

5.3 Confidence Intervals for Continuous Data

MBC 638

Data Analysis and Decision Making

Another Statistical Inference Method

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**Drawing a conclusion about
a population**

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Takes into account the *natural
variability* in the data

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...based on a sample

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Drawing a conclusion about a population

Takes into account the *natural variability* in the data

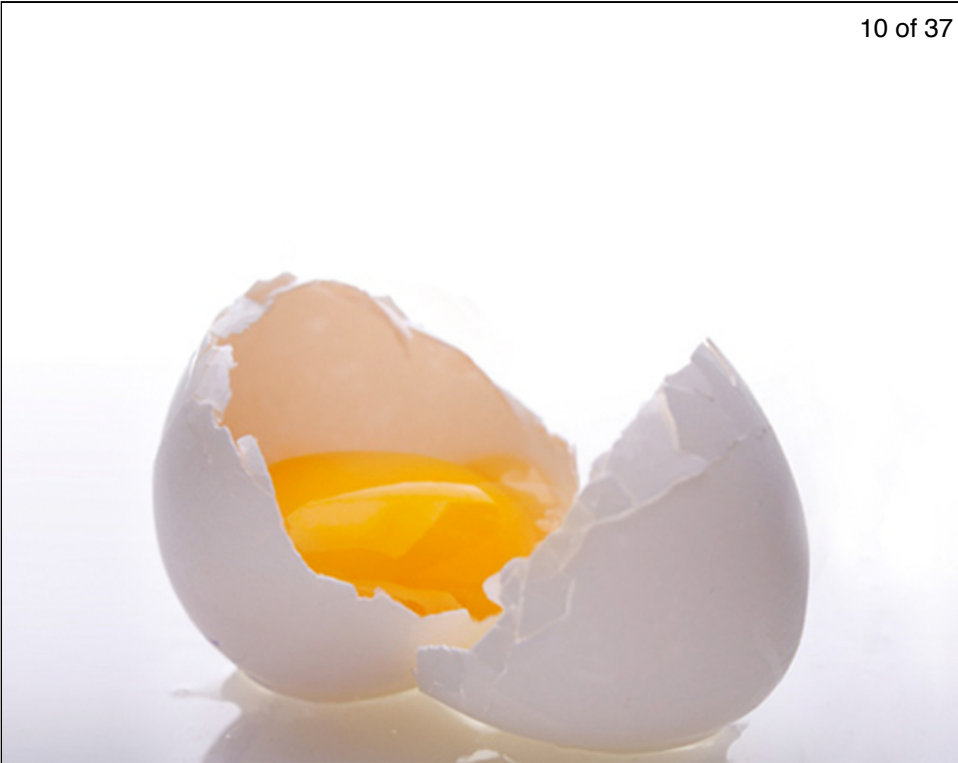
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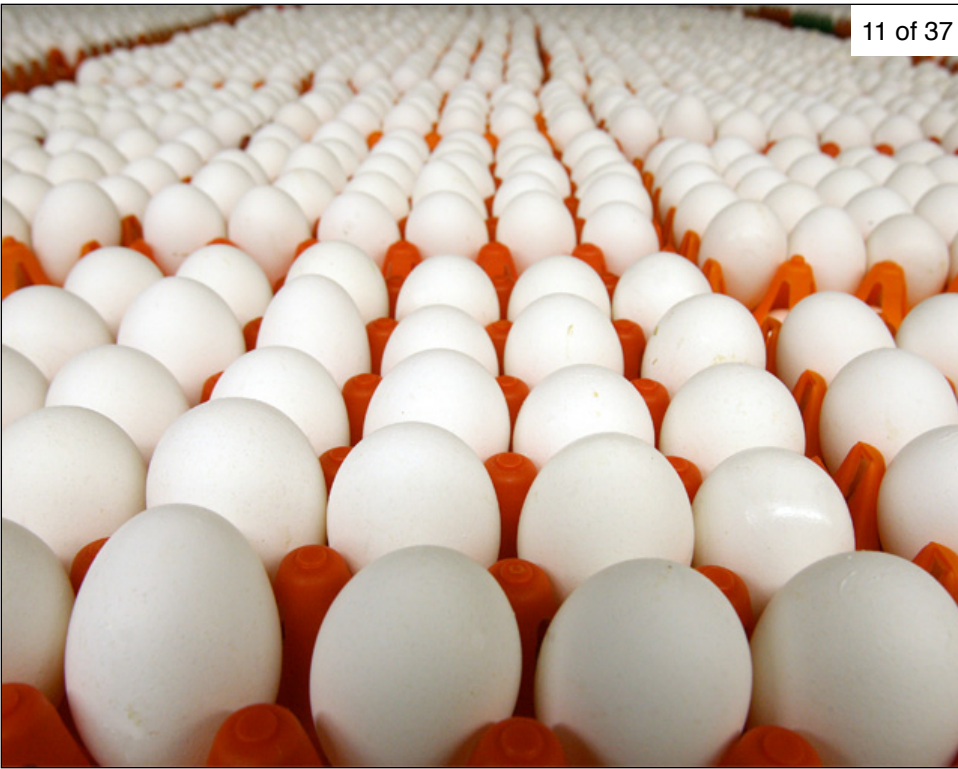
Reasons to sample:

Too time consuming

Too expensive

May require destruction





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- Gives an indication of how accurate that estimate is
- Also indicates how confident we are that the results are correct

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Parameter estimate \pm **[(Confidence) × (Variability)]**

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Confidence Interval Formulas for Mean

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Boundaries
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When population
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(not often)

Upper
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$$U = \bar{x} + z^* \frac{\sigma}{\sqrt{n}}$$

Lower
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$$L = \bar{x} - z^* \frac{\sigma}{\sqrt{n}}$$

Confidence Interval Formulas for Mean

Boundaries
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When population
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When population
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size *n* is *large* (≥ 30)

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			$df = n - 1$

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