

Heart Disease Analysis Report

Automated Insights & Performance Metrics

Executive Summary

The dataset comprises 20 records of individuals diagnosed with heart disease, capturing various cardiovascular health indicators. Key insights reveal a predominance of male patients, with asymptomatic and atypical angina being common chest pain types. Elevated cholesterol levels and resting blood pressures are notable across patients. Understanding the interplay of these factors can aid in better diagnostic and preventive strategies in cardiovascular health management.

Key Findings

- The majority of patients in the dataset are male, with 12 out of 20 entries.
- Asymptomatic and atypical angina are frequent chest pain presentations among the patients.
- Many patients have high cholesterol levels, with several exceeding 240 mg/dl, which is considered high risk.
- A significant number of patients maintain a maximum heart rate above 150 bpm, suggesting a range of cardiovascular fitness levels.
- Resting blood pressures vary, but several patients have elevated levels, notably above 140 mm Hg.

Statistical Overview

- Age distribution shows a concentration between 40 and 69 years, with a mean age of approximately 54.5 years.
- Gender distribution is skewed towards males (60% male, 40% female).
- Cholesterol levels range from 168 to 354 mg/dl, with a mean of around 253 mg/dl.

- Resting blood pressure ranges from 110 to 172 mm Hg, with a common range between 120 and 150 mm Hg.
- Maximum heart rates range from 114 to 187 bpm, with a mean value around 160 bpm.

Risk Factors Identified

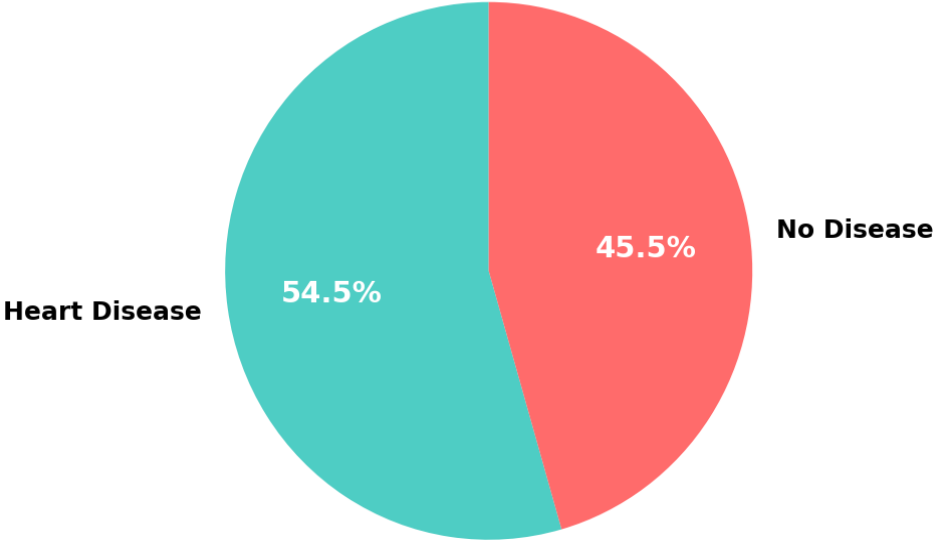
- High cholesterol levels are prevalent among patients, indicating a significant risk factor for heart disease.
- Elevated resting blood pressure is common, contributing to cardiovascular strain.
- Asymptomatic and atypical angina presentations suggest underdiagnosed or late-stage presentations in some patients.
- A notable subset of patients have fasting blood sugar levels > 120 mg/dl, correlating with metabolic syndrome risks.
- Exercise-induced angina and ST depression are observed in some cases, indicating exercise intolerance and potential myocardial ischemia.

Clinical Recommendations

- Regular monitoring and management of cholesterol and blood pressure are advised to mitigate cardiovascular risk.
- Encourage lifestyle modifications, including diet and exercise, to manage weight, blood sugar, and cholesterol levels.
- Conduct further diagnostic evaluations for patients with atypical and asymptomatic presentations to prevent late-stage interventions.
- Consider stress testing and cardiac imaging for patients with exercise-induced symptoms to assess ischemic risk.
- Promote patient education on recognizing angina symptoms and the importance of regular cardiovascular check-ups.

Heart Disease Distribution

Heart Disease Distribution in Dataset
(Total Patients: 303)



Key Data Metrics (Top 20 Samples)

Age	Sex	Chest Pain Type	Resting BP (mm Hg)	Cholesterol (mg/dl)	Fasting BS > 120	Resting ECG	Max Heart Rate	Exercise Angina	ST Depression	ST Slope	Major Vessels (0-3)	Thalassemia	Diagnosis
63	Male	Asymptomatic	145	233	True	0	150	No	2.30	0	0	1	Heart Disease
37	Male	Non-anginal	130	250	False	1	187	No	3.50	0	0	2	Heart Disease
41	Female	Atyp. Angina	130	204	False	0	172	No	1.40	2	0	2	Heart Disease
56	Male	Atyp. Angina	120	236	False	1	178	No	0.80	2	0	2	Heart Disease
57	Female	Typ. Angina	120	354	False	1	163	Yes	0.60	2	0	2	Heart Disease

Age	Sex	Chest Pain Type	Resting BP (mm Hg)	Cholesterol (mg/dl)	Fasting BS > 120	Resting ECG	Max Heart Rate	Exercise Angina	ST Depression	ST Slope	Major Vessels (0-3)	Thalassemia	Diagnosis
57	Male	Typ. Angina	140	192	False	1	148	No	0.40	1	0	1	Heart Disease
56	Female	Atyp. Angina	140	294	False	0	153	No	1.30	1	0	2	Heart Disease
44	Male	Atyp. Angina	120	263	False	1	173	No	0.00	2	0	3	Heart Disease
52	Male	Non-anginal	172	199	True	1	162	No	0.50	2	0	3	Heart Disease
57	Male	Non-anginal	150	168	False	1	174	No	1.60	2	0	2	Heart Disease
54	Male	Typ. Angina	140	239	False	1	160	No	1.20	2	0	2	Heart Disease
48	Female	Non-anginal	130	275	False	1	139	No	0.20	2	0	2	Heart Disease
49	Male	Atyp. Angina	130	266	False	1	171	No	0.60	2	0	2	Heart Disease
64	Male	Asymptomatic	110	211	False	0	144	Yes	1.80	1	0	2	Heart Disease
58	Female	Asymptomatic	150	283	True	0	162	No	1.00	2	0	2	Heart Disease
50	Female	Non-anginal	120	219	False	1	158	No	1.60	1	0	2	Heart Disease
58	Female	Non-anginal	120	340	False	1	172	No	0.00	2	0	2	Heart Disease
66	Female	Asymptomatic	150	226	False	1	114	No	2.60	0	0	2	Heart Disease
43	Male	Typ. Angina	150	247	False	1	171	No	1.50	2	0	2	Heart Disease
69	Female	Asymptomatic	140	239	False	1	151	No	1.80	2	2	2	Heart Disease