

Cardiovascular diseases

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- Cardiovascular diseases remain the biggest cause of deaths worldwide, though over the last two decades. Cardiovascular mortality rates have declined in many high-income countries but have increased at an astonishingly fast rate in low- and middle-income countries.

Cardiovascular diseases

- are the class of diseases that involve the heart or blood vessels. While the term technically refers to any disease that affects the cardiovascular system, it is usually used to refer to those related to atherosclerosis (arterial disease). These conditions usually have similar causes, mechanisms, and treatments.

Cardiovascular diseases includes

- Coronary Heart Diseases
- Heart Attack
- Rheumatic Heart Diseases
- Atherosclerosis
- Stroke
- High Blood Pressure
- Congestive Heart Failure

Coronary Heart Diseases (CHD)

- Coronary Heart Disease is the Major form of Cardiovascular Disease
- Arteries are narrowed by fatty deposits such as cholesterol and triglycerides.
- Blood supply is thereby limited to heart muscle precipitating a heart attack.

Leading Risk Factors for CHD

- Physical Inactivity (greatest impact)
- High Blood Pressure
- Excessive Body Fat
- Low HDL-Cholesterol
- Elevated LDL-Cholesterol
- Elevated Triglycerides
- Elevated homocysteine
- High sensitivity CRP

More risk factors

- Diabetes
- Abnormal Electrocardiograms (ECG)
- Tobacco Use
- Stress
- Family History
- Age
- Gender

Heart Attack – Myocardial Infarction

- is the interruption of blood supply to a part of the heart, causing heart cells to die. This is most commonly due to blockage of a coronary artery following the rupture of a vulnerable atherosclerotic plaque, which is an unstable collection of lipids (fatty acids) and white blood cells in the wall of an artery. The resulting ischemia and oxygen shortage if left untreated for a sufficient period of time, can cause damage or death of heart muscle tissue.

Heart Attack Warning Signs

1. Chest discomfort.
2. Discomfort in other areas of the upper body.
3. Shortness of breath.

May occur with or without chest discomfort.

Other signs: These may include breaking out in a cold sweat, nausea or lightheadedness.

Stroke

- A blood vessel leading to the brain is blocked or bursts, preventing oxygen and nutrients from reaching the brain.
- 2 types: Ischemic and Hemorrhagic. Ischemic (blockage) accounts 83% of strokes . Hemorrhagic is less common (17%). Vessel bursts, blood leaks into brain.
- Risk factors for stroke same as all cardiovascular diseases (smoking, lifestyle habits, diet, blood pressure, physical inactivity, overweight)

Stroke Warning Signs

1. Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
2. Sudden confusion, trouble speaking or understanding
3. Sudden trouble seeing in one or both eyes
4. Sudden trouble walking, dizziness, loss of balance or coordination
5. Sudden, severe headache with no known cause

Importance of physical activity on Cardiovascular Diseases

- The importance of physical activity are obvious in terms of both weight control, control of carbohydrate metabolism and increases HDL-cholesterol
- Regular aerobic physical activity leads to improved transport of oxygen in the body, reducing myocardial oxygen demands for the workload and reducing the extent of ischemia during exercise
- There is evidence that aerobic exercise also leads to an increase in parasympathetic tone branch of the autonomic nervous system, reducing the risk of sudden arrhythmic cardiac death

Physical activity on Cardiovascular Diseases

- 1) Indirect impact include reduction of risk factors particularly in strengthening muscles and certain lifestyle changes
- 2) Direct impacts are the reduction resting and exercise heart rate, blood pressure, increased peripheral venous tone, improved myocardial contractility

Physical activity as a part of therapy

- It is based on aerobic exercise
- Gradually, as well as strengthening exercises
- Individual training plan according to the results of stress test (spiroergometry)
- Intensity: 60-70% VO₂ max.
- Duration: At least 3 months, 3 x per week, 1 hour

Examples of physical activity

- Cycling
- Walking
- Swimming
- Running
- Rollerskating
- Cross-country skiing
- Circuit training
- Riding on exercise bike
- Rowing

Thank you for attention