

MALNUTRITION ASSOCIATED WITH CARDIOVASCULAR METABOLIC SYNDROME

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QUESTIONS

- ▣ How many gm of carbohydrate does our body need every day
- ▣ 1) 20 gm
- ▣ 2) 100 gm
- ▣ 3) None

Questions

- ▣ How many people in this country are diabetic or prediabetic?

- ▣ 1) 10 million

- ▣ 2) 65 million

- ▣ 3) 111 million

- ▣

QUESTIONS

- ▣ What food group is the culprit of the present epidemic of the metabolic syndrome?
- ▣ Fat
- ▣ Protein
- ▣ Simple carbohydrates
- ▣ None of the above

DEFINITION OF METABOLIC SYNDROME

AMERICAN HEART ASSOCIATION

Abdominal obesity men >40 in women >35 in

Triglycerides > 150

HDL <40 in men, <50 in women

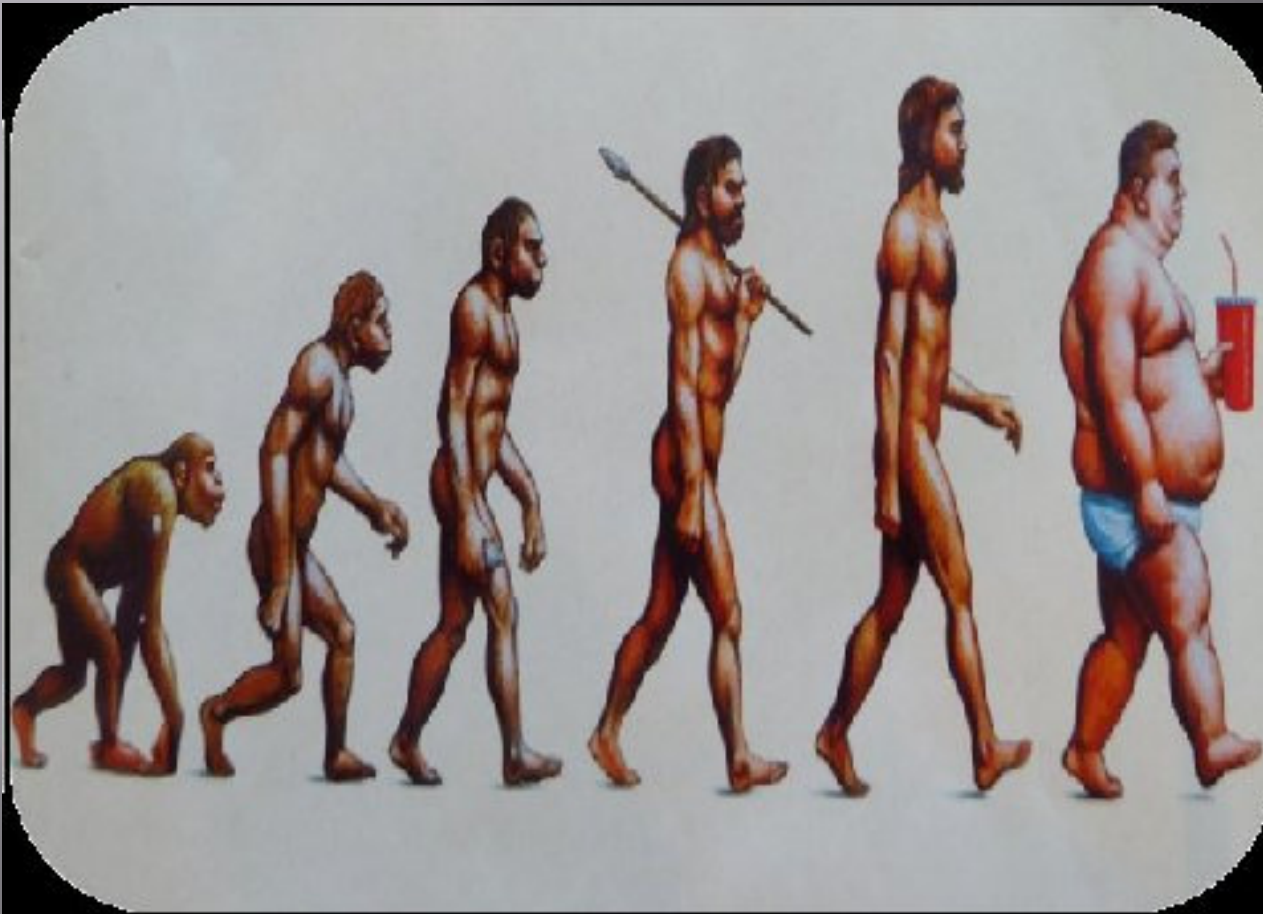
Blood Pressure $>135/85$

Fasting Glucose >110

BMI >25 according to Endocrine society

Diseases of Civilisation associated with the Metabolic Syndrome

- ▣ Obesity
- ▣ Diabetes
- ▣ Hypertension
- ▣ Dyslipidemia
- ▣ Gerd
- ▣ Sleep apnea
- ▣ Osteoarthritis
- ▣ Polycystic ovaries



US POPULATION 315 MILLION

- ▣ 214 million are overweight or obese 68%
- ▣ 25 million are diabetic, 7 million are undiagnosed diabetic, 79 million are prediabetic (111 million or 35%)
- ▣ 90 million have Hypertension Bp>120/80 (28%)
- ▣ 105 million have Hypercholesterolemia Cholesterol >200 (33%)
- ▣ 75% of the US population have at least some features of the metabolic syndrome



Other components of the Metabolic Syndrome

- ▣ Insulin resistance and Hyperinsulinemia
- ▣ Proinflammatory status: CRP, Interleukins, elevated WBC
- ▣ Prothrombotic state: Fibrinogen

Malnutrition

DEFINITION:

Malnutrition results from taking an unbalanced diet in which certain nutrients are lacking, or are in excess (too high an intake), or in the wrong proportions.(Webster)

Lack of nutrients

- ▣ Kwashiorkor (protein)
- ▣ Pellagra (niacin)
- ▣ Beri Beri (thiamine)
- ▣ Rickets (vitamin D)
- ▣ Scurvy (vitamin C)
- ▣

Overnutrition

EXCESSIVE CONSUMPTION OF REFINED CARBOHYDRATES

Sugar, Sodas, most Breads, white Rice ,most Cereals, Bagels, Chips, Cookies, Donuts, Cakes.

Average sugar consumption 170 pounds per person per year

History of Sugar and Refined Carbohydrate consumption

- ▣ Sugar cane available in Asia for thousands of years. Introduced to the Americas during 16th century. Sugar remained expensive.
- ▣ Beet sugar became available in US in 1870. Cheaper.
- ▣ High fructose corn syrup introduced 60 years ago. Really cheap.
- ▣ Refining of carbohydrates became possible 120 years ago due to new techniques and machinerie

What is refined

- ▣ From a whole grain the outer layer (bran) and the inner core (germ) are removed through grinding ,mixing, bleaching, brominating.
- ▣ Bran carries fiber and minerals. Germ carries most of the nutrition (Vitamins ,Proteins ,good Fats)
- ▣ Refined grains are considered nutritionally inferior. However they don't spoil.

Metabolic effects of refined carbohydrates

Refined carbohydrates have a high glycemic index and glycemic load. Minutes after they are consumed they enter the bloodstream as sugar. White bread has a glycemic index of 100, sugar 70.

Quickly rising blood sugar triggers a significant insulin release. Prolonged overstimulation of insulin eventually leads to insulin resistance and chronically elevated insulin levels.

AGES

- ▣ ADVANCED GLYCATION ENDPRODUCTS
- ▣ EXAMPLE: Hemoglobin A1C

Insulin Effects

- ▣ Insulin is a storage hormon. It stores the sugar just eaten as glycogen in muscle and liver. Excess sugar is converted into fat.
- ▣ Elevated insulin levels prohibit the release of fat from fat tissue.
- ▣ Insulin promotes fluid and salt retention, raises blood pressure.
- ▣ High insulin levels stimulate cholesterol production.
- ▣ Insulin promotes inflammation.

- ▣ THE GOAL OF ANY SUCCESSFUL DIET IS TO LOWER INSULIN LEVELS.
- ▣ LIFESTYLE INDUCED HYPERINSULINISM IS STRONGLY LINKED TO CHRONIC INFLAMMATION, WHICH LEADS TO ARTERIAL MICROINJURIES, CLOT FORMATION (Heart disease) AND EXAGERRATED CELL DIVISIONS. (Cancer)

TRANSFATS

- A fat recently introduced to our diet
- Created by partial hydrogenation of polyunsaturated fat. (vegetable oil)
- Inexpensive and very profitable for the food industry.
- Food with trans fats: french fries, baked goods such as cookies and cakes, non dairy creamer, fried fast food.
- Trans fats are strongly implicated in heart disease.

Why is there an epidemic of the metabolic syndrome and obesity

- ▣ Multiple Factors

- ▣ 1: Recommendation of a low fat diet by government and medical societies
- ▣ The whole nation lowered fat consumption from 40% to 30%. Refined carbohydrates replaced fat.
- ▣ A low fat diet predictably
 - Lowers HDL
 - Increases Triglycerides
 - Changes LDL to a small dense form

- ▣ GERALD REAVEN

- ▣ IF ALL THE NATION FOLLOWS
A LOW FAT DIET

- ▣ AN EPIDEMIC OF OBESITY AND
DIABETES WILL OCCUR

- ▣ JAMA 1974

Other causes of obesity and metabolic syndrome

- ▣ Physical inactivity: catching chips with one hand and stretching the other hand to reach the remote control
- ▣ Supersizing
- ▣ Abundant availability of inexpensive refined food
- ▣ Constant advertising on TV especially to young children

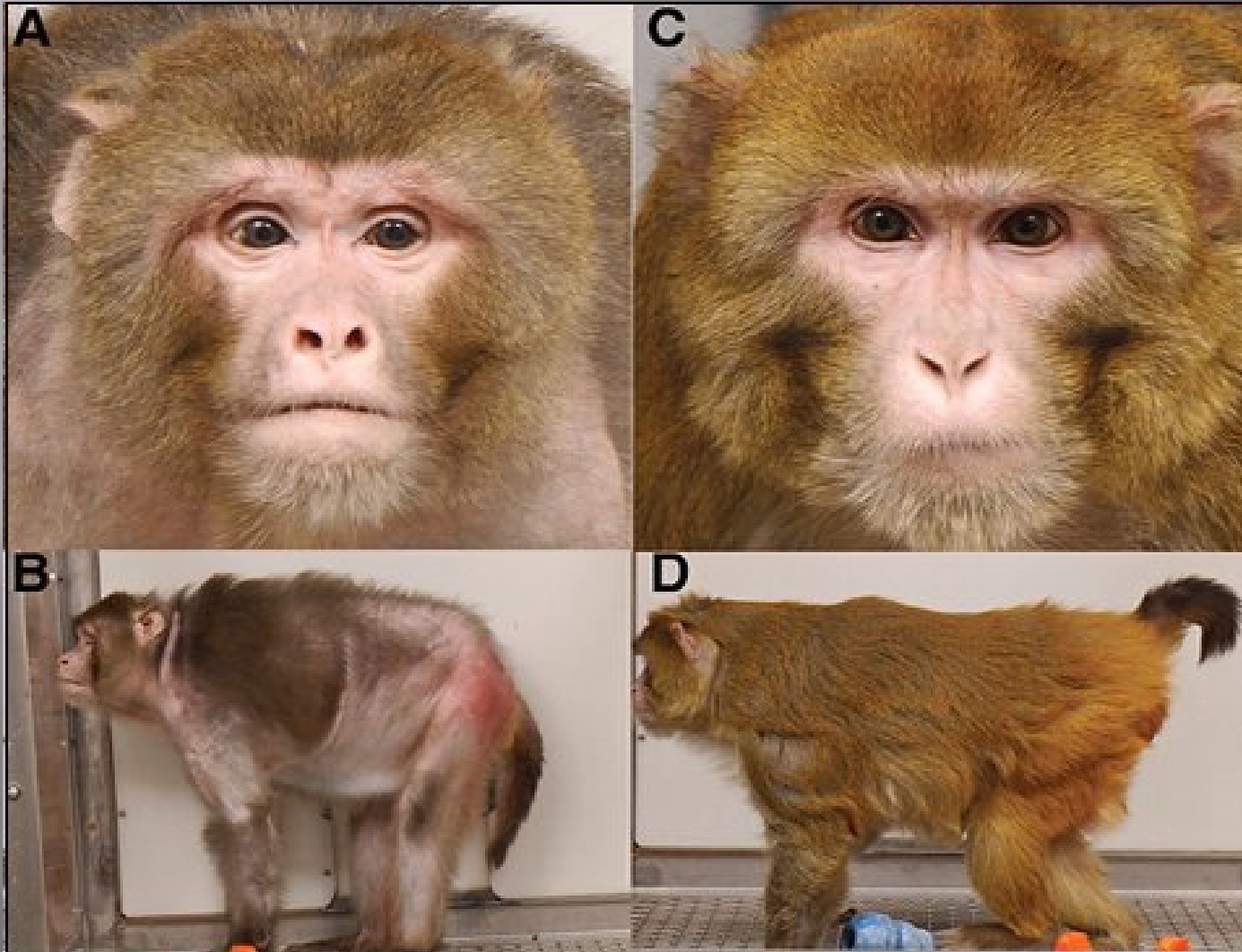
The Role of Government

- ▣ Publication of the food pyramid in 1992
- ▣ Every person age 2 or older should consume 6 to 11 servings of bread, pasta, cereal and rice every day
- ▣ Now we have the food plate. No much change
- ▣ You clearly see the handwriting of the food industry

PORTION CONTROL

- ▣ RHESUS MONKEY STUDIES
- ▣ LONGEVITY STUDIES

Portion Control



EFFECTS OF WEIGHT LOSS

- ▣ LOWERS
CHOLESTEROL
- ▣ TRIGLYCERIDES
- ▣ BLOODSUGAR
- ▣ INSULINLEVELS
- ▣ INFLAMMATORY
CYTOKINES

Studies that contradict the beneficial effects of the low fat diet

- ▣ Lyon Heart Study
- ▣ Israel study
- ▣ Nursing Health Study
- ▣ Womens Health Initiative Study
- ▣ Atkins

Successful Diets

- ▣ South Beach Diet
- ▣ Mediterranean Diets
- ▣ Weight Watcher
- ▣ Ornish
- ▣ HCG
- ▣ Whole Plant Diet (Campbell)

- ▣ Amazon lists 20 000 diet books

Successfull Diets

- ▣ ALL SUCCESSFUL DIETS RESTRICT
- ▣ REFINED, SIMPLE, NON NUTRICIOUS
- ▣ CARBOHYDRATES

Feed Lots

Cows in feedlots are fed mostly corn .

For a calf to grow full size it used to take 4 to 5 years. In modern feed lots it takes 14 months.

Feeding Carbohydrates and adding growth hormones creates big fatty animals

What food makes us gain weight?

- ▣ CARBOHYDRATES MAKE US FAT
- ▣ FAT DOESN'T MAKE US FAT

▣ How many grams of carbohydrates does our body need daily?

None

50 gm

100 gm

60% of food intake

WHAT DOES OUR BODY NEED ON A REGULAR BASIS

- ▣ PROTEIN (MINIMUM .8 GM/KG)
- ▣ 20 AMINO ACIDS ,9 ESSENTIAL
- ▣ FATTY ACIDS (OMEGA 3 AND 6)
- ▣ VITAMINS
- ▣ MINERALS
- ▣ PHYTONUTRIENTS

DIET OF HOPE

- ▣ A TEACHING PROGRAM
- ▣ PROMOTES SIMPLE INEXPENSIVE FOOD
- ▣ NO DRUGS, NO ARTIFICIAL FOOD

DIET OF HOPE

- ▣ THREE COMPONENTS
- ▣ 1: Refined carbohydrates are restricted
- ▣ 2: Portion control for proteins and fat.
- ▣ Emphasis on good fatty acids and whole protein. Simple food.
- ▣ 3: Unlimited vegetables

DIET OF HOPE

- ▣ Results of the diet of hope in the first 100 patients with diabetes and the metabolic syndrome
- ▣ 1: Average weight loss 10.3% of body weight
- ▣ 2: Hgl A1c decreased from 6.9 to 6.25
- ▣ 3: Systolic BP decreased by 7.2 mmHg
- ▣ 4: Diastolic Bp decreased 4.9 mmHg
- ▣ 5: Total cholesterol decreased 11%
- ▣ 6: Triglycerides decreased 47%
- ▣ 7: HDL increased 4.7%
- ▣ 8: Total yearly savings on medications 1340 dollars.

DIET OF HOPE

▣ ONE YEAR FOLLOW UP ON 1000
PATIENTS

67% OF PATIENTS LOST AN ADDITIONAL
7.25% OF BODY WEIGHT

31% MAINTAINED THEIR 6 WEEK WEIGHT
LOSS

2% GAINED THEIR WEIGHT BACK

DIET OF HOPE

- ▣ Statistics on weight loss diets
- ▣ 90% of people will gain their weight back in one to three years
- ▣ This explains most physicians nihilistic approach to diets

FACTS

- ▣ IN 2011 688 000 PATIENTS UNDERWENT PTCA
- ▣ 427 000 UNDERWENT CORONAR BYPASS SURGERY
- ▣ ONE IN 50 HAD KNEE REPLACEMENT FOR OSTEOARTHRITIS

THE FUTURE

- ▣ OUR MEDICAL SYSTEM WILL GO BANCRIPT IF NO CHANGE OCCURS
- ▣ BENEFICIARIES OF THE PRESENT SYSTEM
- ▣ PHARMA AND FOOD INDUSTRY



"No, it's not water. You seem to be retaining food."

SUGGESTIONS

- ▣ ELIMINATE SUBSIDIES TO THE CORN AND SUGAR INDUSTRY
- ▣ TAX SUGAR AND SODAS
- ▣ PROMOTE UNPROCESSED FOOD
- ▣ IF ITS PACKAGED OR ADVERTIZED ON TV
DON'T BUY IT

HIPPOCRATES

- ▣ LET FOOD BE YOUR MEDICINE
- ▣ AND MEDICINE YOUR FOOD