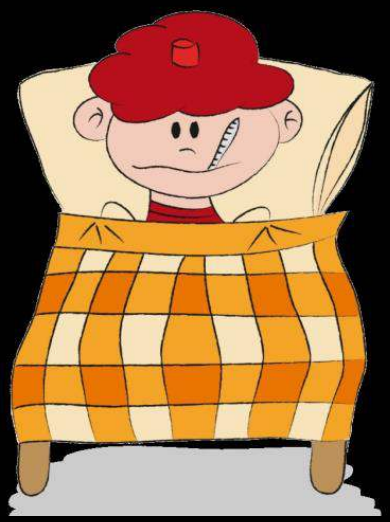
These Slides Accompany the YouTube Video Tutorial:
https://www.youtube.com/watch?v=gUU_-_DUIss

Hypothesis Testing

Types of Errors & p-Region

Null versus Alternative Hypothesis



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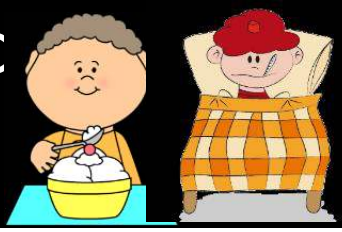
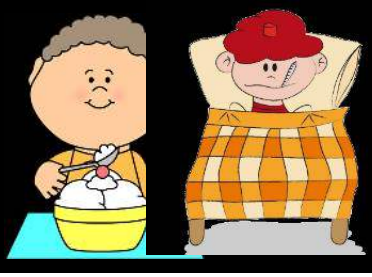
Null Hypothesis (H_0)

- No statistical significance between the two variables.
- Researcher is trying to disprove it.
- Individual is free from disease
- Relationship is due to chanc



Alternative Hypothesis (H_a)

- Statistical significance between the two variables.
- Researcher is trying to approve it
- Individual has disease
- Relationship is not due to chance
- If H_a is accepted, H_0 is rejected



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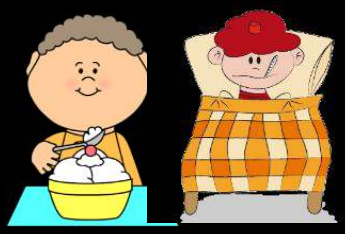
p-region



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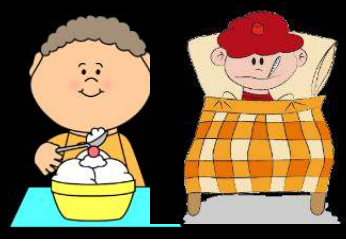
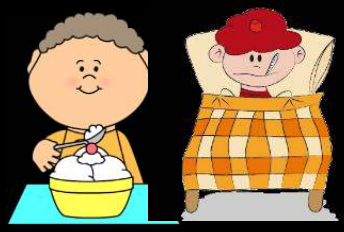
Errors in Hypothesis

	H_0 True
Decision about H_0 Retain	CORRECT
Decision about H_0 Reject	Type I Error (α)



Type I Error



- Reject H_0 when its true
- α error
- Error of first kind
- Error of excessive credulity
- False positive
- Poor specificity
- If a test shows that a person has kidney stone when in reality he/she does not

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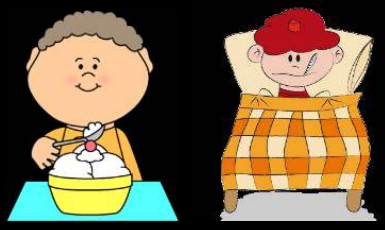
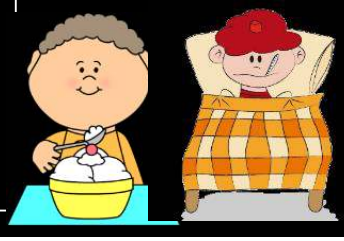
p-value

- Probability of obtaining an effect at least as extreme as the one in your sample data, assuming the truth of the null hypothesis.



Errors in Hypothesis

	H_0 True	H_0 False
Decision about H_0 <u>Retain</u>	CORRECT	Type II Error (β)
Decision about H_0 <u>Reject</u>	Type I Error (α)	CORRECT



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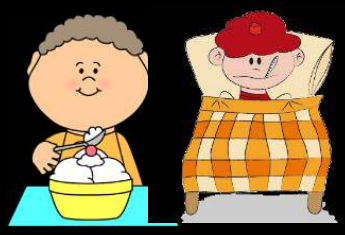
Type II Error



- Accept H_0 when its false
- β error
- Error of second kind
- Error of excessive skepticism
- False negative
- Low sensitivity
- If a test shows that a person is not having kidney stone when in reality he/she does have a kidney stone.