



Insure your heart against CVD!

With AyuGen's CVD Risk Assessment Test

WHY TAKE UNNECESSARY RISK? TAKE A STEP NOW WHEN YOU CAN ! NOTHING HAPPENS OVERNIGHT; THEREFORE PREVENTION TAKEN EARLY WILL AVOID SEVERE COMPLICATIONS LATER.

India has the largest pool of cardiac patients. Cardiovascular disease (CVD) is the leading cause of death in the population today. **Don't be one of them!**

Lifestyle, diet and family history are major contributory factors for poor heart health conditions in India. It is estimated that by 2020 CVD may be responsible for killing approximately 13,000 Indians daily if the correct preventive strategies are not followed ⁽¹⁾.

However, your heart can be insured against CVD by understanding its genetic pre-disposition to it.

Many of us may relate to one of the following or similar other situations related to heart health:

- My father and grandfather died of heart attack, am I likely to get heart attack some day?
- I know my sister had diabetes and my aunt also had diabetes, what are my chances of getting diabetes?
- My mother, her mother, and my mother's sister have high blood pressure, am I at risk for high blood pressure?

The answer to most of such situations is Yes and or No. Why is this?

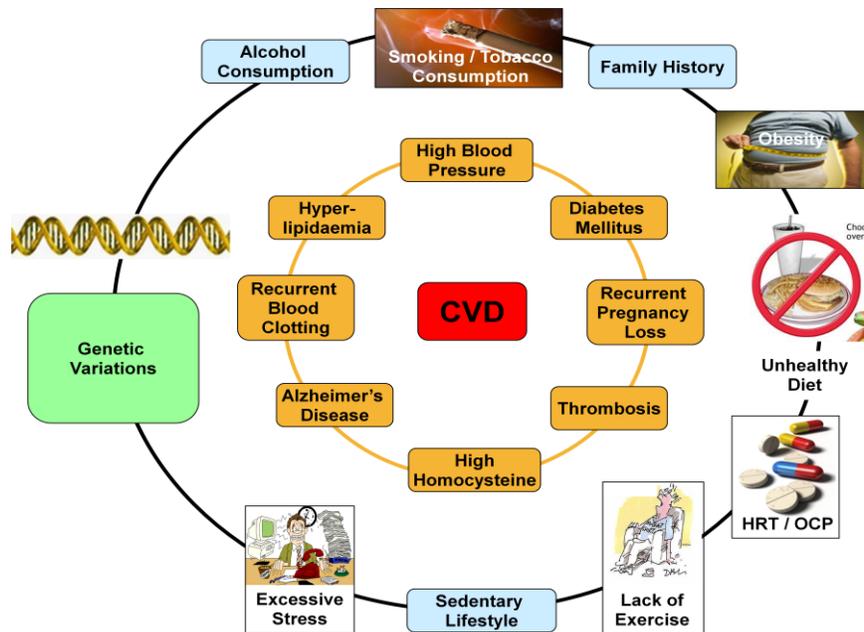
Let's first understand what is CVD.

CVD stands for cardiovascular disease – disease of heart & blood vessels. The causes of cardiovascular disease are many like high cholesterol, high blood pressure, obesity, diabetes, unhealthy diet, excessive stress, smoking etc. Many of these risk factors along with your genes contribute to the development of this disease.

What is the link between genes and cardiovascular disease (CVD)

- CVD like diabetes and cancer is manifested due to interaction between variations in more than one gene associated with it and multiple environmental factors like diet, smoking, alcohol consumption, obesity, stress to name a few. E.g.: Genetic changes in the gene Factor V Leiden and Factor II Prothrombin are common causes for deep vein thrombosis (DVT). However, if other environmental risk factors are also present like (less mobility (e.g. long distance travel) & smoking) the risk of DVT increase by multifold.
- Even though routine diagnostic blood tests can diagnose acute as well as chronic cases, these tests have their limitations on deciding the long term interventional strategies since the results of such tests depend on the patient's current health status & environmental exposure.

- To understand risk or tendency to develop a disease & to find out the cause of a particular problem it is equally important to determine the presence of genetic risk factors.



How genetic markers along with the environmental factors cause problems?

Example 1 - Apolipoprotein E gene is involved in maintaining blood levels of cholesterol. People with E4 genetic change in the gene Apolipoprotein E have about 40% increased risk of coronary heart disease (CHD) than those without this gene change (Song et al.). This gene effect is pronounced in people who smoke as it increases the deleterious effect on the arterial wall thickening. Therefore, people with E4 genetic change should follow a low-fat diet and avoid both active & passive smoking life long (Petot et al.).

Example 2 – In the normal person, factor V functions as an important factor in the clot formation. It is estimated that women with genetic change in factor V Leiden gene have a 4- to 7-fold increased risk of venous thrombosis. Oral contraceptives confer a 3-fold increase in risk. In the presence of both risk factors, the relative risk is 34-fold increased (Vandenbroucke et al.). This is likely due to the fact that oral contraceptives induce activated protein C resistance, making the biochemical defect associated with factor V Leiden worse.

AyuScreen CVD test – a new way to healthier heart for long term

- AyuGen assesses your genetic, familial, clinical and environmental exposures and come up with a comprehensive report on heart health to aid clinical decision making.
- AyuGen has carefully selected multiple genetic markers to help identify the genetic predisposition to CVD.
- AyuGen also provides relevant genetic counseling to you and assist your doctor during the test request process as needed.
- Our test presently looks for genetic variants that are known to be involved in the following conditions.
 - Dyslipidaemia
 - DNA damage / Folate metabolism / Hyperhomocysteinemia
 - Haemostasis / Thrombophilia

Who should do the test?

This test is recommended for:

- Anyone who would like to assess his / her CVD (heart health) risk & take preventive measures for a healthy heart
- Individuals with family history of heart disease (Atherosclerosis, deep vein thrombosis, heart attack, high lipid levels, pulmonary embolism, hypertension, diabetes)
- Individuals having existing CVD, to identify causative factors, provide guidelines on how to reduce risk of recurrent event or identify the risk of occurrence of other disorders from the CVD spectrum.
- Our thrombotic panel can also be used for women suffering from recurrent pregnancy loss.

Benefits - One time investment but lifelong benefits

- This once-in-a-lifetime test will help you classify your risk from low or intermediate to high based on the result of the test
- The test helps identify combination of genetic & environmental risk factors that can be targeted for prevention of this disease
- Helps in determining effective & *personalized* preventive strategies
- One-time test with easy to follow *personalized* recommendations
- It will identify the environmental risk factors that need a careful monitoring in the long run (e.g: avoidance of smoking if E4 genetic variation present)

Sample Requirements

This test requires 3ml of peripheral blood or saliva or buccal swab collected in special containers.

Turnaround Time

8-10 business days.

References:

- 1) Gupta R. Burden of Coronary Heart Disease in India. Indian Heart J. 2005; 57: 632-638.
- 2) Song Y, Stampfer MJ, Liu S. Meta-analysis: Apolipoprotein E genotypes and risk for coronary heart disease. Ann Intern Med 2004; 141:137-147.
- 3) Petot GJ, Traore F, Debanne SM, et al. Interactions of apolipoprotein E genotype and dietary fat intake of healthy older persons during mid-adult life. Metabolism 2003; 52: 279-281.