

CVD Risk Factors

- Four out of the 10 leading risk factors to **health** are related to CVD;
- 1- hypertension
- 2-smoking
- 3-high cholesterol levels
- 4- obesity .
- These risk factors explain at least 75% of new cases of coronary heart disease, reflecting in part a population shift in the energy intake-consumption balance .

- Cardiovascular risk factors tend to cluster together, leading to multiplication of risks, but also providing an opportunity to reduce multiple risk factors by addressing their common behavioral roots .

Other risk factors include

- 5 -Physical inactivity.
- 6 – Unhealthy diet.
- 7- Diabetes.
- Life expectancy in developing countries is rising sharply and people are exposed to these risk factors for longer periods.

Newly merging CVD risk factors:

- Like low birth weight.
- folate deficiency.
- Infections.
- Social class: more frequent among the poorest in low and middle income countries.

Hypertension

- **Prevalence:**
- Hypertension is estimated to cause **4.5% of current global disease burden** and is as prevalent in many developing countries, as in the developed world.

- continuously across the whole blood pressure range Blood pressure-induced cardiovascular risk rises. Countries vary widely in capacity for management of hypertension, but worldwide the majority of diagnosed hypertensive are inadequately controlled.

- Hypertension, notably untreated or uncontrolled, is a major risk factor for cardiovascular diseases (CVD) morbidity and mortality.

- Hypertension affects **one in four adults**, putting them at higher risk for heart
- attacks, kidney disease, atherosclerosis, macular degeneration and stroke. It is
- often termed the "**silent killer**" because as many as 35% of those who have hypertension do not realize it.

- The high prevalence of undiagnosed hypertension is emphasized by the large number of cases discovered incidentally e.g. during surveys, or when patients are under going treatment for other diseases, especially in developing countries.

- **More than 60%** of all women over age 65 have hypertension. Women over age 75 are much more likely to develop the disease than men..

Risk Factors

- Uncontrollable risk factors:
- Increasing age.
- Family history.
- Race, African-Americans are at higher risk than Caucasians).
- Sodium sensitivity. .

Controllable risk factors:

- Overweight or obesity.
- Physical inactivity.
- Heavy alcohol consumption.
- Use of oral contraceptives.
- Excessive sodium intake. .

Diet:

- Dairy, Fruits & Vegetables, and low fat, high Fibers food may Lower Blood Pressure
- a recent study suggests that adding certain foods to the diet may also help. The dairy products act in lowering blood pressure in mildly hypertensive adults.
- Fat: Fatty food increases the risk.

Prevention

- Hypertension should be approached more aggressively in terms of prevention strategies, diagnosis and treatment. Provision of community sports facilities (children play grounds, safe cycling pathways, and indoor swimming pools), adapted to local culture and climate is recommended.

- Also, there is a pressing need to raise awareness among physicians and patients of the importance of adherence to treatment guidelines and recommendations, and to the potential complications of hypertension.

Coronary heart disease (CHD)

- is the leading cause of death in Industrialized countries
- CHD is also called Ischemic heart disease or coronary artery disease . These are several disorders that reduce the blood supply to the heart muscle . The underlying impairment is the atherosclerosis which remains sub clinical .

Non- modifiable risk factors are :

- Ethnicity.
- age.
- gender.
- socioeconomic status

High risk groups:

- Men have a higher CHD mortality rates than women twice for men than women , never the less, CHD is the single greatest mortality risk in women : 3 times the risk of breast cancer.
- Age : CHD is the leading cause of death for men and women over 65 years of age.
- For men- major increases in CHD begin in 35-44 year age group.
- For women – marked increase is delayed until after menopause

Modifiable Risk factors:

- Most important modifiable risk factors are :
- elevated blood cholesterol
- physical inactivity
- smoking

Other modifiable Risk Factors includes :

- diabetes
- obesity
- elevated blood homocysteine
- dietary factors
- alcohol use
- stress

- Cholesterol : CHD increases steadily with increase of cholesterol blood level.
- < 200 mg : low risk of CHD
- ≥ 240 mg : risk doubles.

- Excess CHD occurs with levels 220-310 mg for people with cholesterol levels 250-300 mg range. Each 1% reduction in cholesterol level results in about a 2% reduction in CHD morbidity and mortality .

- High levels of LDL are leading factor in progression of atherosclerosis and development of CHD.
- Evidence supporting the association of elevated blood triglycerides and CHD has been mounting in recent years. The level of HDL is inversely related to CHD however the lower level of HDL $< 35\text{mg}$ increases the risk of CHD.

- **Diabetes** is considered a major CHD risk factor
CHD is the most common cause of morbidity and mortality among diabetics – 2-4 times higher than non-diabetics.
- Risk is higher in diabetic women than diabetic men.
- Homocysteine , increased attention as a potential modifiable risk factor for acute CHD.
- Plasma levels of homocysteine , positively associated with risk of CHD.

- Homocysteine : an inborn metabolic error leads to extremely high levels of homocysteine people with this error, have strokes before age 30 years .

Obesity :

- . Body mass index (kg/m²) BMI (weight)
 - ratio of weight to height >
 (height)²
 - Overweight : BMI > 27.8 kg/m² in males
 - : BMI > 27.3 kg /m² in females

- prevalence of overweight increased dramatically
- Poverty is related to obesity in women
- Death from CHD is associated with obesity at the upper range of body weight BMI ≥ 30 kg/m² .

- Recent studies suggest that the distribution of fat in the body may affect CHD risk
- Central obesity – upper body and abdominal fat increases risk more than lower body fat.