# Heart Disease Analysis Report

## Context

Cardiovascular diseases (CVDs) are the leading cause of death worldwide, accounting for 31% of all deaths (approximately 17.9 million lives each year).

## Key Facts

- Four out of five CVD deaths are caused by heart attacks and strokes.  
- One-third of these deaths occur prematurely in people under the age of 70.  
- Early detection and management of risk factors like hypertension, diabetes, hyperlipidemia, and lifestyle habits are crucial to reducing CVD-related deaths.  
- This dataset contains 11 features that can be used to analyze and predict heart disease.

## Business Problems

### 1. Predictive Insights: Identifying High-Risk Groups

- Goal: Analyze age and sex to identify groups with the highest prevalence of heart disease.  
- Purpose: Help healthcare providers target at-risk demographics for preventative care and early intervention.

### 2. Correlation Between Lifestyle Factors and Heart Disease

- Goal: Examine how factors such as cholesterol, resting blood pressure, and exercise-induced angina correlate with heart disease outcomes.  
- Purpose: Provide insights into lifestyle or physiological factors contributing to heart disease risk, enabling data-driven public health strategies.

### 3. Chest Pain Type as an Indicator of Heart Disease

- Goal: Analyze the distribution of chest pain types and their association with heart disease.  
- Purpose: Determine whether specific chest pain types can be used as diagnostic indicators for heart disease.

### 4. Threshold Analysis for Risk Factors

- Goal: Identify critical thresholds for cholesterol, blood pressure, and maximum heart rate (MaxHR) that are most commonly associated with heart disease.  
- Purpose: Establish actionable metrics for healthcare professionals to monitor and manage heart health effectively.