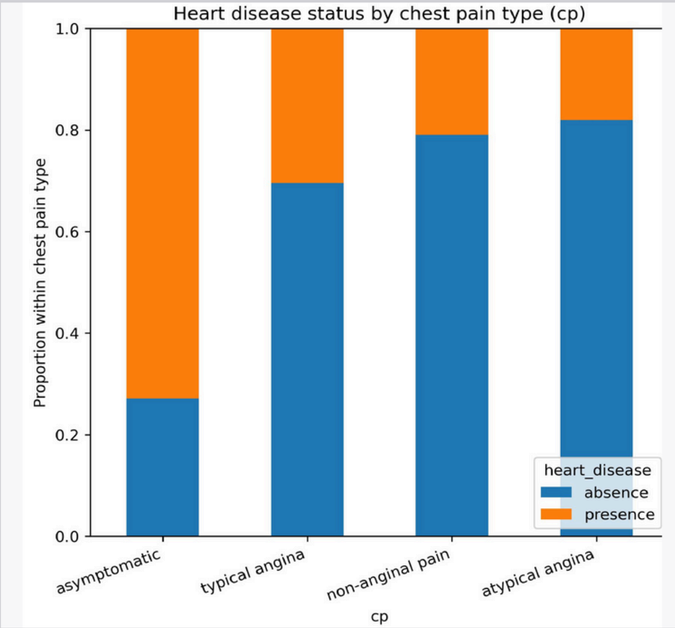
Heart Disease Signals

Which factors are most associated with a heart-disease diagnosis?

Dataset: clinical evaluation sample (Cleveland Clinic)
N = 303
Tests: χ^2, Welch t-test, ANOVA + Tukey

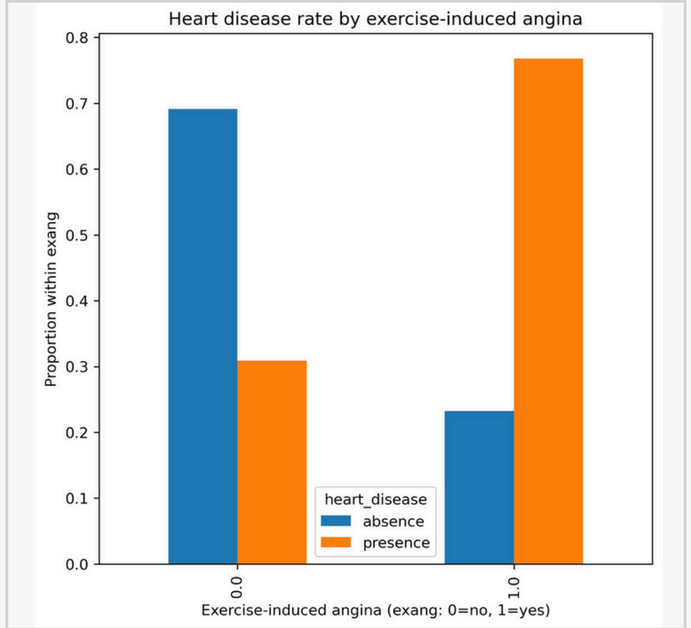
Chest pain type (cp) is strongly linked to diagnosis



Asymptomatic: ~73% diagnosed

χ^2 p = 1.25e-17 | Asymptomatic has the highest heart disease rate.

Exercise-induced angina (exang) is a strong indicator



exang: ~77% vs no exang: ~31%

χ^2 p = 1.41e-13 | Chest pain during exercise is associated with much higher diagnosis rate.

Exercise capacity (thalach) differs by diagnosis

HD group: ~19 bpm lower thalach

t-test p = 3.46e-14 | Heart disease group reaches substantially lower max HR in the stress test.

Benchmarks

- High FBS: 14.85% vs 8% (45 vs ~24) (p=4.69e-05)
- Cholesterol (vs 240 mg/dl): heart disease group mean 251.47 (>240), p(one-sided)=0.0035

Supporting predictors

- Age: +4.0 yrs (p=7.06e-05)
- Resting BP: +5.3 mmHg (p=0.00855)
- Sex: 55.3% (male) vs 25.8% (female) (p=2.67e-06)

Limits

- Clinical sample (not population)
- Association ≠ causation
- Some groups are small