

# **Third Annual Health Ministry Renewal Conference**



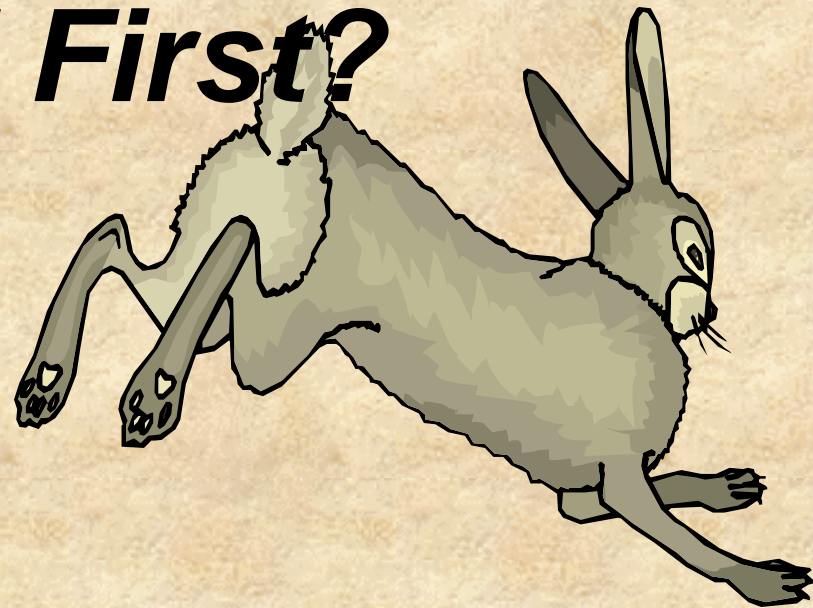
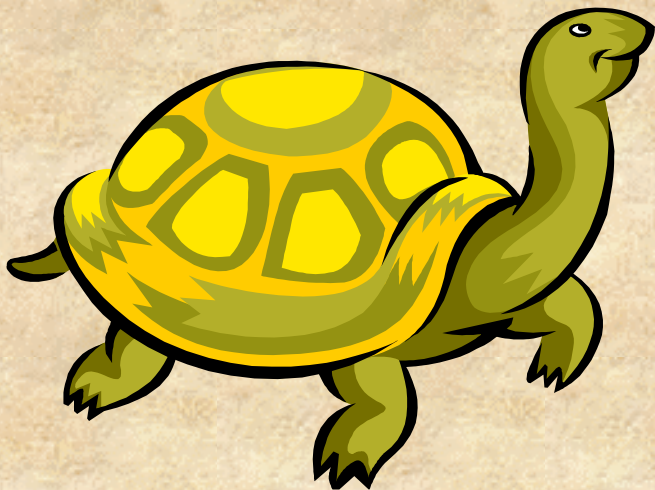
**James L. Early, MD**

Director of Clinical Preventive Medicine

University of Kansas Medical School

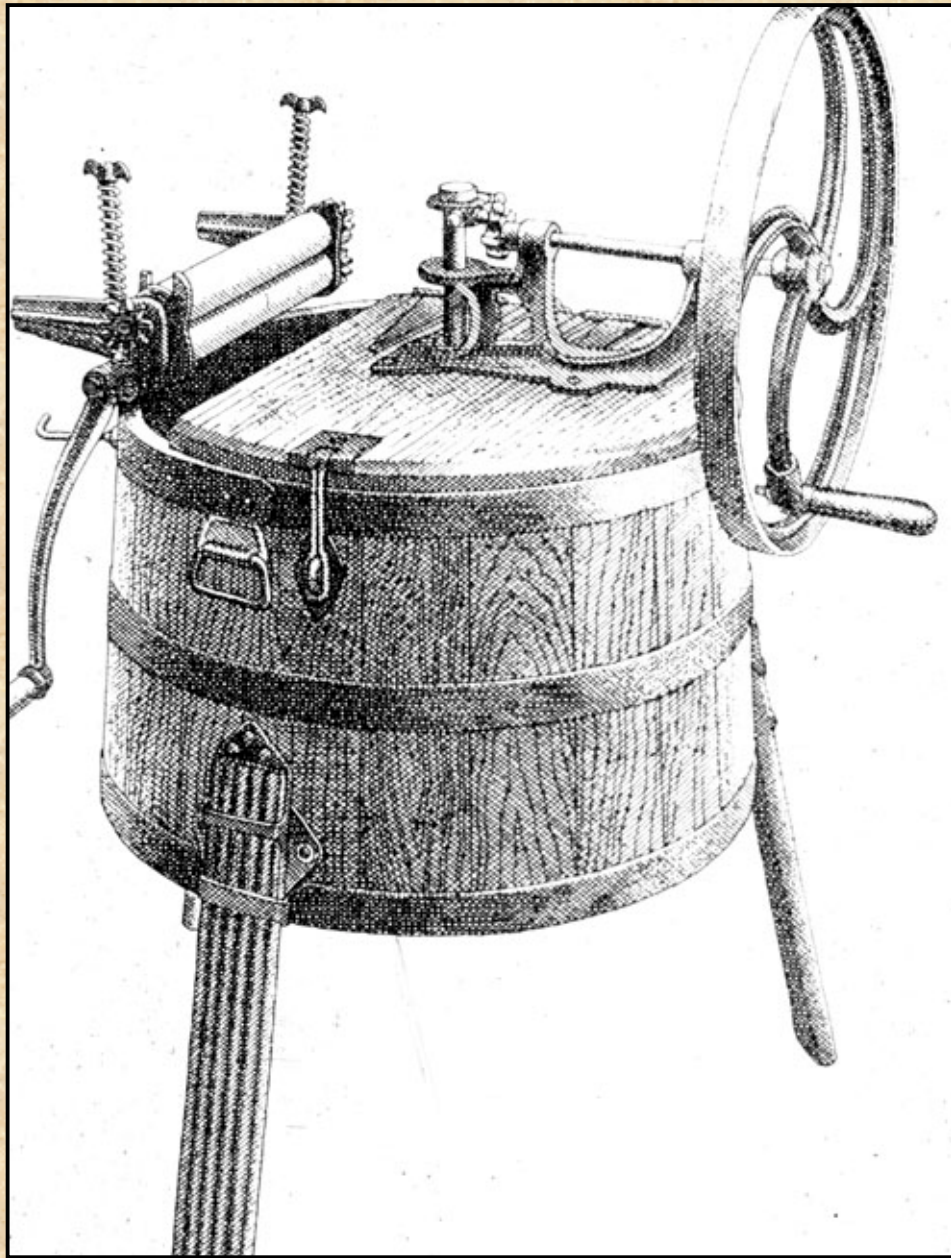
Wichita, Kansas

***The Tortoise and the Hare:  
What Did They Eat Before  
the Big Race and Which One  
Died First?***



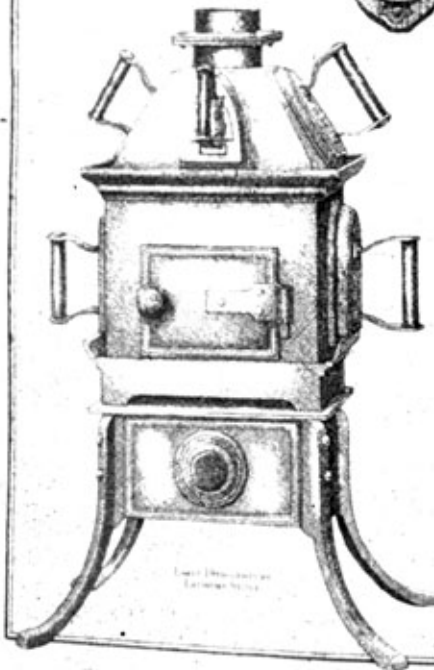
Lifetime Dedication to Change  
vs. the Short-Term Fix

**Looking Back at America  
and American Healthcare  
Over the Past 50 Years**



# THE IRON AGE

TWO BASIC TYPES OF IRON EVOLVED IN THE seventeenth century, the flat iron and the box iron. Flat irons were of various weights—heavy for thick material, light for cheesecloth. They were either heated in front of the open fire or on the kitchen range, although some large houses had a purpose-built heating stove. Box irons were much deeper in the belly, designed to contain a cast-iron slug, which was heated until red hot and then placed inside the iron with tongs. Later box irons burned charcoal or coal and featured a row of holes in each side for ventilation. Several special-purpose irons were also made: the Italian or tally iron was indispensable for ironing bows and penetrating gathers. Spirit and Lenoire irons became common in the second half of the nineteenth century but were gradually superseded by the electric iron, first patented in the United States in 1883.



THE  
BEVERAGE,  
1957:

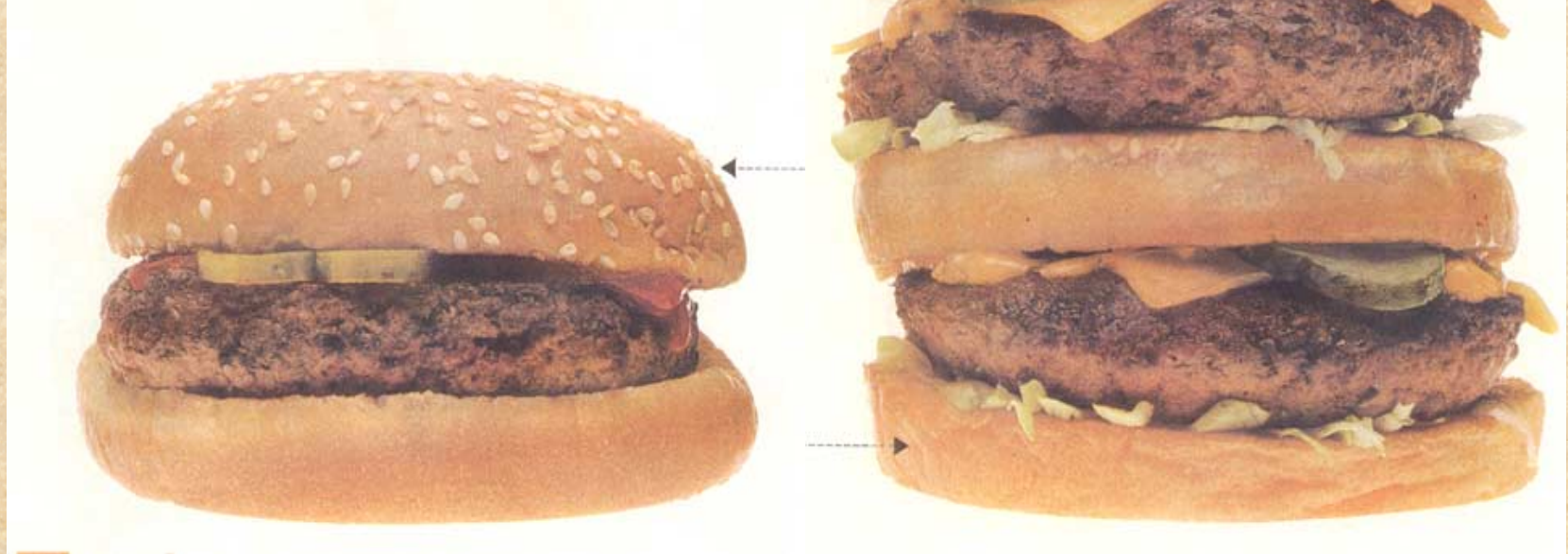


THE  
BEVERAGE,  
1997:



**Now**

**Then**





American Culture



Healthy Lifestyle

**The Gap**

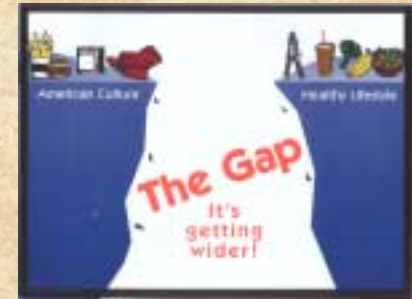
It's  
getting  
wider!

# What is Wrong with the American Diet?

- Increased total calories and portion sizes
- Increased fast food consumption
- Increased soda and juice consumption
- Increased saturated fat and salt intake
- Low fruit and vegetable intake
- Inadequate calcium intake

All in the presence of decreased physical activity

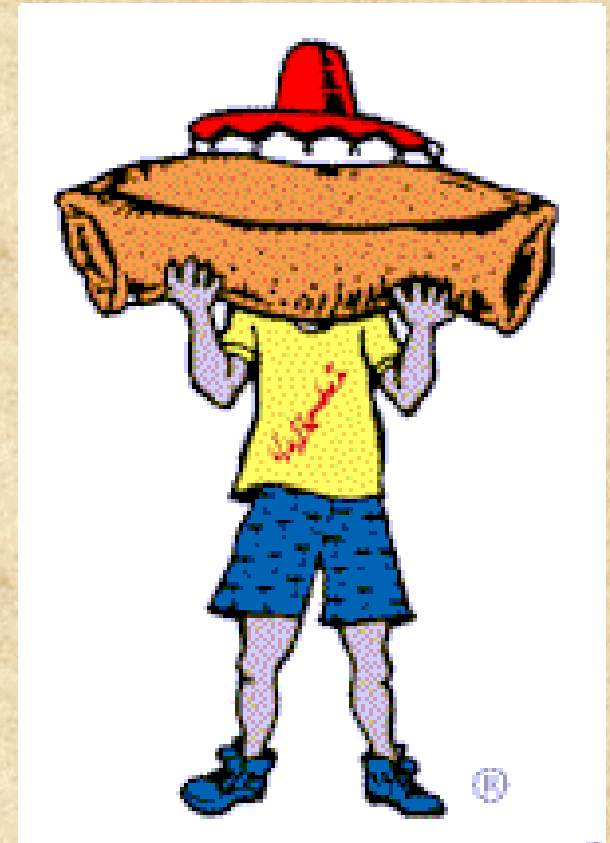
The Gap:



Nothing Is  
**TOO BIG** Anymore



Burritos AS Big  
AS your Head!



<http://www.labambarestaurant.com>



# Lean Cuisine®

It's not just lean. IT'S CUISINE.™

## “Hearty Portions”

“Their new “complete meals” weigh about 50% more – and have at least 50% more calories.”

*Tufts University Newsletter: August 1999*

DELICIOUS

MARS

BAR

DEEP FRIED IN BATTER

- Dipped in coconut batter
- Pre-cooked in oil
- Then deep fried

**“It tastes like a battered and fried Mars bar.”**





NEW  
**Big Xtra!**  
LARGE *Extra Value Meal*<sup>®</sup>

  
**POWER PLAY**  
days



Try McDonald's<sup>®</sup> New Big Xtra!<sup>™</sup> Sandwich. Buy any Large or Super Size<sup>®</sup> Extra Value Meal<sup>®</sup> and play the Bruins Power Play Days Pull and Win Game for a chance to win instant prizes.

No purchase necessary to play. For free game rules, see rules. ©2008 McDonald's Corporation.



Is your stomach as big as your eyes?

New Bigger Muffins.



0979BJ

OUTDOOR SYSTEMS





No one goes home hungry from The Cheesecake Factory®!

2,000 Calories!!!

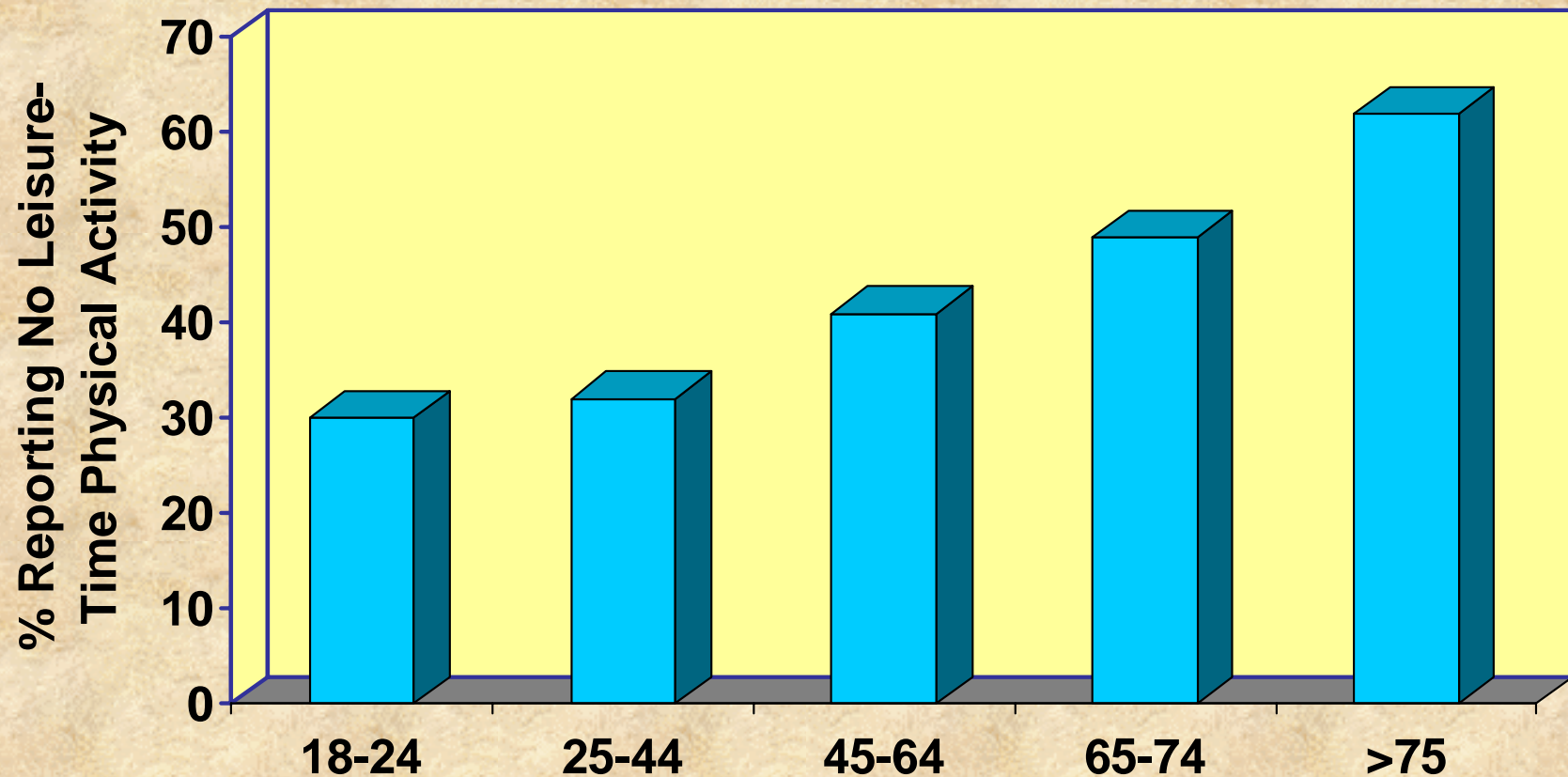




**“Genetics loads the gun; the environment pulls the trigger.”**

George Bray

# Lack of leisure-time physical activity among US adults



Source: Healthy People 2010.

JE Manson et al. Arch Int Med 2004 Feb 9; vol 164



Garage Door

TV

Stereo

VCR

Remote Car Starter and Door Opener

Air Conditioning

Fireplace

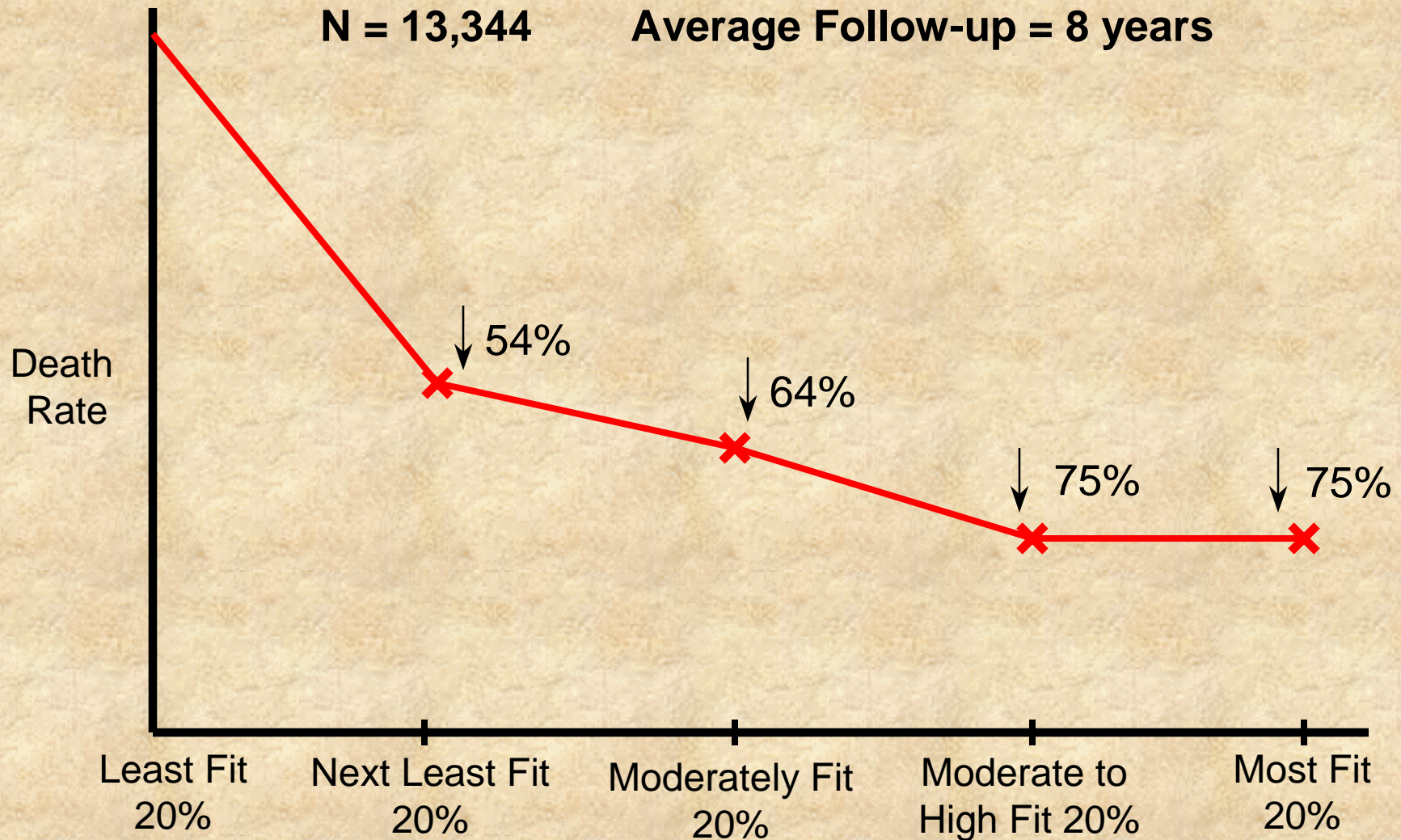
**Lucky for us that there are  
more dogs in America that  
need walking than there  
ever have been before!**



# Physical Fitness and All-Cause Mortality

N = 13,344

Average Follow-up = 8 years

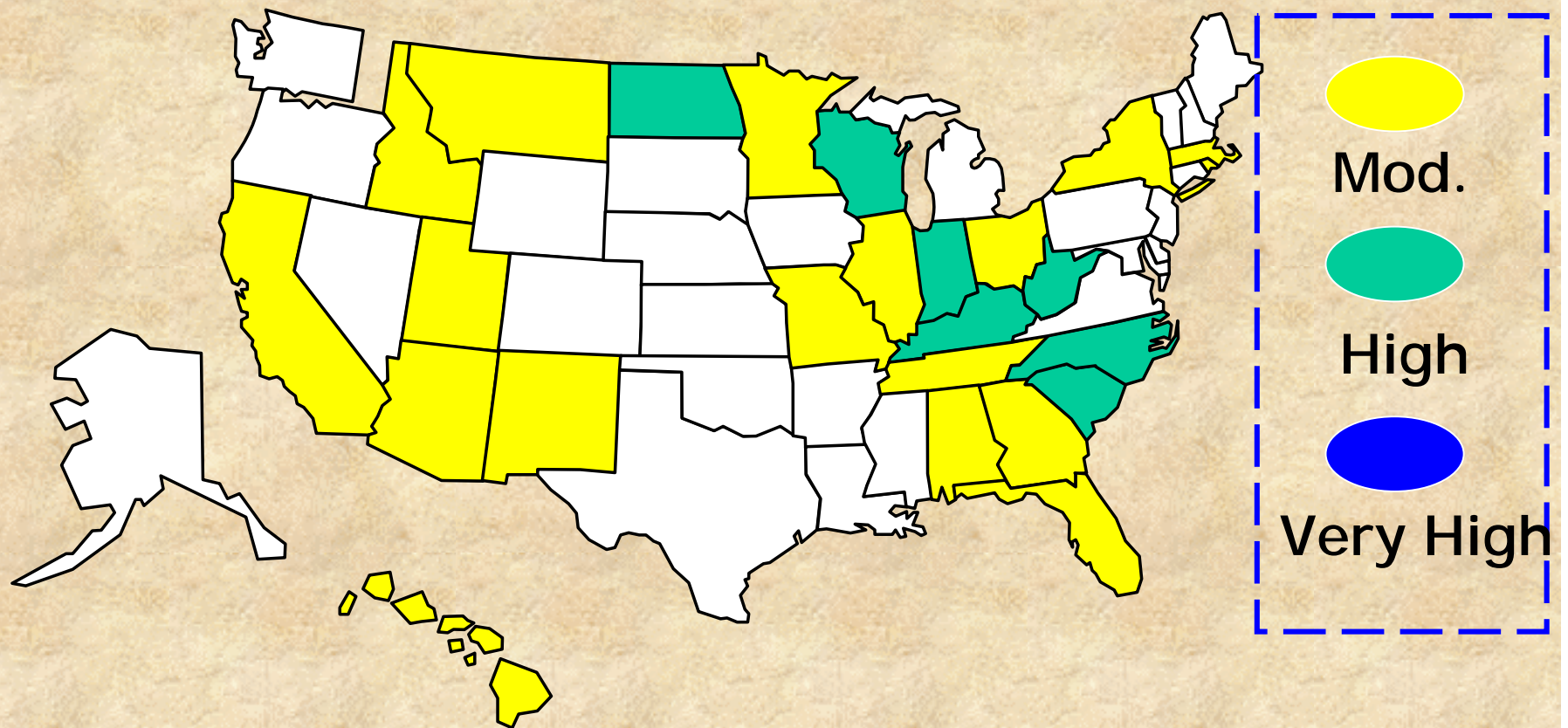


# % Obese 1900





# % Obese, 1986

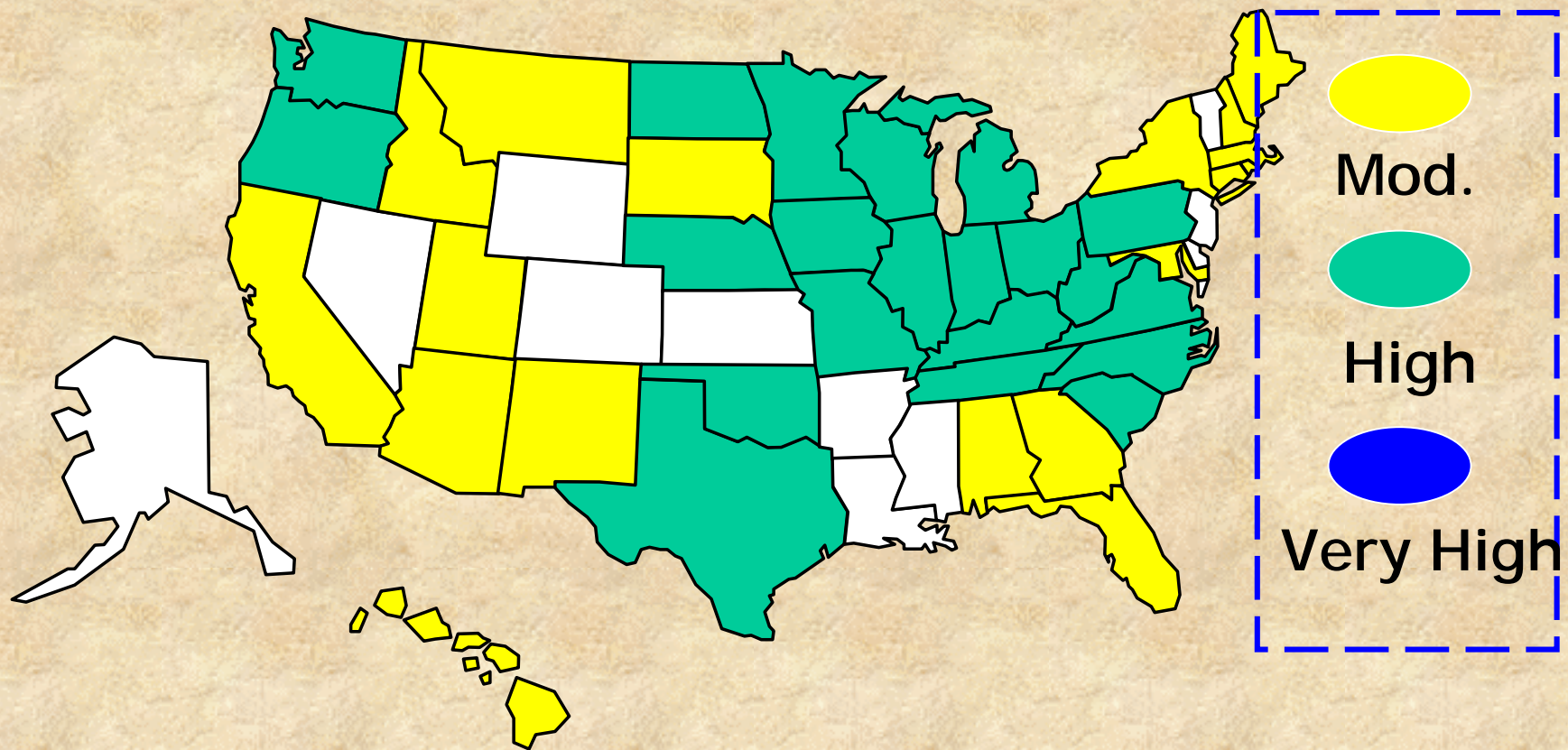


Source: Mokdad, et al.



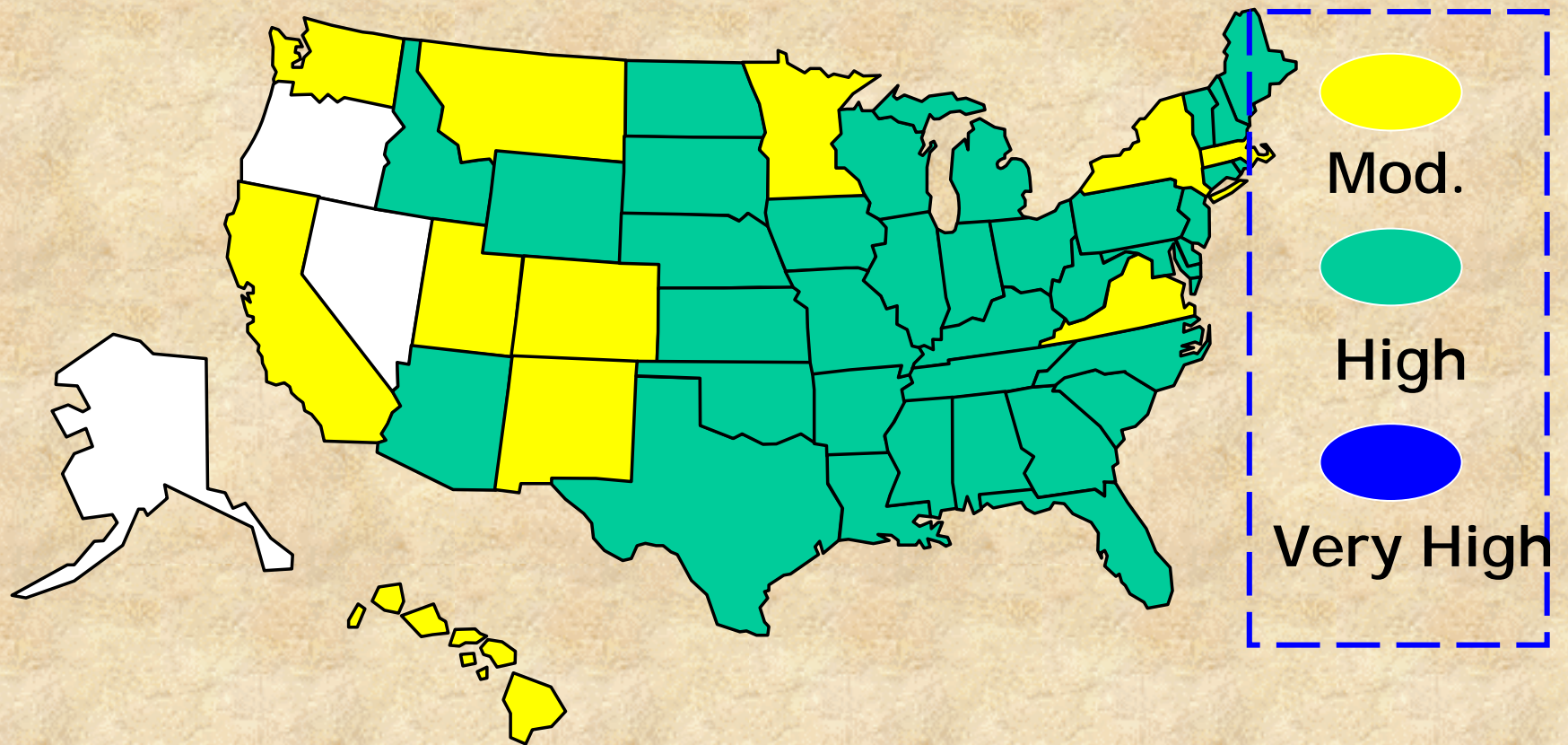


# % Obese, 1989



Source: Mokdad, et al.

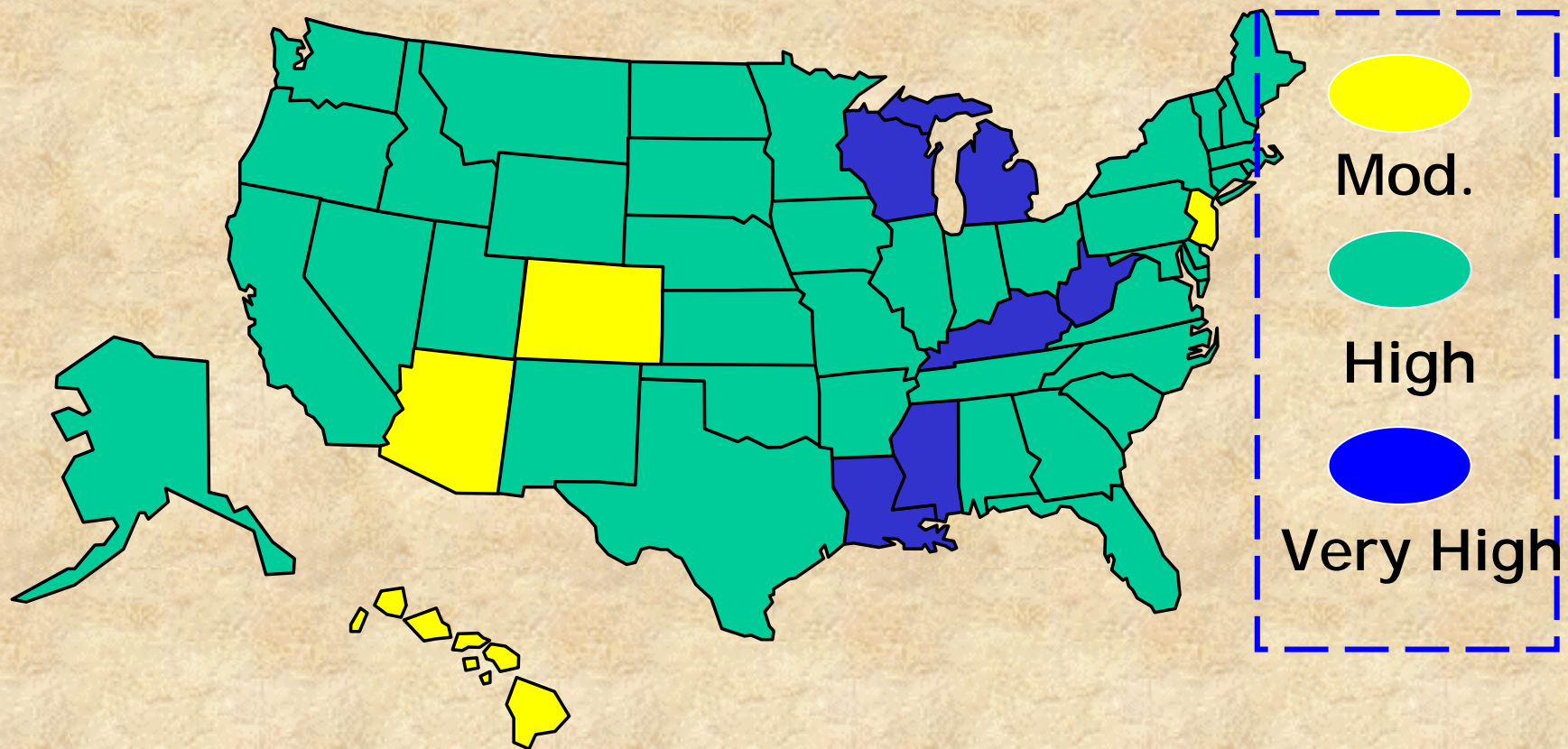
# % Obese, 1990



Source: Mokdad, et al.

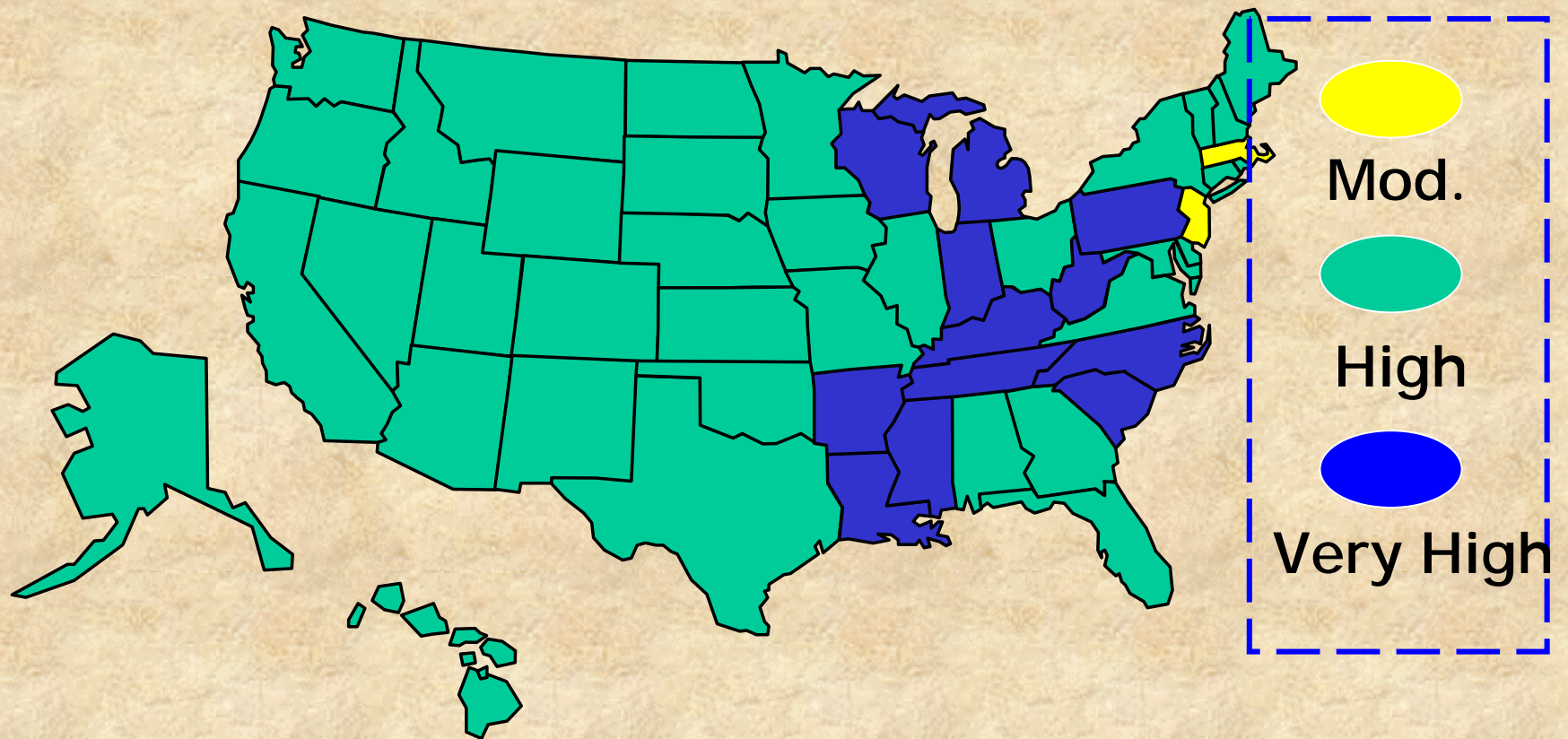


# % Obese, 1992



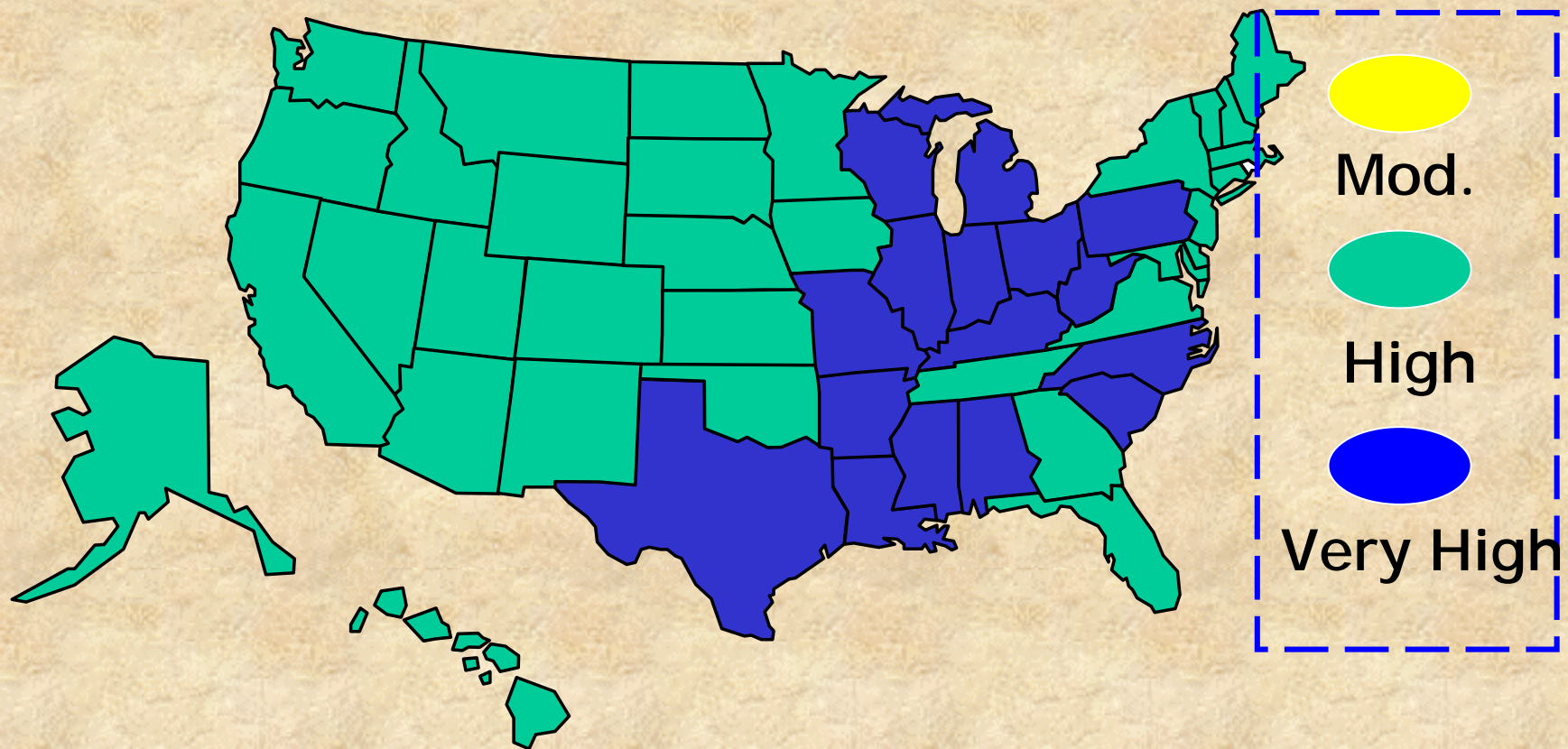
Source: Mokdad, et al.

# % Obese, 1993



Source: Mokdad, et al.

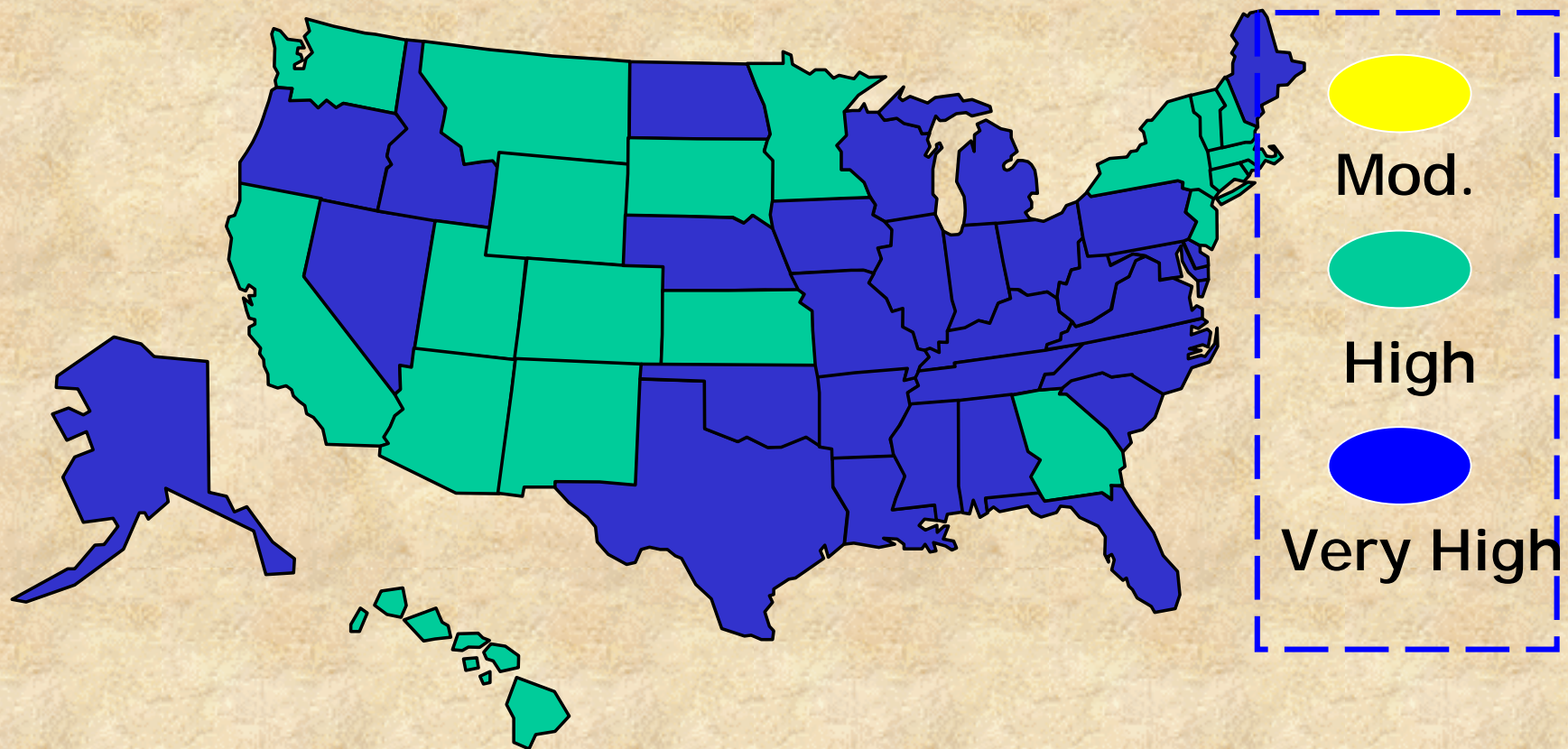
# % Obese, 1994



Source: Mokdad, et al.



# % Obese, 1996

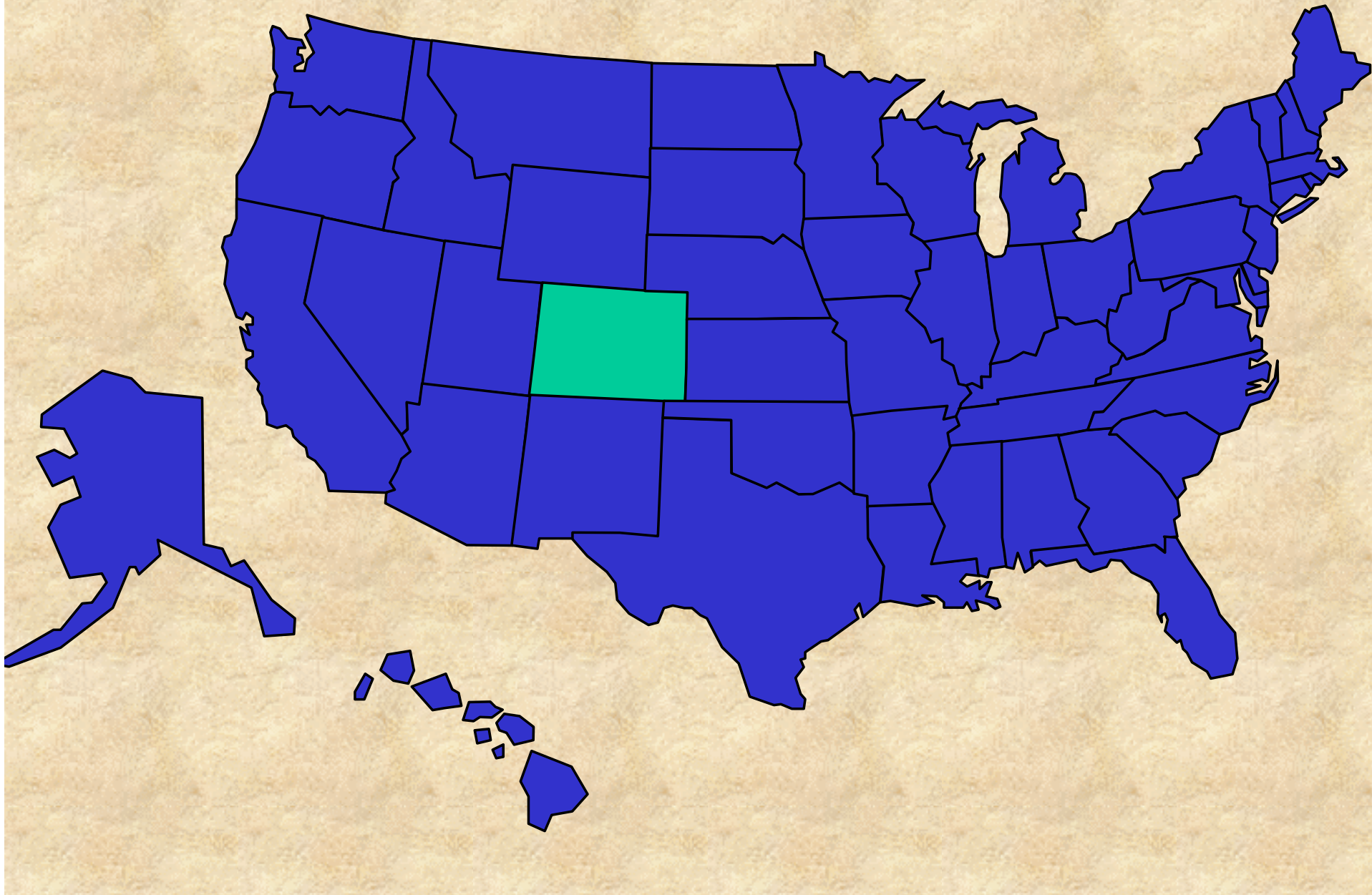


Source: Mokdad, et al.

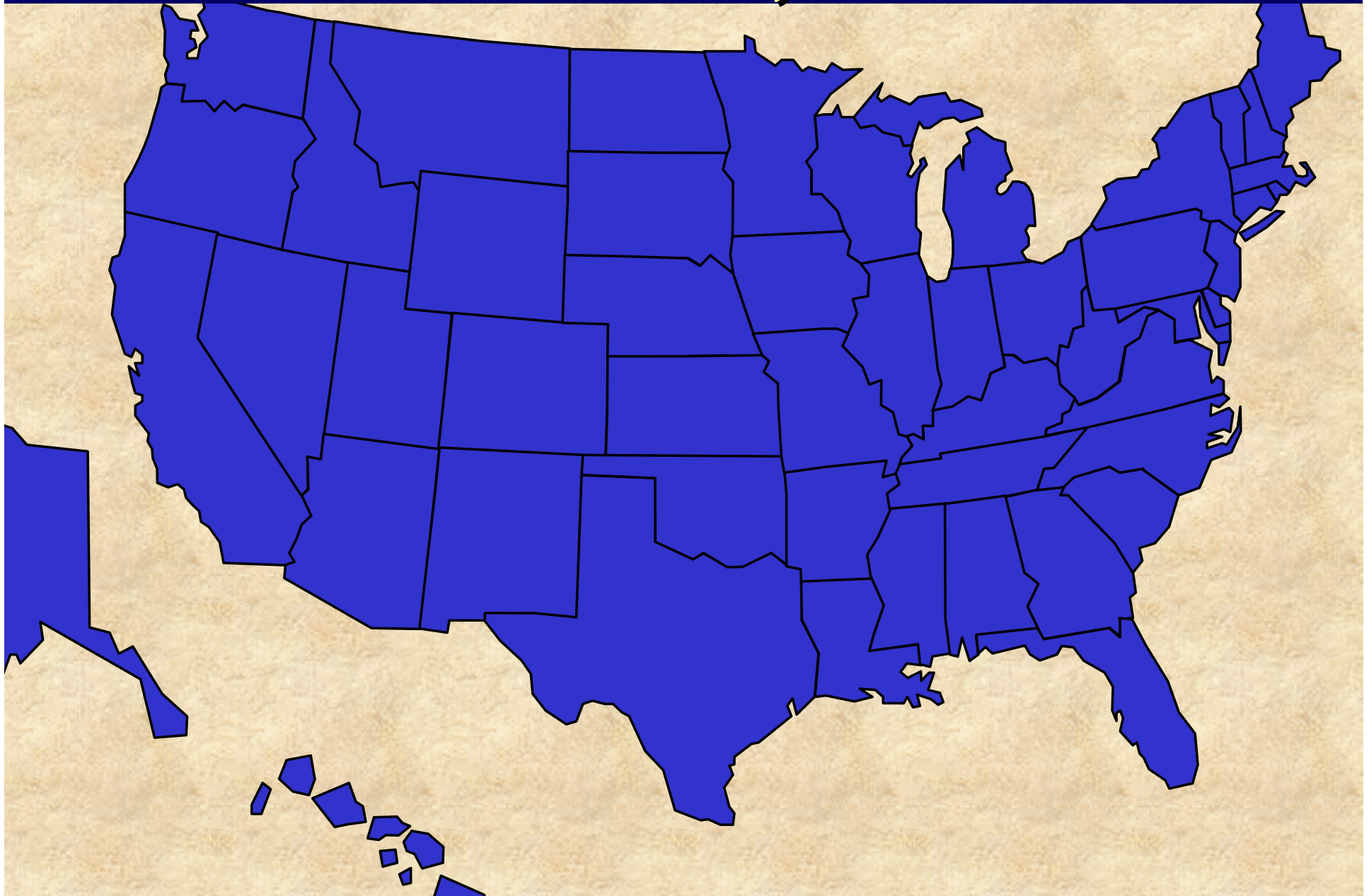




# % Obese, 1999



# % Obese, 2000

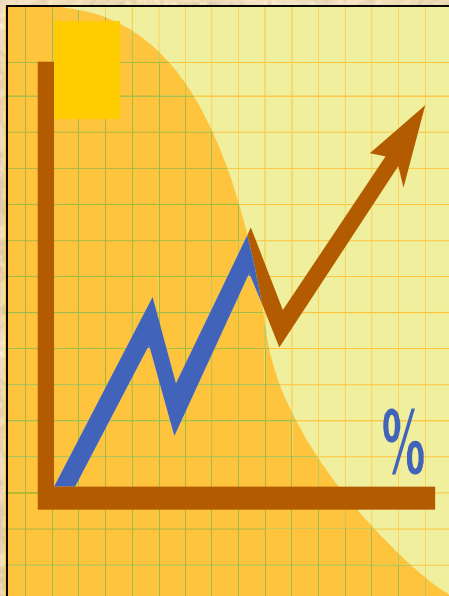


# Increase of Overweight in Children

**Increase in overweight from NHANES III (1988-1994) to NHANES 1999-2000:**

- **47.6%** increase for 12-19 year-olds
- **35.4%** increase for 6-11 year-olds
- **44.4%** increase for 2-5 year-olds

# CDC Reports Dramatic Increase in Obesity



There has been a **74%** increase in the number of obese Americans in the past 10 years (1991-2001).

# 5-Year Obesity Study in Rural Wisconsin

- In 5 yrs, on average: **women gained ~16 lbs., men gained ~17.5 lbs.**
- The greatest 5-year increase in weight gain occurred in the 20 – 30 year age group (women: ~24.2 lbs., men: ~26.5 lbs.)
- **58% of normal-weight subjects became overweight or obese.**

# Projections: What Can We Expect?

At the current rate of increase, by the year 2007:

**75%** of Americans will be overweight or obese.

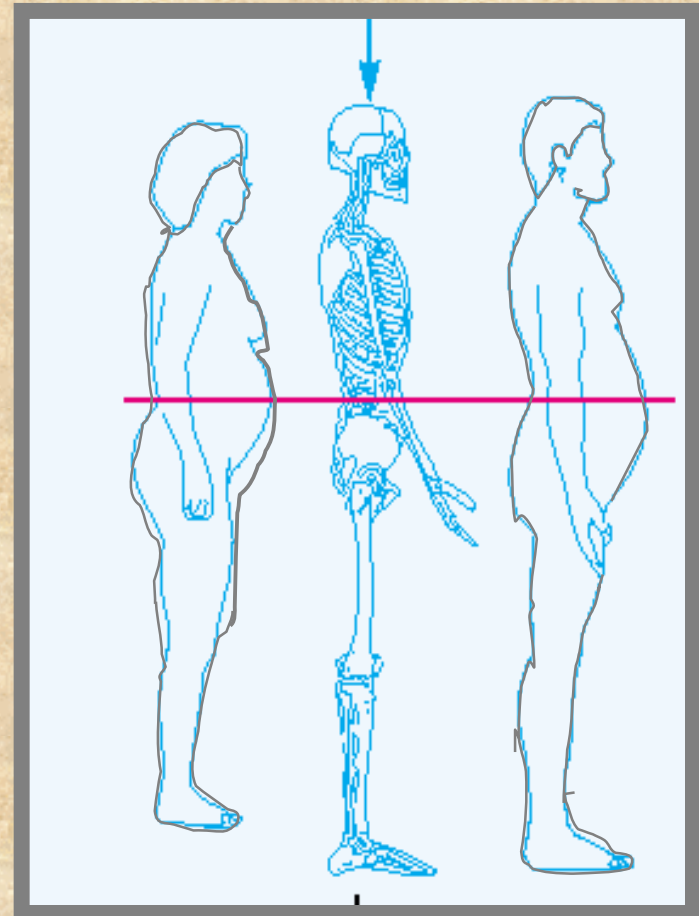
**Table 2.** Actual Causes of Death in the United States in 1990 and 2000

| Actual Cause                      | No. (%) in 1990*      | No. (%) in 2000         |
|-----------------------------------|-----------------------|-------------------------|
| Tobacco                           | 400 000 (19)          | 435 000 (18.1)          |
| Poor diet and physical inactivity | 300 000 (14)          | 400 000 (16.6)          |
| Alcohol consumption               | 100 000 (5)           | 85 000 (3.5)            |
| Microbial agents                  | 90 000 (4)            | 75 000 (3.1)            |
| Toxic agents                      | 60 000 (3)            | 55 000 (2.3)            |
| Motor vehicle                     | 25 000 (1)            | 43 000 (1.8)            |
| Firearms                          | 35 000 (2)            | 29 000 (1.2)            |
| Sexual behavior                   | 30 000 (1)            | 20 000 (0.8)            |
| Illicit drug use                  | 20 000 (<1)           | 17 000 (0.7)            |
| <b>Total</b>                      | <b>1 060 000 (50)</b> | <b>1 159 000 (48.2)</b> |

\*Data are from McGinnis and Foege.<sup>1</sup> The percentages are for all deaths.

# The Metabolic Syndrome

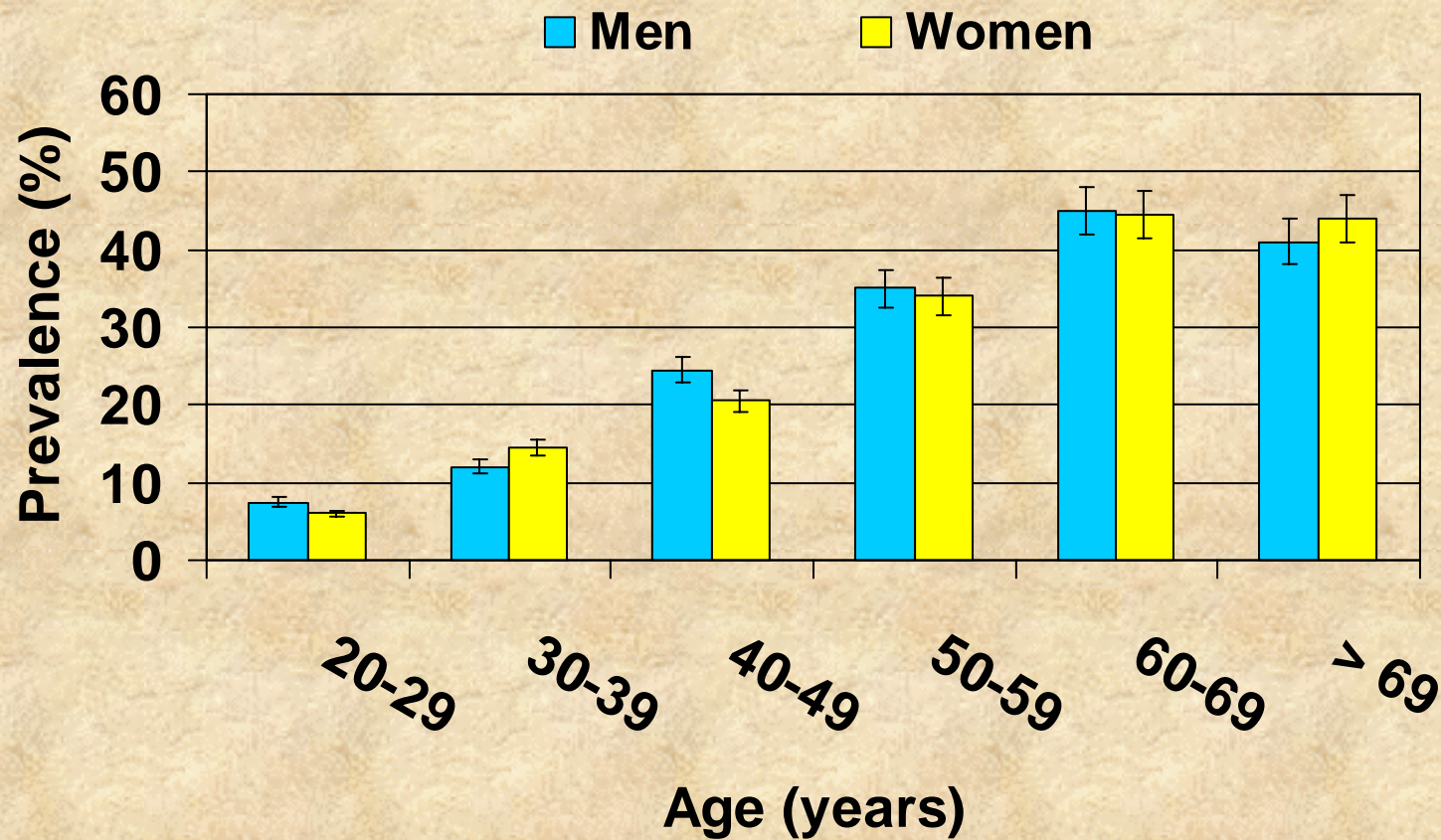
- Constellation of major risk factors, life-habit risk factors and emerging risk factors
- Over-represented among populations with CHD
- Clue is distinctive body-type with increased abdominal circumference (although some leaner men and women with abdominal obesity without increased waist)



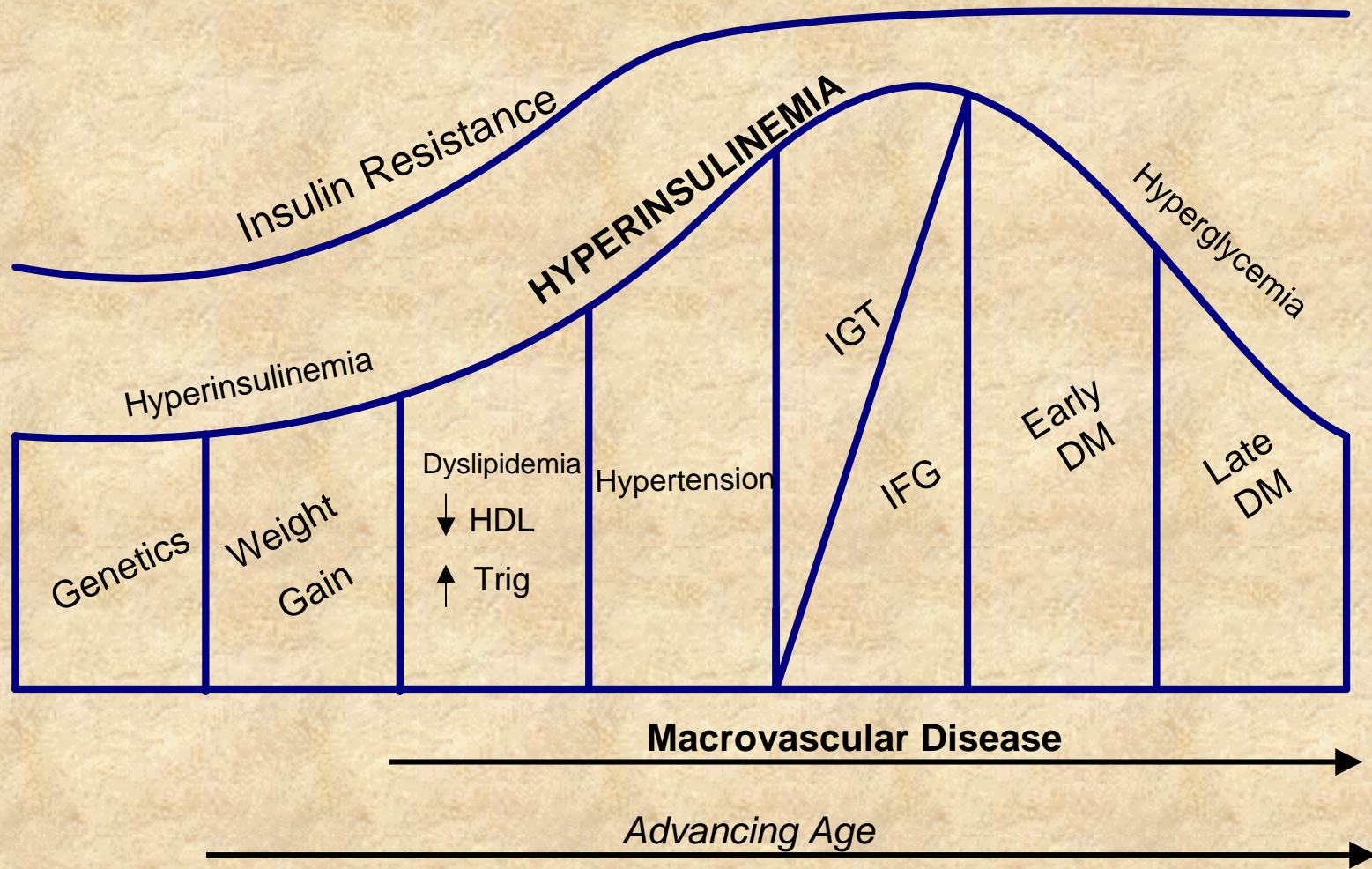
# The Presence of 3 or More Risk Factors Correlates With the Metabolic Syndrome (ATP III)

| <b>Risk Factor</b>                | <b>Defining Level</b>                                |
|-----------------------------------|--|
| Abdominal obesity<br>Men<br>Women | Waist circumference<br>>40" (102 cm)<br>>35" (88 cm) |
| FBG                               | ◀110 mg/dL   |
| Triglycerides                     | ◀150 mg/dL   |
| HDL-C<br>Men<br>Women             | <40 mg/dL<br><50 mg/dL                               |
| BP                                | ◀130/◀ 85 mm Hg                                      |

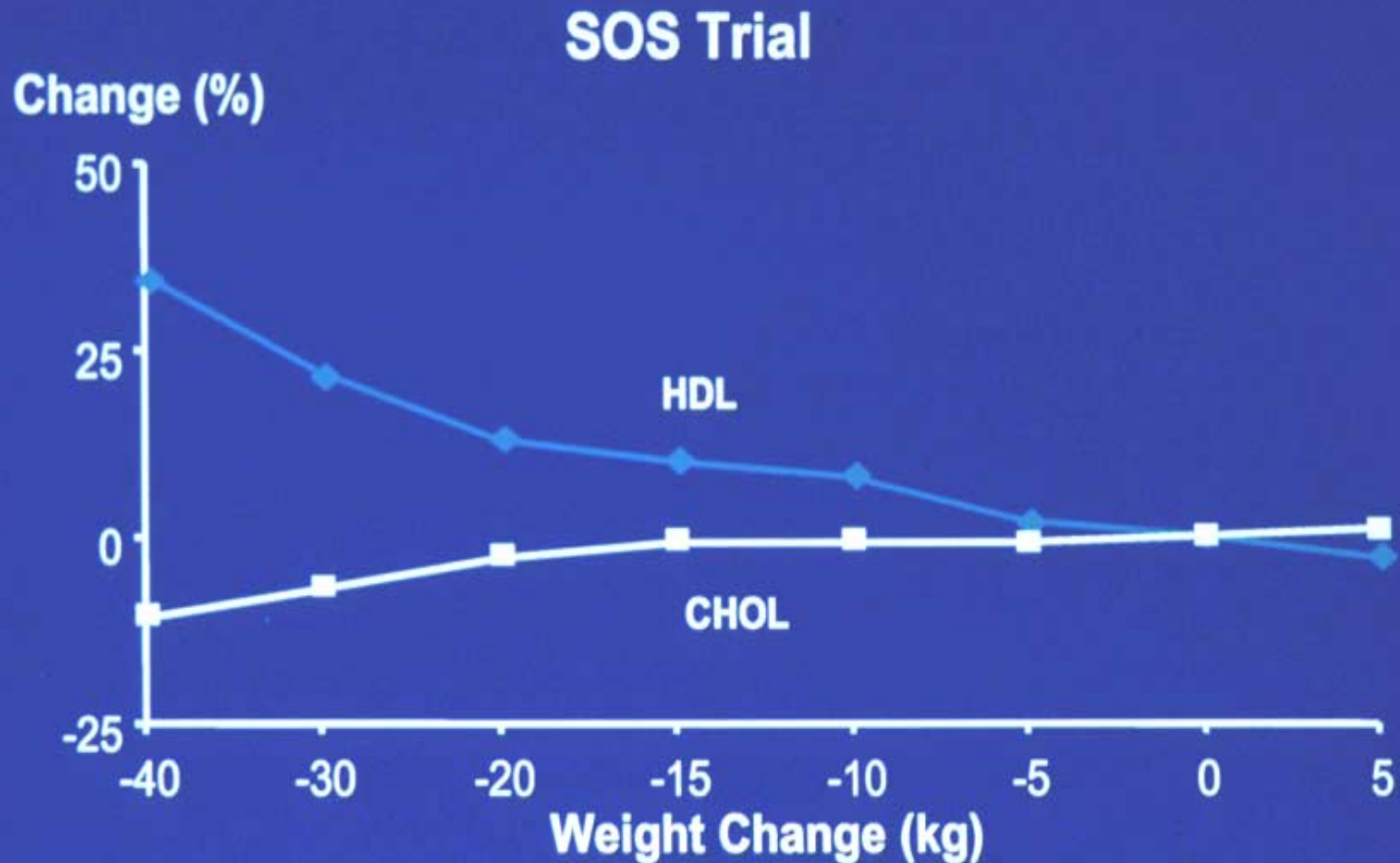
# Prevalence of the Metabolic Syndrome in the US



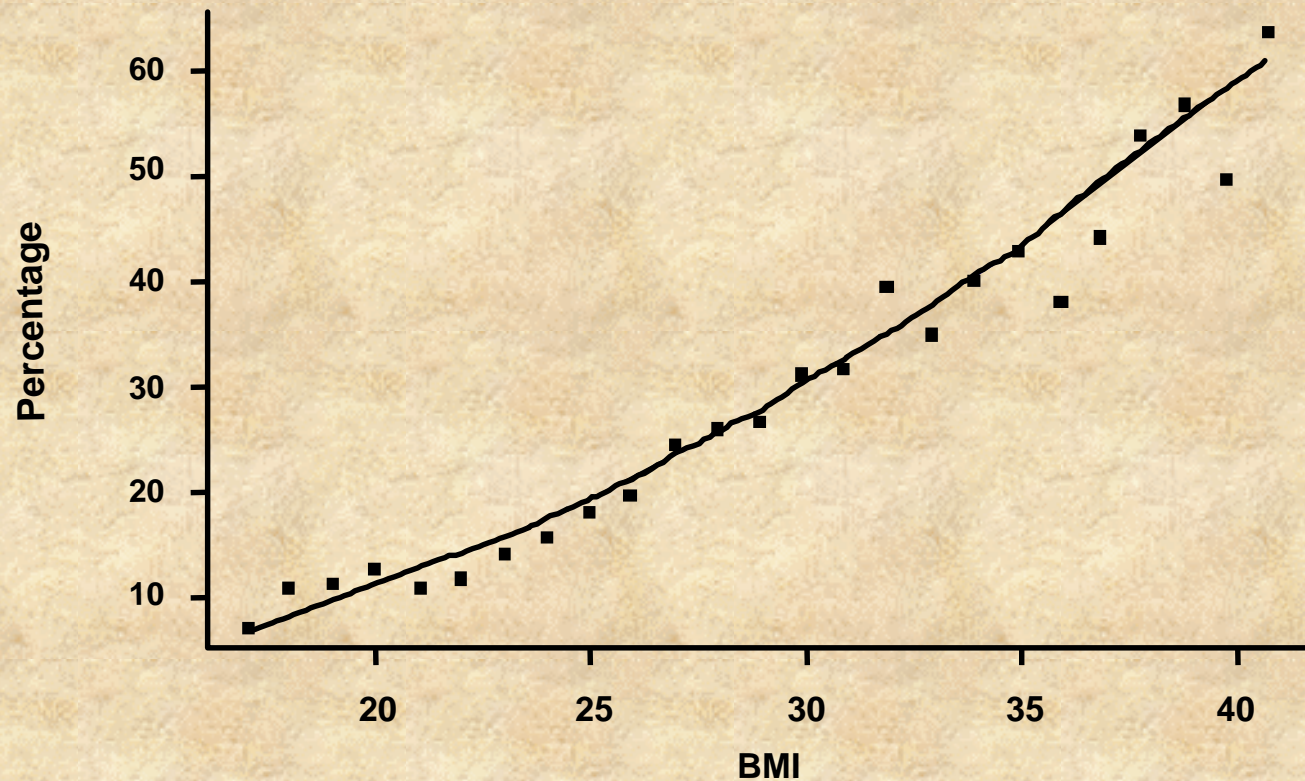
# Metabolic Syndrome “In Action”



# Change in HDL and Total Cholesterol With Weight Loss



# Hypertension



**Relationship between BMI and crude percentage of women reporting medical problems, surgical procedures, symptoms, and health care utilization.**

# Increasing Rates of Type 2 Diabetes Parallel Obesity Epidemic

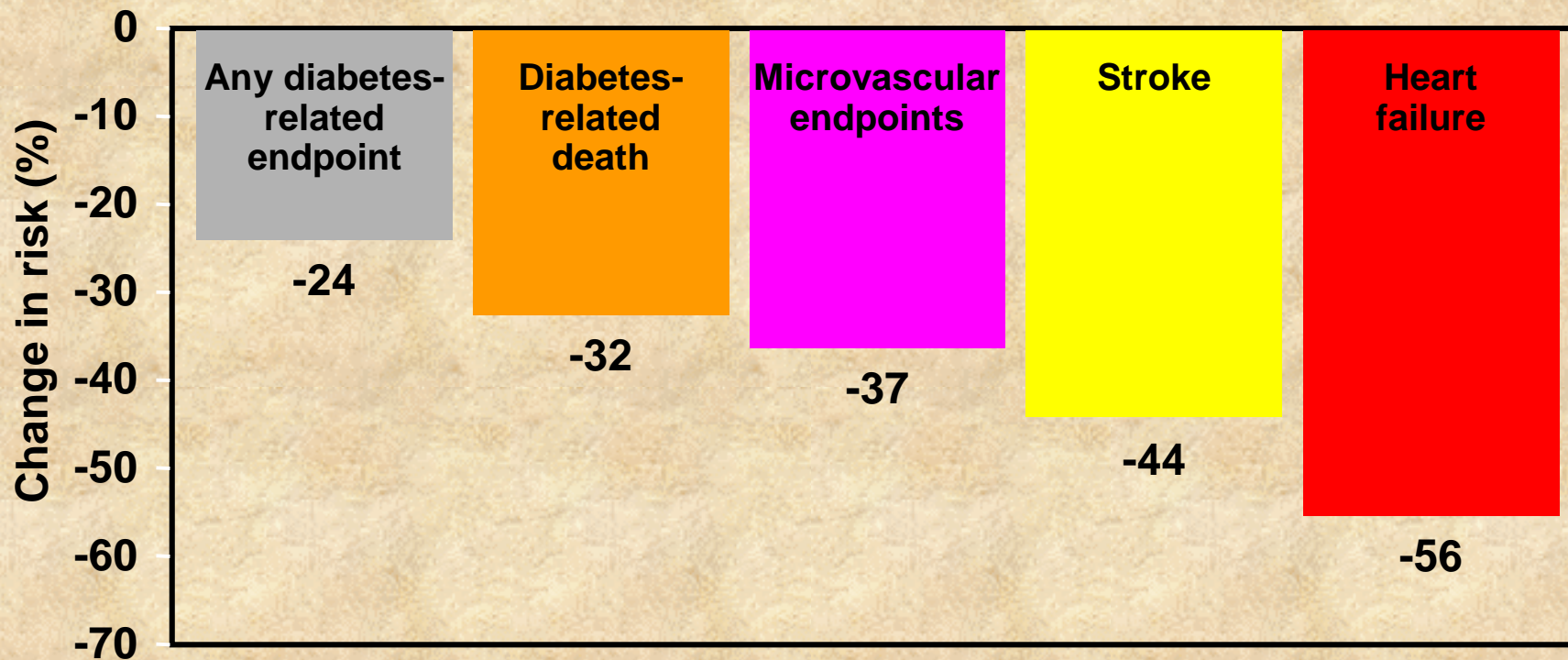
- There has been a **600% increase** in the prevalence of diabetes since 1960.
- The number of people with diabetes is increasing by more than 1 million per year.
- There was a 76% increase in the prevalence of diabetes for 30-39 year-olds between 1990 and 1998.

"Diabetes in America", NIDDK, 1995  
*Diabetes Care* 2000;23:1278-1283  
*Diabetes Care* 2001;24:412



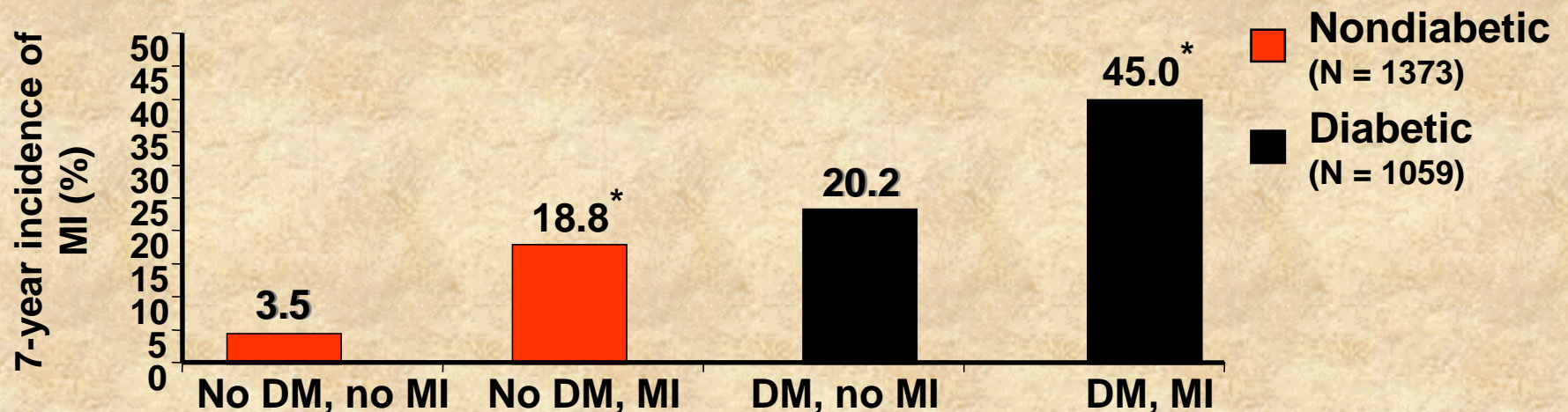
# UKPDS: Blood Pressure Control Study in Type 2 Diabetes

Effect of BP on Complications Risk:  
Benefits of 144/82 vs 154/87 (10/5 mm Hg)



# East West Study: Type 2 Diabetes and CHD

## 7-Year Incidence of Fatal/Nonfatal MI



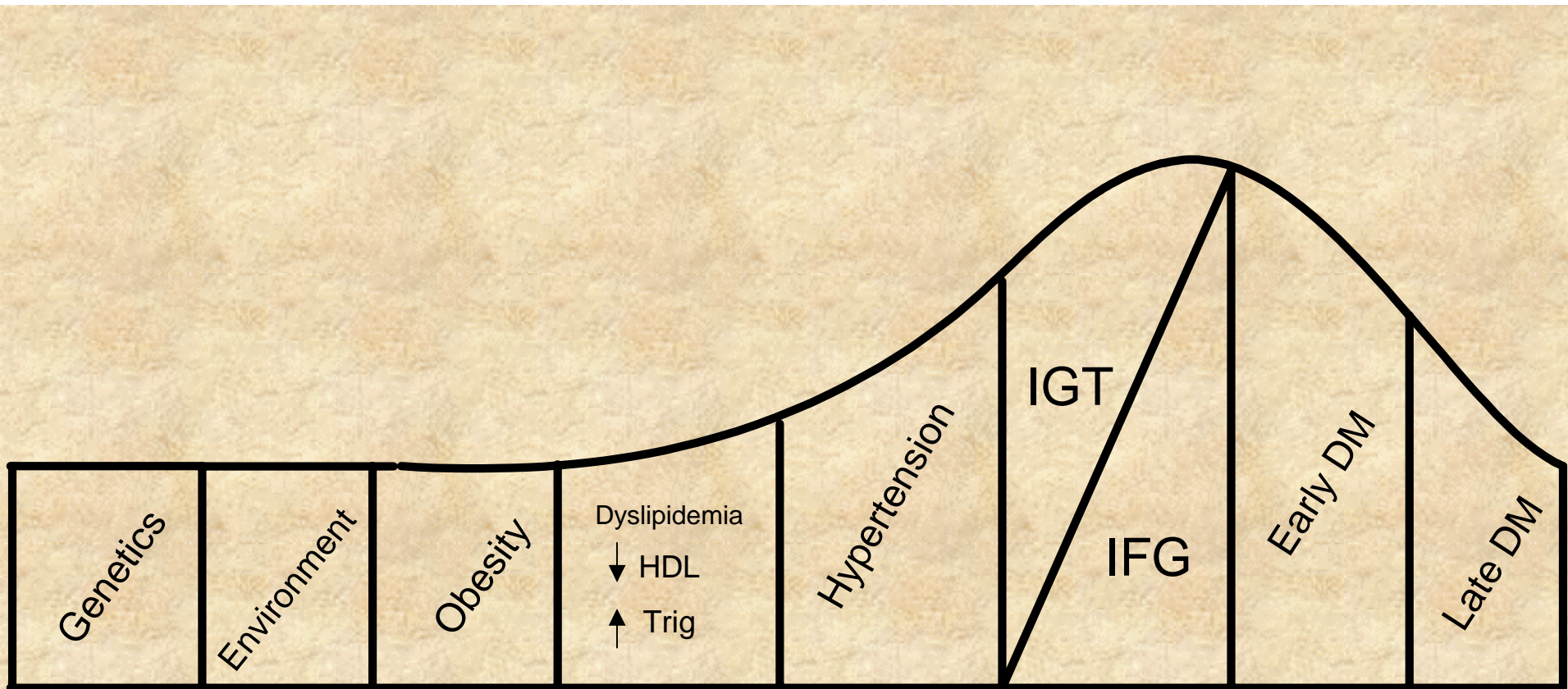
Type 2 diabetics with no known CHD are at equal risk as nondiabetics who have CHD

\* $P < 0.001$ .

Haffner S, et al. *N Engl J Med*. 1998;339:229-234.

\$

?



Fertility

drugs

Aspirin

Fluoride

Pesticides

Antibiotics

Fertilizers

Sunblocks

Anti-reflux

Herbal

supplements

OTC

Phenteramine

Orlistat

Sibutramine

Resins

Fibrates

Statins

Niacin

OTC

Ezetimibe

Diuretics

Ace Inhibitors

Beta Blockers

Alpha Agonists

ARBs

Other

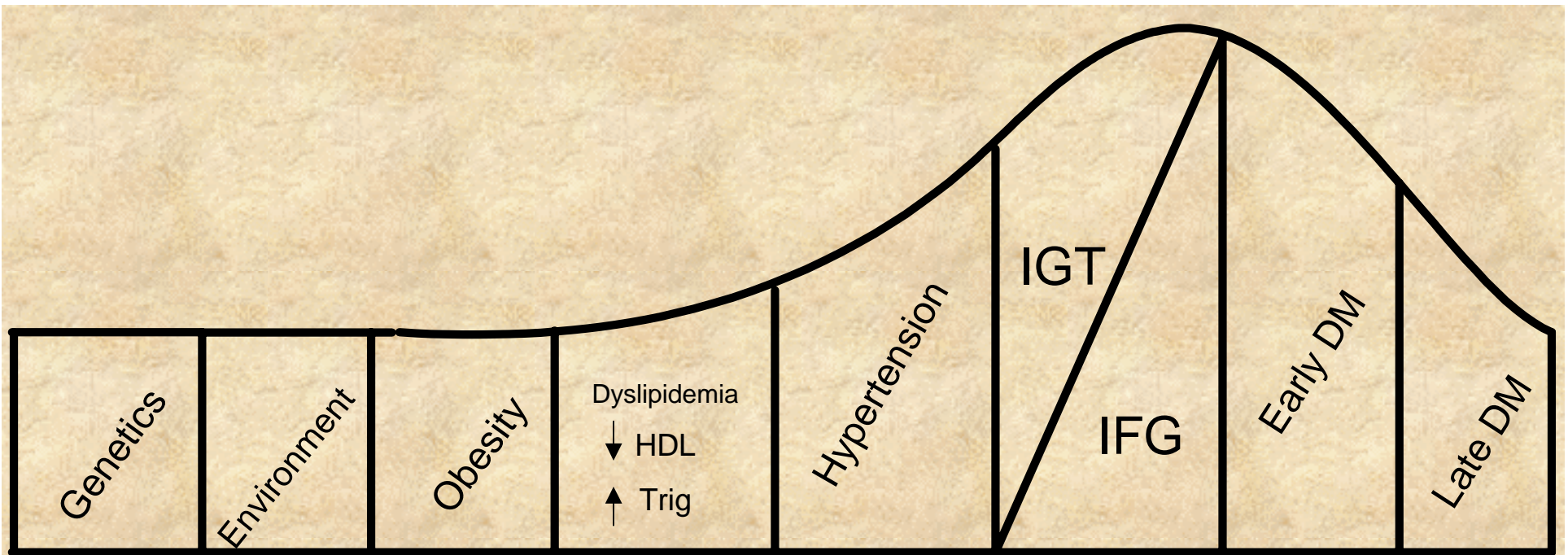
Insulin

Glitizones

Sulfonylureas

Biguanides

Others



Fertility  
drugs  
Aspirin

Fluoride  
Pesticides  
Antibiotics  
Fertilizers  
Sunblocks  
Anti-reflux

Herbal  
supplements  
OTC  
Phenteramine  
Orlistat  
Sibutramine

Resins  
Fibrates  
Statins  
Niacin  
OTC  
Ezetimbe

Diuretics  
Ace Inhibitors  
Beta Blockers  
Alpha Agonists  
ARBs  
Other

Insulin  
Glitizones  
Sulfonylureas  
Biguanides  
Others

$$\$3.99 + \$80.00 + \$29.99 + \$138.29 + \$9.99 + \$61.99 + \$79.95 + \$89.79 =$$

**\$493.99 per month**

# **Total Yearly Cost**

**\$5,927.88**

# Let's Look at Prevention

- Combatting a deteriorating lifestyle
- Increasing exercise
- Preventing weight gain
- Treat co morbidities early
- Reverse co morbidities when possible

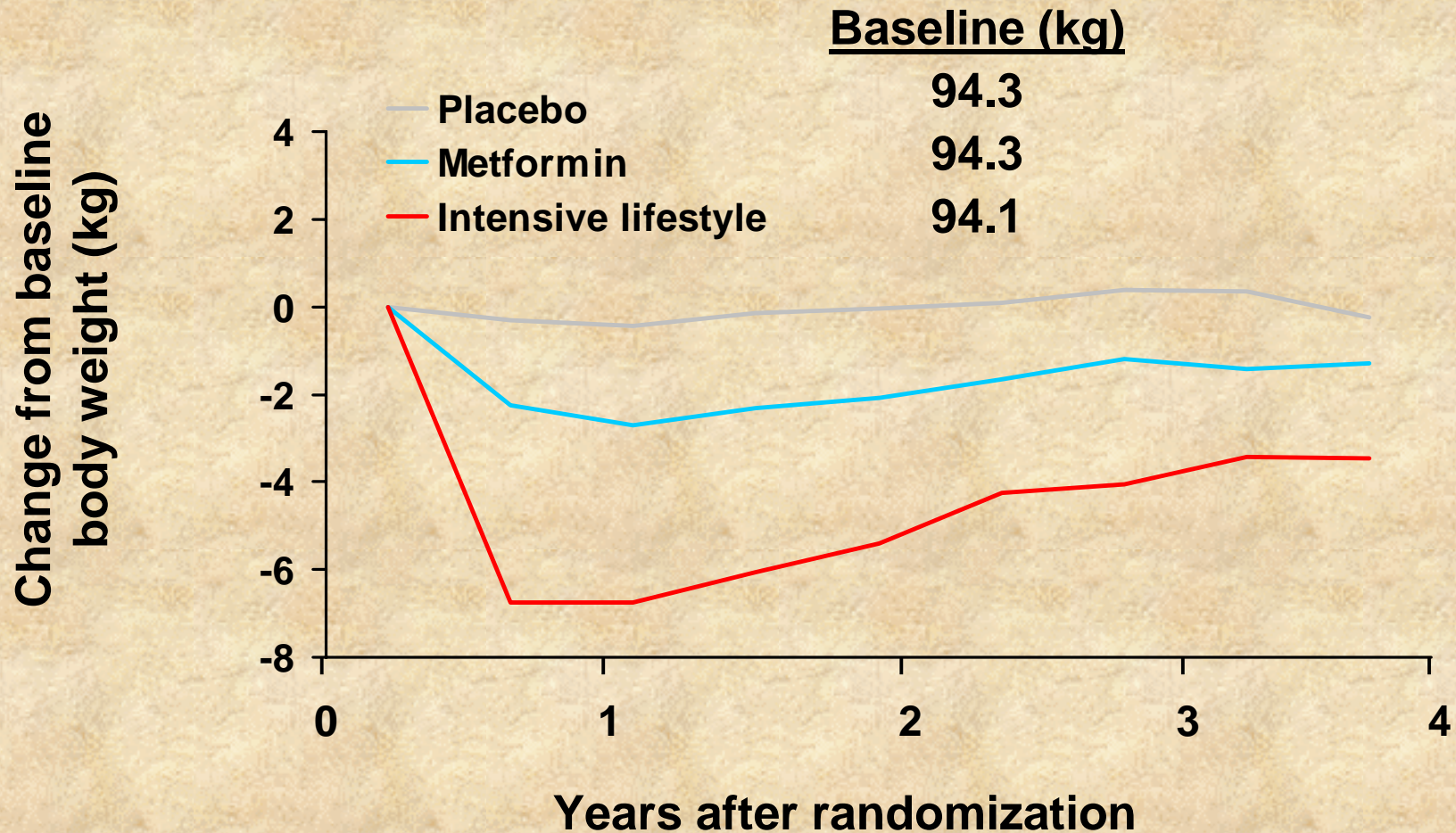
**Does it work?**

# Diabetes Prevention Program (DPP)

---

- 3234 overweight patients with IGT followed for 3 years
  - 45% minorities
  - NI FPG, increased PPG
- 29% of standard advice group developed diabetes
- Intervention diet & exercise group
  - Target 7% weight loss
  - Target exercise 150 minutes/week
  - New diabetes was 14%; A RRR 58%!
- Metformin (Glucophage<sup>®</sup>) 850 mg po bid produced a RRR 31%

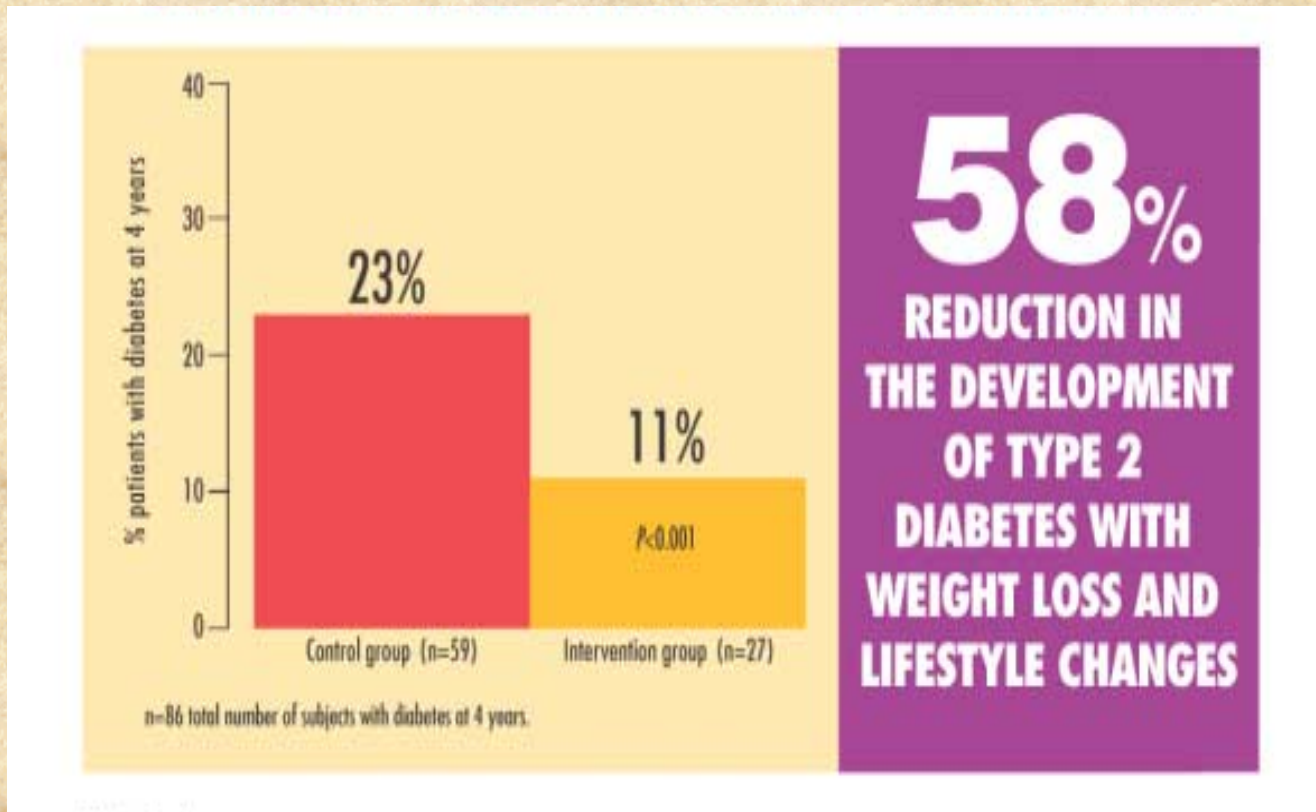
# Diabetes Prevention Program: Change in Body Weight



The Diabetes Prevention Program Research Group. *N Engl J Med.* 2002;346:393.

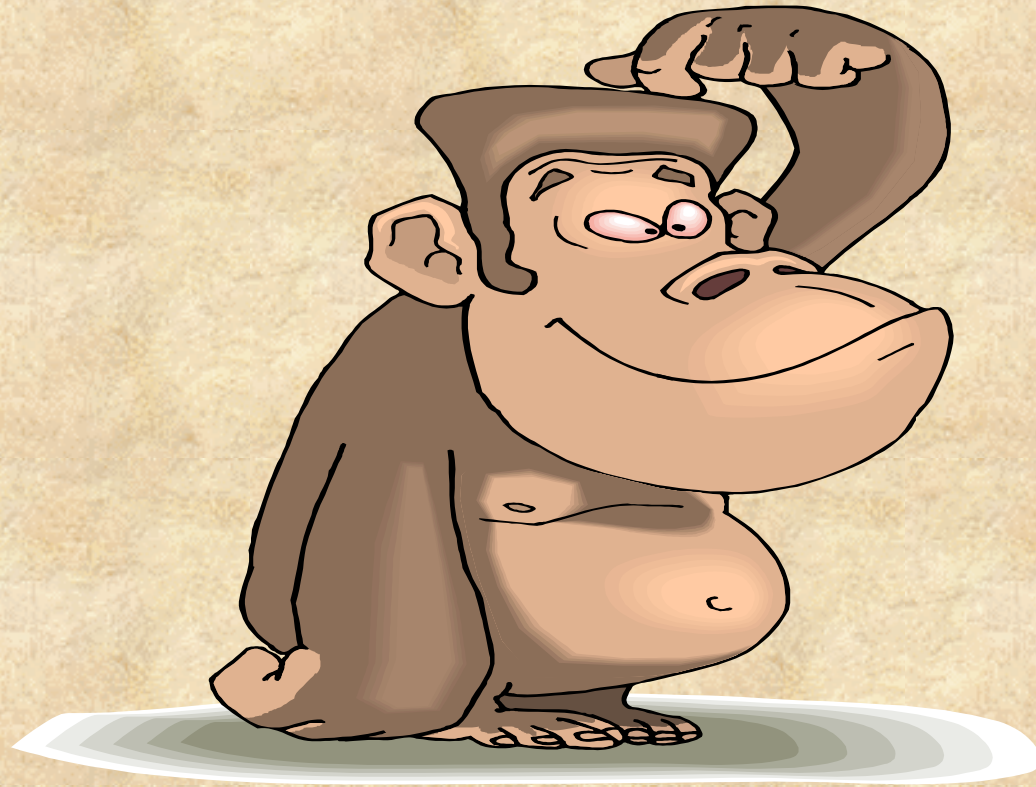
# Positive Effects of Weight Loss on Type 2 Diabetes

–Modest weight loss of 5% yields significant results



Finnish Diabetes Prevention Study. Tuomilehto J et al. *NEJM* 344:1343 (2001)

**So if all this is true, what is  
standing between US and  
SUCCESS?**



# Elements Needed to Make Prevention Work

- Long-term vision
- Supportive environments - “places”
- Consistency
- Specificity
- Public and private cooperation

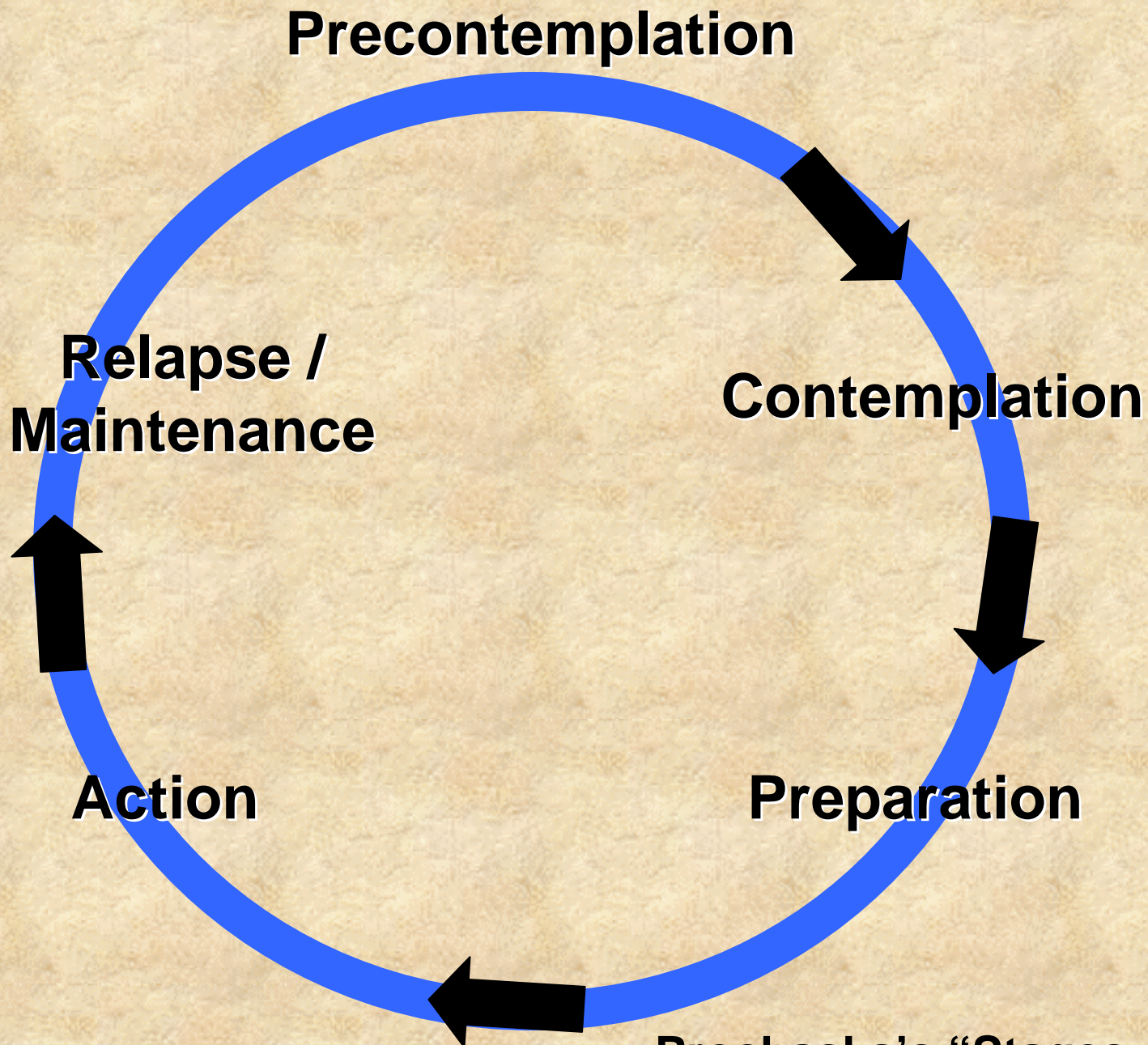
# **Basic Theories**

# Theories

- Health Beliefs theory
  - It is critical to be on the same page with the community. If our assumptions about the importance of a problem such as obesity are not shared by the community, we are fighting a losing battle from the outset.
  - The community's beliefs must be in line with the proposed process and outcome in order for further collaborative work to be successful.

# Prochaska's "Stages of Change"

- The basic concept of this theory is that people's understanding and readiness for change progresses through stages and that interventions should be as accurately matched to the person's stage of readiness for change as possible.



**Prochaska's "Stages of Change"**

# Theories--cont.

- Bandura's theory of self-efficacy (a part of the theory of reasoned action).
  - If we take a small successful step this promotes taking another small step. Each successful step then builds confidence and allows and promotes further action.
  - On the other hand repeated failures to accomplish unrealistic or over ambitious goals often stifle the willingness to keep trying and damage the belief that success is possible.



# **Basic Approaches**

# **“The 10-year Plan”™**

- Set your goals to be consistent with your long-term plan
- Always maintain long-term focus when setting short term, individual goals
- Annually review your progress
- Don't let overachieving or underachieving in the short-term derail long-term plan

# Maintain Motivation

- Choose directive, client-centered programs in order to elicit positive behavior change.
- Programs must help clients explore and resolve their mixed feelings regarding achieving their goals.

# **Basic Technique: Motivational Interviewing**

- Definition: Motivational interviewing is a directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence

# Examples of How to Maintain Motivation

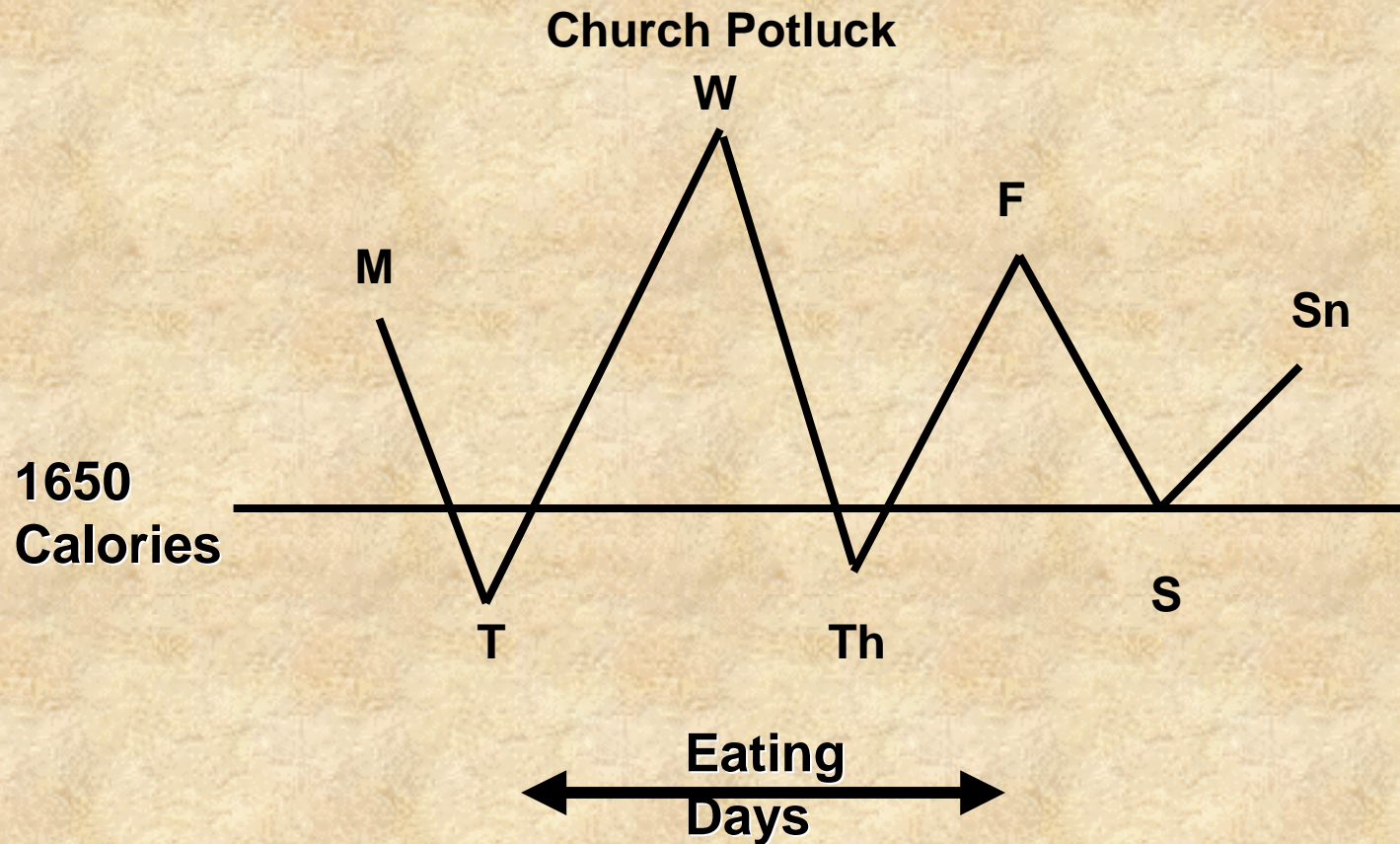
- Motivation to change should ideally come from within.
- Individuals should be able to state their goals and resolve the conflicts they face.
- When help is needed from the outside, it should usually be delivered in a quiet, eliciting way.
- Readiness to change is not something we are born with, but rather, something we learn when the world around us and our interaction with others nurtures that change.

As Benjamin Franklin was fond of saying...there is nothing you can't get people to accomplish as long as they believe it is their idea.

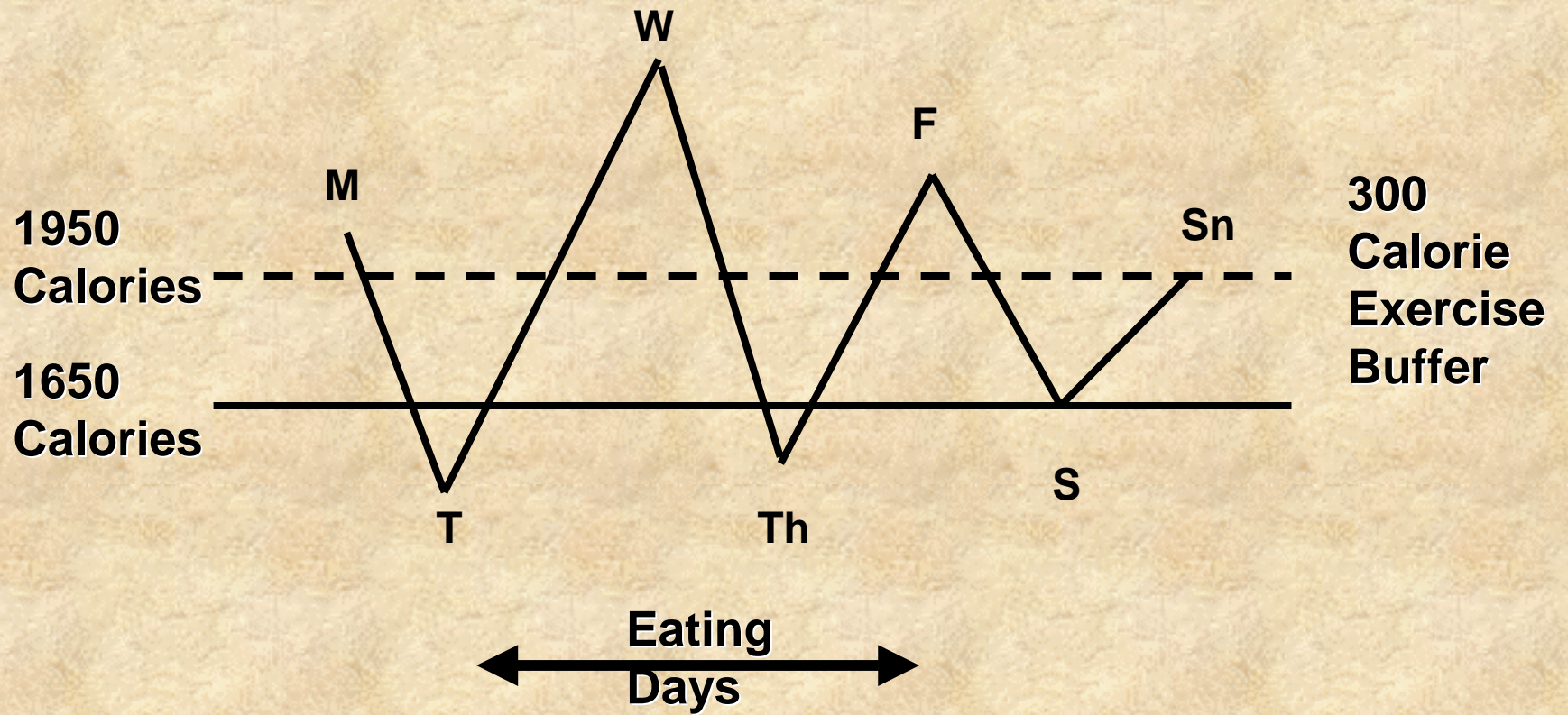
# Just How Hard Is It to Make a Lifestyle Change?

- Let's look at a woman who has just lost 50 lbs and now weighs 150 lbs
- She originally was able to eat around 2200 calories a day, while remaining sedentary, and keep her weight at 200 lbs
- Now, the reward for her weight loss is that she can only eat 1650 calories at her new weight

# Typical Week Trying To Maintain a Weight of 150 Lbs.



### Church Potluck



# Points to Ponder

- The Metabolic Syndrome is a marker for a dynamic and progressive process leading relentlessly to diabetes and vascular disease
- Lifestyle modification: diet and exercise, and weight reduction are critical elements of successful preventive management

# Points to Ponder-Obesity

- Obesity is **THE** major factor in the explosive growth of the Metabolic Syndrome and the heart disease that follows
- Obesity, itself, is a chronic disease and a major public-health problem in the United States
- Even modest weight loss (5%-10% of body weight) can have considerable medical benefits
- Life-style change (diet and physical activity) is **THE** cornerstone of therapy

# **The Role of the Community- Church**

Promoting Fitness through Healthy Eating  
and Exercise Programs in the Local  
Church

**“The function of protecting  
and developing health  
must rank even above that  
of restoring it when it is  
impaired.”**

Hippocrates