



FINAL REPORT

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Heart Disease Detection Tool

Goal of the Tool

The term "heart disease" is often used interchangeably with the term "cardiovascular disease." Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect your heart's muscle, valves or rhythm, also are considered forms of heart disease.

According to the study from the American Heart Association, 121.5 million Americans, or about 48.5 percent, dealt with heart or blood vessel disease as of 2016. The study says deaths from cardiovascular disease rose from more than 836,000 in 2015 to more than 840,000 in 2016.

However, many forms of heart disease can be prevented or treated with healthy lifestyle choices. Our heart disease detection tool can be used to detect your probability of having a heart disease. This tool can warn people to get a thorough body check at hospital if he/she found the probability is high. We built the tool based on **machine learning algorithms** with **92%** accuray.

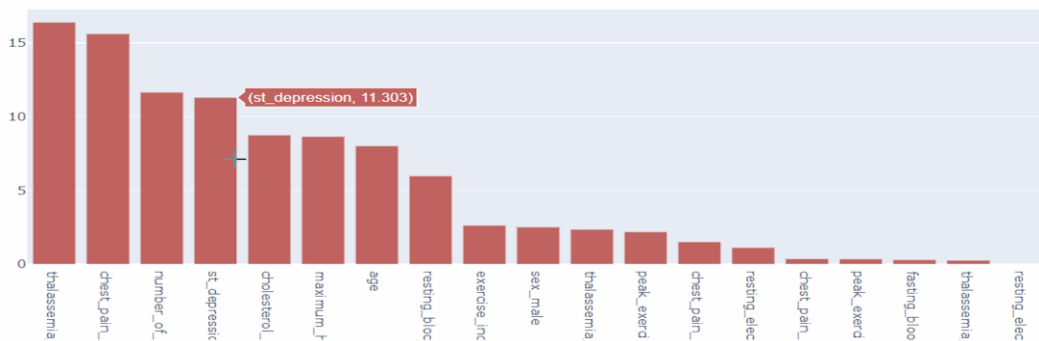
Introduction of the Tool

To make sure you totally understand how to use the tool, we created a gif picture below showing you how the tool works.

To be more specifi, there are three main parts.

First, there's a feature importance graph of factors those have high impact on heart disease. The higher value it is, the more importance it accounts for. You can also adjust your habits or lifestyle choices based on the feature importance graph. For example, if you had a chest pain, you should go to see the doctor, since the chest pain is an important factor that determines a heart disease. Below is the feature importance graph.

The importance of various factors that cause heart disease



Second, there are multiple questions below the graph. To know your probability of having a heart disease, you just simply need answer those questions. Below is showing you what questions we have.

Have you ever experienced chest pain, typical angina ?

☒ Yes ☐ No

Do you have symptoms of thalassemia repair defects ?

☒ Yes ☐ No

How many number of major vessels in your heart ?

☐ 0 ☒ 1 ☐ 2 ☐ 3 ☐ 4

Is your fasting blood sugar lower than 120g/ml ?

☒ Yes ☐ No

Do you have symptoms of exercise induced angina ?

☒ Yes ☐ No

Is the resting electrocardiographic measurement normal

☐ Yes ☒ No

Please choose your gender

☐ Male ☒ Female

Last part is the prediction results and suggestions. Once you complete those questions, you will get an probability. If you find the probability is relatively high, we would suggest you visiting the link about heart disease provided and even going to see a doctor.