

Faculty Disclosure

Birgit Khandalavala, MD

Dr. Khandalavala has listed no financial interest/arrangement that would be considered a conflict of interest.

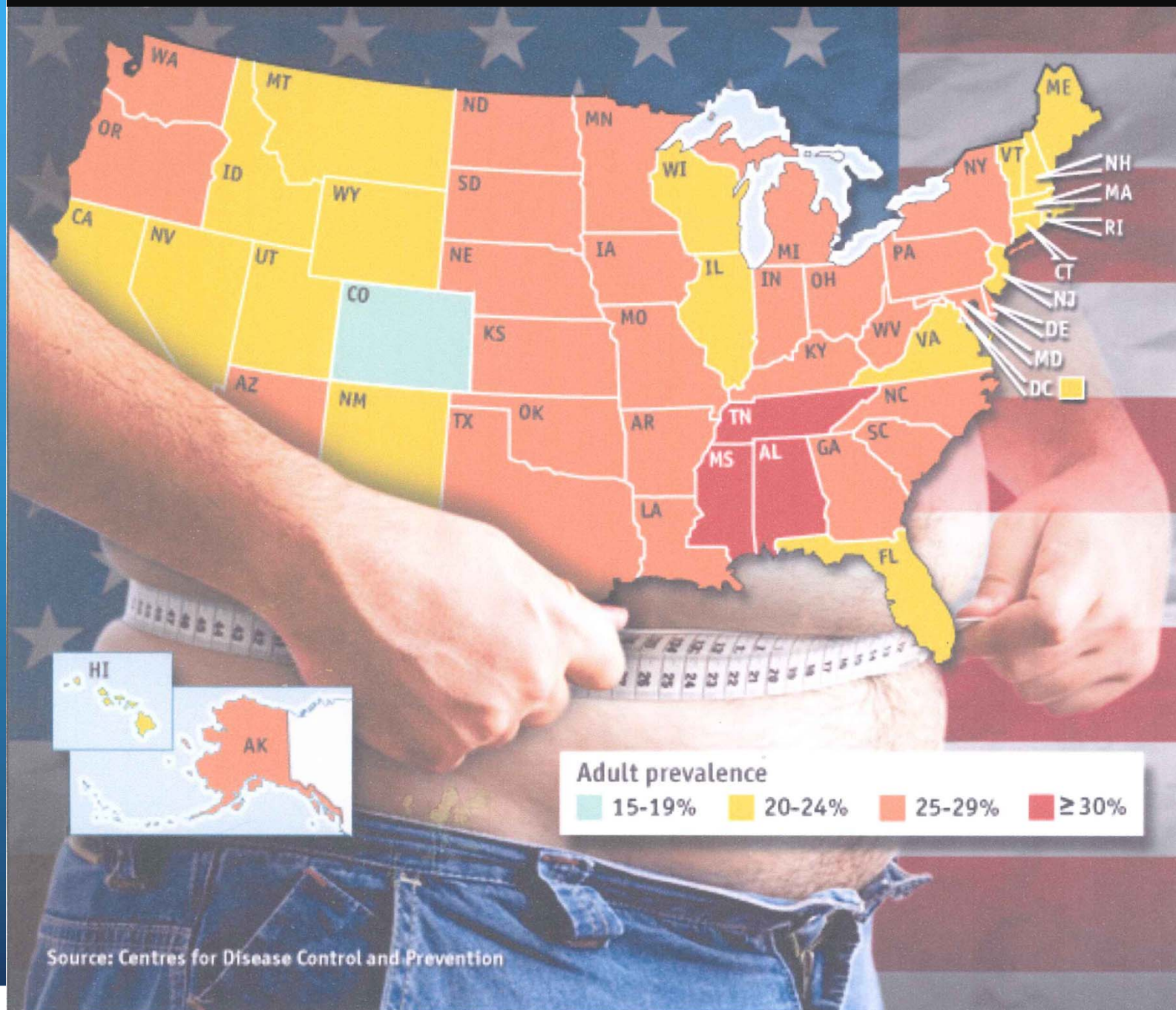
Esophageal conference October 2009-

Birgit Khandalavala, M.D.
Department of Family medicine
CUMC

FOCUS: THREE POINTS

- #1. Fat is not all bad-physical inactivity may be as harmful
- #2. Obesity is a chronic relapsing disease characterized by increased systemic subclinical inflammation
- #3. Diet and exercise is not enough- “Oprah Factor” (obesity is not a sign of moral/celebrity failure)

United States of Obesity, Physical Inactivity and Cancer- 2009



Researcher: U.S. fattest society ever

COX NEWSPAPERS

WEST PALM BEACH, Fla. — A Florida Atlantic University researcher is calling the United States the fattest society in the world.

After taking part in a worldwide study that spanned an estimated 40 years, Dr. Charles Hennekens said the results show that Americans are increasingly unhealthy.

“We’re likely to be the fattest in the history of the world,” he said. “Unless Ameri-

cans lose weight and increase physical activity, cardiovascular disease will remain the leading killer.”

The Lancet, an international medical journal, posted the results of the research this week. Body mass index numbers were gathered from 900,000 adults in a total of 57 studies.

Body mass index helps estimate a healthy body weight based on how tall a person is. According to the study, the optimal BMI is 22-25, but two-thirds of Americans are above 25 and one-third is above 30.

People with a BMI above 30 reduce their life spans an average of two to four years. That figure is eight to 10 years for those with BMIs of 35 and higher.

Hennekens said he is particularly worried about children.

“Young people today are heavier,” he said. “The youngsters will be the first generation in the last 50 years to have a higher mortality rate than their parents.”

Dr. Edward Mostel, a cardiologist in Palm Beach Gardens, Fla., said children and adults should exercise and eat vegetables, fruits and smaller portions.

So how did we get this way?

- 100kcal (ten lifesavers)a day-James Hill. Science 2003
- 18 pounds since 1970's
- Energy Gap-this is also important for the treatment



300 kcal

-

200 kcal

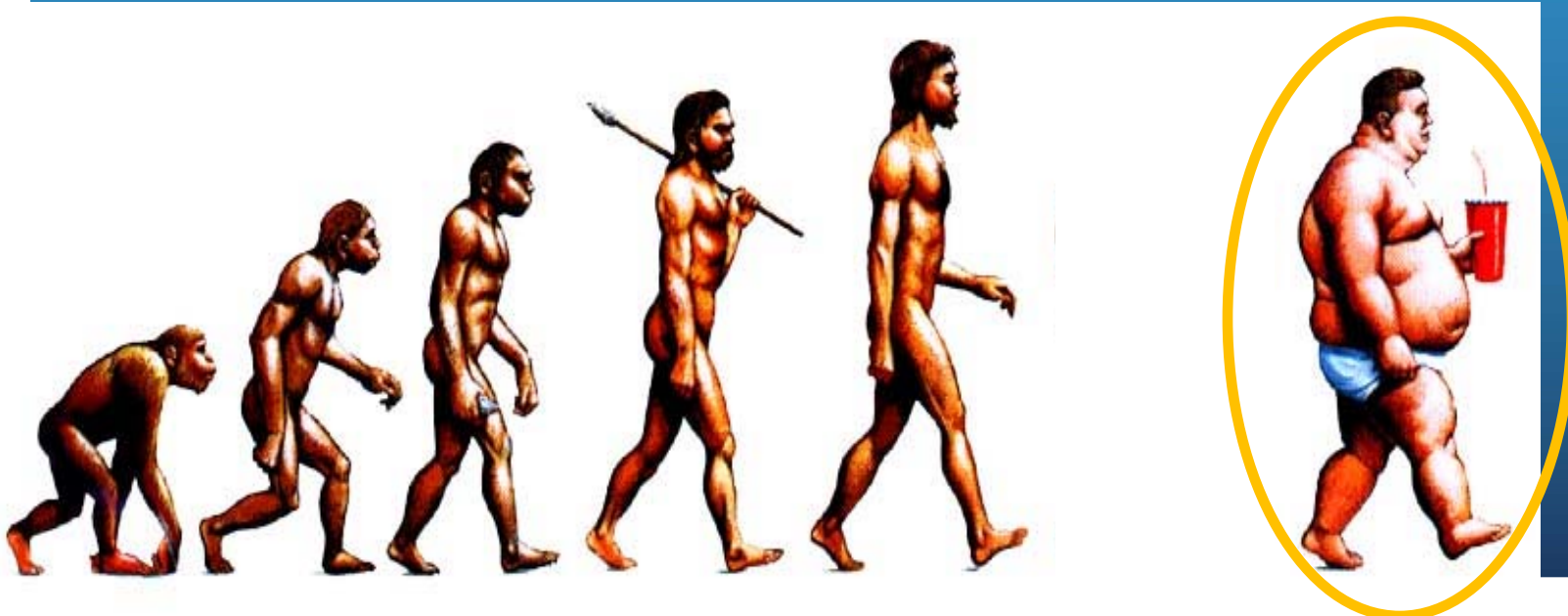
=

100 kcal/day



WHY? Genetics Vs Environment

- Genetic loads the gun
- A permissive or toxic environment pulls the trigger

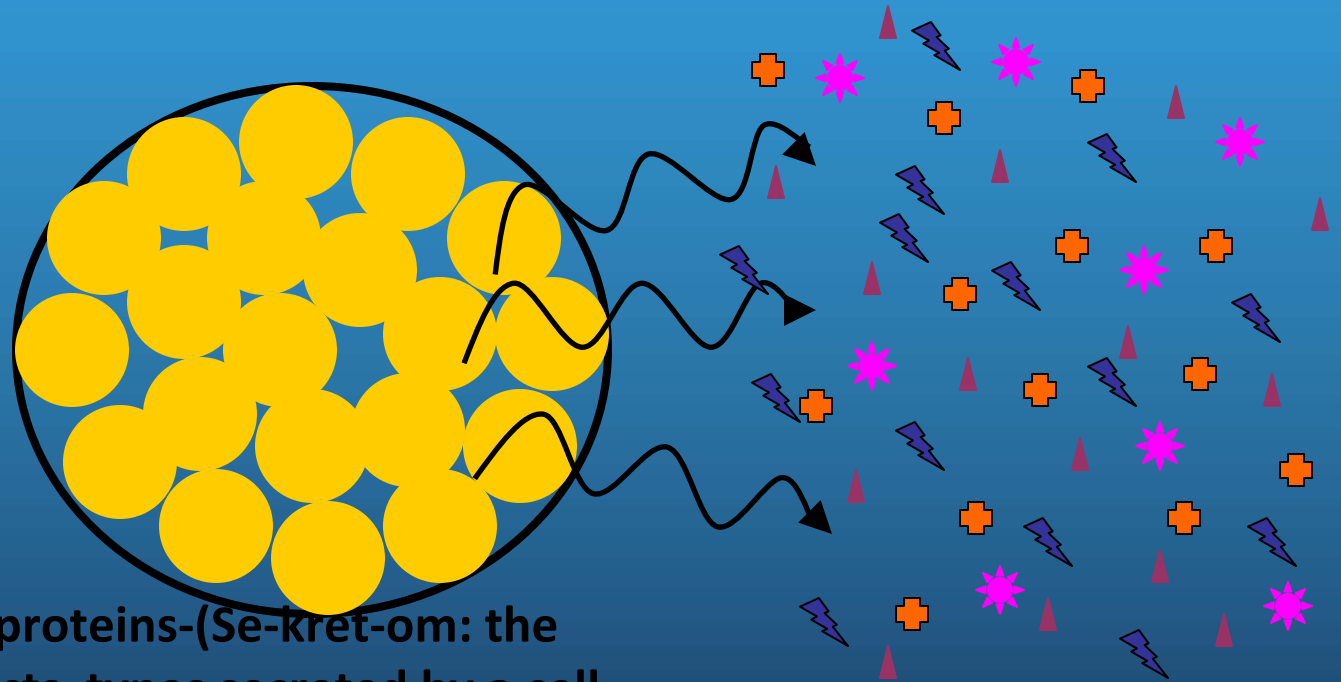


Other factors-

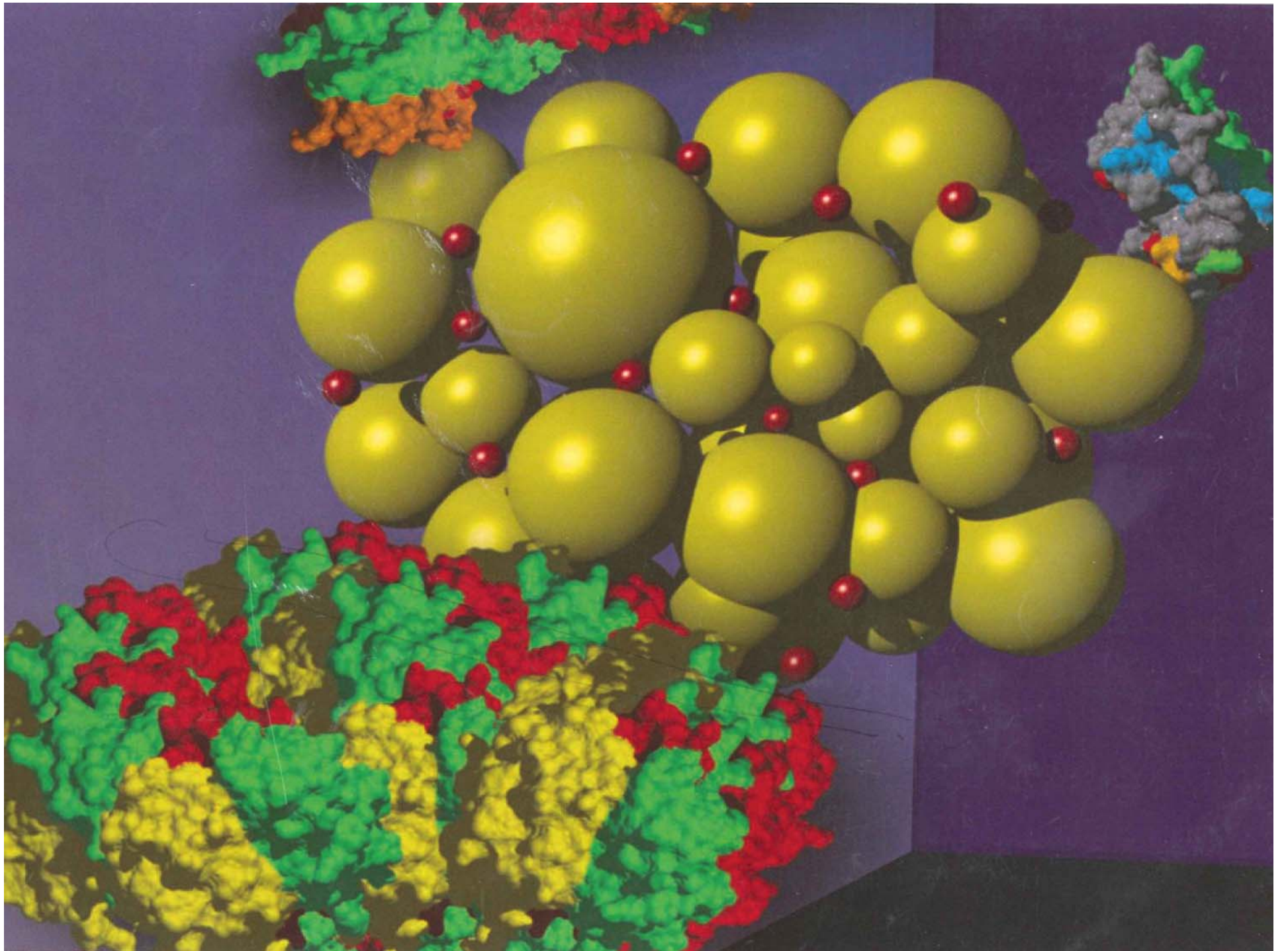
- decrease in cigarette smoking—tax-junk food tax?
- SLEEP
- Social networks
- Reduction in physical activity
- Government Policies- cheap fuel, cheap sugar, CORN HFCS



The adipocyte as an endocrine cell: SECRET =Secretion

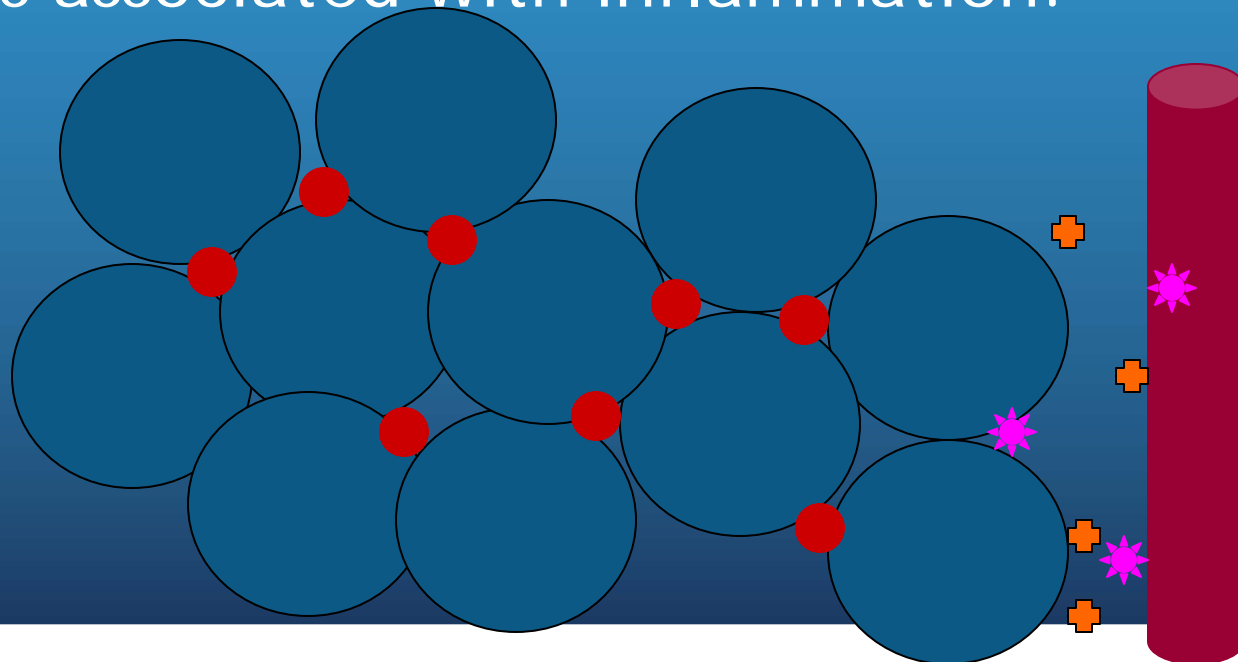


Secretome-100+ proteins-(Se-kret-om: the entirety of products types secreted by a cell , parasite or others)

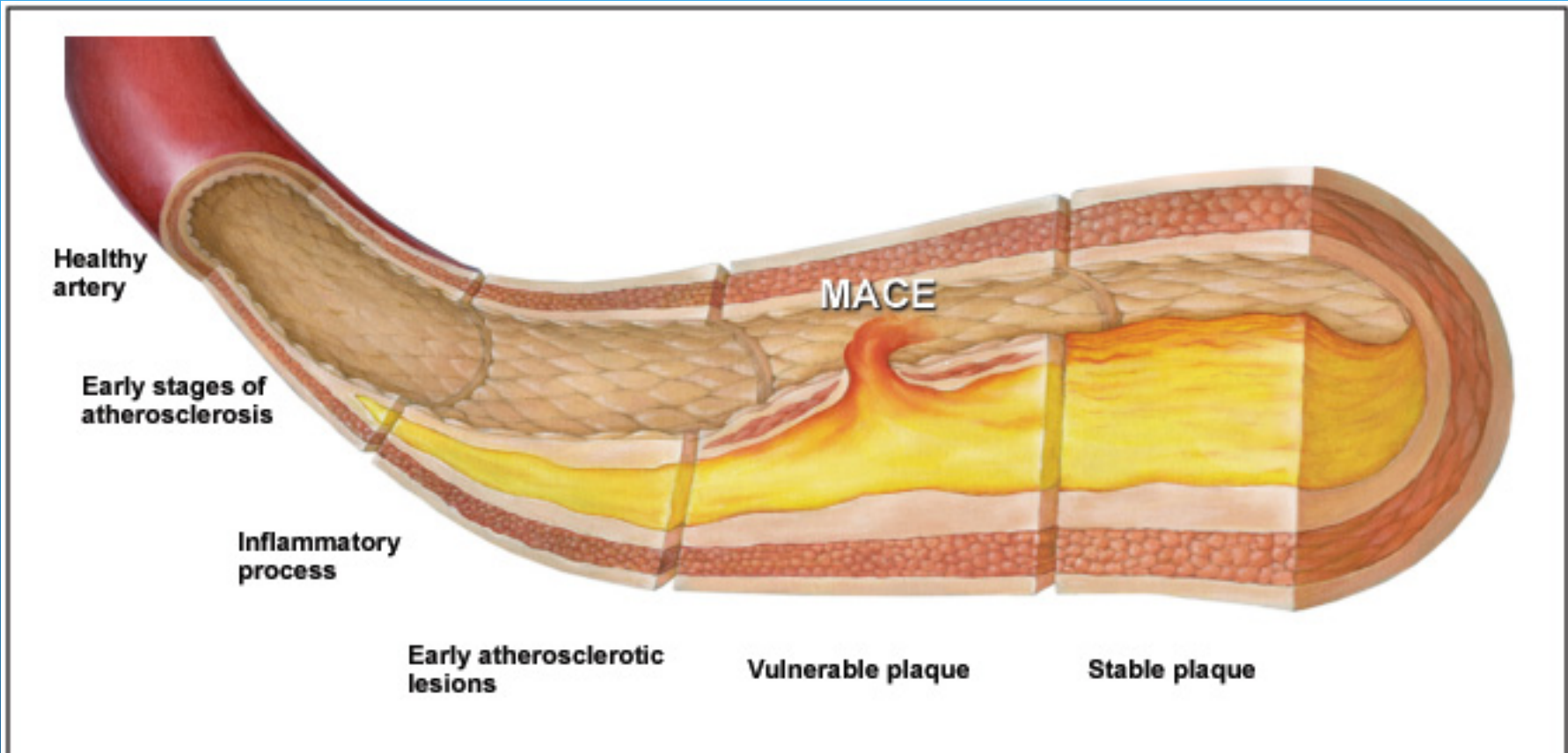


ADIPOSE TISSUE

- EACH POUND OF FAT HAS ONE MILE OF BLOOD VESSELS I
- Produce “Good Guys” “Bad Guys”-tumour necrosis factor
- Cells associated with inflammation.



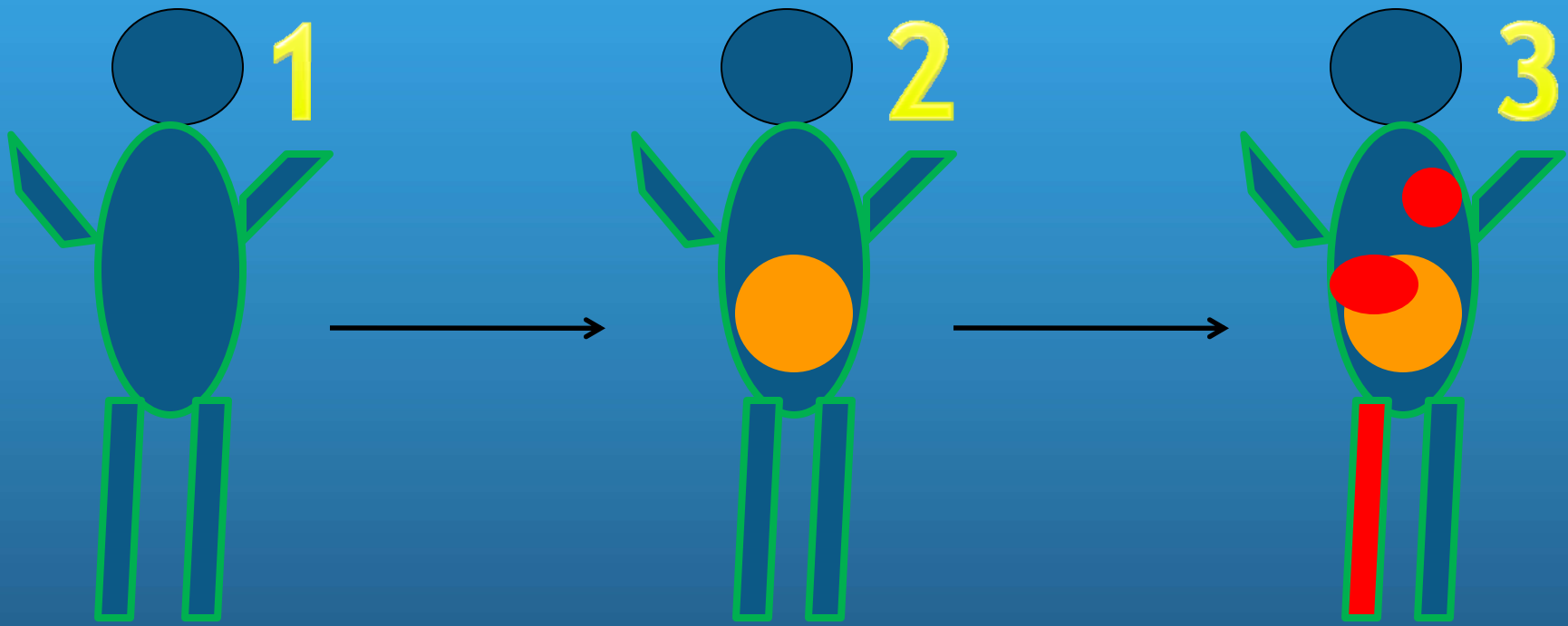
Inflammation in the blood vessel



Principal Influencing Factors on Inflammation

Aggravates	Reduces
Traditional Western diet, Increased omega 6	Mediterranean diet, Asian cuisine-increased omega 3
Unmanaged stress, anger, and depression	Laughter, lightheartedness, serenity
Less than 20 minutes of physical activity a day	A 30-minute walk 6 times a week
Cigarette smoke, atmospheric pollution, domestic pollutants	Clean environment

Order of fat deposition



Subcutaneous

Visceral

Ectopic

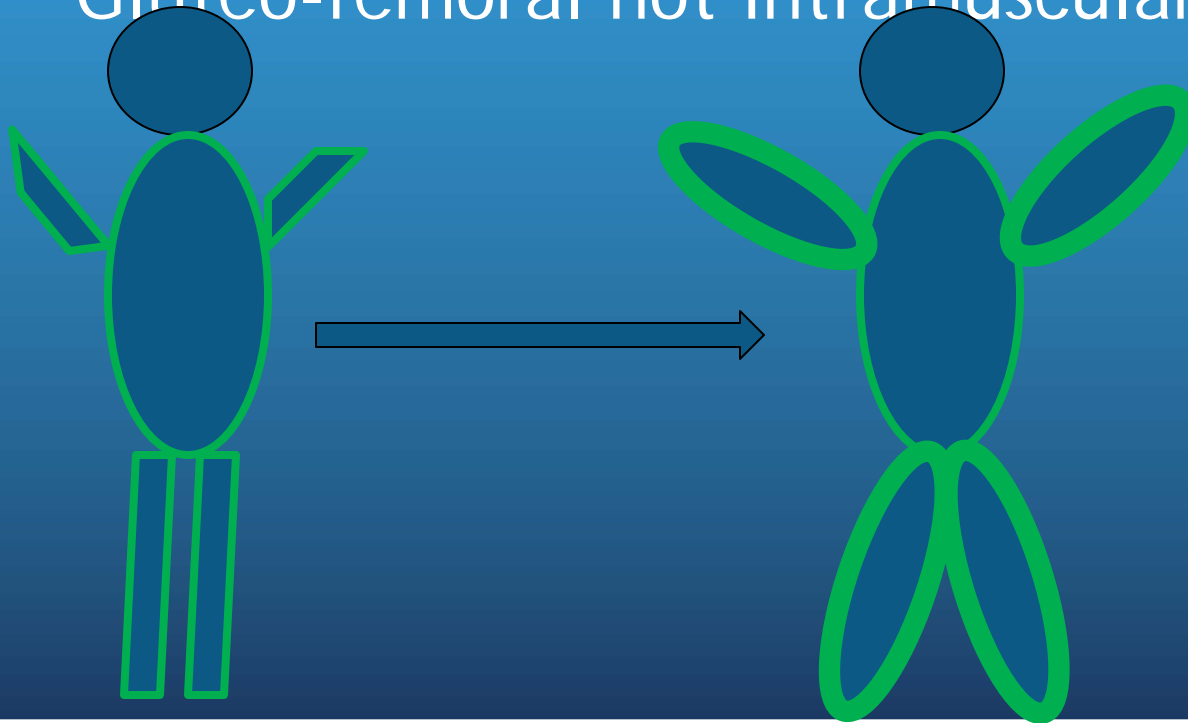
Sustained Positive Energy Balance

Layer under the skin is mostly protective

Subcutaneous adipose tissue:

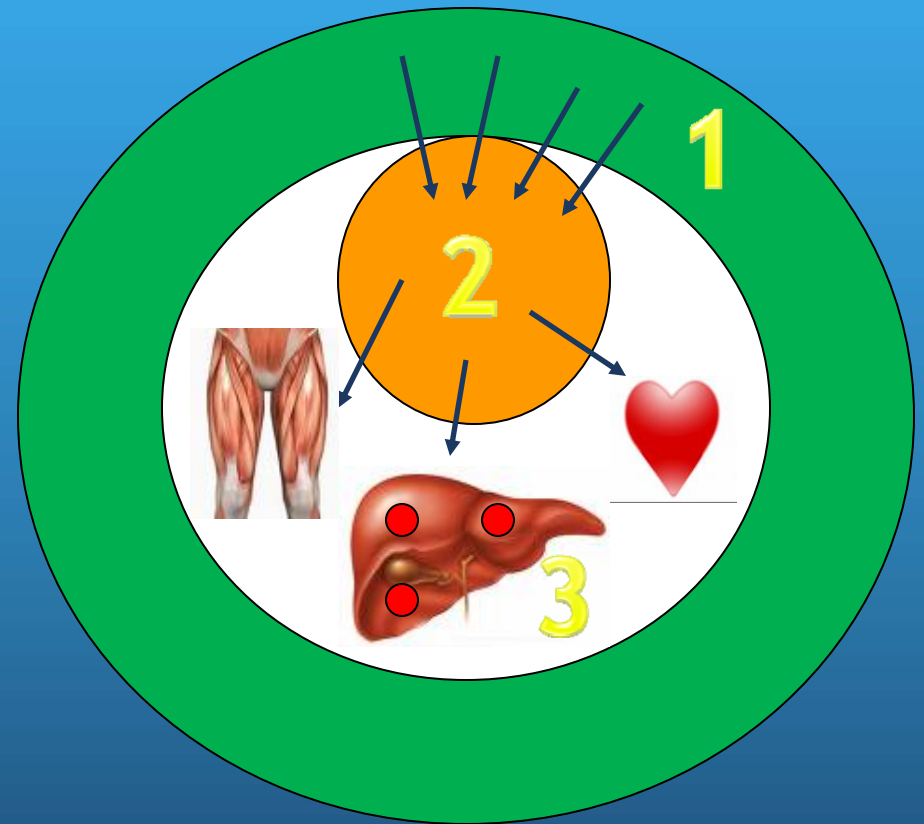
“Metabolic SINKS” - Protective

Gluteo-femoral not intramuscular



Health consequences of increased VAT

- VAT is more metabolically active = more bad than good
- Lethal if deposited in liver and heart
- Reason liposuction does not work

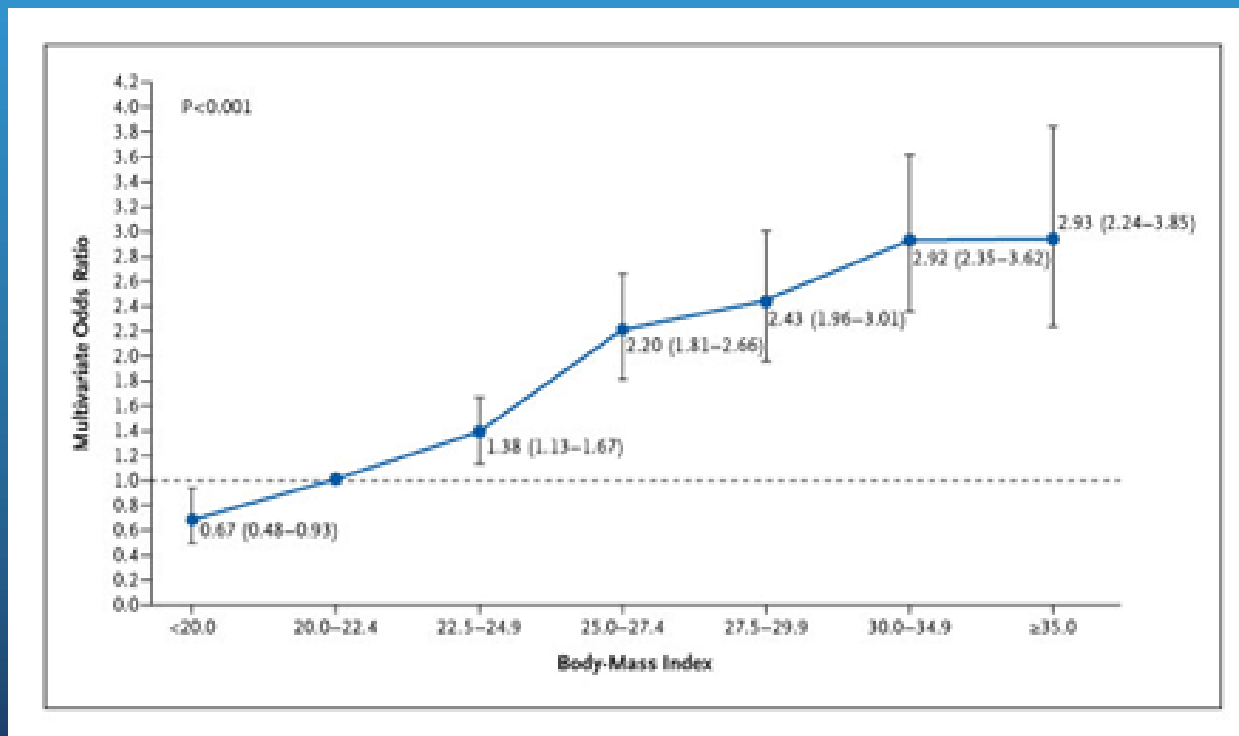


Consequences of obesity

- “Metabolic” - diabetes, hypertension, gout, gall bladder disease, asthma, PCOS-, cancer, mood disorders, decreased quality of life
- “Mechanical” - arthritis, abnormal growth in children, sleep apnea, headaches, reflux
- Social: discrimination, bias, adoption
- ASSOCIATION WITH REFLUX AND ESOPHAGEAL CANCERS

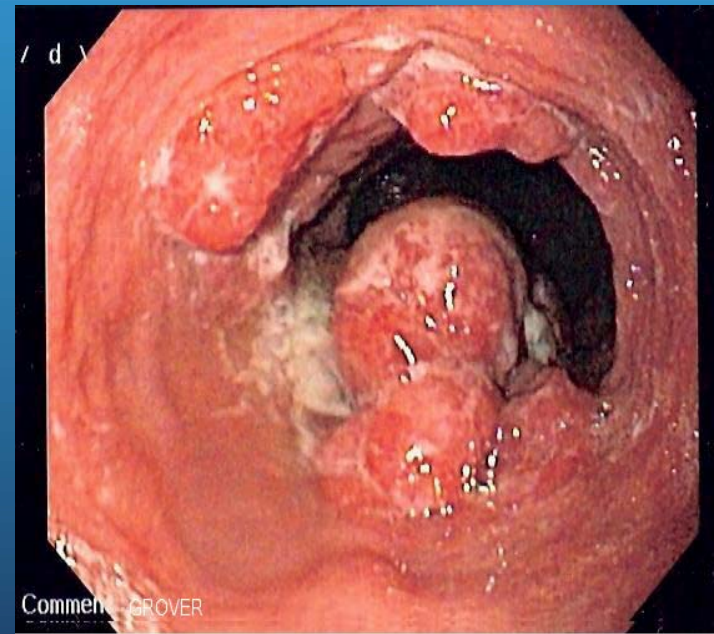
The esophagus and obesity

- Mechanical-GERD



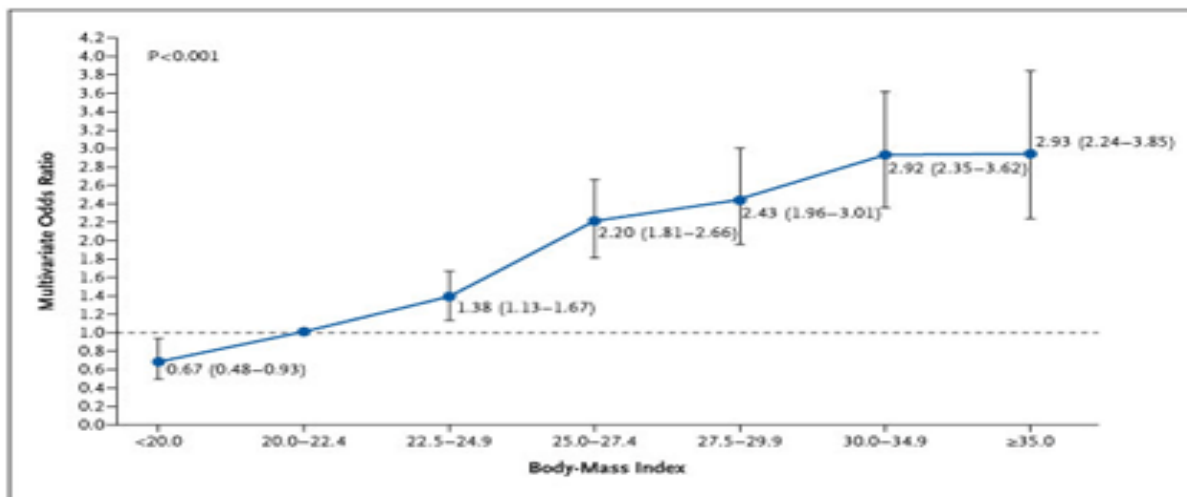
Esophageal cancer

- Progression of Barretts'
- Increased inflammation
- Whiteman et al 2007
- obesity independently risk
- Esp in men-
- obese pt with GERD esp high



The esophagus and obesity

- Mechanical-GERD

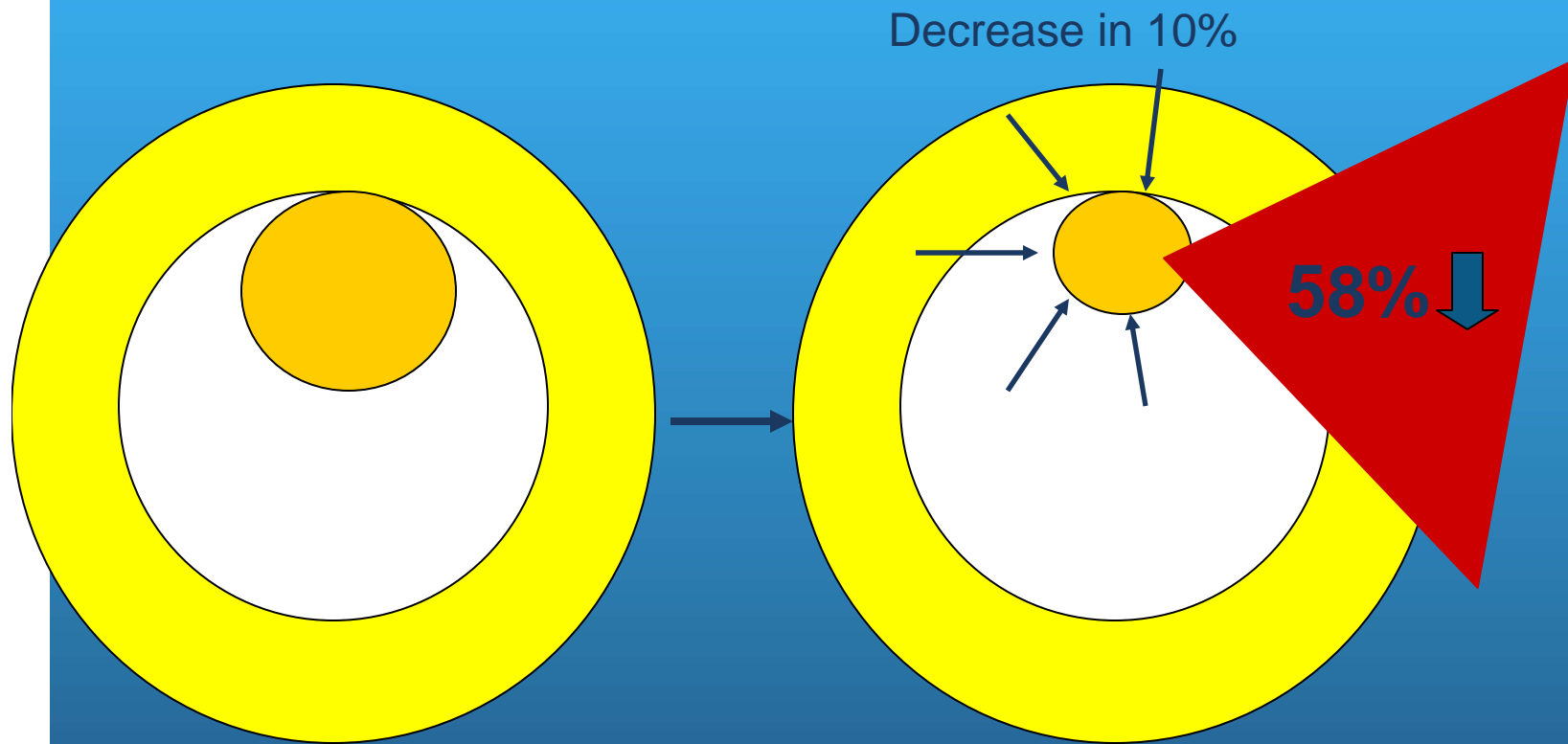


- CANCER RISK-identical
- Synergistic interaction: GERD and cancer
- #2-state of chronic systemic + local inflammation

Treatment Options Based on BMI

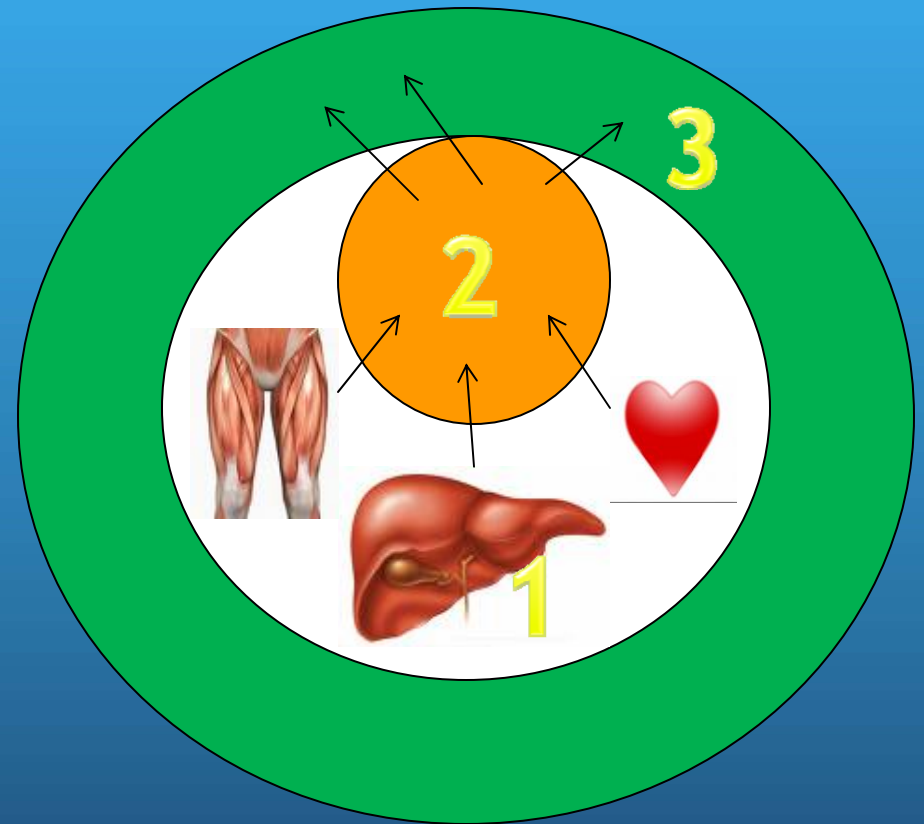
Treatment	BMI Category (kg/m ²)				
	25-26.9	27-29.9	30-34.9	35-39.9	≥40
Diet, Exercise, Behavior Tx	+	+	+	+	+
Pharmaco- therapy		With co- morbidities	+	+	+
Surgery				With co- morbidities	+

Goal: Magic 10%-Diabetes Prevention Program-2003

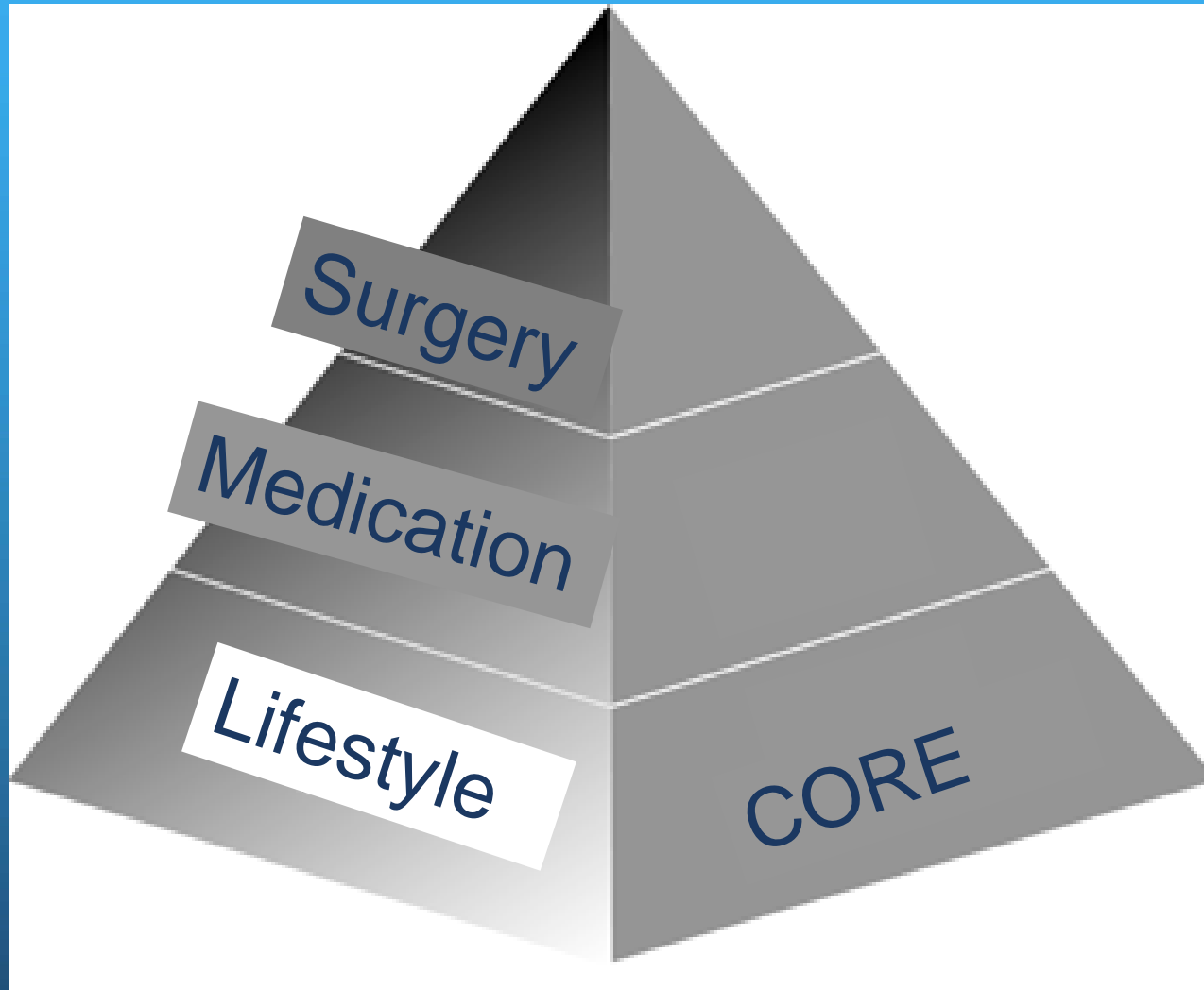


Small changes produce big rewards

- Not equal loss
- Reverse of gain



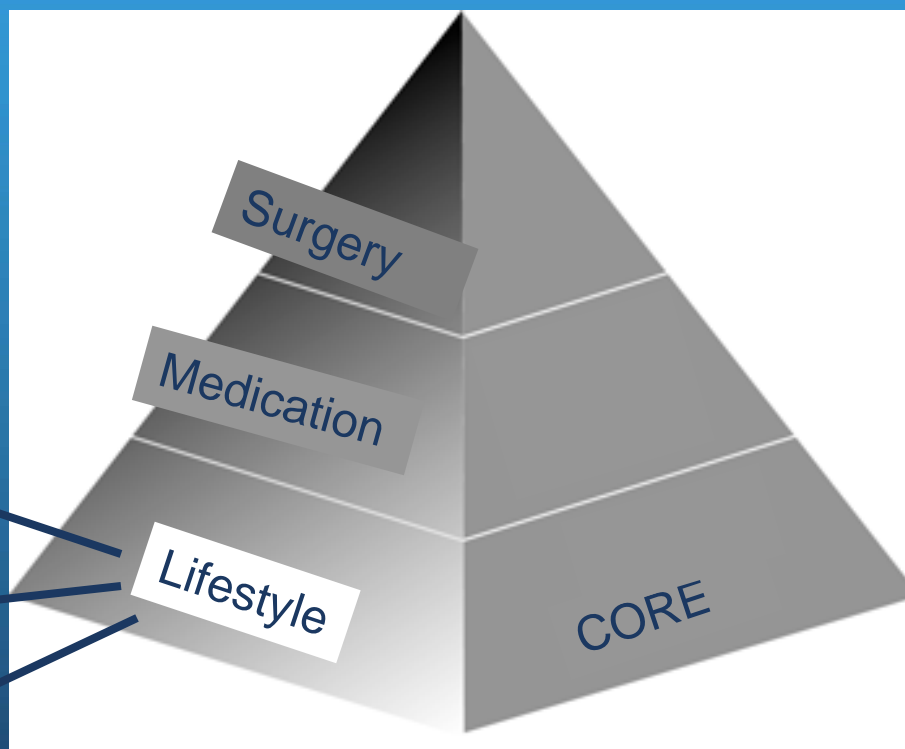
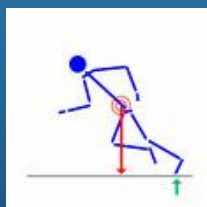
Treatment Pyramid



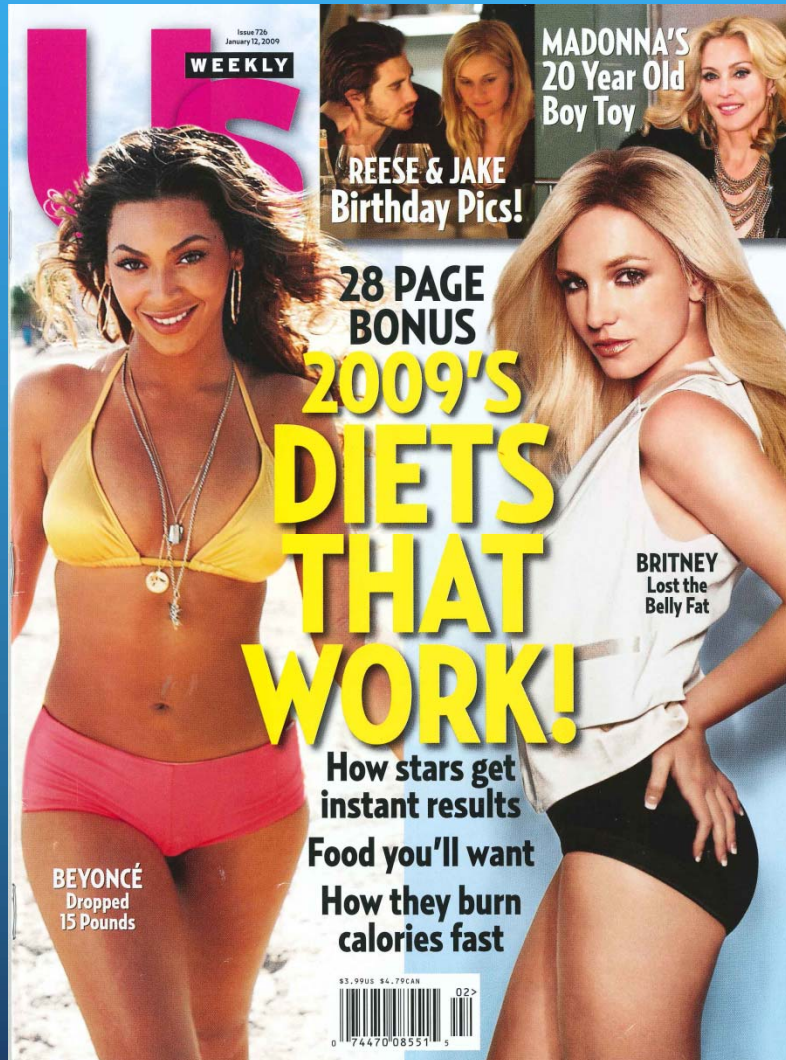
BMI

Lifestyle modification program

- Base of any treatment program



Nutrition



- Never “diet”
- All diets work-300kcal deficit
- What is the best? Low glycemic index?
- High protein diet?

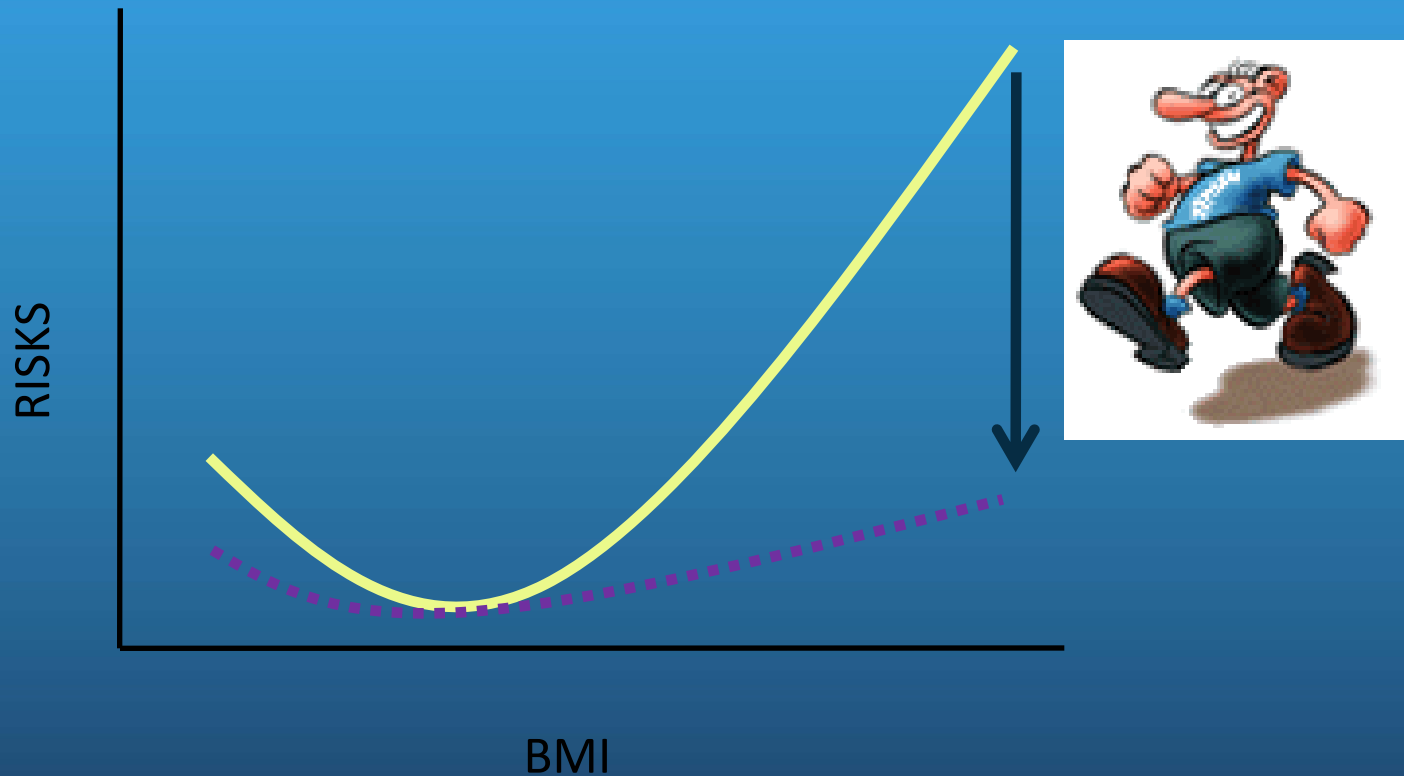
- Low fat-what if it is all one big fat lie?

SUGAR SWEETENED BEVERAGES- 25% OF EXTRA CALORIES

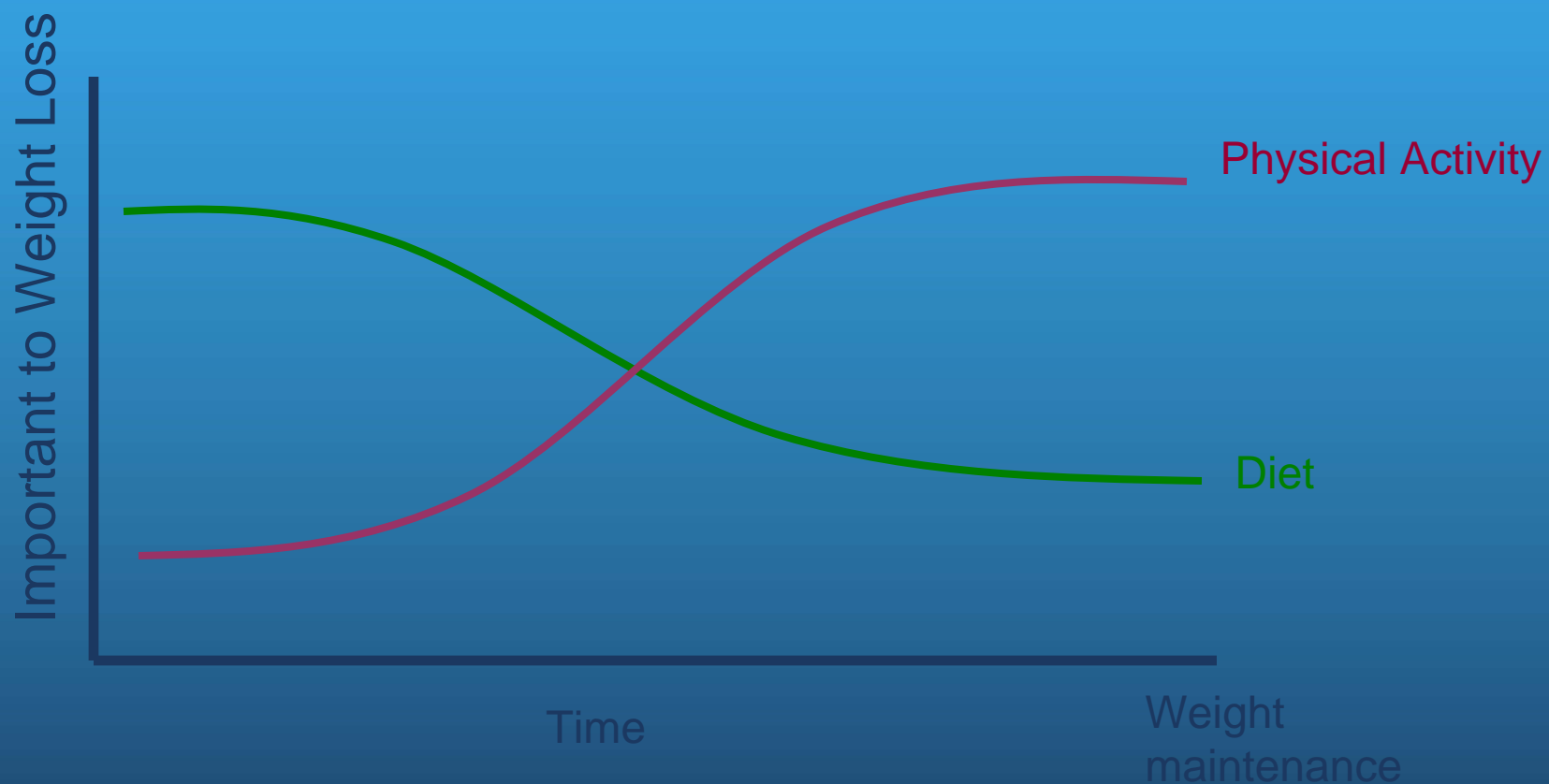
- SNACKING,
- DESSERTS, SWEETS, 56 % of our
- Calories come from sugar, flour
- And oils such as soybean, trans fats
- That were not around while our genes were being developing and directly fuel inflammation/cancer



Reducing the risks of obesity/cancer/diabetes



Role of Diet and Physical Activity



Energy Requirement to Fight Cancer

- Breast Cancer 9 METS (3-5 Hours Normal Walking)
- Colon Cancer 18 METS (Twice as long, twice as fast)
- Prostate Cancer 30 METS (3 hours of jogging)
- Most chronic diseases 30 mins daily 6 days of the week-
180 mins a week-just walking

Role of Diet and Physical Activity



Why diet and exercise is not enough-Oprah factor

Sleep, motivation

Regain is inevitable-lipid suitcases

Focussing on an individual may be wrong

Social networks

Stickiness

policies



If Oprah can't change, is there any hope for us?

THE NEW YORK TIMES

Change — if only it were as simple as a campaign slogan.

It certainly didn't seem to be

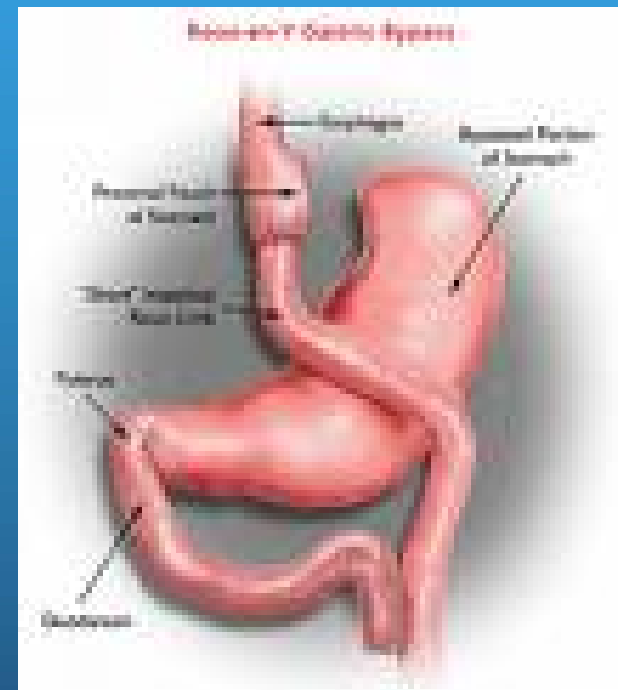
iversity of Minnesota.

Such revelations will hardly come as a surprise to the repeat offenders and recidivists —

that's what they are.

Thinking outside the box

- Surgery-
'undiet', medications
- Changes the biology/set point
- Only option for the severe, morbidly obese class
- May work the best due to slowest regain
- Decreasing mortality—
Sjorstrom, Adams-NEJM 2007



For the individual

- Maintain weight-cut sugar
- Quit smoking
- Work on losing 10%
- Physical activity reduces all risk-

