**Health Sciences CHS 232**

**cardiovuscular Health**

**Test Your Knowledge**

1. Women are about as likely to die of cardiovascular disease as they are to die of breast cancer? True or False
2. How much earlier, on average, do sedentary people develop heart disease compared with people who exercise?

 6 months, 2 years, 6 years

1. Which of the following foods would be a good choice for promoting heart health?
	1. Tofu
	2. Salmon
	3. Bananas

**Answers**

1. False. CVD kills far more. Among American women, about 1 in 2 deaths is due to CVD and about 1 in 30 is due to breast cancer.
2. 6 years. Both endurance exercise and strength training significantly improve cardiovascular health.
3. ALL THREE! Soy protein (tofu), foods with omega-3 fatty acids (salmon) and foods high in potassium and low in sodium (bananas) all improve cardiovascular health

# Types of Cardiovascular Disease

## **- Coronary heart disease (CHD, ischemic heart disease, heart attack, myocardial infarction, angina pectoris)**

## **- Cerebrovascular disease (stroke, TIA, transient ischemic attack)**

## **- Hypertensive heart disease**

## **- Peripheral vascular disease**

## **- Heart failure**

## **- Rheumatic heart disease (streptococcal infection)**

## **- Congenital heart disease**

## **- Cardiomyopathies**

**Risk Factors**

# AGE

## **Early lesions of blood vessel, atherosclerotic plaques: around 20 years - adult lifestyle patterns usually start in childhood and youth (smoking, dietary habits, sporting behavior, etc.)**

## **- Increase in CVD morbidity and mortality: in age-group of 30-44 years**

## **- Premature death (<64 years of age, or 25-64 years): in the elderly population more difficult to interpret death rate due to multiple ill health causes**

**SEX**

## **CVD affect nearly as many women as men.**

## **- Women: special case (WHO, 2004)**

## **Higher prevalence of certain risk factors in women (diabetes mellitus, high triglyceride levels, depression)**

## **Gender-specific risk factors (risks for women only) (oral contraceptives, hormone replacement therapy, polycystic ovary syndrome)**

# ETHNICITY

## **- In the US: increased cardiovascular disease deaths in African-American and South-Asian populations in comparison with Whites**

## **- Increased stroke risk in African-American, some Hispanic American, Chinese, and Japanese populations**

## **- Migration: Ni-Hon-San Study: Japanese living in Japan had the lowest rates of CHD and cholesterol levels, those living in Hawaii had intermediate rates for both, those living in San Francisco had the highest rates for both**

# Physical Inactivity

## **- Regular physical activity: protective factor**

## **- Intensity and duration (150 minutes/week intermediate or 60 minutes/week heavy)**

## **- Modernization, urbanization, mechanized transport: sedentary lifestyle (60% of global population)**

## **- Raises CVD risk and also the development of other risk factors (glucose metabolism, diabetes mellitus, blood coagulation, obesity, high blood pressure, worsening lipid profile)**

**- Physical activity: helps reduce stress, anxiety and depression**

**classification of Risk Factors**

|  |  |
| --- | --- |
| ***Major modifiable risk factors*** * High blood pressure
* Abnormal blood lipids
* Tobacco use
* Physical inactivity
* Obesity
* Unhealthy diet
* Diabetes mellitus
 | ***Other modifiable risk factors*** * Low socioeconomic status
* Mental ill health (depression)
* Psychosocial stress
* Heavy alcohol use
* Use of certain medication
 |
| ***Non-modifiable risk factors*** * Age
* Heredity or family history
* Gender
* Ethnicity or race
 | ***”Novel” risk factors*** * Excess homocysteine in blood
* Inflammatory markers (C-reactive protein)
* Abnormal blood coagulation (elevated blood levels of fibrinogen)
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**World Trends**

## **Developed countries: decreasing tendencies (e.g, USA: 30% between 1988-98, Sweden: 42%)**

## **improvement of lifestyle factors, for example, a decrease of smoking and a higher level of health consciousness )**

## **- better diagnostic and therapeutic procedures (e.g., bypass surgeries, hypertension screening, pharmacological treatment of hypertension and hypercholesterinaemia, access to health care)**

## **Developing countries: increasing tendencies**

## **- increasing longevity, urbanization, and western type lifestyle**

# Cardiovascular Prevention I.

## ***Primordial*:**

## ***Prevents the occurance of isk factors*: Social, legal and other (often nonmedical) activities which may lead to a lowering of risk factors (e.g., socioeconomic development, smoke-free restaurants)**

## ***Primary:* Controlling risk factors contributing to CVD (health education programs, anti-smoking campaign, sports programs, nutrition counselling, regular check of blood pressure and certain blood parameters, e.g., cholesterol, blood lipids, glucose)**

## ***Secondary*: Screening and treatment of symptomatic patients, set up personal risk profile**

## ***Tertiary:* Cardiovascular rehabilitation, prevention of recurrence of CVD (new heart attack: 5-7 times higher risk among CVD patients)**

* **Dietary recommendations to protect against CVD:**
* **1-fat:**

by limiting the intake of fat from dairy and meat sources, avoiding the use of hydrogenated oils and fats in cooking and manufacture of food products, using appropriate edible vegetable oils in small amounts, and ensuring a regular intake of fish (one to two times per week) or plant sources of a-linolenic acid. Preference should be given to food preparation practices that employ non-frying methods.

**2- Fruits and vegetables**

Daily intake of fresh fruit and vegetables (including berries, green leafy and cruciferous vegetables and legumes), in an adequate quantity (400-500 g per day), is recommended to reduce the risk of coronary heart disease, stroke and high blood pressure

**3- Sodium**

restricting daily salt (sodium chloride) intake to less than 5 g per day. This should take into account total sodium intake from all dietary sources, for example additives such as monosodium glutamate and preservatives. Use of potassium-enriched low-sodium substitutes is one way to reduce sodium intake. The need to adjust salt iodization, depending on observed sodium intake and surveillance of iodine status of the population, should be recognized.

**4- Potassium**

Adequate dietary intake of potassium lowers blood pressure and is protective against stroke and cardiac arrhythmias

. This may be achieved through adequate daily consumption of fruits and vegetables.

**5- dietary fiber**

Fibre is protective against coronary heart disease and has also been used in diets to lower blood pressure. Adequate intake may be achieved through fruits, vegetables and wholegrain cereals.

**6- Fish**

Regular fish consumption (1-2 servings per week) is protective against coronary heart disease and ischaemic stroke and is recommended. The serving should provide an equivalent of 200-500 mg of eicosapentaenoic and docosahexaenoic acid. People who are vegetarians are recommended to ensure adequate intake of plant sources of a-linolenic acid.

**7- Snacks**

While many with concerns about their heart have figured out what their meals should consist of, they may not be considering healthy snacks.

 natural yogurt with nuts or cantaloupe halves filled with blueberries, cottage cheese and cinnamon are all heart-healthy treats to try.

**8- Cookware**

Diet has a major impact on cardiovascular health and sometimes it comes down to not just what food you prepare, but how that food is prepared. Steaming vegetables preserves nutrients better than boiling them.

Exercise Equipment

* Major exercise equipment, like a treadmill or a stationary bike, makes a great gift and will help keep your loved one's ticker well-exercised. However, this equipment can be expensive. If you can't afford one, try something a bit smaller.
* Walking has major cardiovascular benefits.
* Jumping a rope