

Al-Mustaqbal University College
Department of Anesthesia techniques
Third Stage

Lecture 10

Hypothesis Test

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Hypothesis Test, HT

- **“Estimate” means providing a substitute for an unknown truth.**
- **guessing with probability**
- **the amount of uncertainty In the estimate.**
- **a number measuring the margin of error.**
- **the best guess and how wrong the guess could be, in precise terms.**
- **For example 95% confidence interval**

Basic idea of Hypothesis test

- **Rare event principle**
- **Reduction to absurdity**
- **Sampling distribution of sample statistics**

Fair coin, fairly toss

- Head and tail



Your outcomes from 3 tosses



if the coin is fair, $P=0.5 \times 0.5 \times 0.5 = 0.125$

Your outcomes from 10 tosses



if the coin is fair, $P(\text{getting head for ten times}) = 0.5^{10} = 0.00098$

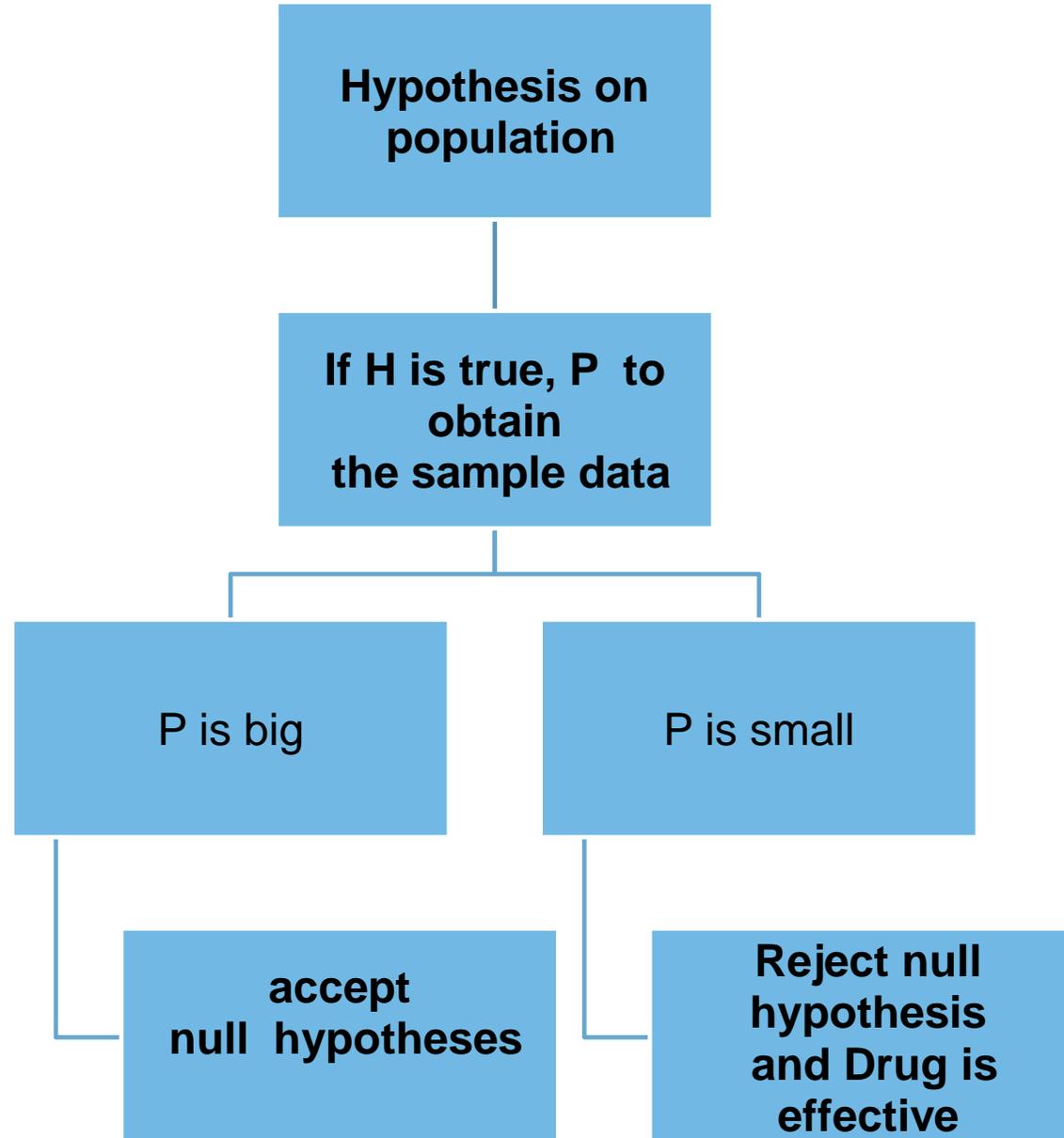
Do you believe that the coin is fair?

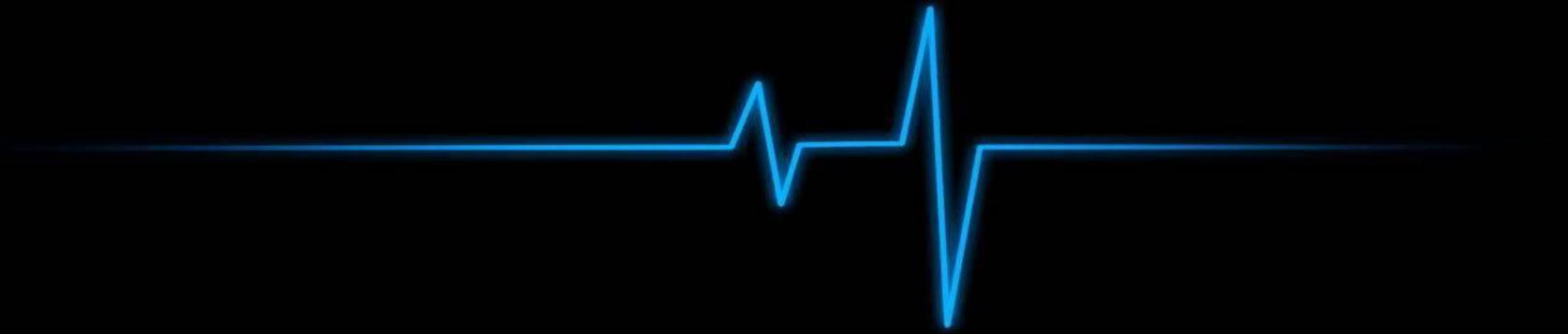
Hypothesis: coin is fair

Calculate the
probability
of sample outcome
if the hypothesis is true

P bigger 0.125
Believe the hypothesis

P smaller 0.00098
Suspect bias coined
reject the hypothesis





Thank You for Listening