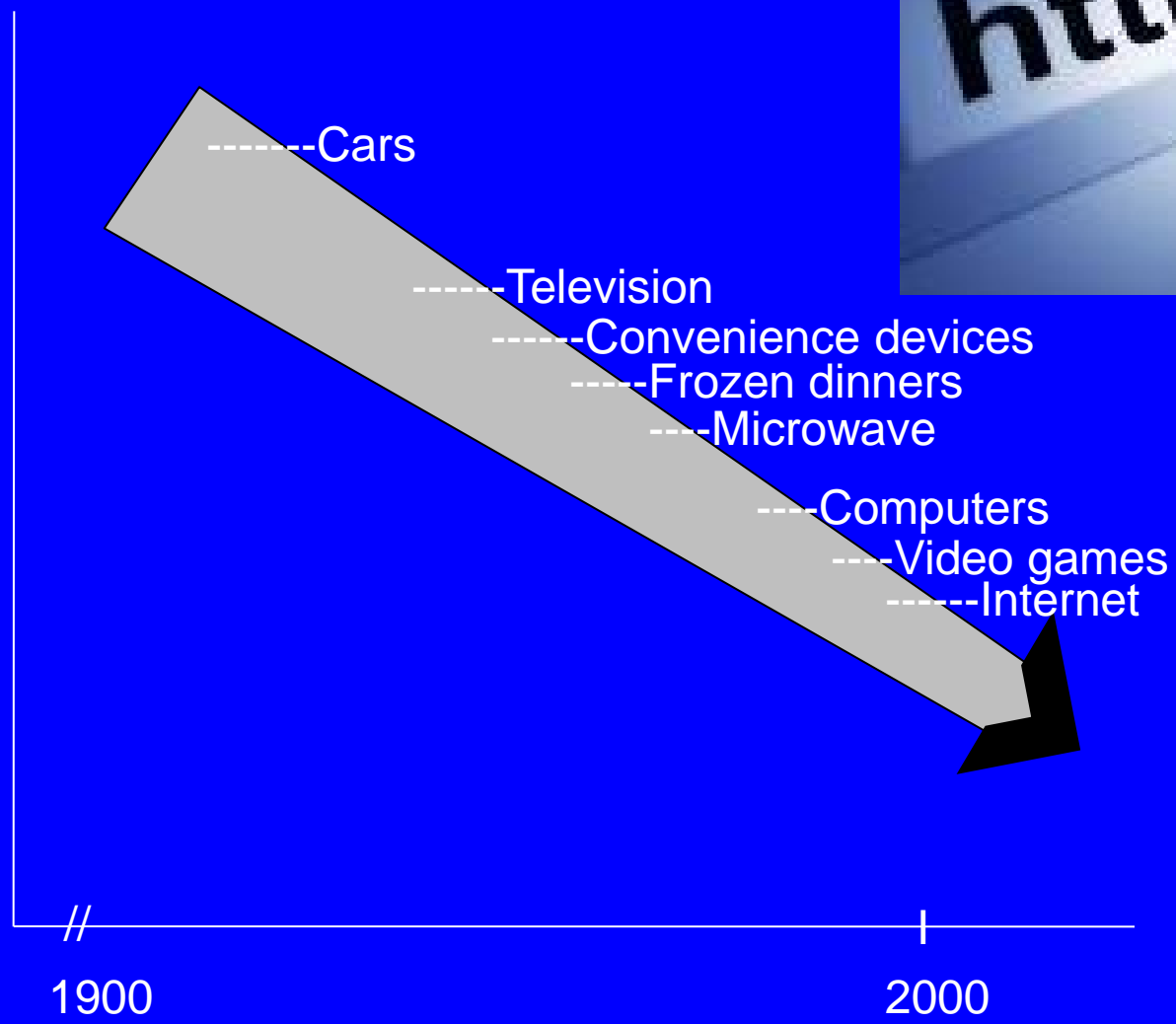
PHYSICAL ACTIVITY



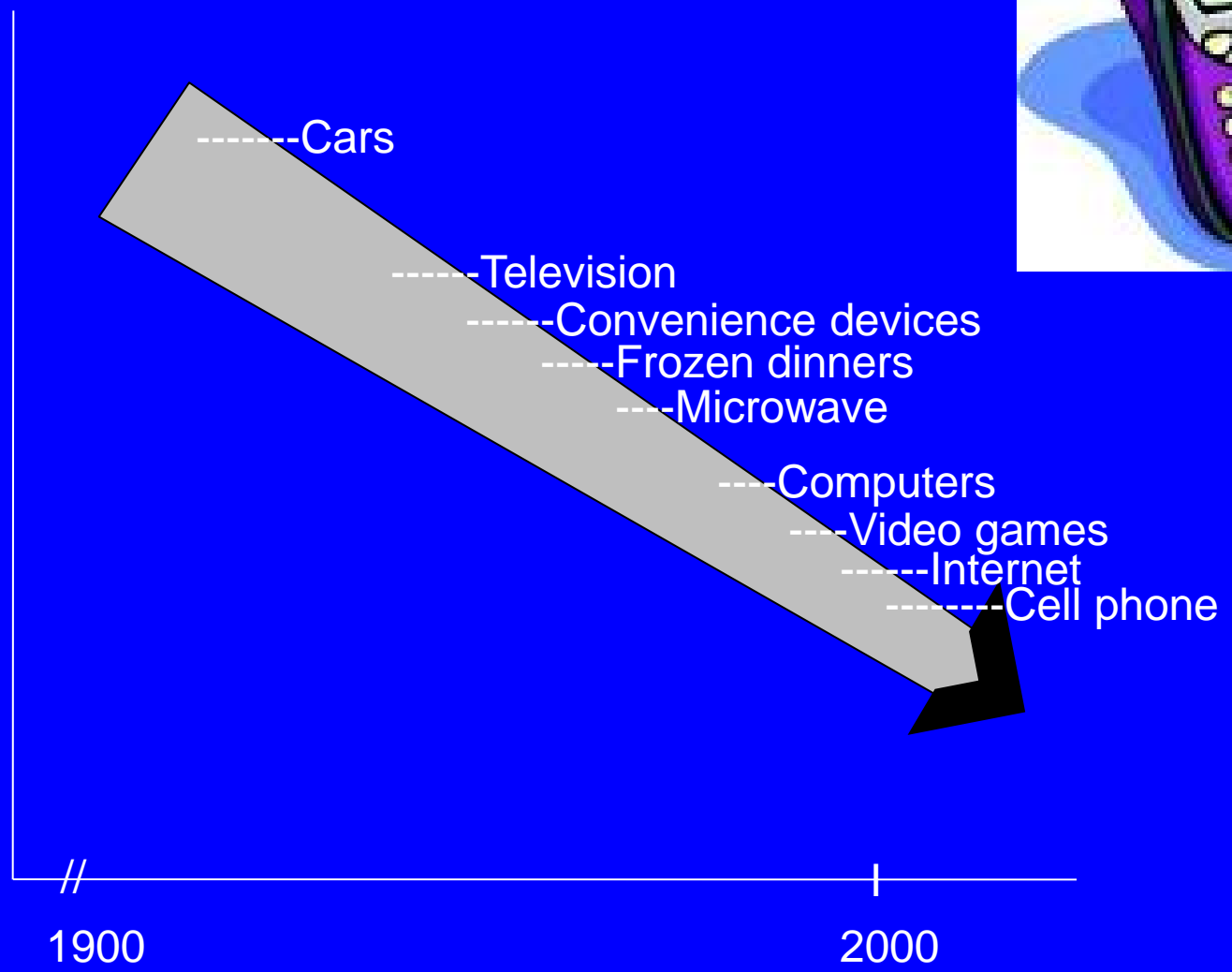
PHYSICAL ACTIVITY



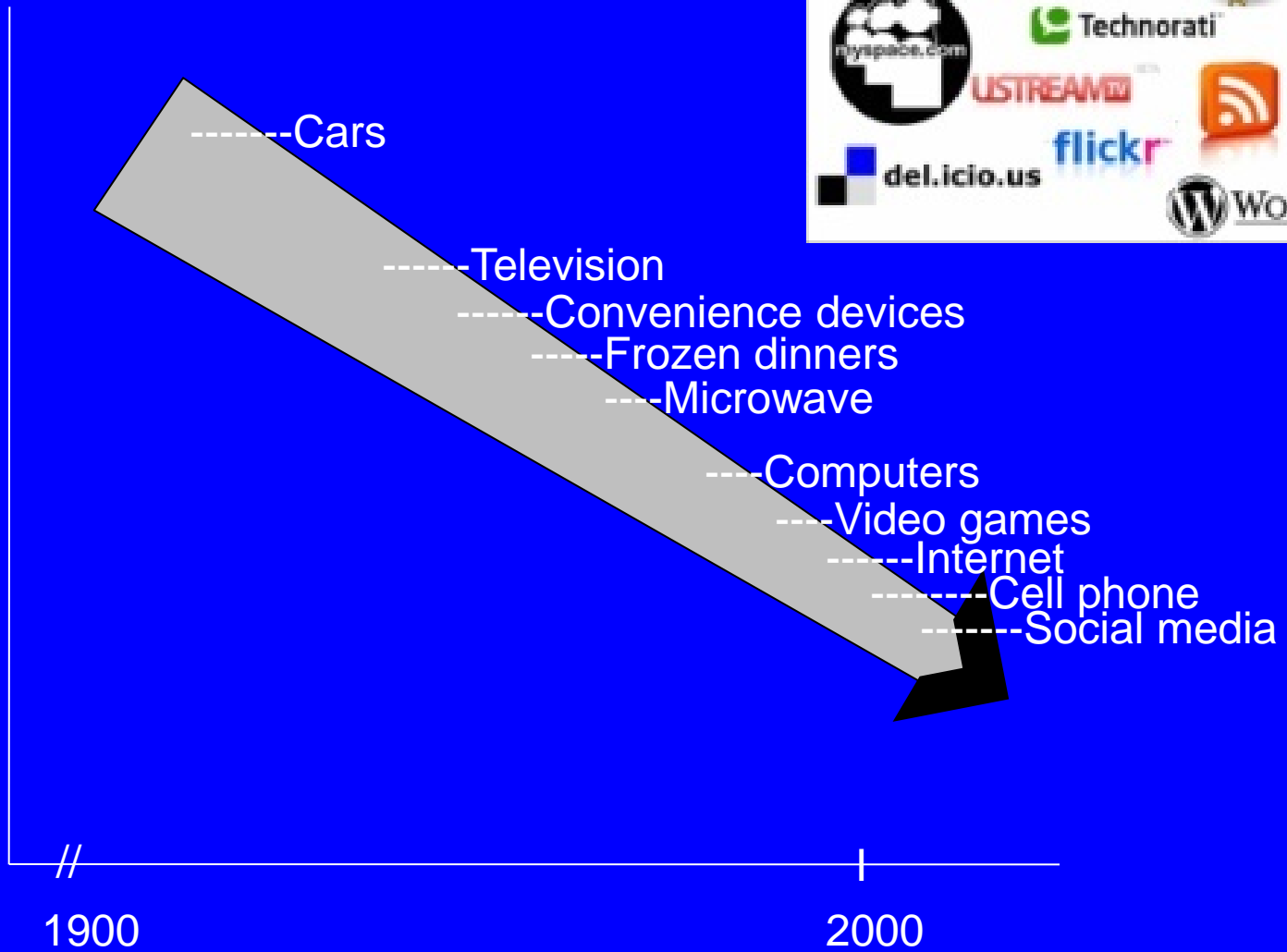
PHYSICAL ACTIVITY



PHYSICAL ACTIVITY



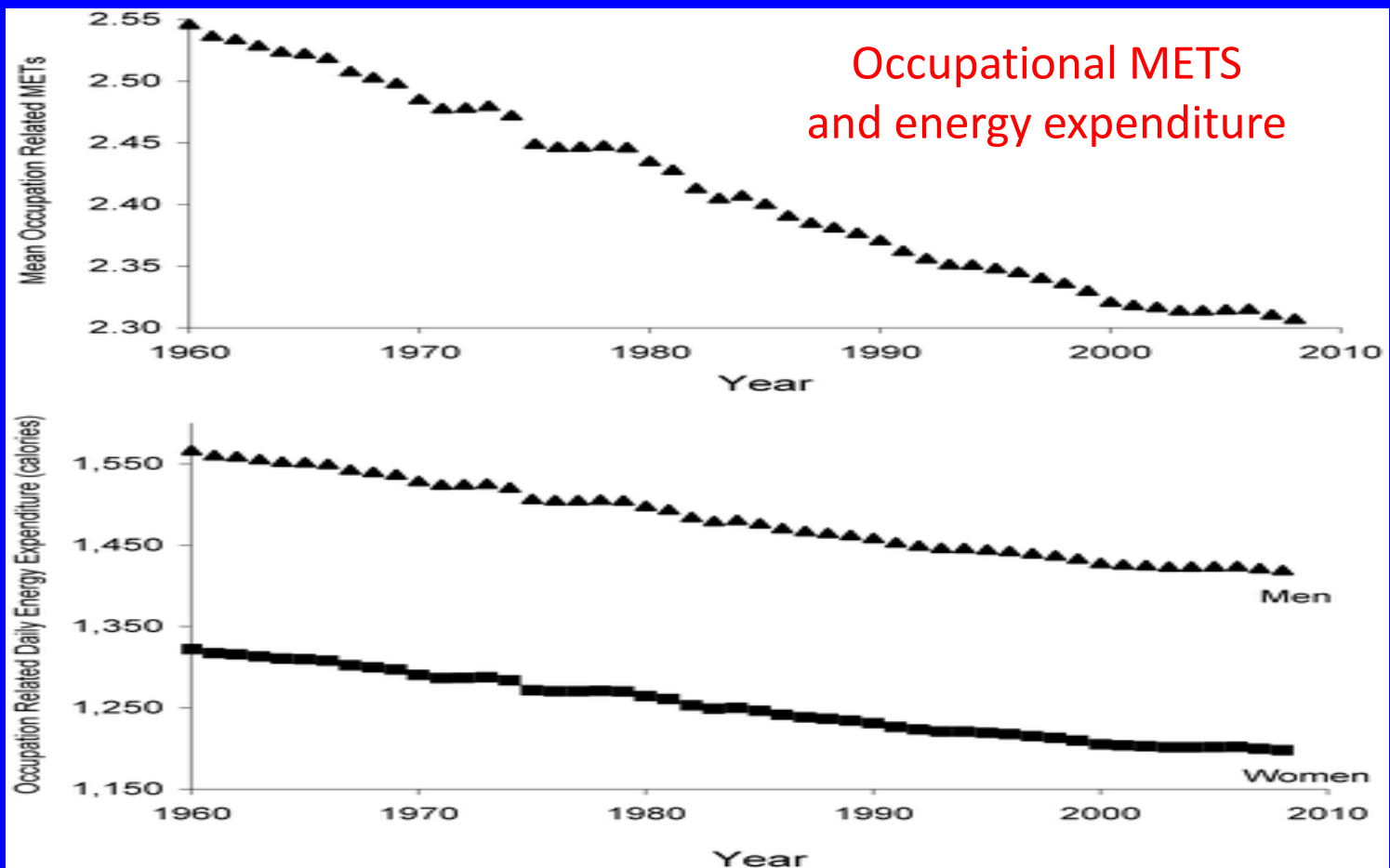
PHYSICAL ACTIVITY



Trends over 5 Decades in U.S. Occupation-Related Physical Activity and Their Associations with Obesity

Timothy S. Church^{1*}, Diana M. Thomas², Catrine Tudor-Locke¹, Peter T. Katzmarzyk¹, Conrad P. Earnest¹, Ruben Q. Rodarte¹, Corby K. Martin¹, Steven N. Blair³, Claude Bouchard¹

1 Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge, Louisiana, United States of America, **2** Department of Mathematical Sciences, Montclair State University, Montclair, New Jersey, United States of America, **3** Arnold School of Public Health, Departments of Exercise Science and Epidemiology/Biostatistics, University of South Carolina, Columbia, South Carolina United States of America

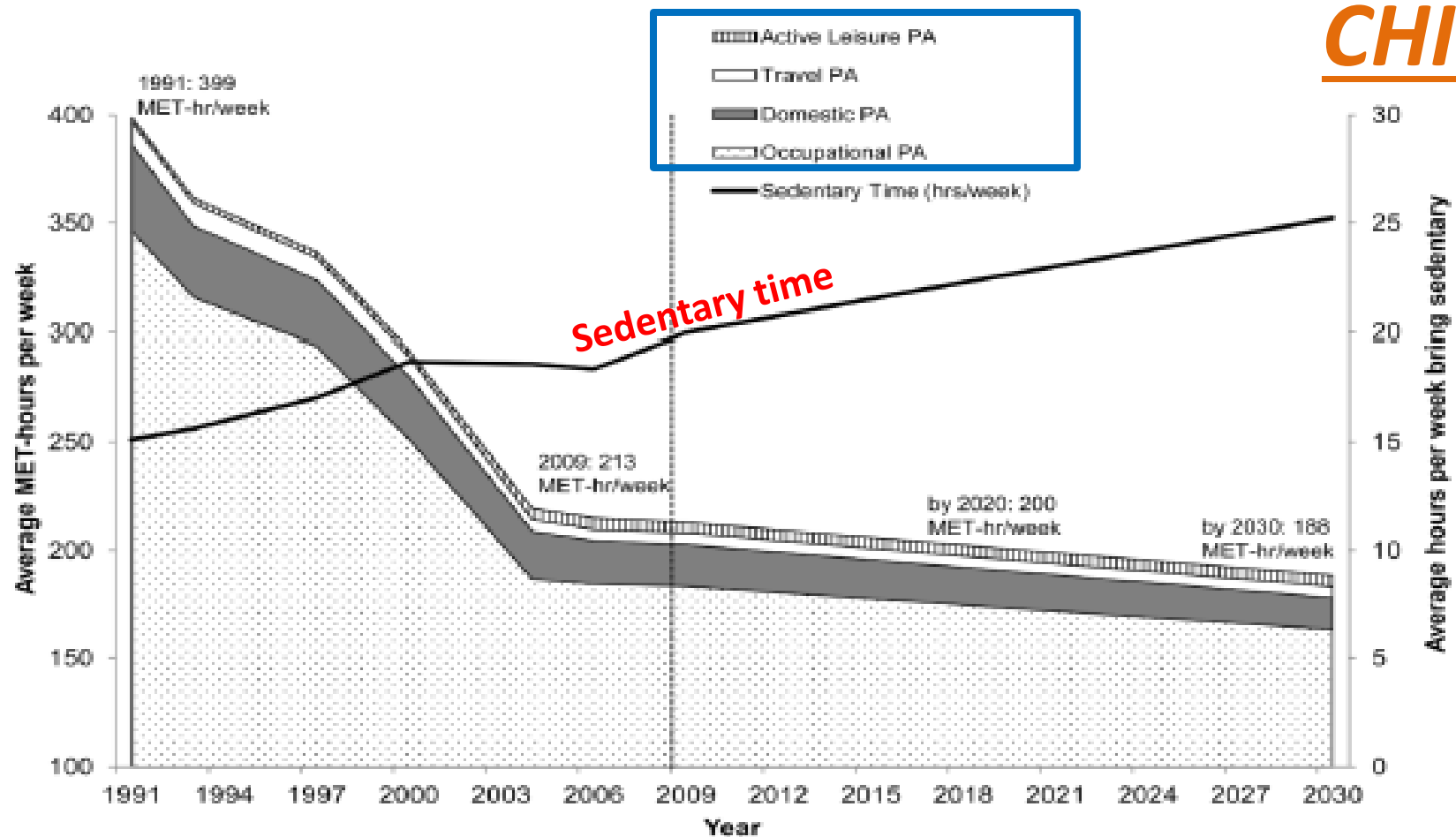


Time Use and Physical Activity: A Shift Away from Movement across the Globe

Shu Wen Ng and Barry Popkin

Department of Nutrition, University of North Carolina at Chapel Hill

CHINA



Heart Disease

Sleep apnea

Stroke

**Fatty liver
Disease**

Cancers

OBESITY

**Hypertension
& Dyslipidemia**

**Gallbladder
disease**

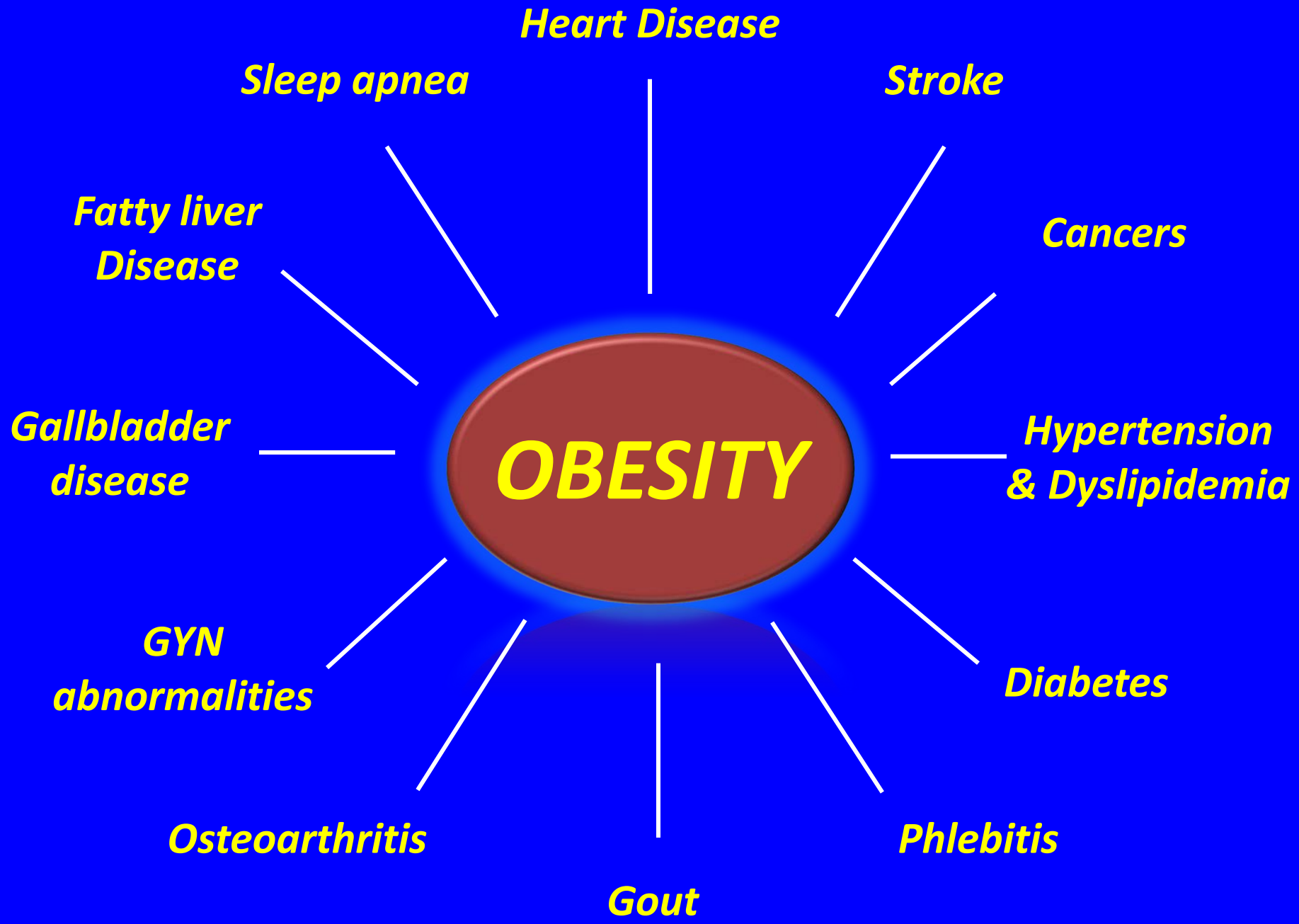
Diabetes

**GYN
abnormalities**

Osteoarthritis

Phlebitis

Gout

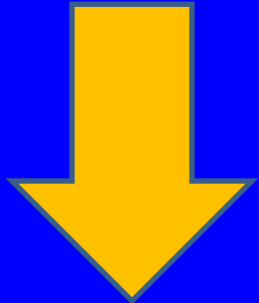


Awash in New Medical Epidemics

- Diabetes
- Metabolic syndrome
- Musculoskeletal disorders

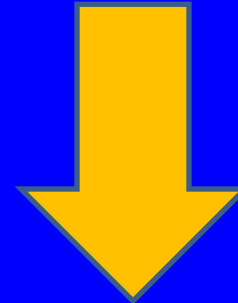
High Prevalence of Disease

AGE 50



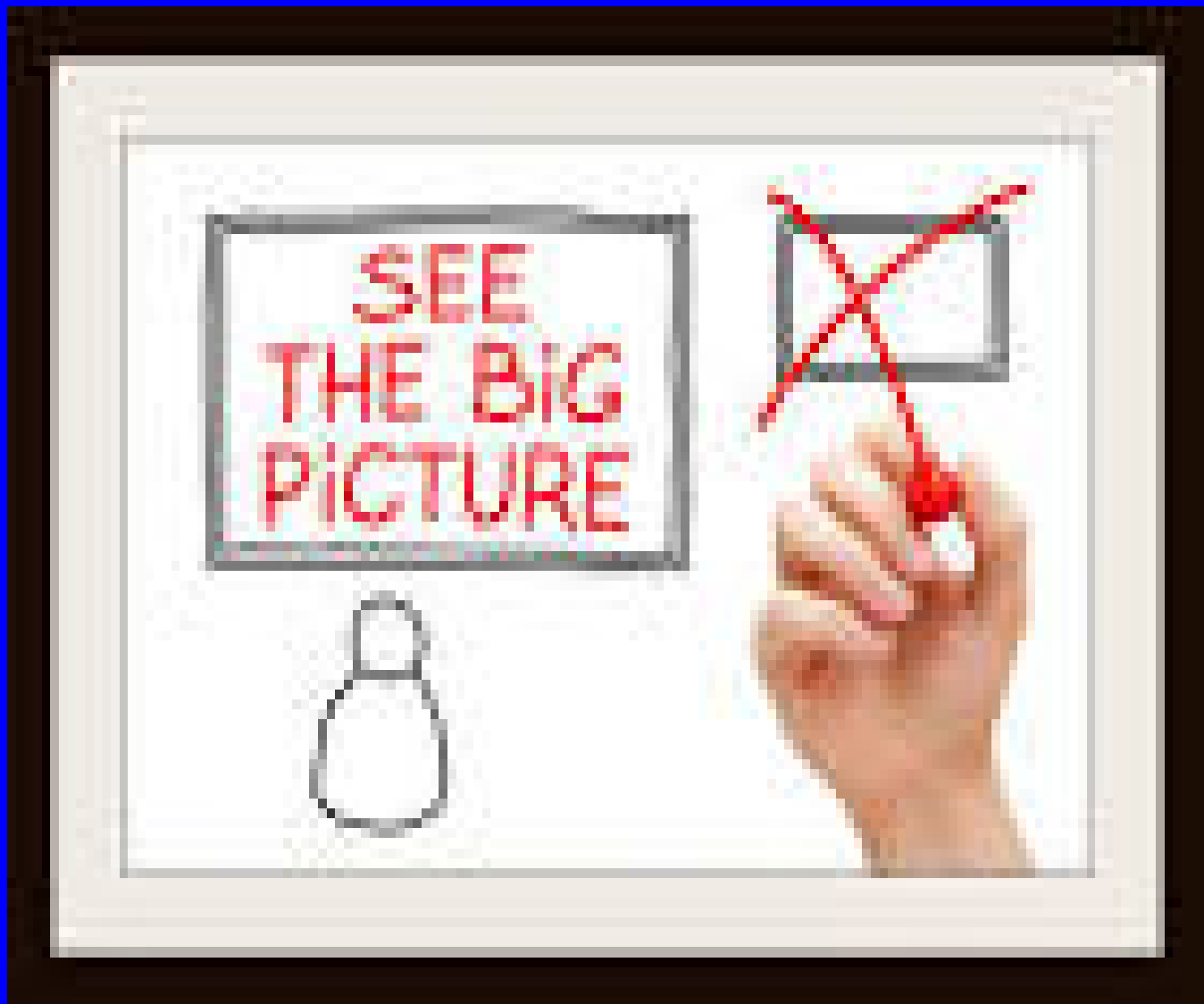
**$\frac{1}{2}$ have \geq one chronic
condition requiring Rx**

AGE 65



**$\frac{2}{3}$ have \geq two chronic
conditions requiring Rx**

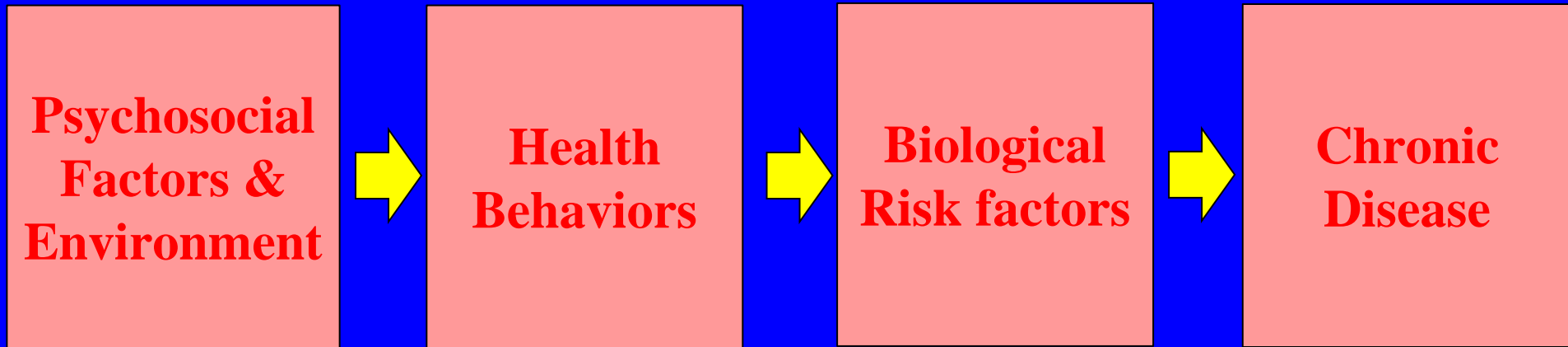
***What is the
solution?***



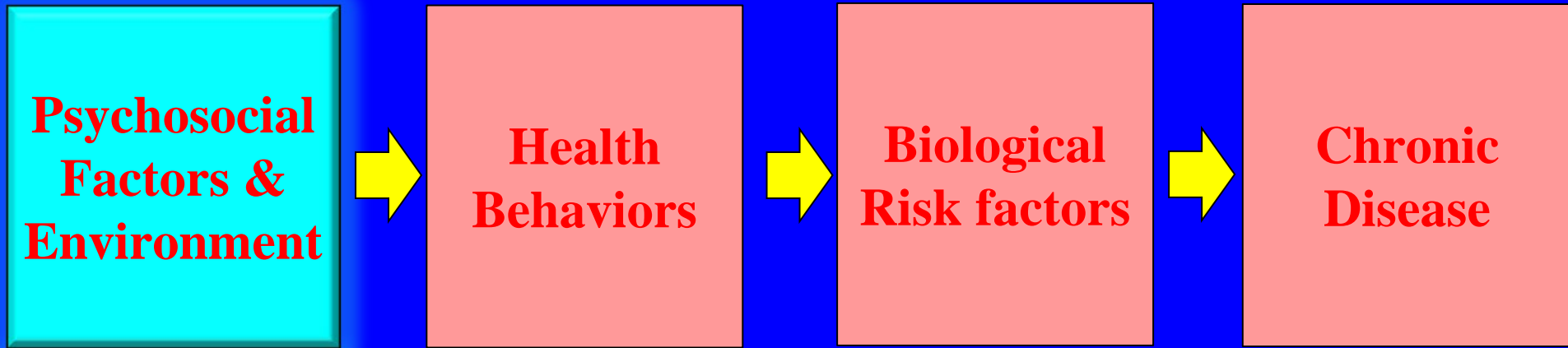
Biomedical Model

- Focus on the biological determinants of disease and their treatment

Bio-Psychosocial Model of *Disease*



Bio-Psychosocial Model of *Disease*



CHALLENGE

Negative Psychosocial Factors

- Depression
- Anxiety
- PTSD
- Pessimism
- Chronic Stress
- Abuse
- Loneliness
- Lack of drive and purpose

**Psychosocial
stress**

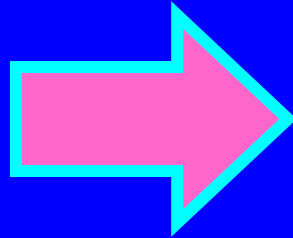
```
graph TD; A([Psychosocial stress]) --> B([Promote unhealthy behaviors]); A --> C([Directly pathogenic]);
```

**Promote
unhealthy
behaviors**

**Directly
pathogenic**

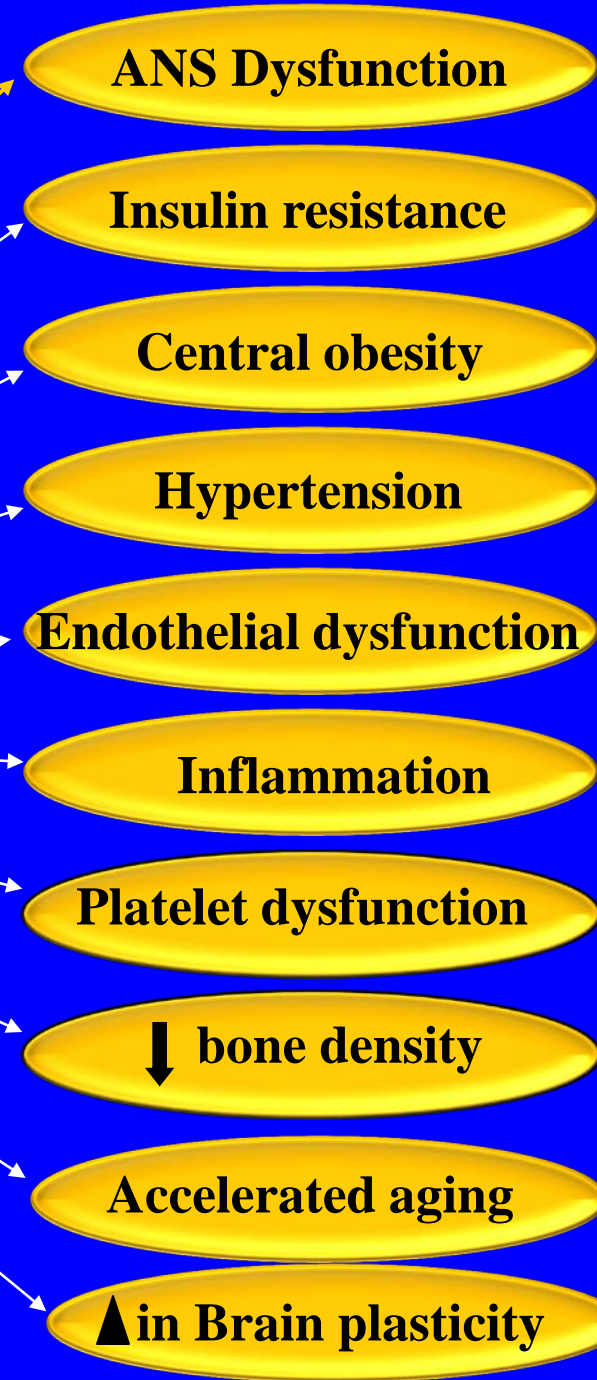
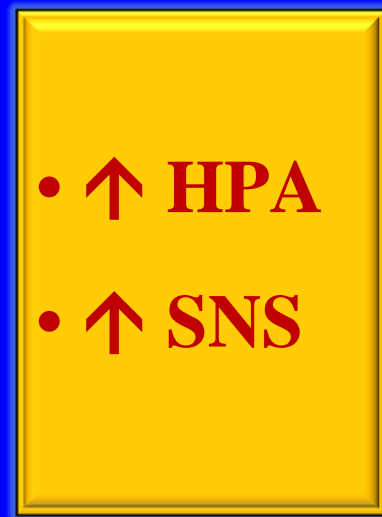
The body as a “Geiger counter”

**Identifying
what is
health
damaging**



- Decreases longevity
- Promotes disease
- Gradient relationship
- Pathophysiologic basis

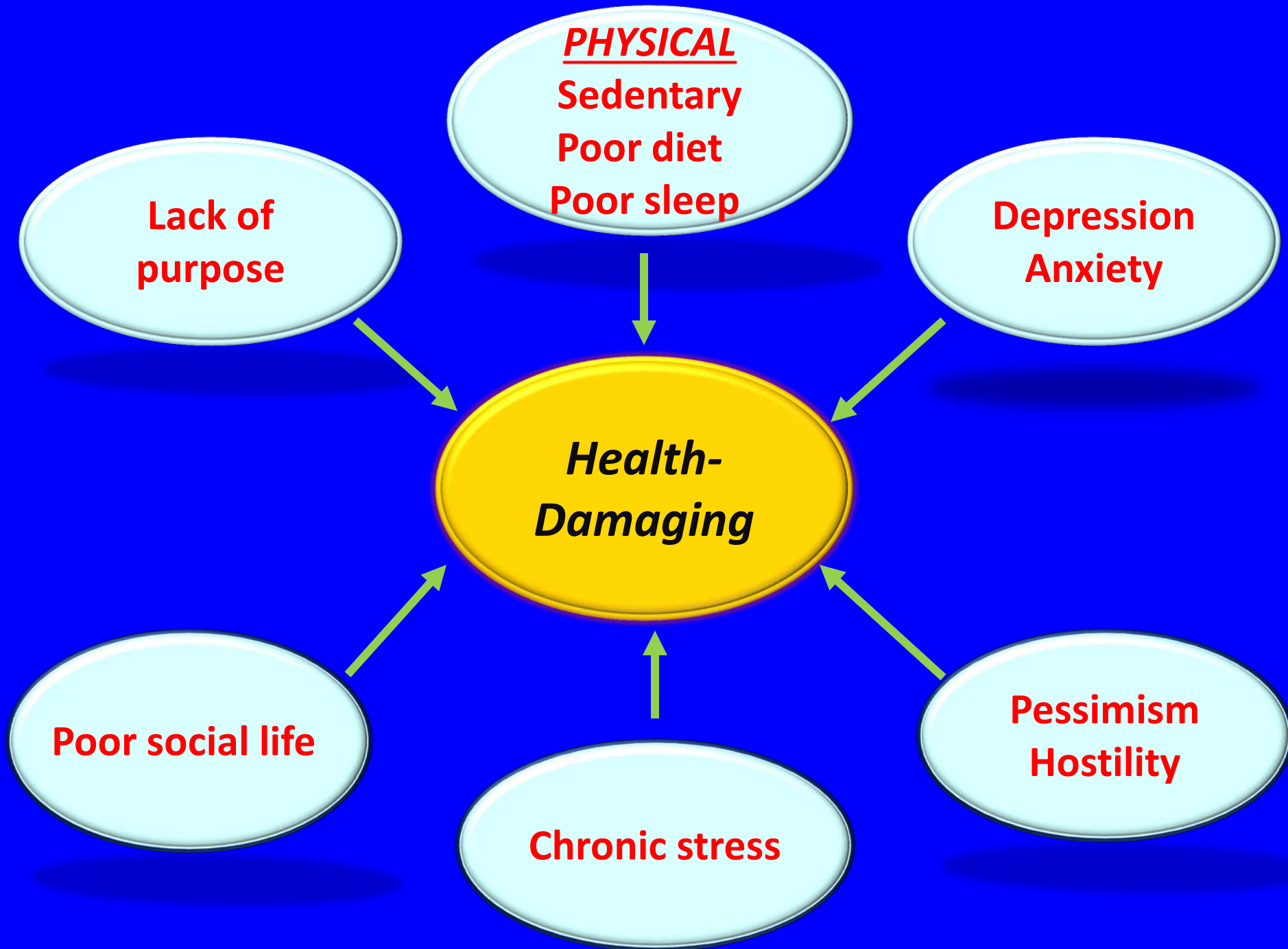
*Pathophysiological
consequences*



PHYSICAL
Sedentary
Poor diet
Poor sleep



***Health-
Damaging***



The extent of CAD risk factors

Conventional RFs

Dyslipidemia
Hypertension
Smoking
Diabetes
Obesity
Physical inactivity

Physical inactivity

Psychosocial RFs

Negative emotions
Negative thoughts
Chronic stress
Social isolation
Lack of purpose
Vital exhaustion

Vital exhaustion

The Artificial Divide

Conventional RFs

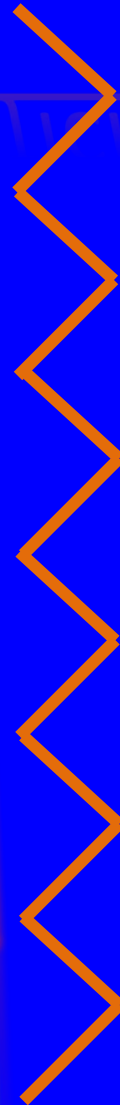
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Psychosocial RFs

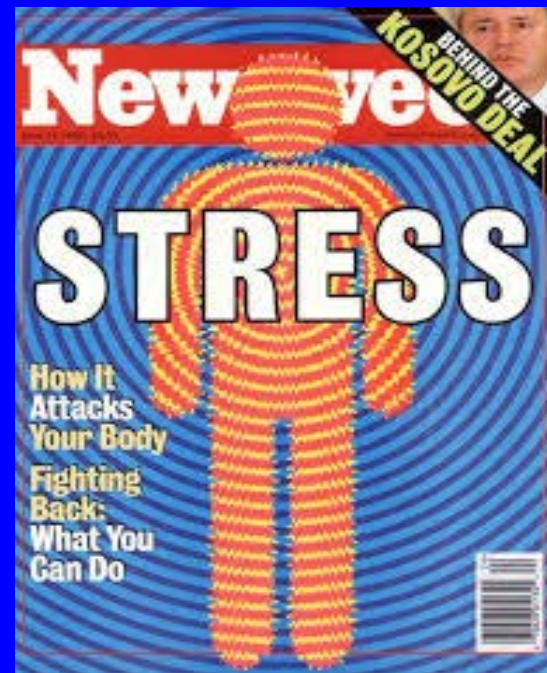
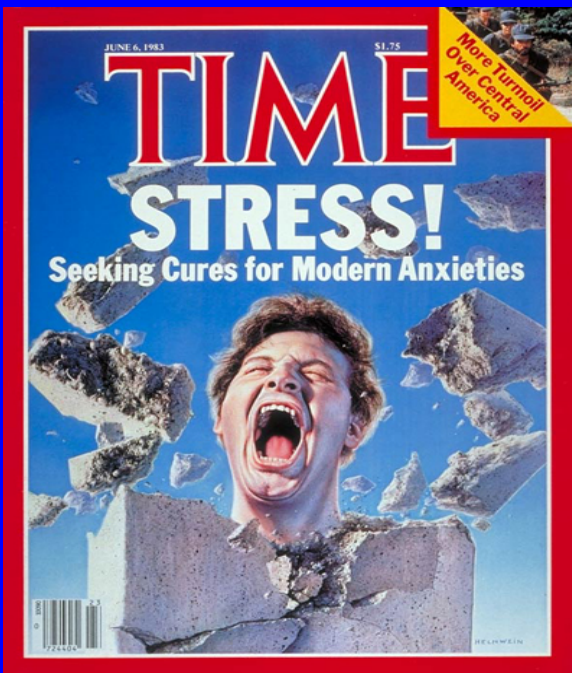
Negative emotions
Negative thoughts
Chronic stress
Social isolation
Lack of purpose
Vital exhaustion

Vital exhaustion



***Psychosocial Risk
Factors are
Increasing!***

increasing;



In search of lost time

Why is everyone so busy?

Dec 20th 2014



May 5, 2015

The 40-Hour Work Week Is a Thing of the Past

by Rachel Feinberg



The phrase “nine to five” is becoming an anachronism..

Opinion

New York Times

A Toxic Work World

By ANNE-MARIE SLAUGHTER

SEPT. 18, 2015



FOR many Americans, life has become all competition all the time. Workers across the socioeconomic spectrum, from hotel housekeepers to surgeons, have stories about toiling 12- to 16-hour days (often without overtime pay) and experiencing anxiety attacks and exhaustion. Public health experts have begun talking about stress as an epidemic.



THE NEW ENGLAND JOURNAL *of* MEDICINE

PERSPECTIVE

GETTING AN EDGE — USE OF STIMULANTS AND ANTIDEPRESSANTS IN COLLEGE

Getting an Edge — Use of Stimulants and Antidepressants in College

Richard Kadison, M.D.

Many students are “affected by the increased stress of college life- overextended by extracurricular activities taken on in order to build their resumes sleeping even less than their predecessors, and worrying more than ever about financial, social, and academic pressures...”

NEW YORK TIMES

Anxious Students Strain College Mental Health Centers

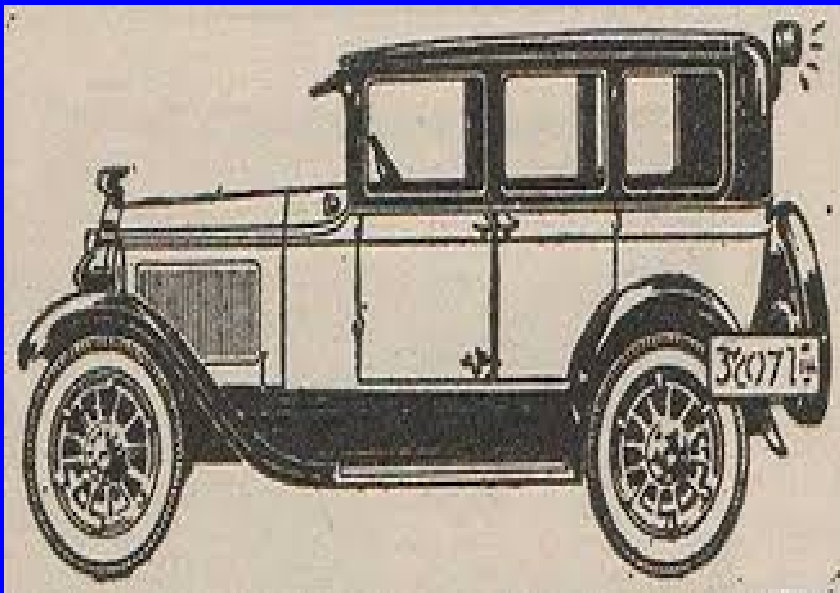
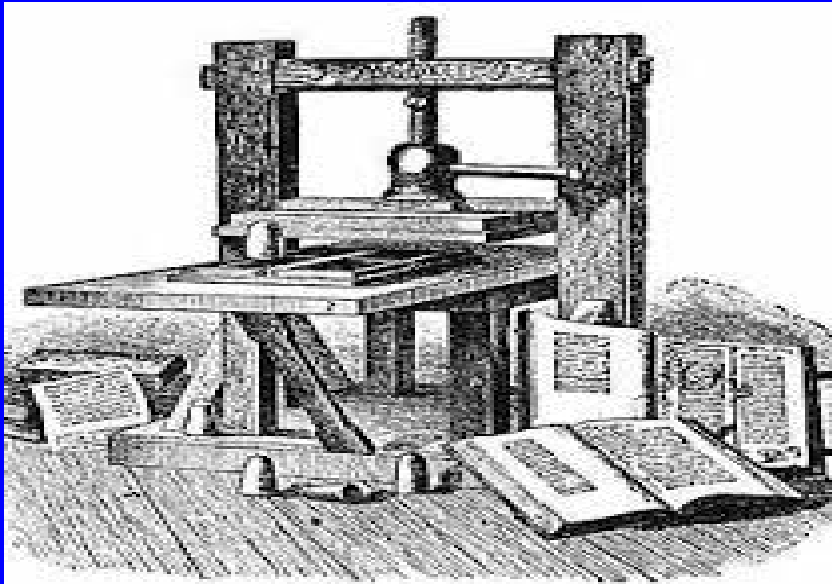
May 27, 2015



A therapy dog named Sparky gives some love to Ashley Perez, 18, and Nik Keebler, 22, during an event at the University of Central Florida's Center for Counseling and Psychological Services.

***WHY IS THIS
HAPPENING?***

IMPACT OF TECHNOLOGY



COMPUTER TECHNOLOGY



INTERNET



CELL PHONE



SOCIAL MEDIA



Med Science and Technological Advance

Revolutionary advances

Enhanced productivity

Information

Social media

Longevity

Global connectivity

Comfort/ convenience

Entertainment

Communication

”



***The Techno-
digital &
Med Science
Revolution***

REVOLUTION

Medical and Technological Advances

Revolutionary advances

Potential consequences

Enhanced productivity	● →	Work overload
Information	● →	Information overload
Social media	● →	Less <i>quality</i> social time
Longevity	● →	“Sandwich generation”
Global connectivity	● →	Global competition; 24/7
Comfort/ convenience	● →	Increasingly sedentary
Entertainment	● →	Excess screen time
Communication	● →	Frequent distraction

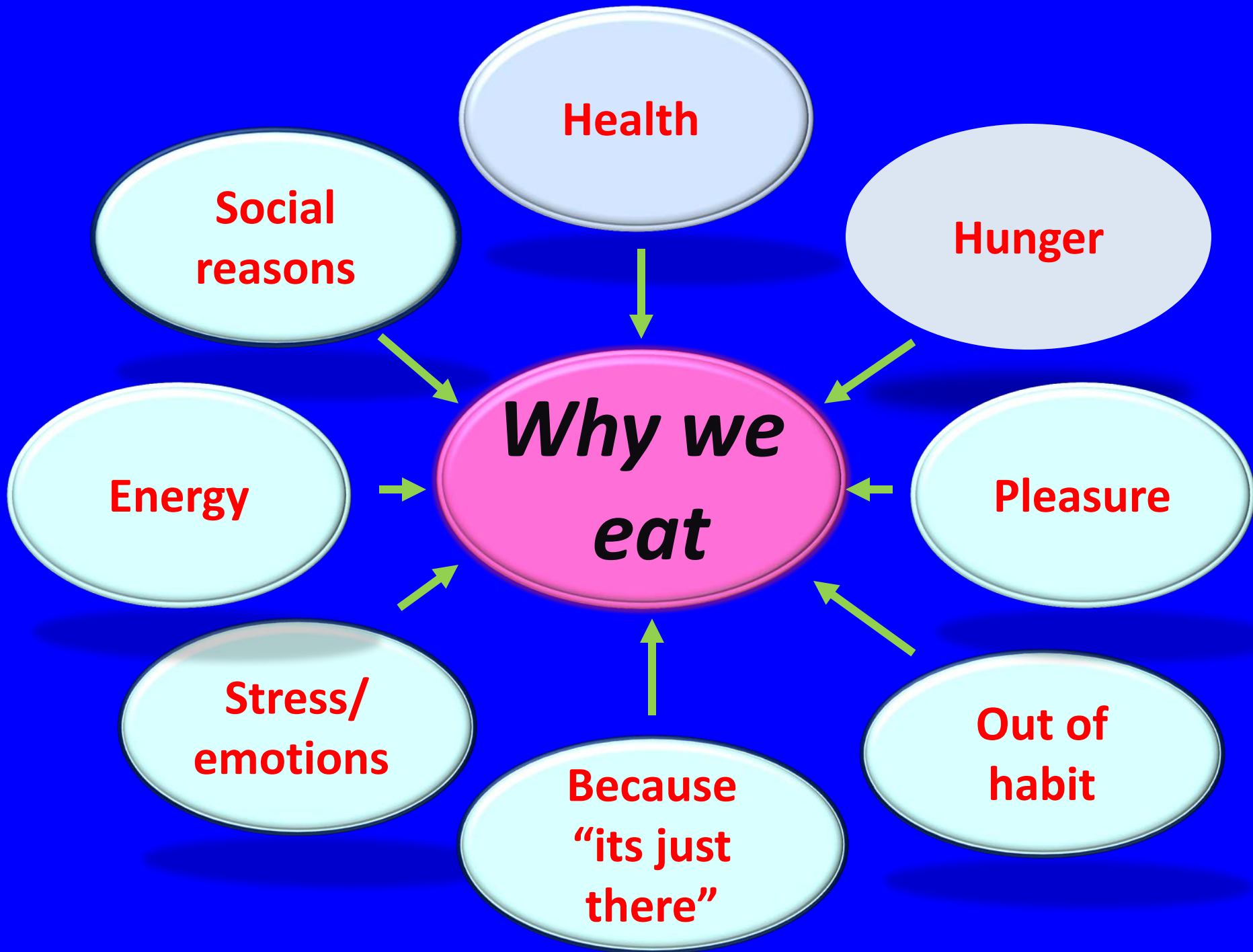
Historical Transition

Revolutionary advances

Negative consequences

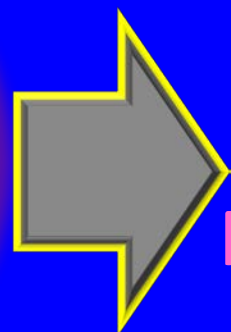
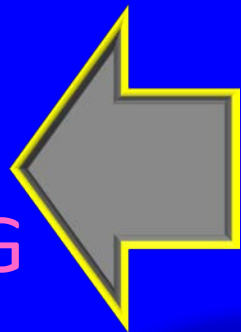
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Increasingly physicalized, multi-tasking, complex and time pressed world with psychological and spiritual sequelae





HEALTH
DAMAGING



HEALTH
PROMOTING



THE #1 NEW YORK TIMES BESTSELLER

LOSE
BODY FAT
FAST!

THE SOUTH BEACH DIET

The Delicious, Doctor-Designed, Foolproof Plan for Fast and Healthy Weight Loss

Arthur Agatston, M.D.

¡Es una gran idea para perder peso!

LA DIETA SOUTH BEACH

El delicioso plan diseñado por un médico para asegurar el adelgazamiento rápido y saludable

Dr. Arthur Agatston

ADDED
NEW
RECIPIES!

THE SOUTH BEACH DIET SUPER CHARGED

FASTER! Weight Loss and Better Health for Life

Arthur Agatston, MD
with Joseph S. Sirtori, PhD

All New
30-Minute
Recipes

THE SOUTH BEACH DIET Quick & Easy Cookbook

THE DELICIOUS RECIPES READY IN 30 MINUTES OR LESS

Arthur Agatston, MD
Author of the #1 New York Times Bestseller The South Beach Diet

THE SOUTH BEACH WAKE-UP CALL

WHY AMERICA IS STILL GETTING FATTER AND SICKER PLUS 7 SIMPLE STRATEGIES FOR REVERSING OUR TOXIC LIFESTYLE

ARTHUR AGATSTON, MD
AUTHOR OF THE #1 NEW YORK TIMES BESTSELLER THE SOUTH BEACH DIET

"Dr. Agatston has been a guest on my show with his South Beach Heart Health Revolution. Unfortunately, it was too late to bring me back, so here I go. The doctor is here with a revolution that can save your life." —Ralph Wilson

THE SOUTH BEACH HEART HEALTH REVOLUTION

The Book Could Save Your Life

Cardiac Prevention That Can Reverse Heart Disease and Stop Heart Attacks and Strokes

Arthur Agatston, M.D.
Author of the #1 New York Times Bestseller The South Beach Diet

Clean up the confusion about gluten once and for all!

THE SOUTH BEACH DIET GLUTEN SOLUTION

The Delicious, Doctor-Designed, Gluten-Aware Plan for Losing Weight and Feeling Great—FAST!

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RETURN OF THE #1 NEW YORK TIMES BESTSELLER THE SOUTH BEACH DIET
WITH NATALIE GEARY, MD