PREVENTION AND TREATMENT OF LIFESTYLE DISEASES- WHY IT SHOULD BE PRIORITY?

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Lifestyle diseases killing more than communicable illness:

WHO -By 2030, Deaths due to cancer, cardiovascular diseases, DM etc (LIFE STYLE) together account for 75 % of all deaths

INDIAN Statistics

- **Life expectancy at birth M/F (yrs): 62/64**
- **Healthy life expectancy at birth M/F: 53/54**
- WHO and World Economic Forum –

  India will lose $237 bn by 2015.
- (DM, Stroke & cancer due to unhealthy workplaces).

Life style problems in USA

- More than70.0% of deaths , 75.0% of health care spending costs attributable to chronic diseases

The 5 leading causes of death

1. Heart disease 2. Cancer 3. Chronic lower
4. Respiratory disease 5. Cerebrovascular disease

- Accounted for more than half of all deaths in 2009
- Represent a high percentage of the nation's health care costs.
- A heavy toll in terms of disease, disability, quality of life, and economic costs (1).

Studies

- Co-Occurrence of Leading Lifestyle-Related Chronic Conditions Among Adults in the United States, 2002-2009
- **Earl S. Ford, MD, MPH; Janet B. Croft, PhD; Samuel F. Posner, PhD; Richard A. Goodman, MD, MPH; Wayne H. Giles, MD, MSc**
- **196,240** adults aged 25 years or older who participated in the National Health Interview Surveys from 2002 to 2009.
- It included data on cardiovascular disease (coronary heart disease, angina pectoris, heart attack, and stroke), cancer, chronic obstructive pulmonary disease (emphysema and chronic bronchitis), diabetes, and arthritis.

Result of study

- In 2002, an unadjusted 63.6% of participants did not have any of the 5 chronic conditions we assessed; 23.9% had 1, 9.0% had 2, 2.9% had 3, and 0.7% had 4 or 5.
- By 2009, the distribution of co-occurrence of the 5 chronic conditions had shifted subtly but significantly. From 2002 to 2009, the age-adjusted percentage with 2 or more chronic conditions increased from 12.7% to 14.7% ($P < .001$), and the number of adults with 2 or more conditions increased from approximately 23.4 million to 30.9 million.

Conclusion of study

- The prevalence of having 1 or more or 2 or more of the leading lifestyle-related chronic conditions increased steadily from 2002 to 2009.
- If these increases continue, particularly among younger adults, managing patients with multiple chronic conditions in the aging population will continue to challenge public health and clinical practice.

1. WHO- 60% of the world's cardiac patients are INDIANS.
2. Almost 4 mn Indians are predicted to die due to Heart disease (CHD), which constitutes 54.1% of all CVD deaths in India by 2020.

High Prevalence of Cardiometabolic Risk Factors among Young Physicians in India. A Ramachandran, C Snehalatha, A Yamuna, N Murugesan

Doctors had significantly higher ($p<0.001$) prevalence of all abnormalities except diabetes, compared with the general population (diabetes 13.3 Vs 14.8%, impaired glucose tolerance 10.7 Vs 7.4%, hypertension 35.6% Vs 27.0%, obesity 55.5% Vs 35.8%, metabolic syndrome 29.0% Vs 24.8%).

Undetected cases of diabetes and hypertension were similar in both groups. Use of alcohol was more common among doctors. Other illness was less common among doctors (13.2% Vs 21.8%, $p < 0.001$).

In India, doctors had high prevalence of metabolic disorders showing that they had not taken good care of their health.

Doctors need to be motivated to practise good healthcare habits that they advocate to their clients.

CAUSES

- STRESS
- POLLUTION
- LACK OF EXERCISE
- RADIATION EXPOSURE
- HEREDITARY
- SEDENATRY HABITS
- FOOD HABITS
- LACK OF NUTRITIOUS FOOD
- SMOKING, ALCOHOL DRINKING

LIFESTYLE

- **WHAT'S WRONG IN OUR LIVES TODAY?**
- **ABSOLUTELY EVERYTHING'S CHANGED!**
- **TIME IS AT PREMIUM!**
- **MONEY AND SUCCESS IS EVERYTHING!**

LIFESTYLE

- EXTENDED WORKING HOURS
- NO TIME FOR RELAXATION
- NO EXERCISE
- STRESS!!!

STRESS

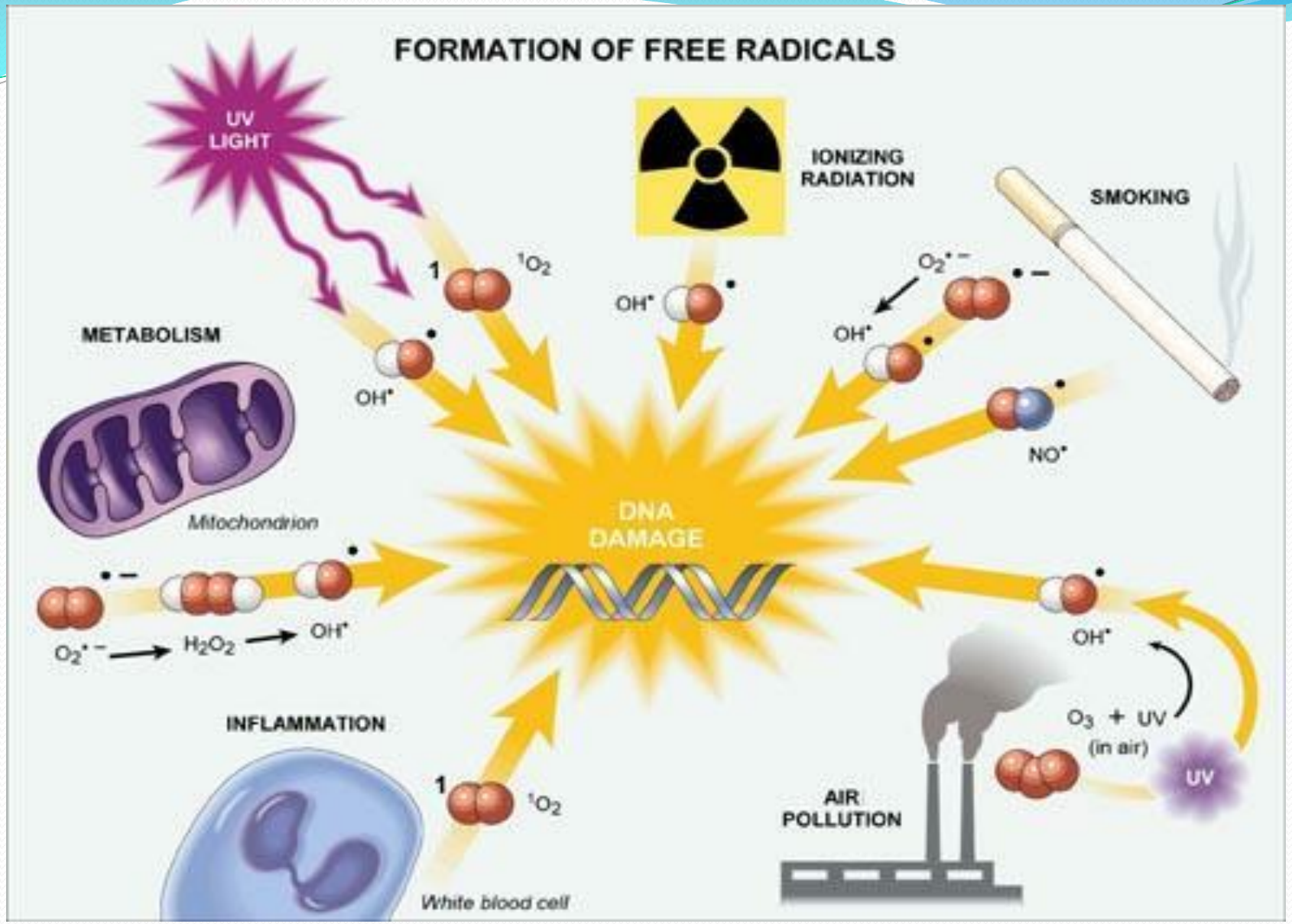
- WHAT IS STRESS?
- IT IS THE FIGHT OR FLIGHT RESPONSE IN THE HUMAN BODY!
- MOST OF THE TIME WE FIGHT!
- THIS CAUSES MENTAL AND PHYSICAL STRESS.

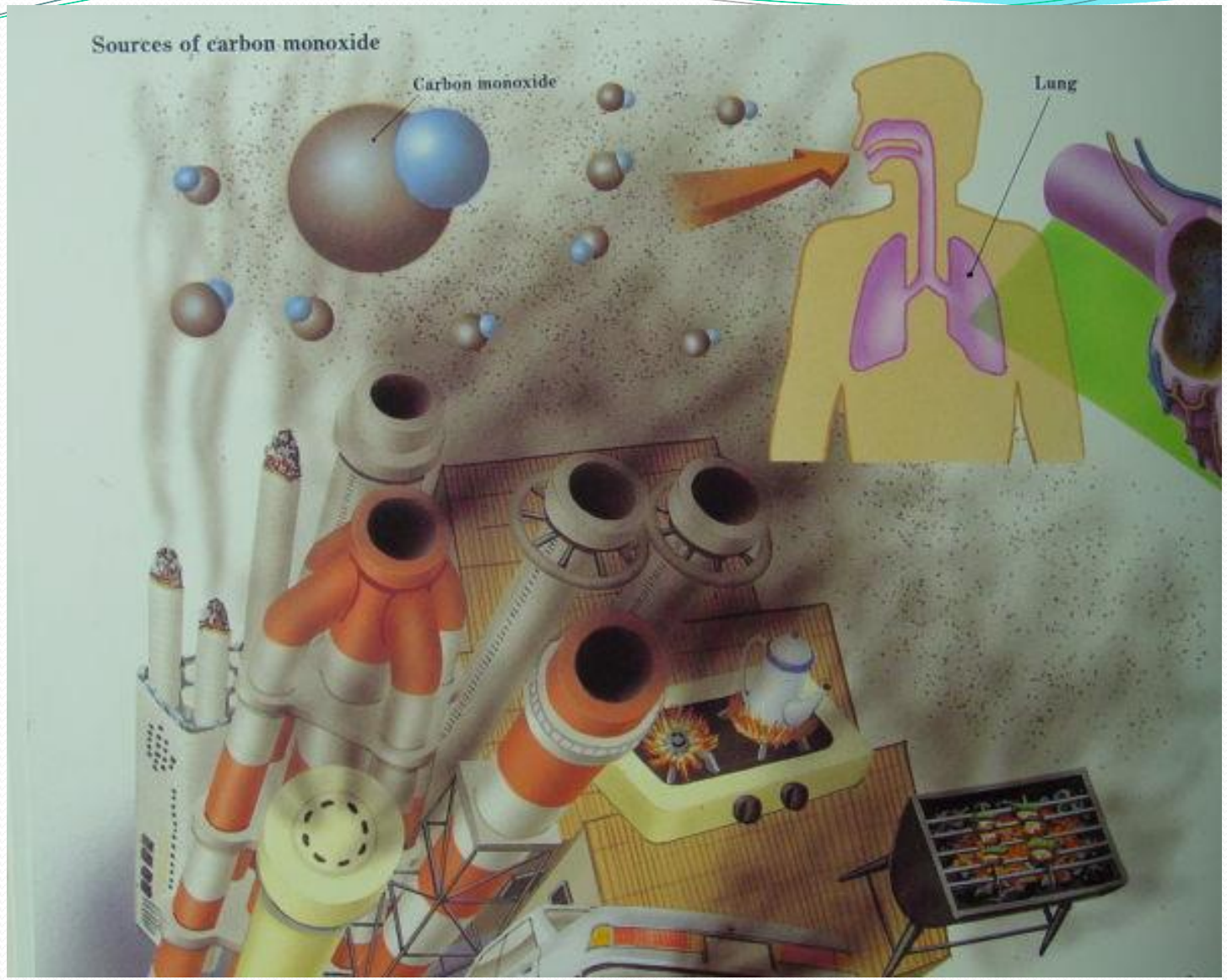
BAD EFFECTS OF STRESS!

- HIGH BLOOD PRESSURE
- DIABETES
- HEART DISEASE
- PERIPHERAL ARTERIAL DISEASE
- STROKE

FREE RADICAL-MAJORCAUSE

- FOOD + OXYGEN = ENERGY +CO_2 + FREE RADICAL
- FREE RADICAL-ENEMY WITHIN- OXYGEN ATOM WITH ONE LESS ELECTRON

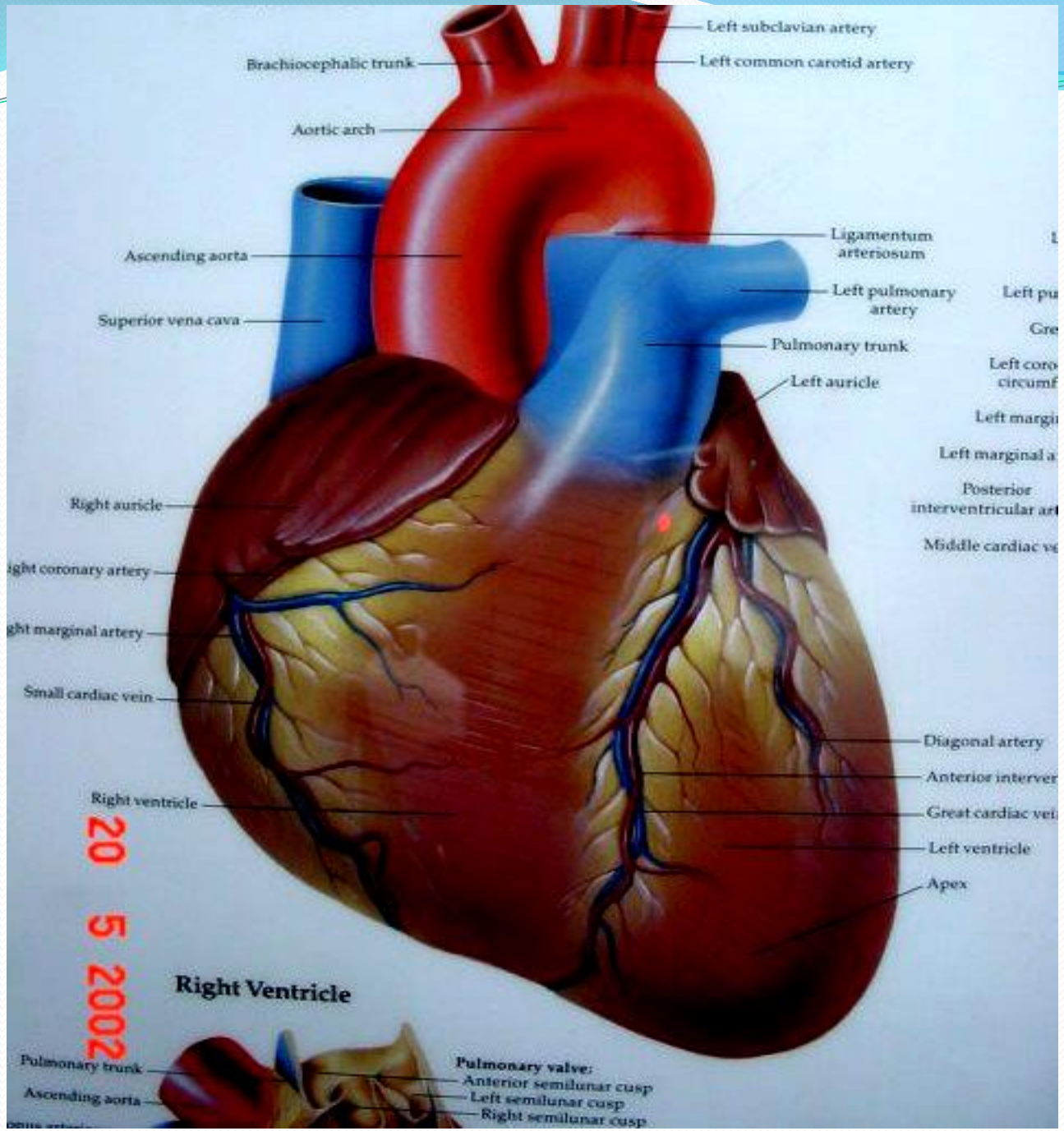

FORMATION OF FREE RADICALS
UV LIGHT
IONIZING RADIATION
SMOKING
METABOLISM
Mitochondrion
DNA DAMAGE
INFLAMMATION
White blood cell
AIR POLLUTION
(in air)
UV


Sources of carbon monoxide
Carbon monoxide
Lung

STRESS

MENTAL STRESS CAUSES AN EXTRA LOAD ON THE HEART- INCREASE IN HEART RATE AND BLOOD PRESSURE!

PROLONGED& SUSTAINED MENTAL STRESS CAUSES A HARDENING OF ALL ARTERIES IN THE BODY CAUSING HIGH BLOOD PRESSURE.


Left subclavian artery
Brachiocephalic trunk
Left common carotid artery
Aortic arch
Ligamentum arteriosum
Ascending aorta
Left pulmonary artery
Superior vena cava
Pulmonary trunk
Left auricle
Right auricle
Diagonal artery
Right ventricle
Great cardiac vei
Left ventricle
Apex
Right Ventricle
Pulmonary valve:
Anterior semilunar cusp
Left semilunar cusp
Right semilunar cusp
Pulmonary trunk
Ascending aorta

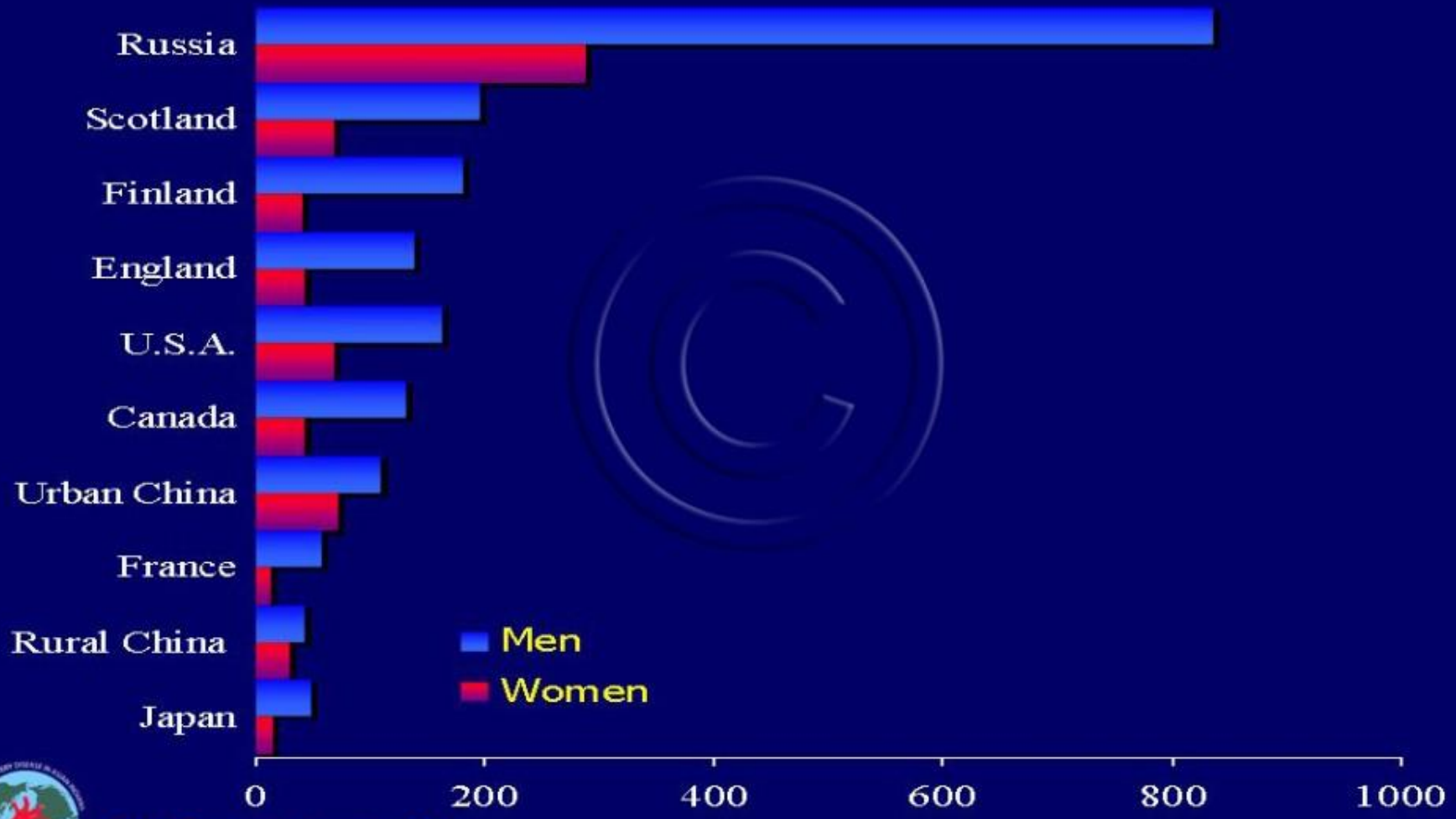
1 PERSON DIES EVERY 33 SECONDS DUE TO A HEART ATTACK IN INDIA!

A Good & Kind heart is nice

But

Keep A Healthy Heart

Age-adjusted CAD Death Rates per 100,000 per Year



AHA Statistical Update 2011

A FEW STARTLING FACTS ABOUT HEART DISEASE IN INDIA & WORLD

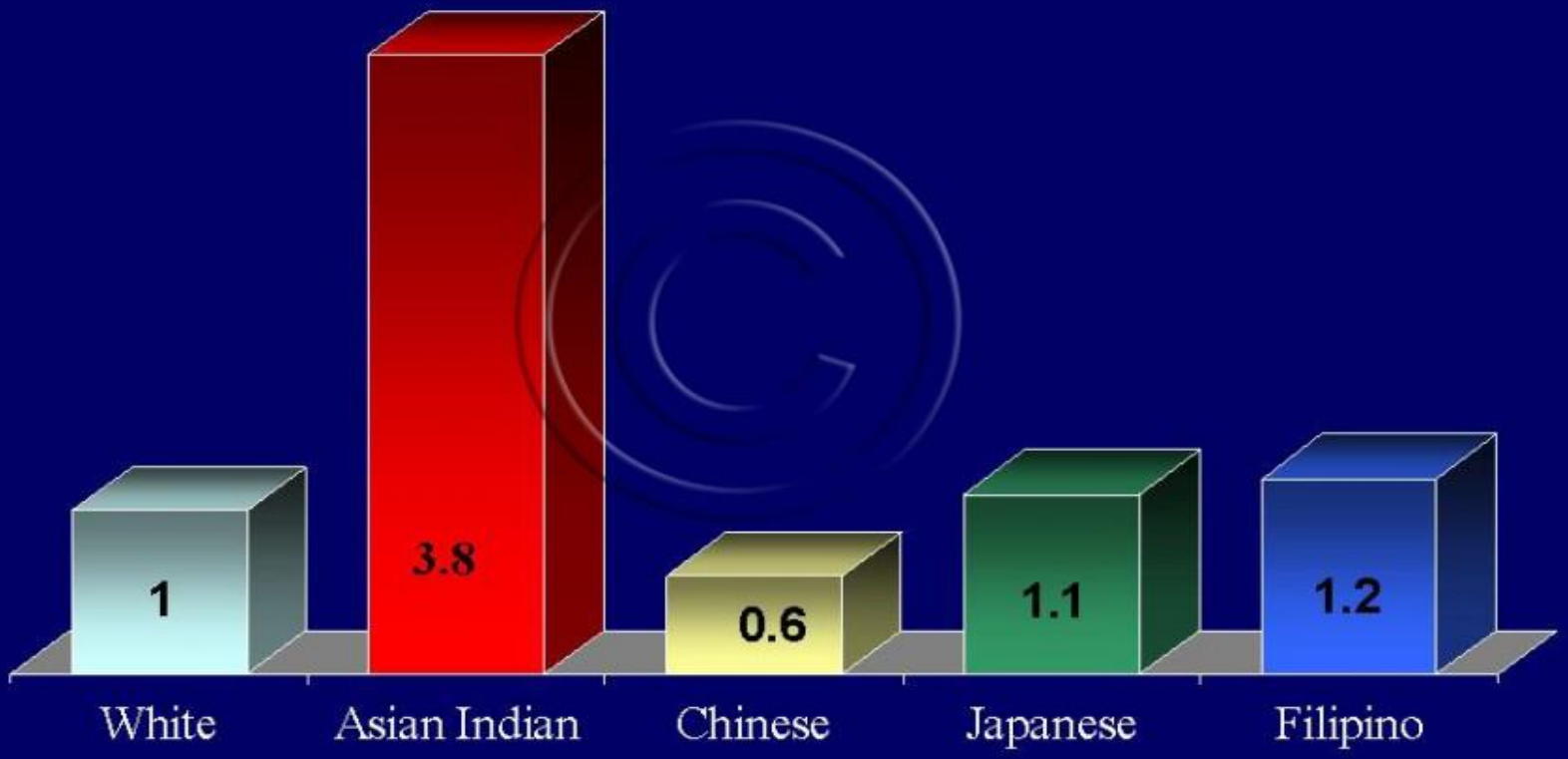
- THE INCIDENCE OF CORONARY ARTERY DISEASE IS AS FOLLOWS URBAN -MALES 65/100, FEMALES 45/100
- According to recent (2010) estimates, due to aging and population growth, the annual CVD events in China is projected to increase by >50% between 2010 to 2030, even if risk factors stay at year 2000 levels; This would result in 39 million CAD events and 130 million strokes (total 169 million).[1]
- A staggering 200 million Chinese have either high blood pressure or high blood cholesterol, and 350 million are current smokers.

A FEW STARTLING FACTS ABOUT HYPERTENSION & HEART DISEASE IN USA

- Cardiovascular disease,* cancer, and diabetes account for nearly 2 of every 3 deaths in the United States—close to 1.5 million people in 2001.[1]
- The Indian population in the US grew 68% in the last decade. (2010 census)
- That's still a shocking **prevalence** in this young population
- The high rates of CAD in Asian Indians in the US are not limited to physicians. In a large study of 13,537 Americans in California, the rate of hospitalization from CAD among Asian Indians was four times higher than in whites and six times higher than in Chinese (**Figure 009**).[5] The rates for Japanese, Filipinos, and other Asians were no different than whites.[5] Thus, Chinese and Asian Indians are at the opposite extremes with regard to heart disease.[5]
- Klatsky AL, Tekawa I, Armstrong MA, Sidney S. The risk of hospitalization for ischemic heart disease among Asian Americans in northern California. *Am J Public Health.* Oct 1994;84(10):1672-1675.

A FEW STARTLING FACTS ABOUT HYPERTENSION & HEART DISEASE IN USA

Relative Rate of Hospitalization for CAD in California: South Asians versus Other Asians



Klatsky A. Am J Pub Health 1991;81:1423

A FEW STARTLING FACTS ABOUT HEART DISEASE

THUS IF YOU LIVE IN CITIES AND TOWNS,YOU HAVE A THREE TIMES HIGHER CHANCE OF SUFFERING A HEART ATTACK.

THE W.H.O FIGURES SAY THAT THERE ARE MORE THAN FOUR MILLION HEART PATIENTS IN INDIA.

INDIA HAS THE HIGHEST RATE OF HEART ATTACKS IN THE WORLD.

A FEW STARTLING FACTS ABOUT HYPERTENSION & HEART DISEASE IN USA

- An estimated additional 45 million fall into the "prehypertensive" range of 120 to 139/80 to 89.[17]
- Elevated blood pressure is associated with a 2 to 3 times higher risk of developing congestive heart failure and substantially increases the risk of stroke, with blood pressures of 160 mm Hg systolic and/or 90 mm Hg diastolic or greater associated with a relative risk of stroke that has been estimated at 4 times greater than in individuals without hypertension.

HEART DISEASE IN WOMEN

- 10% of women between 45-64yrs. , and 25% of those over 65 yrs. Are now living with heart disease.
- Nearly 13% women over 45 yrs. have had a heart attack!
- Women who smoke may suffer a heart attack 19 years earlier.

Unchangeable Risk Factors

- Age- the older you get, the greater the chance.
- Sex- males have a greater rate even after women pass menopause.
- Race- minorities have a greater chance.
- Family history- if family members have had CHD, there is a greater chance.
- Personal Medical History- other diseases such as Diabetes Mellitus can increase chances.

Changeable Risk Factors

- Hypertension
- Serum cholesterol
- Obesity
- Diabetes Mellitus
- Physical Inactivity
- Cigarette Smoking
- Alcohol Intake

Types of Cholesterol

Lipoproteins- 4 main classes

- Chylomicrons
- Very low density lipoproteins (VLDL)
- Low Density Lipoprotein (LDL)
- High Density Lipoprotein (HDL)
- More than 1300 LDL & VLDL particles per liter of blood, increases your heart attack and death rate. The "number" of LDL particles and "size" of your LDL and HDL particles determine your heart disease risk

Good vs. BAD

- LDL is known as bad cholesterol. It has a tendency to increase risk of CHD.
- LDL's are a major component of the atherosclerotic plaque that clogs arteries.
- Levels should be <130

Good vs. BAD

- HDL is known as the good cholesterol.
- It helps carry some of the bad cholesterol out of the body.
- It does not have the tendency to clog arteries.
- Levels should be >35.
- High levels of HDL >60 can actually negate one other risk factor.

CHOLESTEROL-SOME MISCONCEPTIONS

YOU DON'T HAVE TO BE FAT/OVERWEIGHT TO HAVE HIGH CHOLESTEROL!

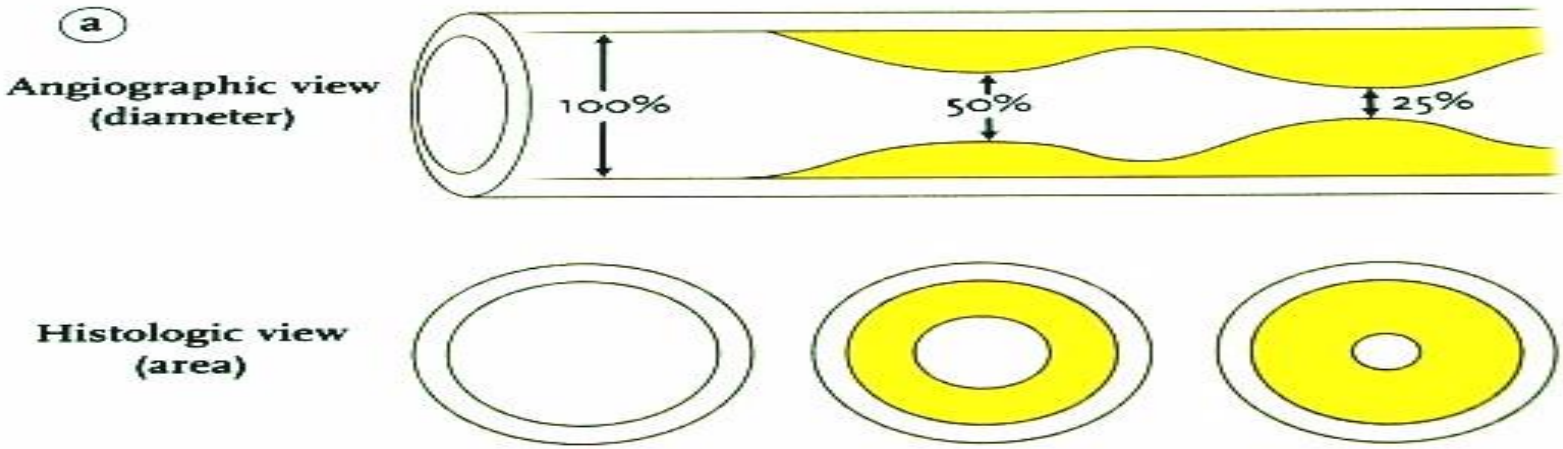
YOUR CHOLESTEROL LEVEL IS NOT ONLY RELATED TO THE AMOUNT OF FATS YOU EAT!

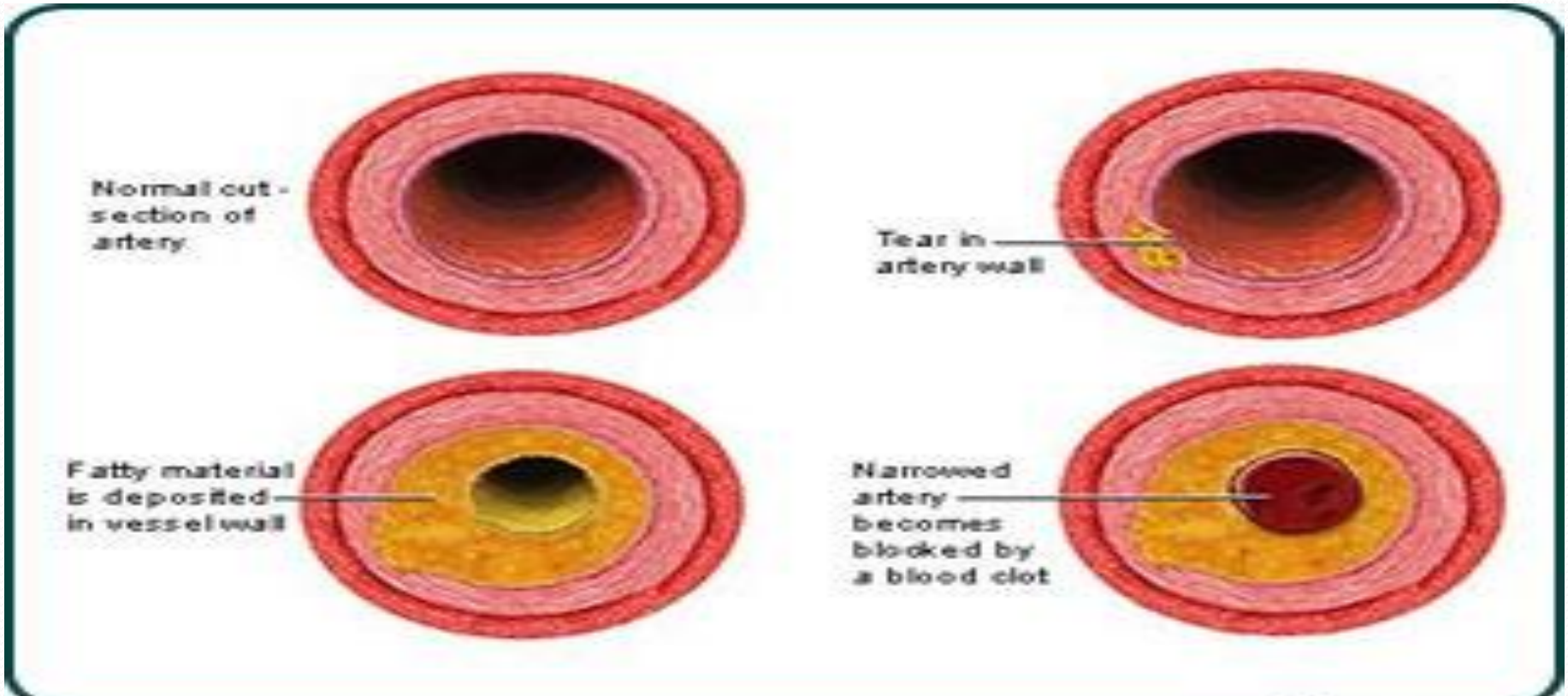
CHOLESTEROL IS MADE BY OUR BODY EVEN IF YOU STOP EATING FATTY SUBSTANCES.

ALL CHOLESTEROL IN BLOOD IS NOT BAD!

Obesity

- People who are obese have 2 to 6 times the risk of developing hypertension.
- Location of the body fat is significant.
- Pears of apples?


a
Angiographic view
(diameter)
100%
50%
25%
Histologic view
(area)


Normal cut-section of artery
Tear in artery wall
Fatty material is deposited in vessel wall
Narrowed artery becomes blocked by a blood clot

Physical Inactivity & Cigarette Smoking

- Increasing physical activity has been shown to decrease blood pressure.
- Moderate to intense physical activity for 30-45 minutes on most days of the week is recommended.

- QUIT Cigarette Smoking

- Causes an increase in blood pressure
- Usually have lower levels of HDL
- Within 1 year of quitting, CHD risk decreases, within 2 years it reaches the level of a nonsmoker.

Other important facts:

- Most heart attacks occur between 4.00am end 10am due to higher adrenaline amounts released in the body during early morning hours.
- 25% of all heart attacks are “silent”- without chest pain.
- Diabetics are at greater risk for “silent” heart attacks.
- The number of deaths increased each year by 2.5% because of the growth in the size of the population above age 65 despite of newer approach of best management.[23]

US Department of Health and Human Services, Centers for Disease Control and Prevention. *A Public Health Action Plan to Prevent Heart Disease and Stroke*. Atlanta, Ga: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2003.

90% of CVD is preventable.

- ✓ **<u>TREATMENT OF A HEART ATTACK</u>**
- ✓ ADMISSION TO AN ICU.
- ✓ ADMINISTRATION OF A CLOT BUSTER-STREPTOKINASE,UROKINASE.
- ✓ IF NOT HELPFUL-ANGIOGRAPHY FOLLOWED BY PRIMARY ANGIOPLASTY & Newer methods of Angioplasty

ADVANCES IN THE PREVENTION AND TREATMENT OF HEART DISEASES

PRIMARY PREVENTION

- STRESS REDUCTION
- LIFE STYLE MODIFICATION
- REGULAR CHECKUPS

SECONDARY PREVENTION

- PROPHYLACTIC ASPIRIN
- CHOLESTEROL LOWERING DRUGS

ADVANCES IN THE PREVENTION AND TREATMENT OF HEART DISEASES

REGULAR CHECK-UPS

- YEARLY EXERCISE ECG (STRESS TEST) FOR ALL ABOVE 35/40 YRS.
- YEARLY LIPID PROFILE TESTING
- SCREENING FOR DIABETES.

DIAGNOSIS OF HEART DISEASE

ECG, ENZYMES- TROPONINS

STRESS TEST ECHOCARDIOGRAM.

THALLIUM TEST

ANGIOGRAPHY-CT, CONTRAST ANGIO

SOLUTION

- CHANGE LIFESTYLE-↓↓STRESS,DIET PATTERN,
- Consistently lowers serum triglycerides and may also have an effect on lowering blood pressure.
- Found in oily fish such as salmon, tuna, and herring.
- Is available as a supplement.

What about Omega 3?

- Type of polyunsaturated fat.
- Consistently lowers serum triglycerides and may also have an effect on lowering blood pressure.
- Found in oily fish such as salmon, tuna, and herring.
- Is available as a supplement.

DIABETES MELLITUS

INDIAN scenario of DM

WHO - 200 million people all over the world

- ***number is likely to be doubled by 2030.***
- India - 80 million diabetics
- Diabetes in India has a younger age of onset & death due to heart attacks at a very young age. 50% more of people with diabetes
- **Responsible for 190 thousand deaths in 2012, 2.263 million disability adjusted life years**

-:Causes:-

- Genetic predisposition;
- Environmental-
  - Exposure to a virus,
  - STRESS,
  - FOOD pattern-Quality, pesticides, Habits etc
  - LEAN muscle mass,
  - Obesity

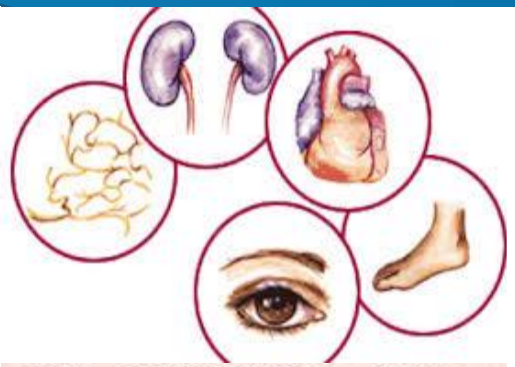
Types of Diabetes Mellitus

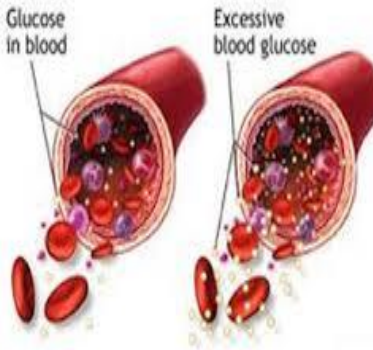
- Type 1- Insulin↓=Progressive destruction of pancreatic β ~~cells~~, Antibodies
- Type 2- Insulin resistance
- GESTATIONAL-PREGNANCY
- MODY,LADA
- SECONDARY-

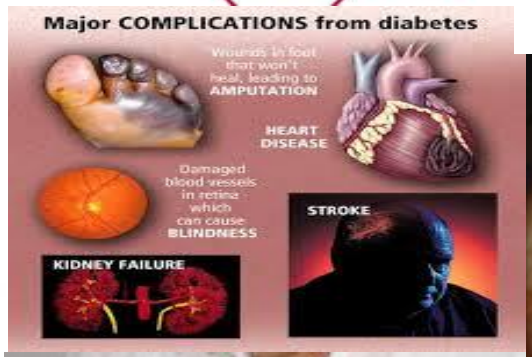
Diagnosis

- Fasting plasma glucose level >7 mmol/L=126mg/dl
- Random plasma glucose level > 11.1 mmol/L plus symptoms=200mg/dl
- Impaired Glucose Tolerance Test – patient is "challenged" with glucose load. Patient should be able to maintain normal BG. Diabetes if BG > 11.1 mmol/L 2 hr post challenge
- **Hemoglobin A1C test (glycosylated Hb)->7**
  - **Reflects amount of glucose attached to Hb over life of RBC**
  - **Indicates overall glucose control over previous 90 – 120 days**






Glucose in blood
Excessive blood glucose

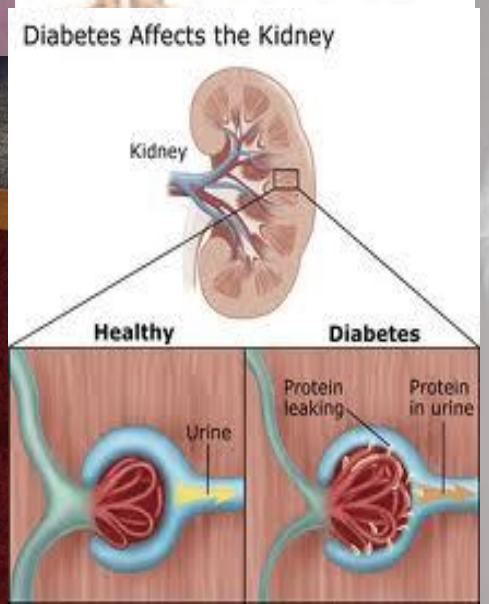

Major COMPLICATIONS from diabetes
Wounds in foot that won't heal, leading to AMPUTATION
HEART DISEASE
Damaged blood vessels in retina which can cause BLINDNESS
STROKE
KIDNEY FAILURE










Diabetes Affects the Kidney
Kidney
Healthy
Diabetes
Urine
Protein leaking
Protein in urine



Diabetes Mellitus

Chronic Complications

- Angiopathy-Macrovascular,Microvascular
- Retinopathy-Vision↓, blindness
- Nephropathy-kidney failure
- Neuropathy-difficulty in walking, pain
- Skin problems-ulcers, itching, fungal infecn
- Infection-UTI,RTI etc

Diabetes Mellitus

Nutritional Therapy

- **Overall goal of nutritional therapy**
  - **Assist people to make changes in nutrition and exercise habits that will lead to improved metabolic control**
  - **Diet rich in protein, calorie from carbohydrates, Essential fatty acids- omega 3, PUFA**

Diabetes Mellitus

Collaborative Care

- **Goals of diabetes management:**
  - **Reduce symptoms**
  - **Promote well-being**
  - **Prevent acute complications**
  - **Delay onset and progression of long-term complications**

Diabetes Mellitus

Collaborative Care

- Patient teaching
- Exercise
- Nutritional therapy
- Drug therapy
- Self-monitoring of blood glucose

MANGEMENT

- Exercise
  - Essential part of diabetes management
  - Increases insulin sensitivity
  - Lowers blood glucose levels
  - Decreases insulin resistance
- Stress Management-YOGA, Meditation
  - Emotional and physiological stress increase BG → hyperglycemia
  - Drug Therapy: Insulin, OHA NEWER MOLECULES

SOLUTIONS FOR PREVENTION OF LIFESTYLE DISEASES

EARN your health

- **E**-EXERCISE-
- **A**-ATTITUDE
- **R**-REST
- **N**-NUTRITION
  - INCRESE PROTEIN INTAKE, REDUCE FAT INTAKE
  - USE OMEGA 3, OLIVE OIL, CO Q 10, GARLIC, GREEN TEA, antioxidants,

SOLUTIONS-

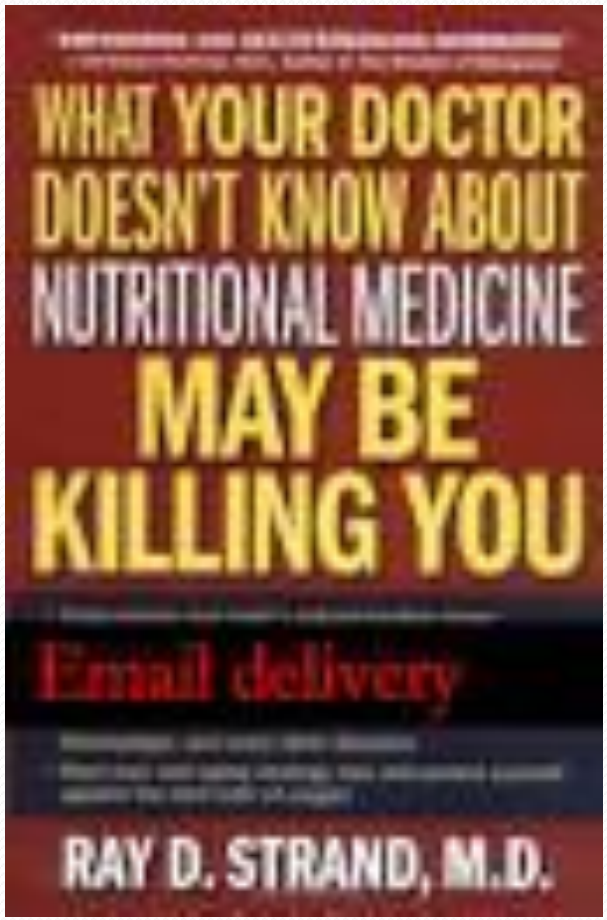
- Greater public awareness
  - About healthy lifestyles,
  - Legislative action that results in more funding for and access to primary prevention programs and research,
  - Reconsideration of the concept of the periodic medical checkup as an effective platform for Prevention,
  - Early detection and treatment.

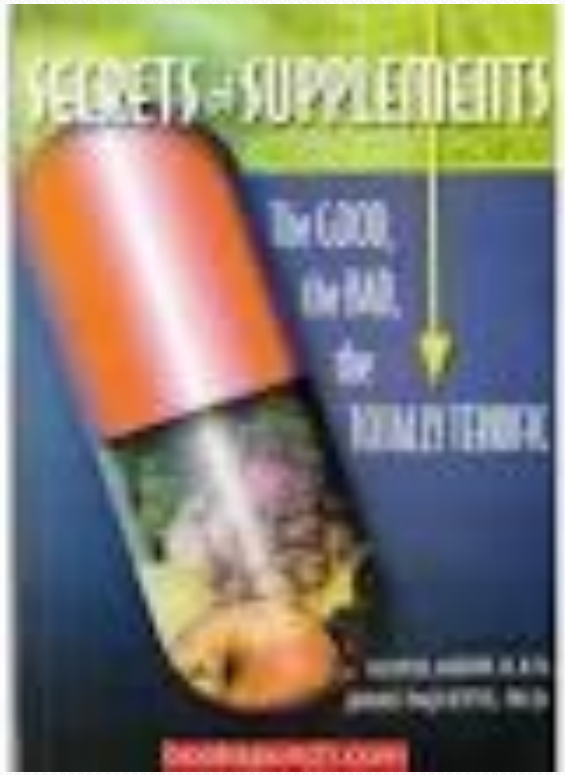
WHY SUPPLEMENTS

- ARE WE EATING NUTRIOUS DIET?
- IS THE QUALITY OF FOOD WE EAT IS GOOD?
- DOES IT CONTAIN ALL THE NECESSARY VITAMINES & MINERALS AS PER OPTIMAL RDA
- WHO & ICMR – 40% NUTRITIONAL GAP

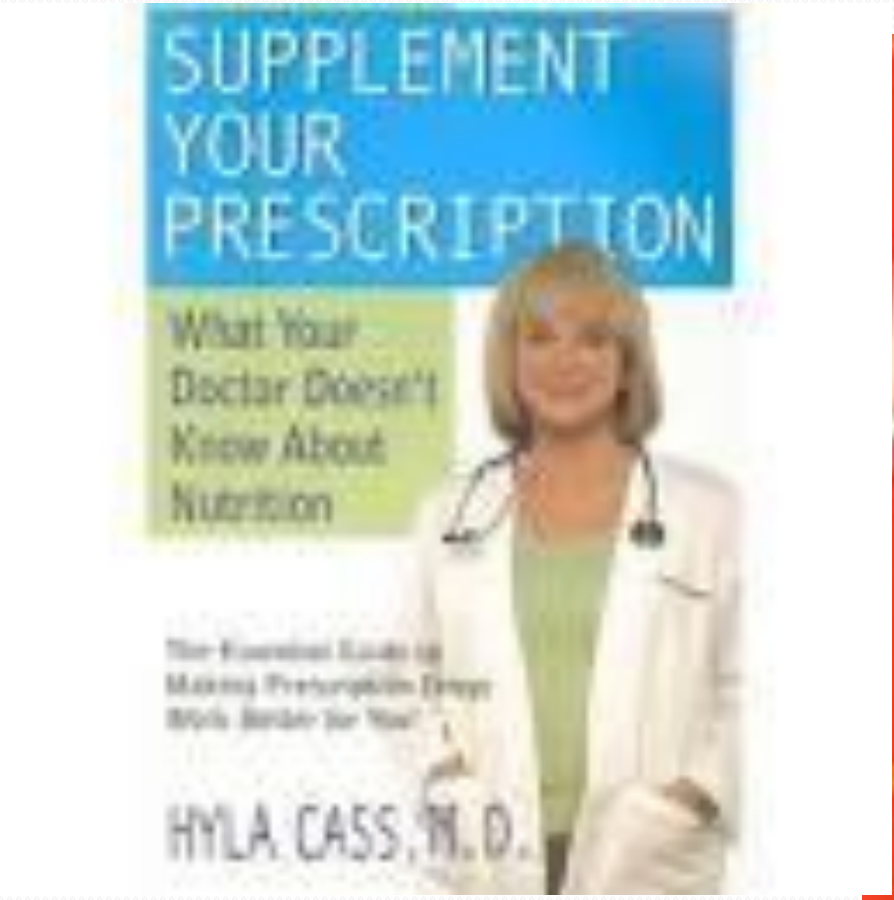


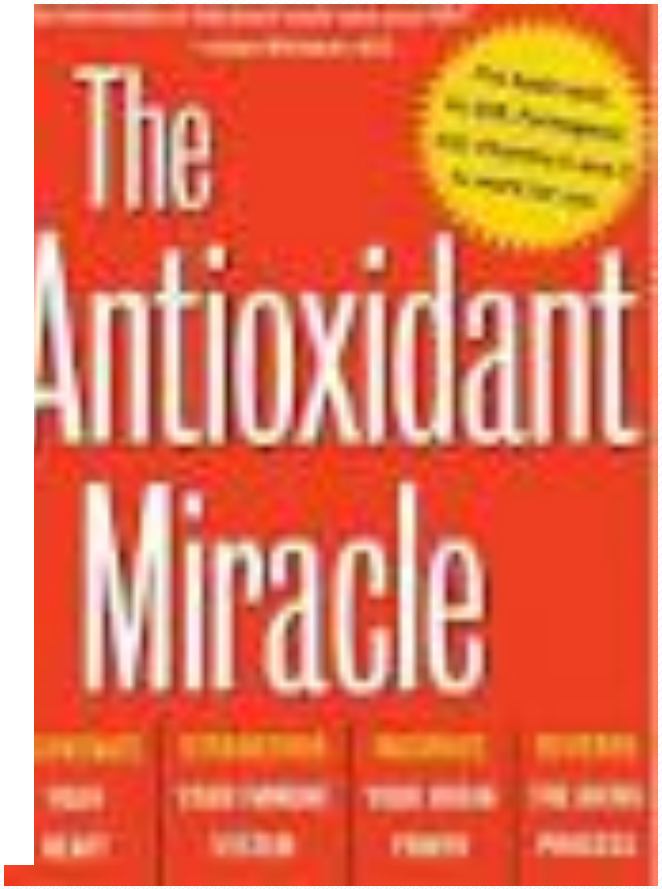
WHY SUPPLEMENTS





WHY SUPPLEMENTS





Let us meet again..

We welcome you all to our future conferences of OMICS International

7th Annual Global Pharma Summit

On

June 20-22, 2016 at New Orleans, **USA**

http://american.pharmaceuticalconferences.com/

THANK YOU

