

Risk factors

The majority of cardiovascular disease (CVD) is caused by risk factors that can be controlled, treated or modified, such as high blood pressure, cholesterol, overweight/obesity, tobacco use, lack of physical activity and diabetes. However, there are also some major CVD risk factors that cannot be controlled.

In terms of attributable deaths, the leading CVD risk factor is raised blood pressure (to which 13 per cent of global deaths is attributed), followed by tobacco use (9 per cent), raised blood glucose (6 per cent), physical inactivity (6 per cent) and overweight and obesity (5 per cent).¹

Modifiable risk factors:

Hypertension (high blood pressure)

Blood pressure is measured as two numbers, written one over the other and recorded in millimetres of mercury – for example, 120/78 mm Hg. The top (higher) number is the systolic pressure – the pressure in the arteries as the heart is contracting – and the bottom (lower) number is the diastolic pressure – the pressure in the arteries when the heart is relaxed between beats. High blood pressure is defined as a repeatedly elevated systolic pressure of 140 or higher OR a diastolic pressure of 90 or higher.

- Globally, nearly one billion people have high blood pressure (hypertension); of these, two-thirds are in developing countries.²
- Hypertension is one of the most important causes of premature death worldwide and the problem is growing; in 2025, an estimated 1.56 billion adults will be living with hypertension.²
- Hypertension is the leading cause of CVD worldwide.¹
- People with hypertension are more likely to develop complications of diabetes.³
- High blood pressure is called the “silent killer” because it often has no warning signs or symptoms, and many people do not realize they have it; that is why it's important to get blood pressure checked regularly.

Tobacco use

- Smoking is estimated to cause nearly 10 per cent of all CVD.¹
- The risk of developing CVD is higher in female smokers, young men, and heavy smokers.⁴
- There are currently about 1 billion smokers in the world today.¹
- Within two years of quitting, the risk of coronary heart disease is substantially reduced, and within 15 years the risk of CVD returns to that of a non-smoker.^{5,6}

Raised blood glucose (diabetes)

- Diabetes is defined as having a fasting plasma glucose value of 7.0 mmol/l (126 mg/dl) or higher.¹
- In 2008, diabetes was responsible for 1.3 million deaths globally.¹
- In 2008, the global prevalence of diabetes was estimated to be 10 per cent.¹
- CVD accounts for about 60 per cent of all mortality in people with diabetes.¹
- The risk of cardiovascular events is from two to three times higher in people with type 1 or type 2 diabetes and the risk is disproportionately higher in women.¹
- In some age groups, people with diabetes have a two-fold increase in the risk of stroke.¹
- Patients with diabetes also have a poorer prognosis after cardiovascular events compared to people without diabetes.¹
- Cardiovascular risk increases with raised glucose values.¹
- Lack of early detection and care for diabetes results in severe complications, including heart attacks, strokes, renal failure, amputations and blindness.¹
- Primary care access to measurement of blood glucose and cardiovascular risk assessment as well as essential medicines including insulin can improve health outcomes of people with diabetes.¹

Physical inactivity

- Insufficient physical activity can be defined as less than five times 30 minutes of moderate activity per week, or less than three times 20 minutes of vigorous activity per week, or equivalent.¹
- Insufficient physical activity is the fourth leading risk factor for mortality.¹
- Approximately 3.2 million deaths and 32.1 million DALYs[†] – representing about 2.1 per cent of global DALYs – each year are attributable to insufficient physical activity.¹
- People who are insufficiently physically active have a 20 to 30 per cent increased risk of all-cause mortality compared to those who engage in at least 30 minutes of moderate intensity physical activity most days of the week.¹
- In 2008, 31.3 per cent of adults aged 15 or older (28.2 per cent men and 34.4 per cent women) were insufficiently physically active.¹
- The prevalence of insufficient physical activity is higher in high-income countries compared to low-income countries due to increased automation of work and use of vehicles for transport in high-income countries.¹
- High-income countries have more than double the prevalence of insufficient physical activity compared to low-income countries for both men and women, with 41 per cent of men and 48 per cent of women being insufficiently physically active in high-income countries compared to 18 per cent of men and 21 per cent of women in low-income countries.¹

[†] DALY- disability-adjusted life year is a measure of overall disease burden expressed as the number of years lost due to ill-health, disability or early death.

Unhealthy diet

- High dietary intakes of saturated fat, trans-fats and salt, and low intake of fruits, vegetables and fish are linked to cardiovascular risk.¹
- Approximately 16 million (1.0 per cent) DALYs and 1.7 million (2.8 per cent) of deaths worldwide are attributable to low fruit and vegetable consumption.¹
- The amount of dietary salt consumed is an important determinant of blood pressure levels and overall cardiovascular risk and the WHO recommends a population salt intake of less than 5 grams/person/day to help the prevention of CVD.¹
- Frequent consumption of high-energy foods, such as processed foods that are high in fats and sugars, promotes obesity compared to low-energy foods.¹
- High consumption of saturated fats and trans-fatty acids is linked to heart disease; elimination of trans-fat and replacement of saturated with polyunsaturated vegetable oils lowers coronary heart disease risk.¹
- Adequate consumption of fruit and vegetables reduces the risk of CVD.¹
- A healthy diet can contribute to a healthy body weight, a desirable lipid profile and a desirable blood pressure.¹
- It is estimated that decreasing dietary salt intake from the current global levels of 9–12 grams/day to the recommended level of 5 grams/day would have a major impact on blood pressure and CVD.¹

Cholesterol/lipids

- Raised blood cholesterol increases the risk of heart disease and stroke.¹
- Globally, one third of ischaemic heart disease is attributable to high cholesterol.¹
- Overall, raised cholesterol is estimated to cause 2.6 million deaths (4.5 per cent of total) and 29.7 million DALYS, or 2 per cent of total DALYS globally.¹
- In 2008, the prevalence of raised total cholesterol among adults – defined as total cholesterol of 6.2 mmol/l (240 mg/dl) or higher – was 9.7 per cent (8.5 per cent for males and 10.7 per cent for females).¹
- Lowering raised blood cholesterol reduces the risk of heart disease.¹
- In 2008, the global prevalence of raised total cholesterol among adults was 39 per cent (37 per cent for males and 40 per cent for females).¹
- The prevalence of raised total cholesterol noticeably increases according to the income level of the country. In low-income countries, around 25 per cent of adults have raised total cholesterol, while in high-income countries, over 50 per cent of adults have raised total cholesterol.¹

Overweight and obesity

- Obesity is strongly related to major cardiovascular risk factors such as raised blood pressure, glucose intolerance, type 2 diabetes and dyslipidaemia.¹
- Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3 per cent) of global DALYs are caused by overweight or obesity.¹

- In 2008, 34 per cent of adults over the age of 20 were overweight with a body mass index (BMI, a measure of weight relative to height).¹
- In 2008, 9.8 per cent of men and 13.8 per cent of women were obese (with a BMI greater than or equal to 30 kg/m²), compared to 4.8 per cent for men and 7.9 per cent for women in 1980.¹
- To achieve optimal health, the median BMI for adult populations should be in the range of 21–23 kg/m², while the goal for individuals should be to maintain a BMI in the range 18.5–24.9 kg/m².¹
- The prevalence of raised BMI increases with income level of countries, up to upper-middle-income levels. The prevalence of overweight in high-income and upper-middle-income countries was more than double that of low- and lower-middle-income countries.¹
- For obesity, the difference more than triples from 7 per cent obesity for both males and females in lower-middle-income countries to 24 per cent in upper-middle-income countries.¹

Non-modifiable risk factors:

In addition to the modifiable risk factors, there are some risk factors that cannot be changed. However, people in these high-risk categories should receive regular check-ups.

Age

- CVD becomes increasingly common with advancing age. As a person gets older, the heart undergoes subtle physiologic changes, even in the absence of disease.
- The heart muscle of the aged heart may relax less completely between beats, and as a result, the pumping chambers become stiffer and may work less efficiently.
- When a condition like CVD affects the heart, these age-related changes may compound the problem or its treatment.

Gender

- A man is at greater risk of heart disease than a pre-menopausal woman. Once past the menopause, a woman's risk is similar to a man's. Risk of stroke, however, is similar for men and women.

Family history

- A family's history of CVD indicates a person's 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), the risk increases.

References

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