# Nutrition101

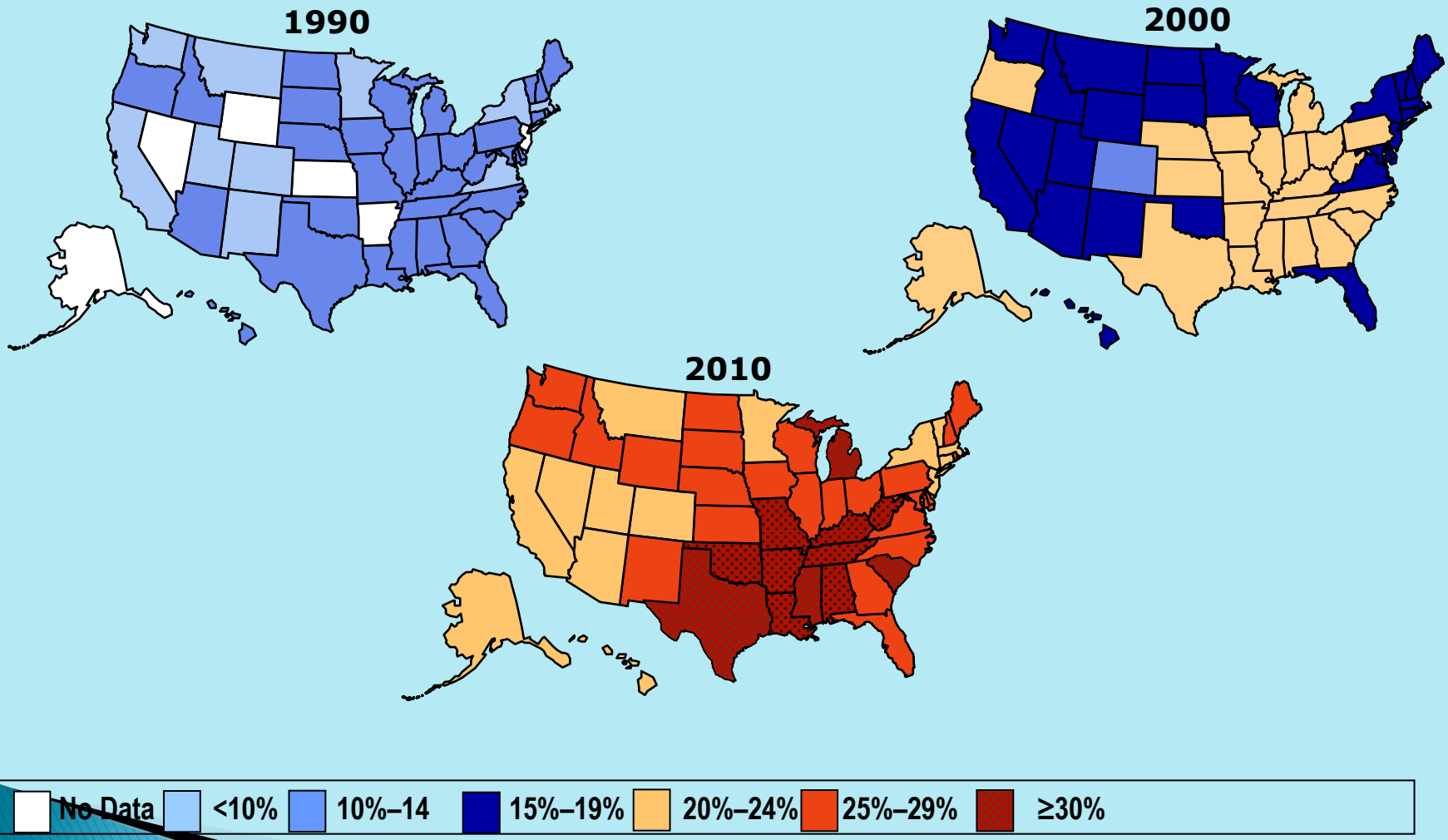
**Dr. Becky K. Captain, RN, DNP, CLS, BC, FNP-C**
Doctor of Nursing Practice

# Survival of the Fittest

# Survival of the ~~Fittest~~ Sickest

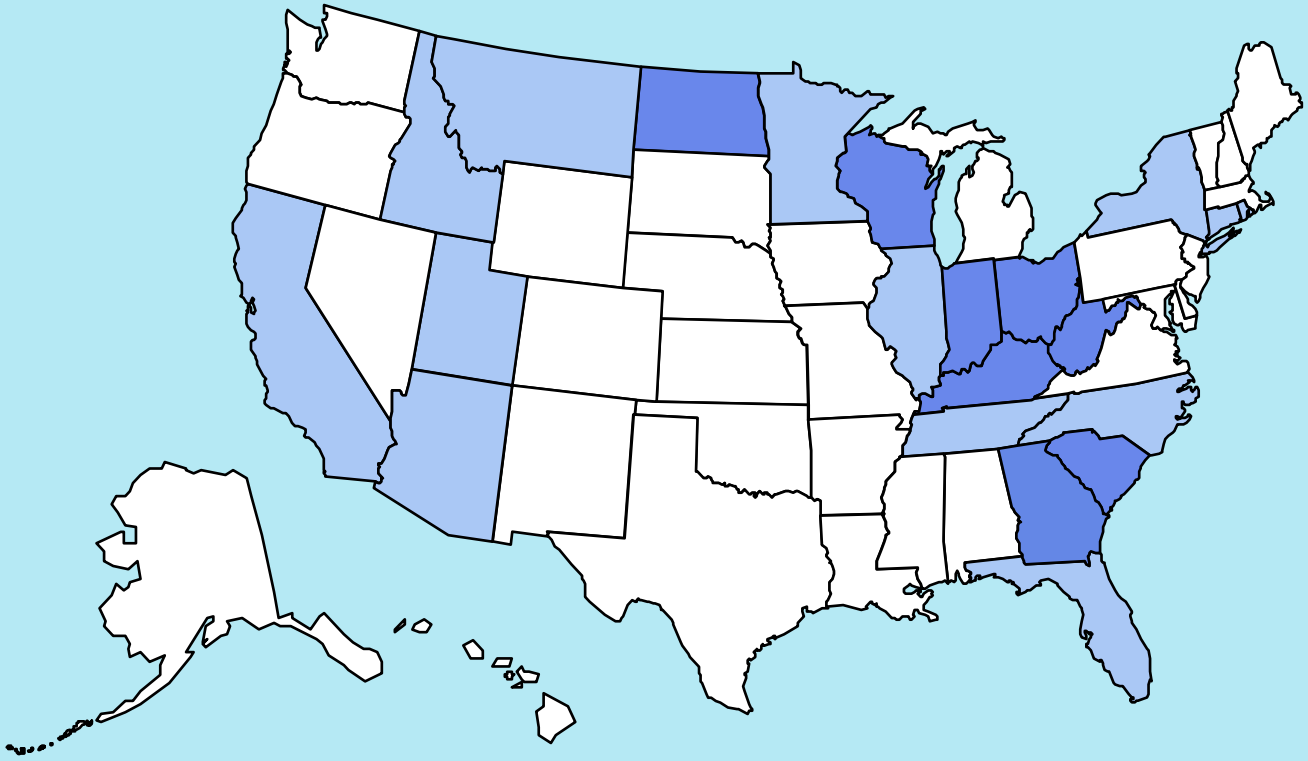
# Obesity Trends* Among U.S. Adults
## BRFSS, 1990, 2000, 2010

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



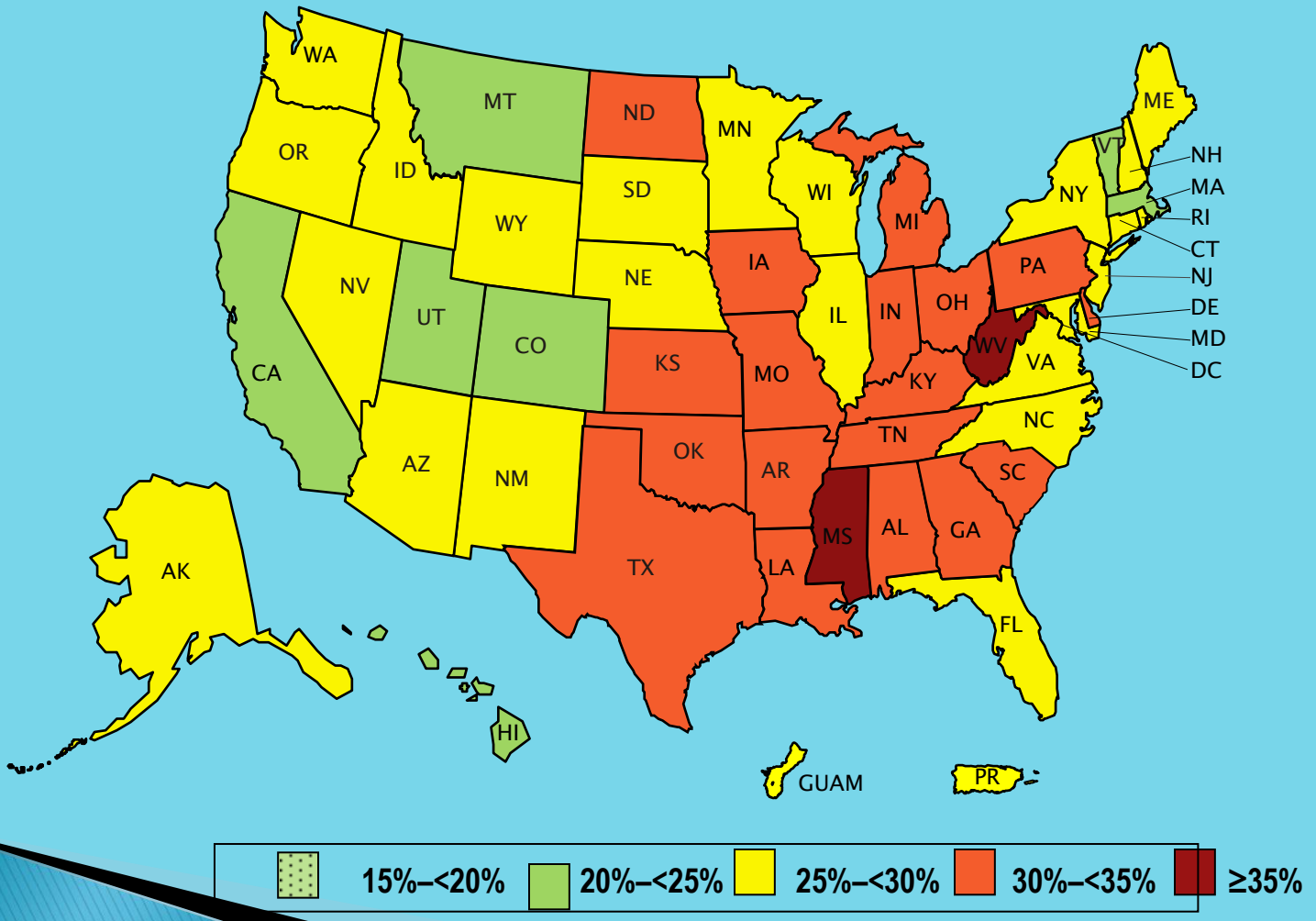
# Obesity Trends* Among U.S. Adults
## BRFSS, 1985

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

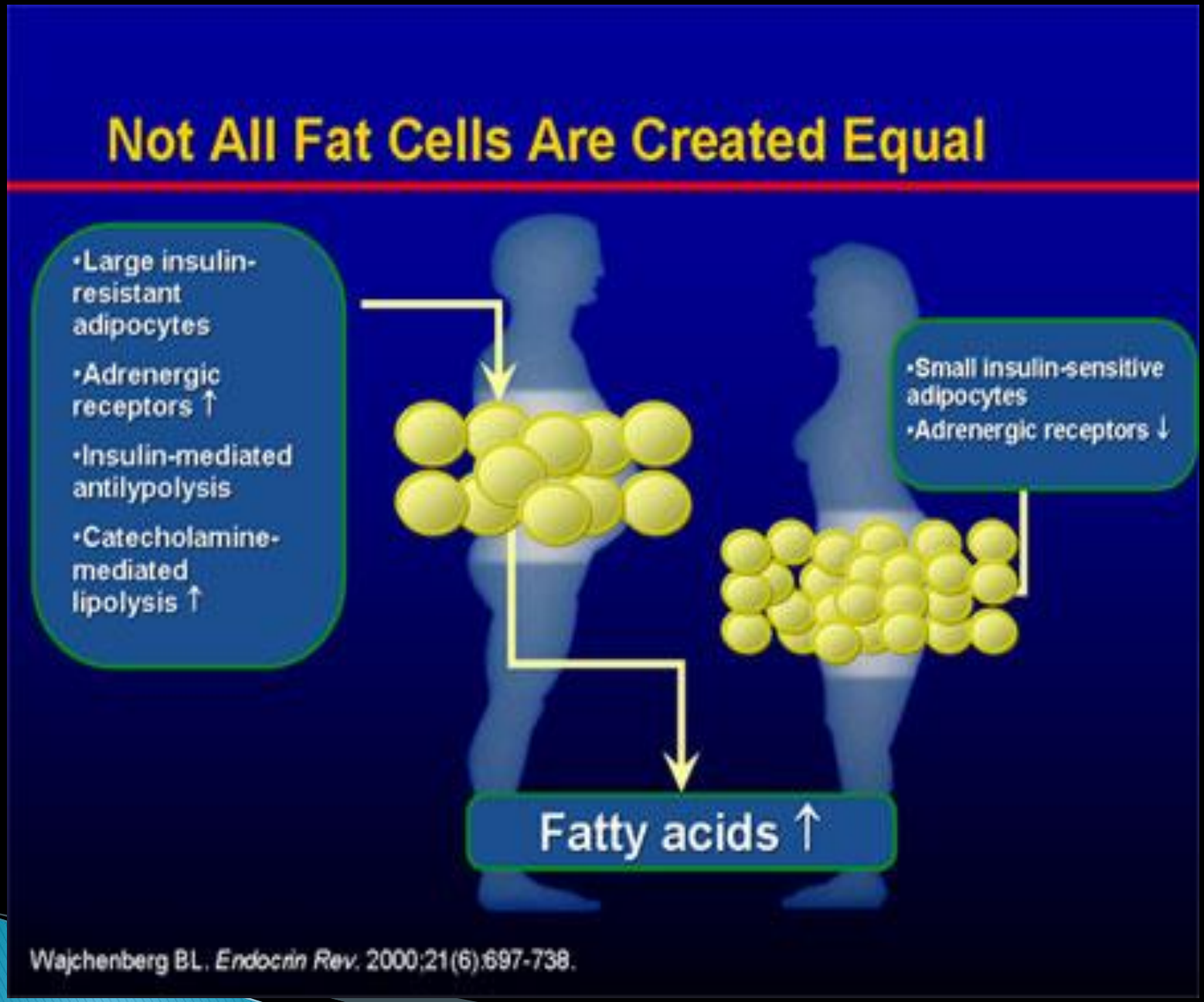


# Prevalence* of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2013

***Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.**

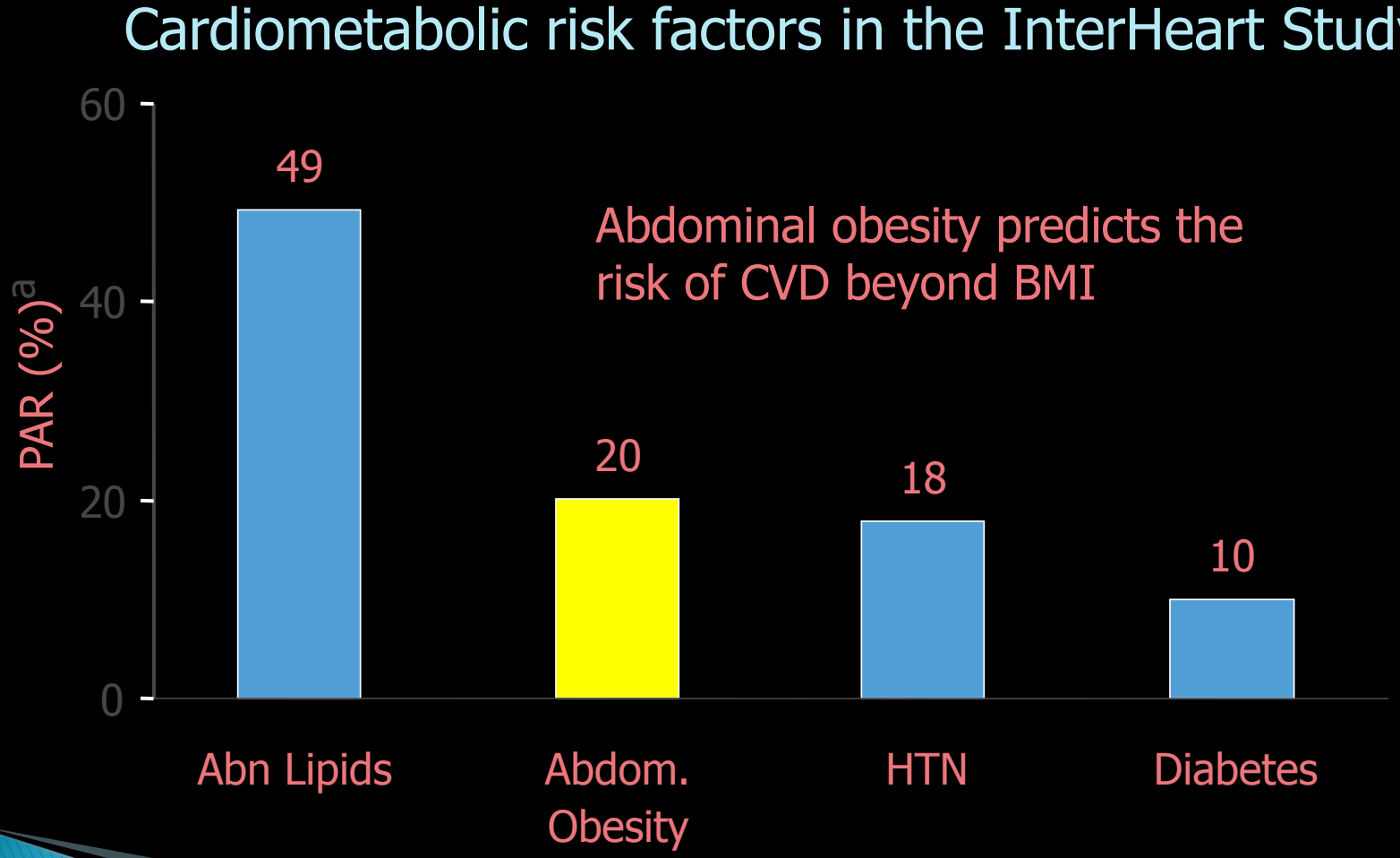


# Not All Fat Cells Are Created Equal




Wajchenberg BL. *Endocrin Rev.* 2000;21(6):697-738.

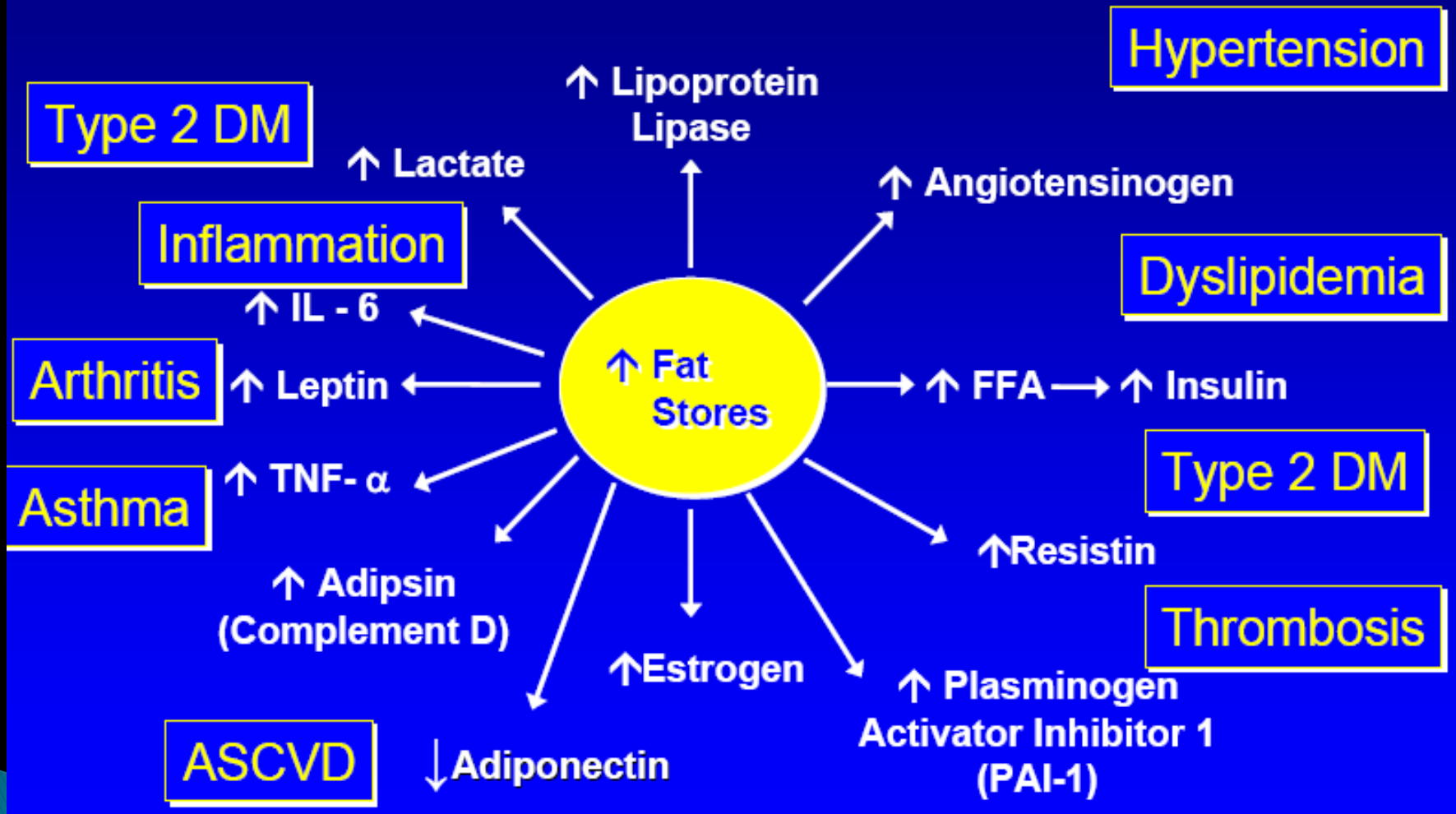
# Abdominal obesity: a major underlying cause of acute myocardial infarction




[a]Proportion of MI in the total population attributable to a specific risk factor

*Yusuf et al 2004*

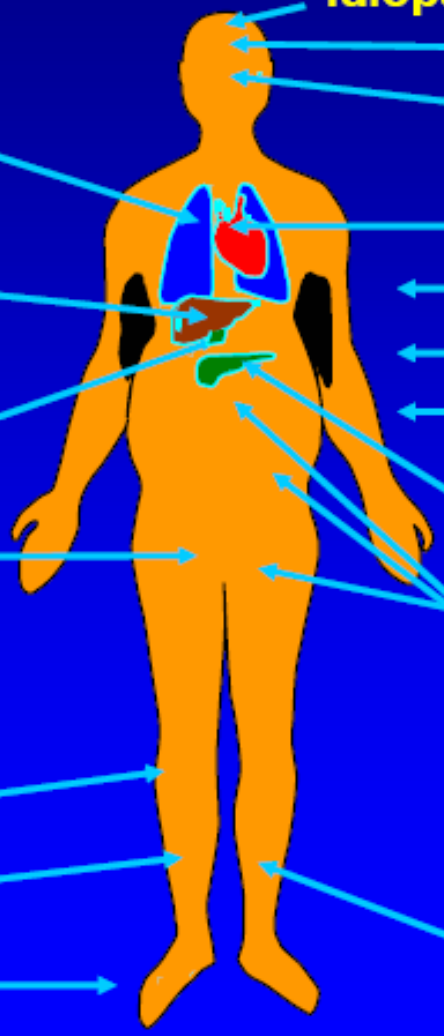
# How Does Obesity Cause Disease?
# Excess production of hormones from fat stores.




DM=diabetes mellitus; FFA=free fatty acid; PAI-1=plasminogen activator inhibitor-1; TNFα=tumor necrosis factor alpha; IL-6=interleukin 6.

Slide: After Dr. G Bray

# Medical Complications of Obesity: Almost every organ system is affected



**Pulmonary disease**
asthma
obstructive sleep apnea
hypoventilation syndrome

**Nonalcoholic fatty liver disease**
steatosis
steatohepatitis
cirrhosis

**Gall bladder disease**

**Gynecologic abnormalities**
abnormal menses
infertility
polycystic ovarian syndrome

**Osteoarthritis**

**Skin**

**Gout**

**Idiopathic intracranial hypertension**

**Stroke**

**Cataracts**

**Coronary heart disease**

**Diabetes**

**Dyslipidemia**

**Hypertension**

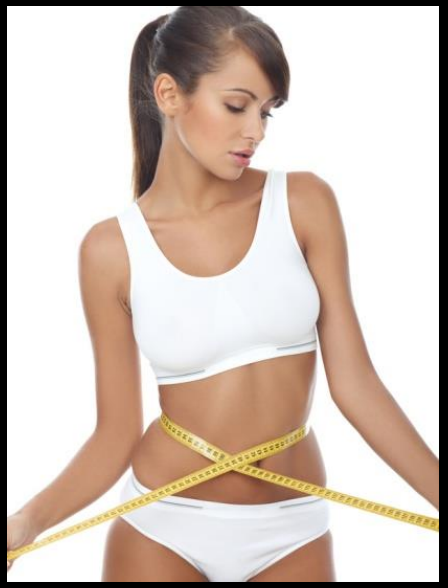
**Severe pancreatitis**

**Cancer**
breast, uterus, cervix
colon, esophagus, pancreas
kidney, prostate

**Phlebitis**
venous stasis

# Body Scan

# Waist Circumference



- Waist Circumference should be ½ height in inches (unless asian descent)
- Increased abdominal fat increases risk for heart disease

# Body Composition Assessment

- Assesses distribution of fat, lean tissue, and bone.
- Visceral fat – *lethal fat that puts your heart and health at risk*
- Fat Mass Index (FMI) – more accurate determinate of obesity than BMI as BMI uses body weight (both fat and lean mass)

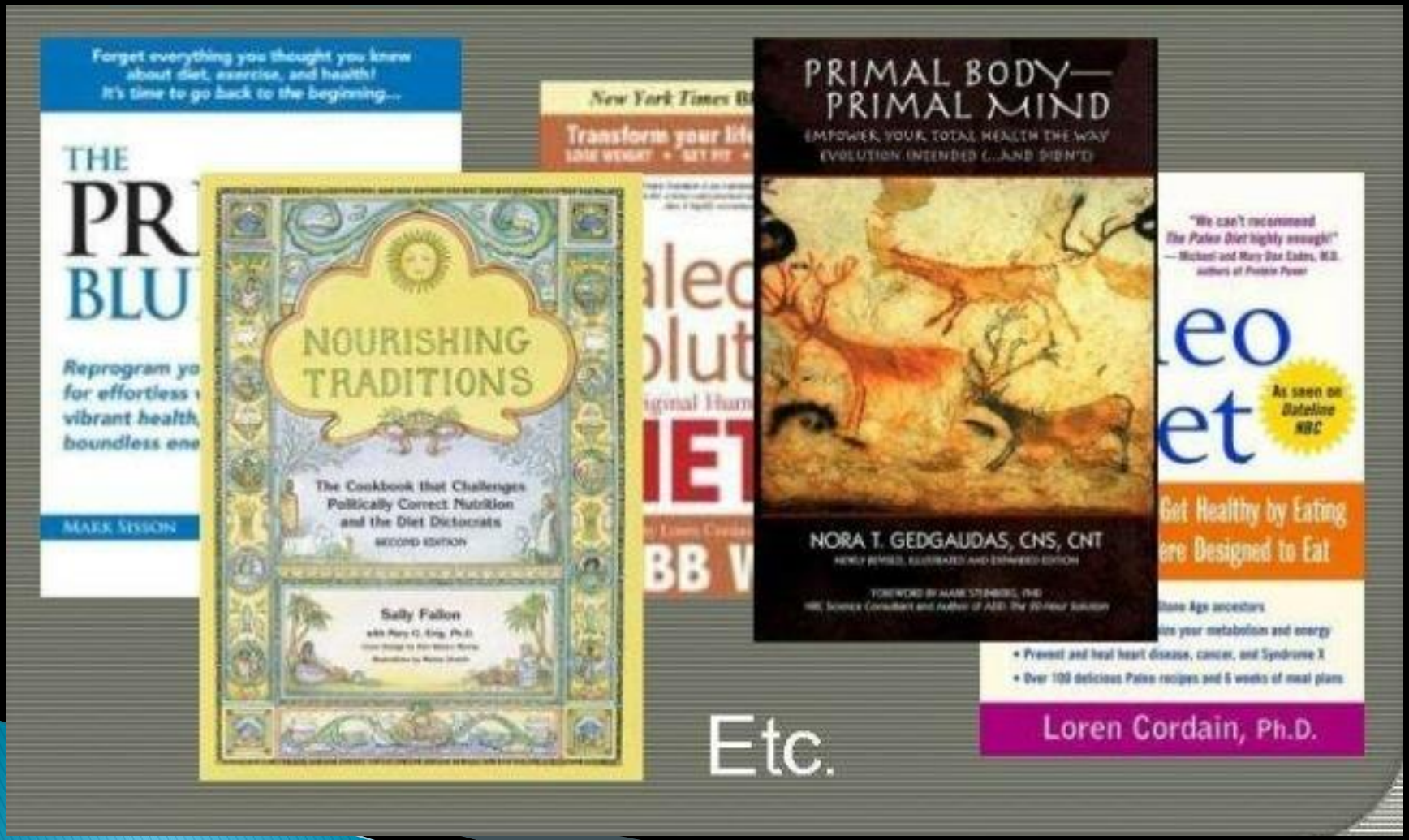
**Call 816-751-8327**
**To schedule your assessment Today**

# Why is it so hard to eat what our bodies are designed for?

- 45,000 foods to choose from
- Processed foods are designed to:
- Sell
- Be cheap
- Taste great
- Go down easy
- Be UN-satisfying

It's no accident that once you pop the top you can't stop!

# What's Common In All Diet Books?



# Diabetes: < 1% Hunter Gatherer Native Americans

Diabetes;1974: 23: 841-55

*A Navajo. Many early explorers and commented on the superb bone stru the native Americans.*

# Carbatarian


# You're an Omnivore Embrace it

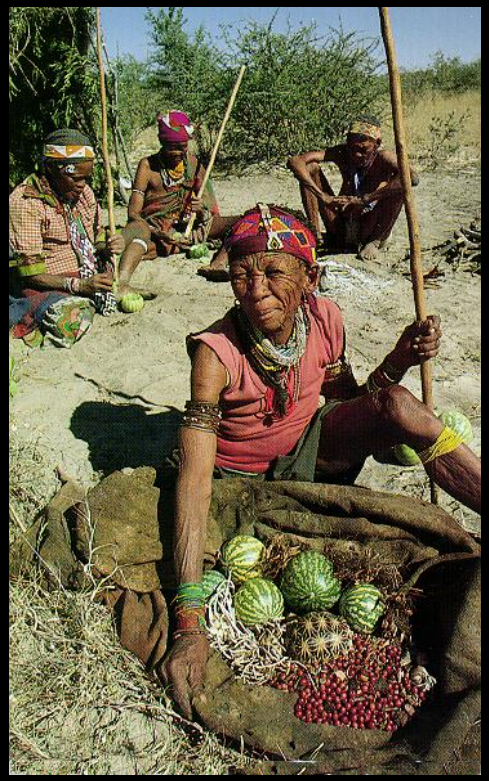
- Plants and Animals: It's what's for dinner; for the past 150,000 yrs

# Another Omnivore

# Hyper-Carnivore

# Herbivore

# Living in a World for which Our Genome is NOT Adapted?



Minimally Processed, Wild Plants

This Mismatch is the genesis of Cardiovascular Disease

Highly Processed, Refined Foods

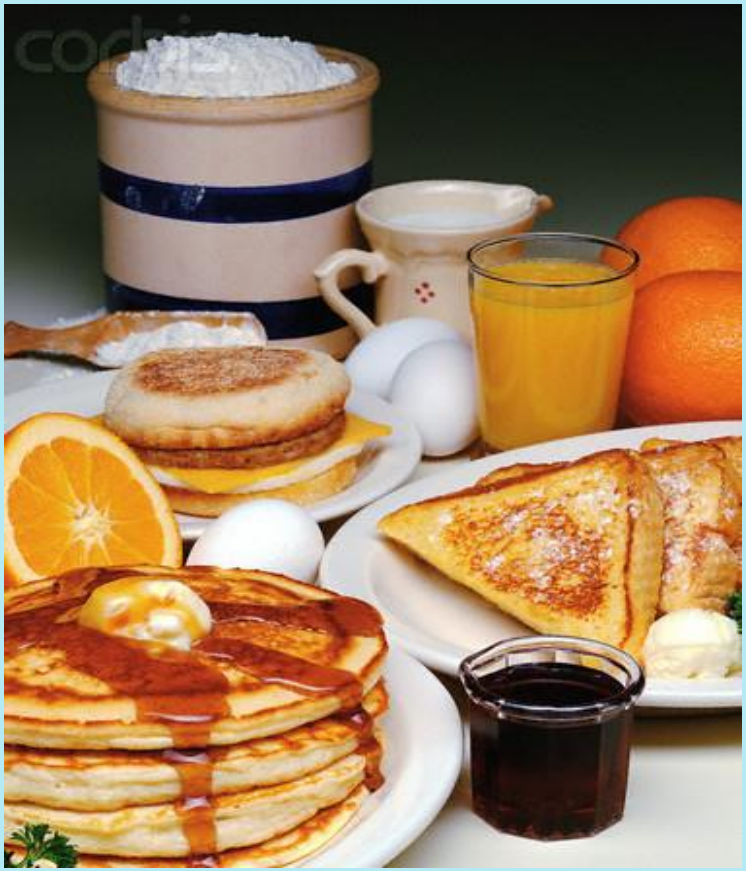
Minimally Processed, Wild Animals

# High Glycemic Foods

- **ALMOST ALL REFINED GRAINS HAVE HIGH GLYCEMIC INDICES**

| | |
|---|---|
| Rice Chex Cereal | 89 |
| Corn flakes | 84 |
| Pretzels | 83 |
| Rice Krispie Cereal | 82 |
| Rice Cakes | 82 |
| Rye bread | 76 |
| Waffles | 76 |
| Total Cereal | 76 |
| Graham crackers | 74 |
| Cheerios | 74 |
| Bagels | 72 |
| Short grain white rice | 72 |
| Corn chips | 72 |
| White bread | 70 |
| Whole Wheat bread | 69 |

| | |
|---|---|
| HIGH G.I. FOODS | > 70 |
| MEDIUM G.I. FOODS | 55-70 |
| LOW G.I. FOODS | < 55 |



Foster-Powell K et al. Am J Clin Nutr 2002;76:5-56

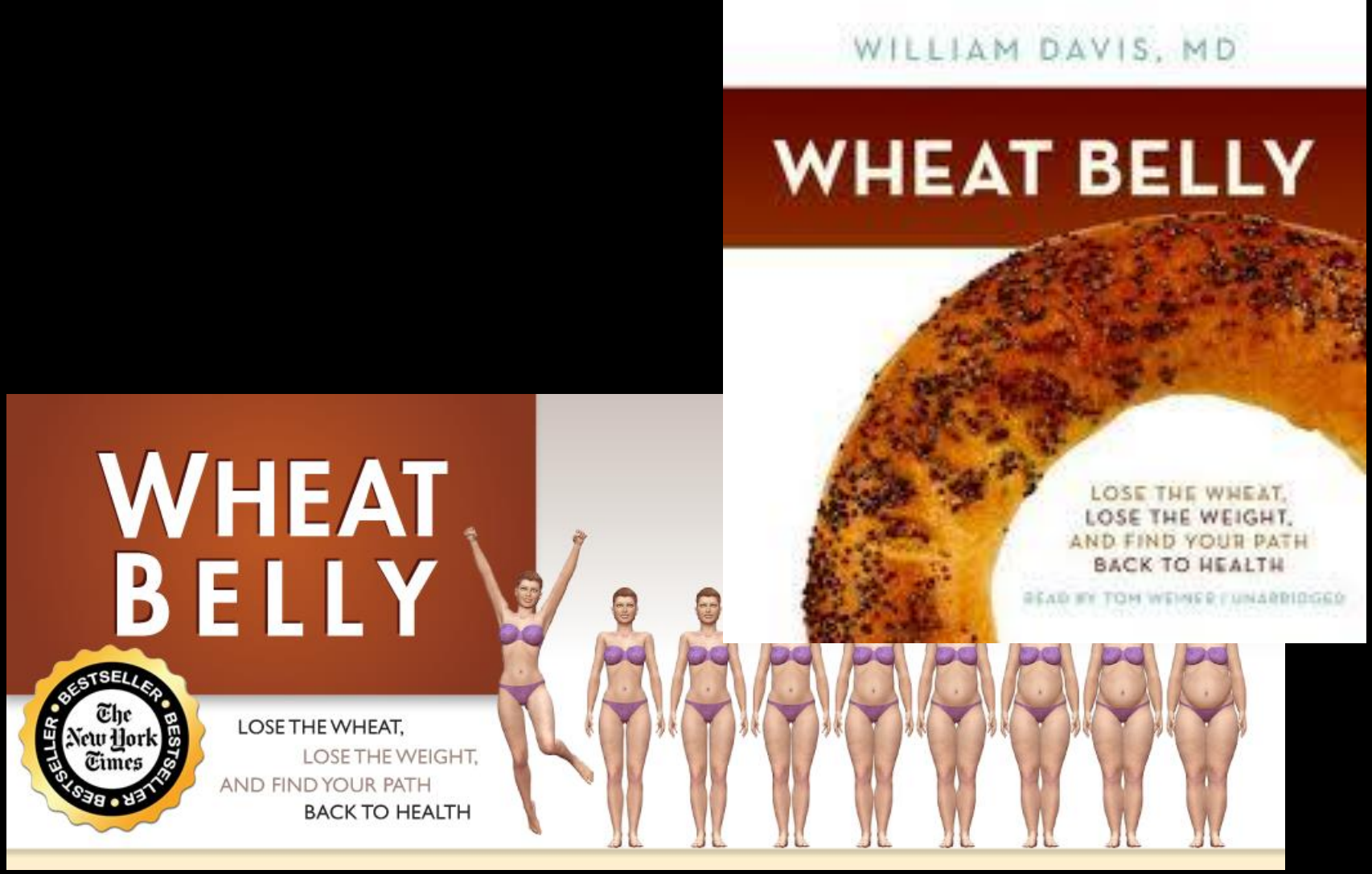
# High Glycemic Load Carbohydrates Promote Diseases of Insulin Resistance


## The Metabolic Syndrome

- Type 2 Diabetes
- Hypertension
- Coronary Heart Disease (CHD)
- Dyslipidemia (Reduced serum HDL cholesterol, elevated triglycerides, elevated VLDL, elevated small dense LDL cholesterol)
- Obesity
- Gout

Liu S et al. Dietary glycemic load and atherothrombotic risk. Curr Atherosclerosis Rep 2002;4:454-61

Ludwig DS. The glycemic index. Physiological mechanisms relating to obesity, diabetes and cardiovascular disease. JAMA 2002;287:2414-23.


WILLIAM DAVIS, MD
WHEAT BELLY
LOSE THE WHEAT,
LOSE THE WEIGHT,
AND FIND YOUR PATH
BACK TO HEALTH
READ BY TOM WEINER | UNABRIDGED
WHEAT
BELLY
BESTSELLER
The New York Times
BESTSELLER
LOSE THE WHEAT,
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FunnyPart.com

# Nutritional Pearls

- Eat foods congruent with your genetic make-up
- Avoid simple carbohydrates and simple sugars

# How Many Sweets Do You Consume Daily?

- Regular soft drinks
- Candy
- Cakes
- Cookies
- Pies
- Fruit drinks, such as fruitades and fruit punch
- Ice cream, sweetened yogurt and sweetened milk
- Grain products, such as sweet rolls and cinnamon toast

# Cinnamon . . . . It Does a Body Good???

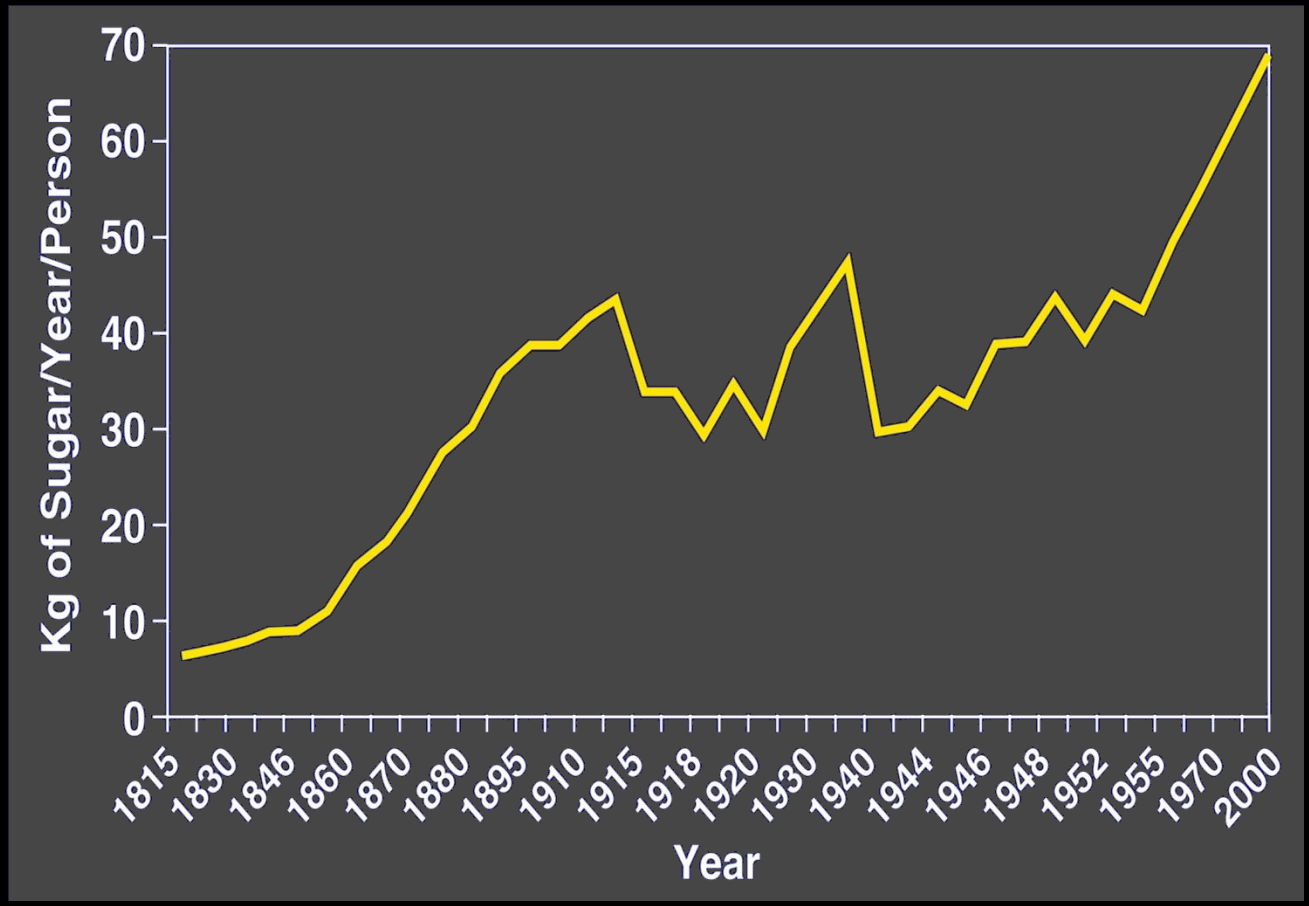
| Serving Size: | 1 roll |
|---|---|
| **Amount Per Serving** | |
| **Calories** 730 | Calories from Fat 216 |
| | % DV |
| **Total Fat** 24g | 37% |
| **Total Carbohydrate** 114g | 38% |
| Dietary Fiber 1.5g | 6% |

dietFacts.com ©2000-2007 Strategic Office Solutions, Inc

Percent of Calories from:

**Fat-29.6%** **Carb-62.5%** **Protein-?%**

# Sugar Intake: 160 lbs/year




*O'Keefe, Cordain. Mayo Clin Proc 2004:79:Jan 1*


Coca-Cola
CLASSIC
Coca-Cola
CLASSIC
CONTAINS 20 tsp SUGAR

# Things don't go better with Coke

**1 Coke day =**

**+ 17 lbs weight per yr**

**↑ Risk of obesity 60%**

**↑ Risk of Diabetes 40%**

**American teenager:**

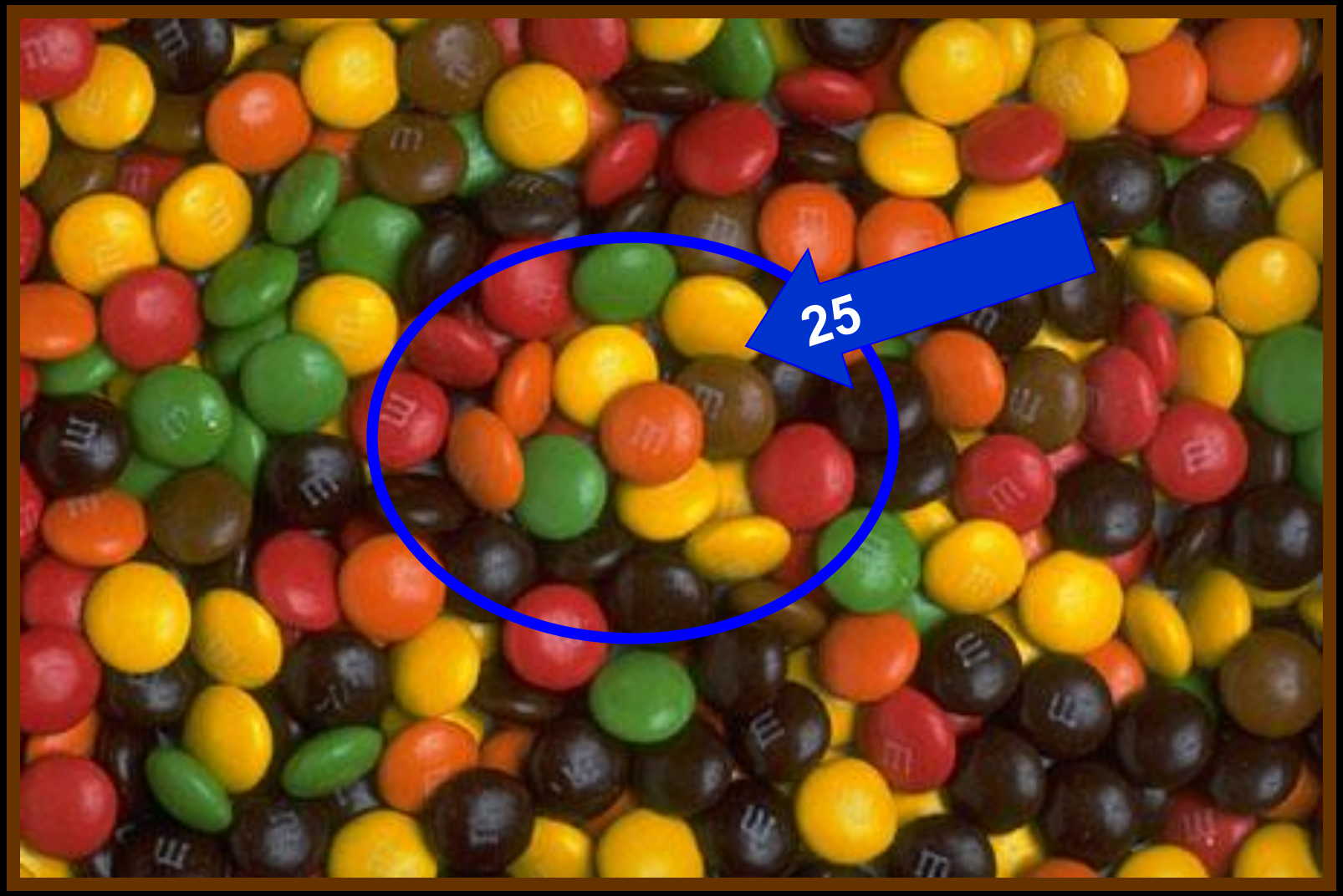
**16 oz of pop/day**

**(>50 gallons/yr)**

# Carbohydrates/Sugars & Your Cholesterol

- ↑ Triglycerides
- ↑ Fasting Blood Sugars
- ↑ Insulin Resistance
- ↑ Risk for Diabetes
- ↓ HDL
- ↑ Abdominal

# Your Blood On Carbs




**25 pieces = 100 calories**

# Example of 100 calories


**10 large jelly beans (1 ounce)**

**“Enjoy present pleasures in such a way as not to injure future ones.”**

~ Seneca (4 BC- 65 AD)

# Nutritional Pearls

- Eat foods congruent with your genetic make-up
- Avoid simple carbohydrates and simple sugars
- Decrease saturated fats and trans fats in diet

# How Many Fats Do You Consume Daily?

- Cheeses
- Creams
- Ice creams
- Well-marbled cuts of meats
- Regular ground beef
- Bacon
- Sausages
- Poultry skin
- Many baked goods, such as cookies, crackers, donuts, pastries, and croissants

# Saturated Fats

- Cheeses
- Creams
- Ice creams
- Well-marbled cuts of meats
- Regular ground beef
- Bacon
- Sausages
- Poultry skin

# Trans Fats

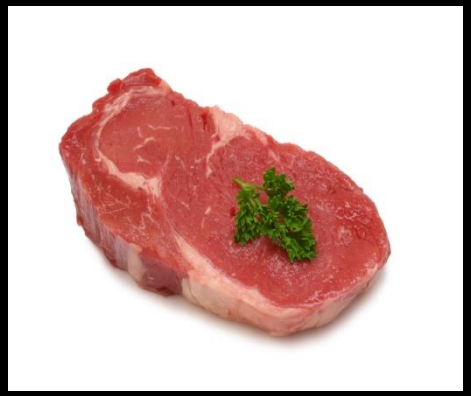
"Some of the worst foods on the planet

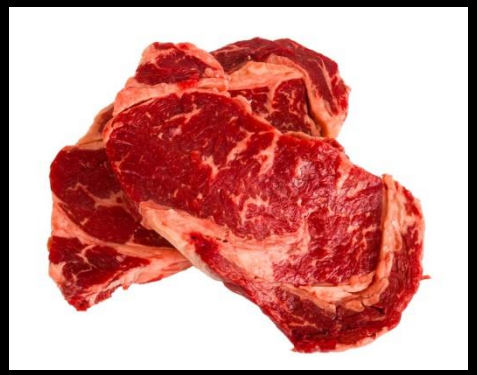
–James O'Keefe, MD & Joan O'Keefe, RD

# Saturated/Trans Fats:
## Effects on Your Cholesterol & Arteries

- Increase LDL
- Decrease HDL
- Promotes Insulin Resistance
- Increase Triglycerides
- Increase Arterial Wall Damage
- Leads to atherosclerosis

# Differences in the Meat of Wild, Grass Fed, Grain and Processed Meats





# Processed Meats

**Salami**
**74 % Fat, 22 % Protein**

**77 % Fat, 21 % Protein**

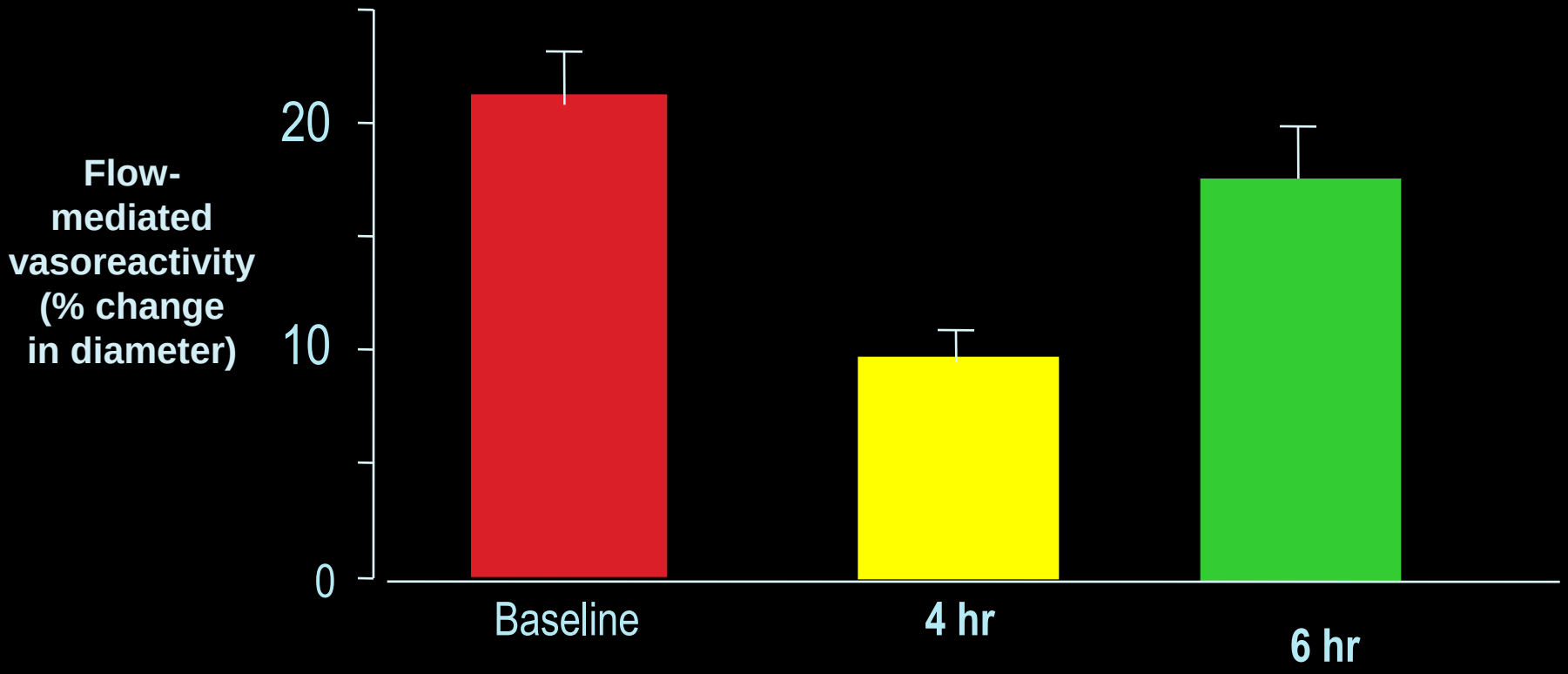
**Ground Beef**
**64 % Fat, 33 % Protein**

**Hot Dogs**
**82 % Fat, 14 % Protein**

**Pork Ribs**
**72 % Fat, 26 % Protein**

**T-bone Steak**
**68 % Fat, 30 % Protein**

# Effect of a Fast Food Meal on Blood Vessel Function




(Vogel RA et al. *Am J Cardiol.* 1997;79:350)

# Nutritional Pearls

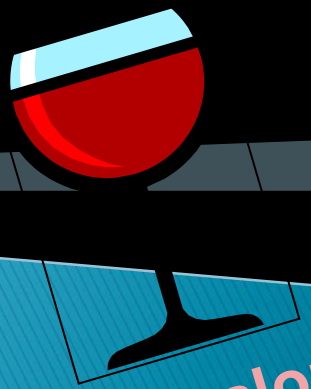
- Eat foods congruent with your genetic make-up
- Avoid simple carbohydrates and simple sugars
- Decrease saturated fats and trans fats in diet
- Do not drink your calories


145 calories/
12 oz.

95 calories/
1.5 oz. 80 proof
distilled spirits

# And What Have YOU Been Drinking?

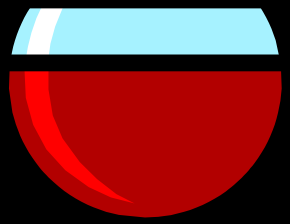
150 calories/
12 oz.



115 calories/
5 oz.

Yes,
These contain calories

# Alcohol in Moderation

Drink in moderation, if you choose to drink:

- 1 drink daily for women
- 2 drinks daily for men

**1 DRINK =**

- **12 ounces regular beer**
- **5 ounces wine**
- **1.5 ounces 80-proof distilled spirits**

http://www.health.gov/dietaryguidelines/dga2005/document/html/chapter9.htm

# What Should I Drink?

- Water
- Tea
- Coffee
- Skim Milk
- Low Sodium V8 Juice

# Sparkling Water: Unsweetened


# Can we change our American life-style?

# What Should You Eat?

- 1 Lean Protein and *(at least)* 2 colors (fruits and/or vegetables) at each meal and for snacks
  - *Lean Proteins: healthy nuts, turkey, chicken, fish, red meat ("loins and rounds") egg whites, natural peanut butter, whey protein, non fat cottage cheese, non-fat plain greek yogurt*
- Avoid pastries and sugary foods

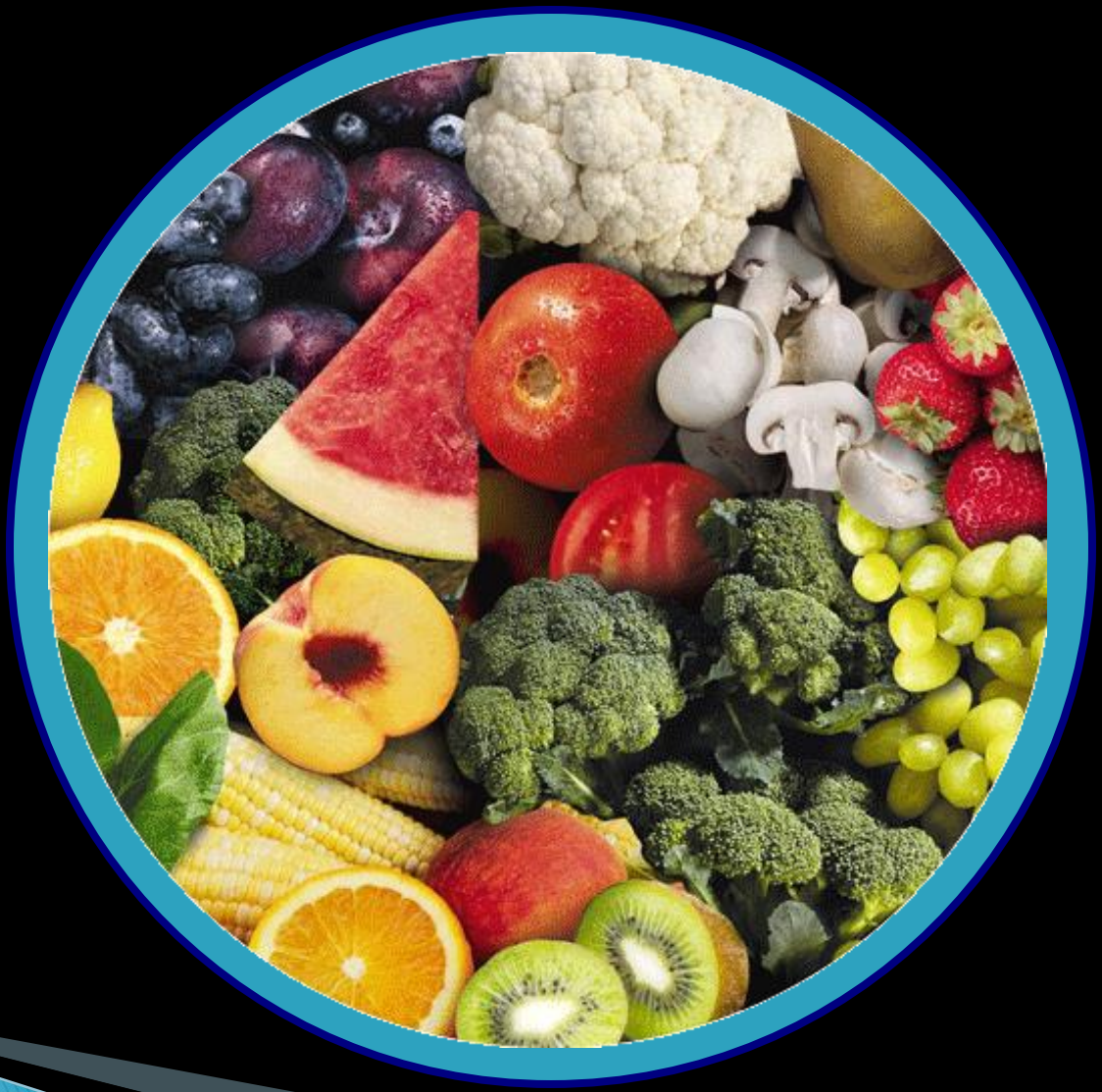
# Portion sizes: Meat

Typical Portion of
cooked meat, fish, or poultry =
Palm of your hand

# Fruits & Veggies

- Antioxidants & Phytonutrients found in fruits & veggies protect cells against oxidative damage & may reduce risk of HD
- Wide array of compounds that protect cells against oxidative damage
- Enhances Immune System

# How Does YOUR Plate Rate?



# Omega 3 Consumption

- AHA recommends all adults include at least 2 servings per week of fish

- For pts with heart disease they recommend even higher levels of fish or fish oil supplements

# Omega 3: Dose for Cardioprotection

- **Secondary Prevention:**
  1000 mg/d DHA + EPA
- **Primary Prevention:**
  500 mg/d of DHA + EPA
- **Triglyceride dose:**
  2- 4 gms/d of DHA + EPA

# *Dietary Strategies For Preventing Cancer*

- Be as lean as possible within normal range of body weight
- Be physically active as part of everyday life
- Limit consumption of energy dense foods & avoid sugary drinks
- Eat foods of plant origin
- Limit red meat & processed meat
- Limit ETOH drinks
- Limit consumption of salt
- Aim to meet nutritional needs through diet alone

Clinical Advisor March 2008

- Diet:
- What should each of our meals consist of?
  A. 2 proteins and 1 color (fruit/vegetable)
  B. 2 vegetables, 1 fruit, 2 carbohydrates
  C. 1 protein, 2 colors (fruits and/or vegetables)
  D. 2 proteins, 1 vegetable

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- Approximately 25% of calories consumed by Americans are from ?
  A. Beverages
  B. Food
  C. Chocolate
  D. None of the Above

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- What is not an example of a healthy protein?
  A. Egg Whites
  B. Edamame
  C. Natural Peanut Butter
  D. Almonds
  E. BBQ Wings

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# Case Study

- Breakfast-
  - Latte – vanilla from Starbucks with cookie
- Lunch-
  - Salad w/ whole grain bread
  - Diet Coke

(3pm – had Snack of M & Ms and diet coke)

- Dinner-
  - Spaghetti w/ meat sauce, 2 pieces of bread, 2 glasses of wine

# Case Study

- Breakfast-
  - Cheerios w/ sliced strawberries, Orange juice
- Lunch-
  - Salad wrapped in wheat tortilla
  - Tea (sweetened)

( 4pm – animal crackers and banana)

- Dinner-
  - Dble cheeseburger, french fries and diet coke

(Prior to bed- small bowl of vanilla ice cream

# Case Study

- Breakfast-
  - 2 eggs, 2 sausage patties, whole wheat toast, orange juice
- Lunch-
  - Taco Bell or Big Mac with fries and Coke

(3-4pm  Snickers bar, chips)

- Dinner-
  - 3-4 beers or bourbon and coke, steak, potatoes

# Nutritional Pearls

- Eat foods congruent with your genetic make-up
- Avoid simple carbohydrates and simple sugars
- Decrease saturated fats and trans fats in diet
- Do not drink your calories
- Have a lean protein and at least 2 colors at each of your meals

# Be Active

## Benefits

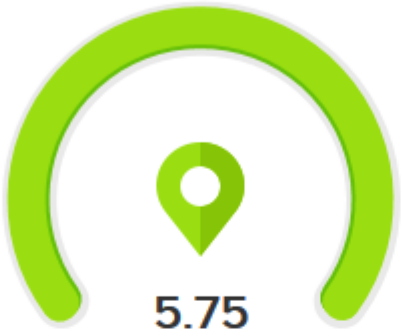
- Decreases blood sugars
- Decreases Triglycerides
- Decreases Blood Pressure
- Decreases Clot Risk
- Increases HDL (good) Cholesterol
- Increases insulin sensitivity
- Best for Anti-aging

YESTERDAY February 26

12,600
Champ!

s days aren't
le for this tile.

Distance / miles



5.75
Champ!

Activity

STEPS CALORIES F


Calories

2,321
Champ!

Very Active Mins

73 min
Champ!

Floors

18
Champ!

Sleep


Top Badges

# Get a Dog

- Dogs and Humans have co-existed for >100,000 yrs
- Dog & Human genomes adapted to cooperate via outdoor exercise

- Dogs improve exercise compliance
- Increase fitness and decrease weight
- Decrease Stress
- Increase Security

# Exercise + Social Connection

# High-intensity Exercise

# + Deep Rest

# Social Connection

# = Peak Health

# Eat For Your Health
# Your Life Depends On It