Through Exploratory Data Analysis, we can find that some single factors such as resting blood pressure (trtbps), age, exercise induced angina (exang), and fasting blood sugar (fbs) have little effect on heart disease.

It is surprising that the age is not a significant factor in heart disease. Typically, the general belief is that heart attack increases with age. In fact, the number of people at risk of heart attack decreases as age progresses and heart attack risk decreases after age 55. But some other factors do affect the chance of heart attack.

The first factor is sex. Female patients are at higher risk for heart attack than males. Because a woman's heart is usually smaller, as are some of its inner chambers. Also, the walls are thinner. While women's hearts beat faster than men's, about 10 percent less blood was expelled with each squeeze. As a result, women's hearts have a heavier load.

The second factor is the number of major vessels (Ca). This variable is the number of great vessels colored by fluoroscopy. In more than half of the patients, the number of large vessels is 0. That is, the number of large vessels colored by fluoroscopy is absent. And in about half of the rest patients, the number of large vessels is 1. That’s because most patients have an occlusion in their veins. Therefore, large vessels cannot be observed with the fluoroscopy technique. Specifically, heart disease can occur when one or more coronary arteries are blocked. Conversely, heart disease can also cause thrombus. The reason is that cardiac insufficiency can cause the insufficient blood supply to human tissues. In addition, the arteries of these patients may be hardened, the arterial lumen is too narrow, and the blood viscosity remains high. These are all conditions for thrombosis.

The third factor is the cholesterol. Cholesterol value in most patients is between 200-and 280. High cholesterol can also cause blood clots, with the same consequences as the small number of major vessels (the second factor).

Chest Pain type chest pain type (Cp) is another factor that can affect the chance of heart attack. Only 8% of the patients have non-anginal pain. And half of the patients have asymptomatic angina. Angina is caused by acute transient myocardial ischemia and hypoxia. When suffering from heart disease, the blood supply capacity of the myocardium is insufficient, and too many metabolites accumulated in the myocardium cannot be transported away. These metabolites stimulate the afferent sympathetic nerves of the heart and afferents to the brain to produce pain. Therefore, angina pectoris is an important symptom of heart disease.

The last factor is maximum heart rate achieved (thalach): The higher the maximum reached heart rate, the higher the probability of the patient having a heart attack. However, after a value of 150, patients with a low probability of having a heart attack decrease, while patients with a high-risk probability increase incredibly.