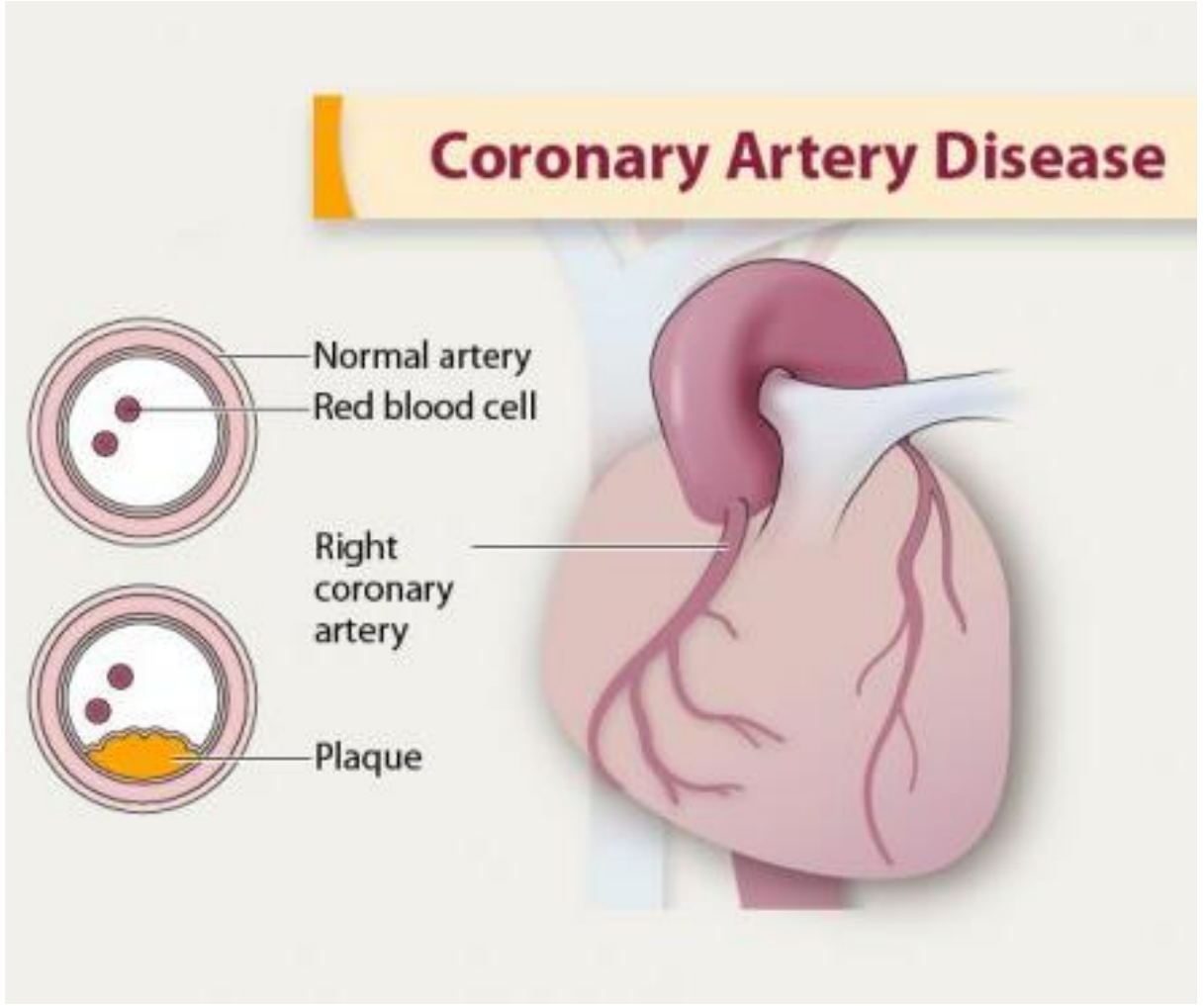
Heart Disease Dataset

- Features
  - Age
  - Sex
  - Blood pressure
  - Chest pain level
  - Serum cholesterol
  - Blood sugar
  - ECG abnormality
  - Maximum heart rate
  - Excercise induced angina
  - ECG→ST→Slope and peak
  - Numer of colored major vessels
  - Diagnosis



Linear Regression

- Target → Age
- Numpy functions
- Implement training
  - Without and with bias term
  - Pseudoinverse
- Implement predict and mean squared error
- Bonus
  - Mean absolute error
  - Mean absolute percentage error
  - Affine data

Hoeffding example

- You have 100 samples
- E_in is 0.1
- You want at least an E_out of 0.2
- What bound do you get?

$$\mathbb{P}\left[\left|\nu - \mu\right| > \epsilon\right] \leq 2\exp\left(-2\epsilon^2 N\right)$$

Perceptron (HW)

- Target → Heart disease (binary)
- Numpy functions
- Implement training
  - Add bias term
  - Basic perceptron learning (w:=w+x*y)
- Implement predict and classification accuracy metric
- Visualize decision boundary
- Bonus
  - Sensitivity metric