



- **Major modifiable risk factors for cardiovascular diseases:**

- **Alcohol:** heavy drinking damages heart muscle although 1-2 drinks per day may lead to a 30% reduction in heart disease.
- **High salt intake:** which leads to hypertension → major risk for heart attack and the most important risk factor for stroke.
- **Smoking:** especially in people who started smoking when they were young and in heavy smokers.
- **Sedentary lifestyle:** which leads to obesity (high rate of obesity: Kuwait – low rate of obesity: Oman) and hypelipidemia (↑ total cholesterol, ↑ LDL, ↓ HDL).
- **Unhealthy diet:** ↓ fruit and vegetable intake, ↑ saturated fat intake.
- **Diabetes.**

Non-modifiable risk factors for cardiovascular diseases:

- **Advanced age:** it is the most powerful independent risk factor for CVDs. The risk for stroke doubles every decade after age 55.
- **Gender:** CVDs are higher among males compared with females (premenopausal age). Risk of stroke is similar for males and females.
- **Ethnicity/ race:** ↑ in blacks and Asians.
- **Genetic predisposition:** there is an increased risk if a first-degree blood relative has had coronary heart disease or stroke before the age of 55 years (for a male relative) or 65 years (for a female relative).

- **Note:** all of those risk factors mentioned above are global which means that they lead to development of a cardiovascular disease in any population around the world. In addition, same risk factors mentioned above are considered as risk factors for developing stroke.

- **Other minor modifiable risk factors for cardiovascular diseases include the following:**

- **Poverty:** consistent inverse relationship with risk of heart disease and stroke.
- **Low educational status.**
- **Poor mental health (depression).**
- **Inflammation and blood clotting disorders.**

- **82% of NCDs (Non-Communicable Diseases) are constituted of the following:**

- **Cardiovascular diseases (CVDs).**
- **Cancers.**
- **Chronic respiratory diseases.**
- **Diabetes.**

		Causative risk factors			
		Tobacco use	Unhealthy diets	Physical Inactivity	Harmful use of alcohol
Noncommunicable diseases	Heart disease and stroke	✓	✓	✓	✓
	Diabetes	✓	✓	✓	✓
	Cancer	✓	✓	✓	✓
	Chronic lung disease	✓			

- **Health burden of cardiovascular diseases:**

- It is the 1st cause of death globally (representing around 31% of all global deaths). Therefore, we can say that CVDs are the leading cause of death in most of GCC countries.



- Over $\frac{3}{4}$ of CVDs deaths occur in low and middle-income countries. Notice that these deaths occur almost equally between males and females. Notice that this issue puts a lot of stress on health services of low-income countries which are already suffering from communicable diseases. Therefore, there will be a double burden from communicable and non-communicable diseases.
- 10% of the global disease burden (DALYS: Disability-Adjusted Life Years) is attributed to CVDs. DALYS is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.
 - ✓ $DALY = YLD + YLL$
YLD: Years Lived with Disability.
YLL: Years of Life Lost.
- PMR (Proportional Mortality Ratio: number of deaths within a population due to CVDs over the total number of death within the same population during a time period) ranges from 24%-41%

- **Physical activity:**

- **Definition:** any body movement -produced by skeletal muscles- which requires energy expenditure.
- **Exercise (type of physical activity):** any body activity performed for various reasons including strengthening muscles and the cardiovascular system, weight loss or maintenance and merely enjoyment.
- **What are the barriers in GCC countries which prevent us from doing physical activity?**
 - ✓ Females: clothing, no support from husband and other competing priorities.
 - ✓ Both genders: climate ☺
- **WHO recommendations of physical activity according to age:**

Age group	WHO Guidelines	
	Duration	Intensity
0-5 Years	None	None
5-17 years old	60 min daily	Moderate to vigorous intensity
18-64 years old	150 min per week / 70 min week	Moderate / vigorous / combination of both
65 years and above	150 min per week / 70 min week	Moderate / vigorous / combination of both