**Heart Disease Prediction (Questions and Answers)**

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**Research Questions:**

1. Can we predict who is more prone to heart disease with the values obtained from our dataset?
2. What aged people are more susceptible to heart health problems?
3. Is gender related to heart health issues? Which gender is more affected?
4. How is the individual’s blood pressure related to heart health?
5. Is Heart disease risk more for individuals with high cholesterol problems?
6. How is the individual’s blood sugar level related to heart health?
7. Does chest pain type influence the risk of heart disease?
8. Do electrocardiographic test results suggest the likelihood of heart disease?
9. How is heart disease related to Max heart rate?
10. Is Exercise-induced angina related to heart disease?

**Answers:**

1. Yes, we can predict the individuals who are at risk of Heart Disease with the analysis done from our data set.
2. From our analysis, we see that increasing age (age: 0.28) is a major risk factor for heart disease. The arteries tend to narrow and harden over time, increasing the risk of coronary artery disease, heart attack, and stroke.
3. Men are at higher risk of heart disease than women. However, after menopause, a woman's risk increases to almost match that of men.
4. High levels of (cholesterol: 0.09) cholesterol are associated with an increased risk of heart disease, while high levels of HDL (high-density lipoprotein) cholesterol are protective. Cholesterol can build up in the walls of arteries, leading to atherosclerosis.
5. High fasting blood sugar levels (fasting blood sugar: 0.27) can contribute to the narrowing of the arteries and increase the risk of heart disease. A fasting blood sugar level less than 100 mg/dL is considered normal. 100-125 mg/dL is considered prediabetes, and 126 mg/dL or higher on two separate tests means you have diabetes.
6. Hypertension (resting bp s: 0.11) damages the arteries and makes them more susceptible to plaque buildup, increasing the risk of heart disease and stroke.
7. Downsloping Peak Exercise ST Segment (ST slope 0.55): The presence of a downsloping peak exercise ST segment in an ECG report is associated with a higher probability of heart disease.
8. Non-anginal chest pain (chest pain type: 0.47) also shows a significant positive correlation with heart disease.
9. Exercise-induced angina (exercise angina: 0.49) is associated with a lower likelihood of heart disease.
10. A high maximum heart rate (Max heart rate: -0.40) achieved during testing is associated with a higher likelihood of heart disease.

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Here is the chart which depicts the correlation between various features:

A chart with different colors

Description automatically generated with medium confidence