



# Introduction to Inference Methods: Oh the Things you will see!

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Brenda Gunderson



# What's Ahead?

Learning how to use data to ...

- **estimate** parameters with *confidence*
- **test theories** about parameters

**Statistical  
Inference**

**Research Question:**  
**What proportion**  
**of all parents with toddlers**  
**report they use a car seat**  
**for all travel**  
**with their toddler?**



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**Estimate a Population Proportion**  
**with Confidence**

**Research Question:  
What is the average  
cartwheel distance  
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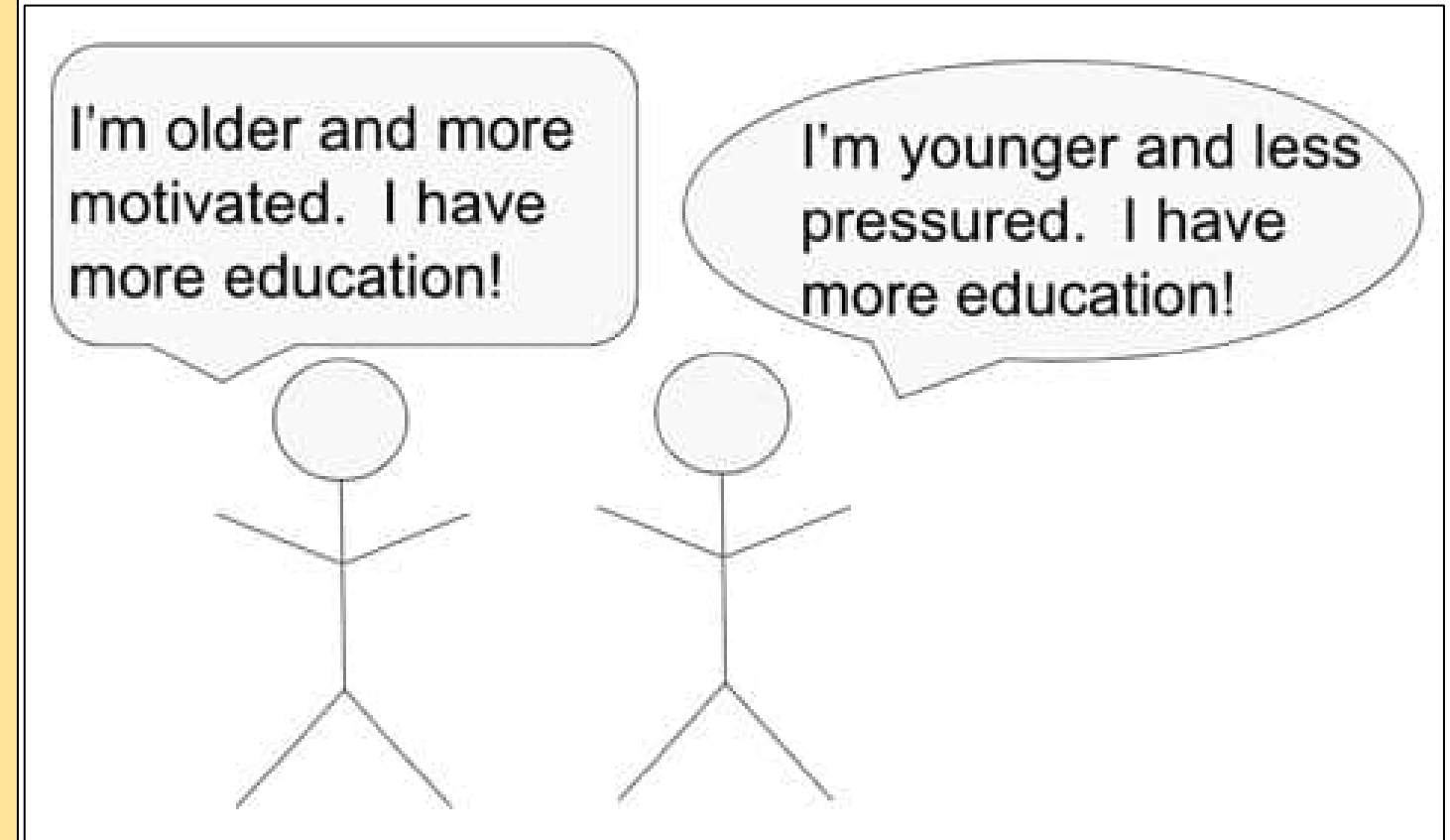
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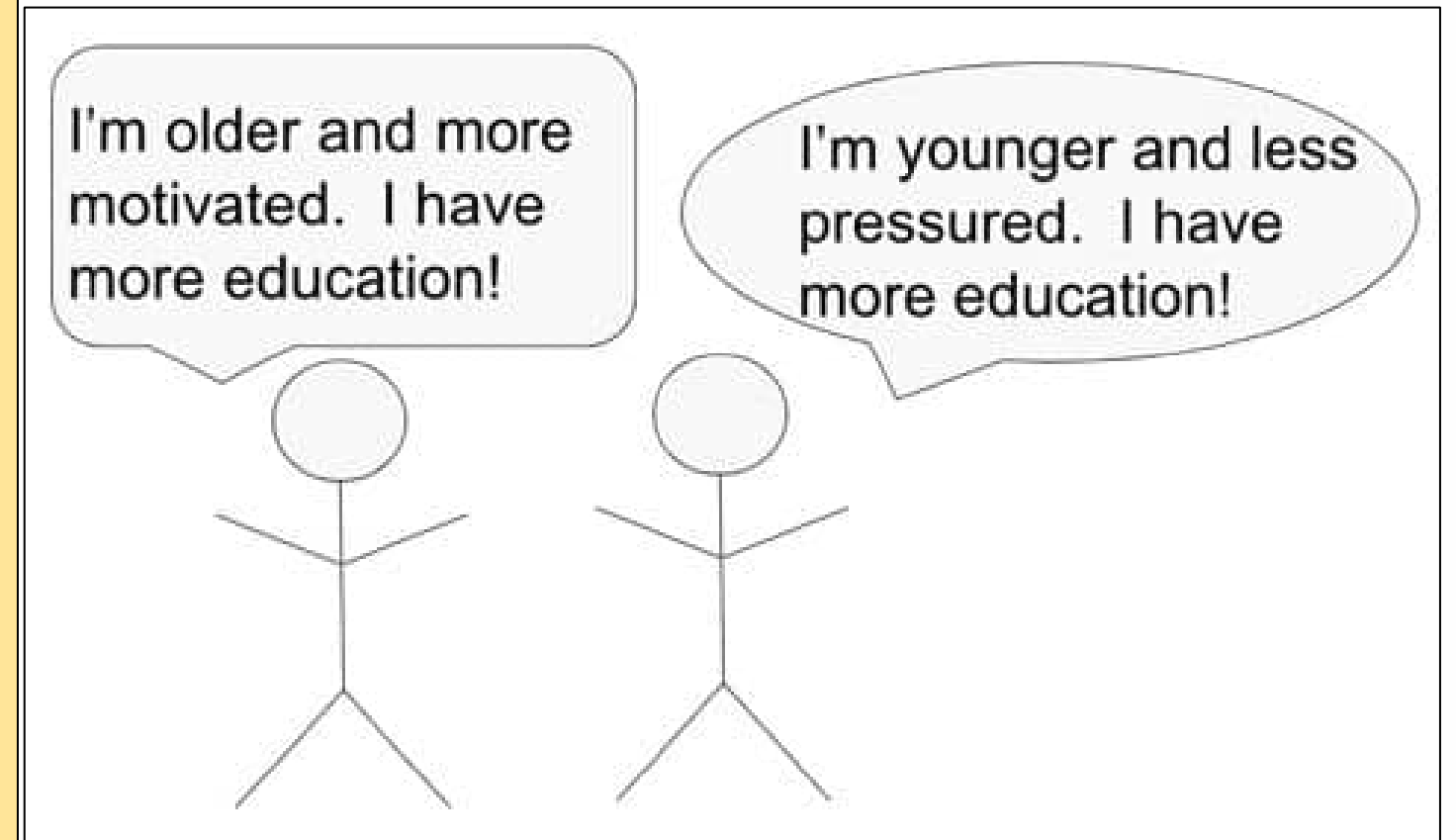
**Estimate a Population Mean  
with Confidence**



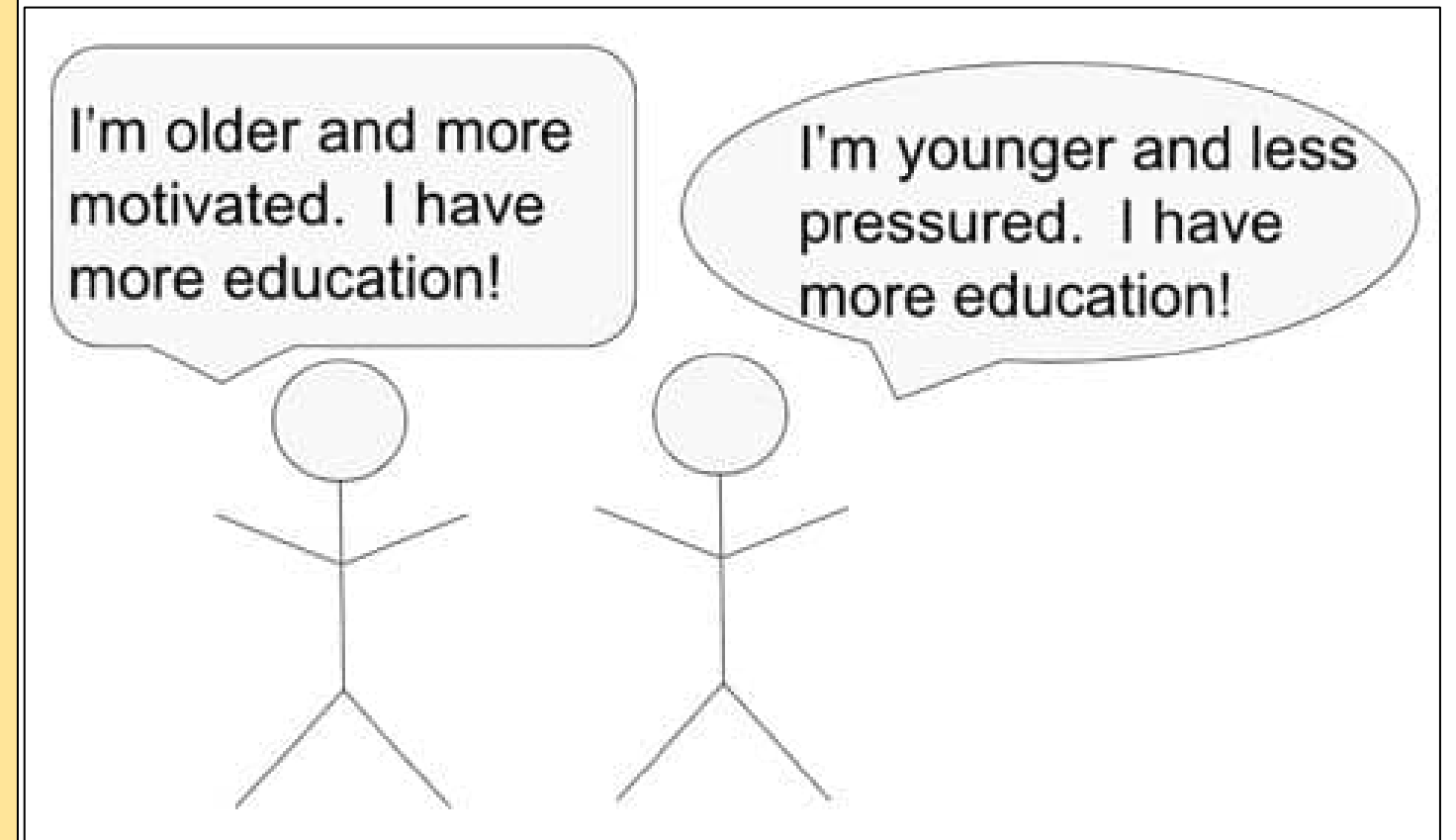
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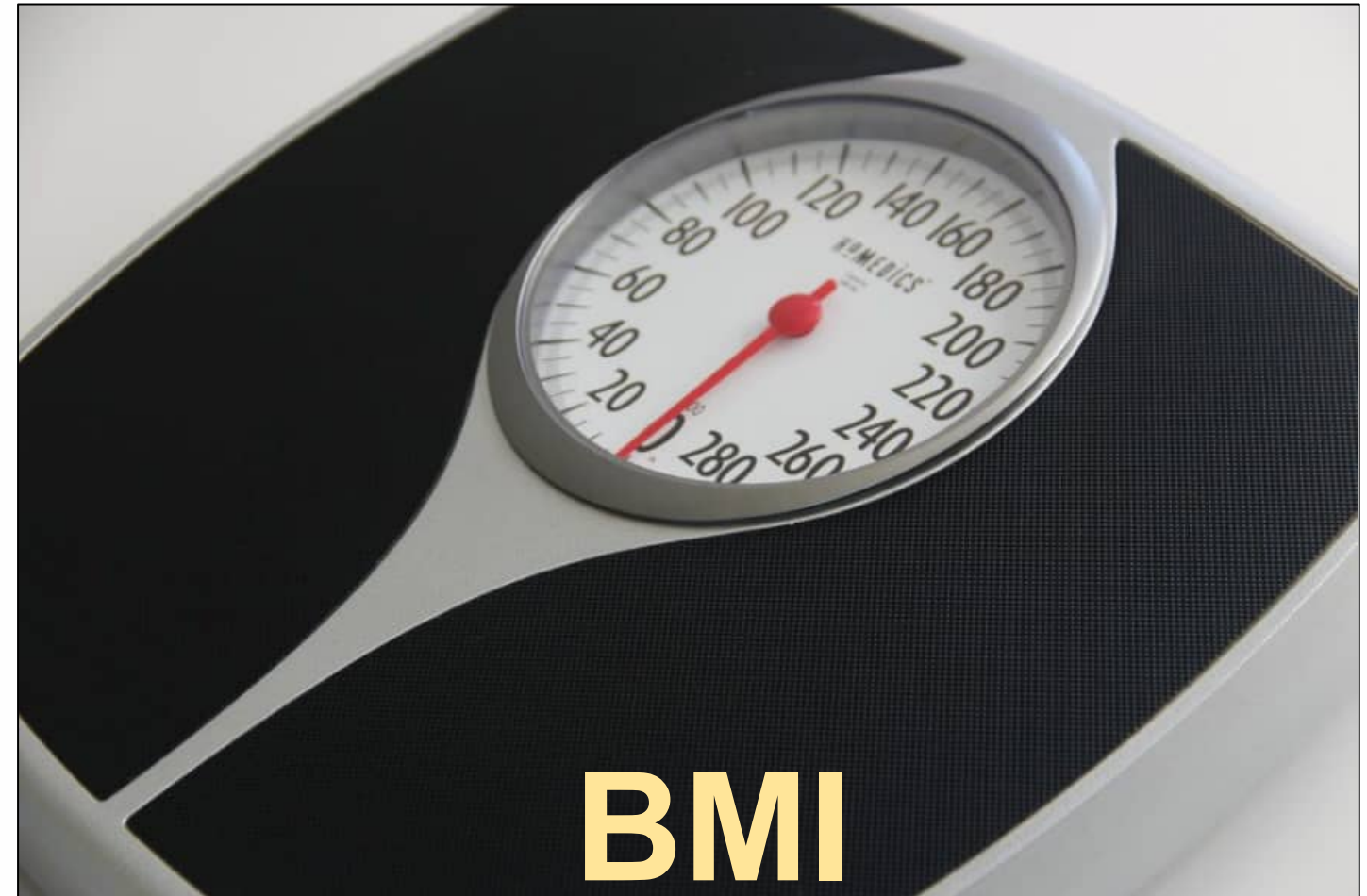


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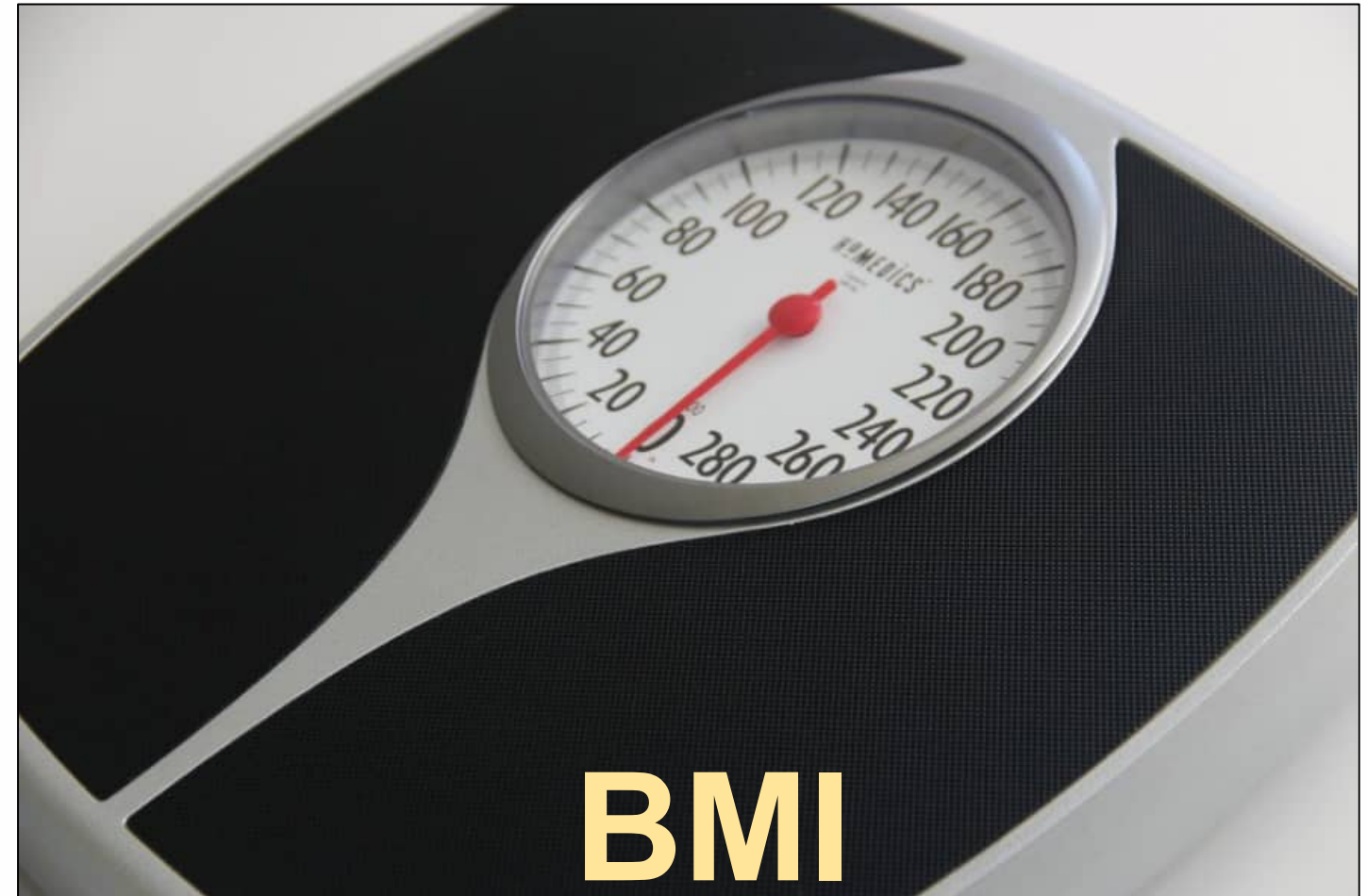


**Estimate a Population Mean Difference**  
**with Confidence**

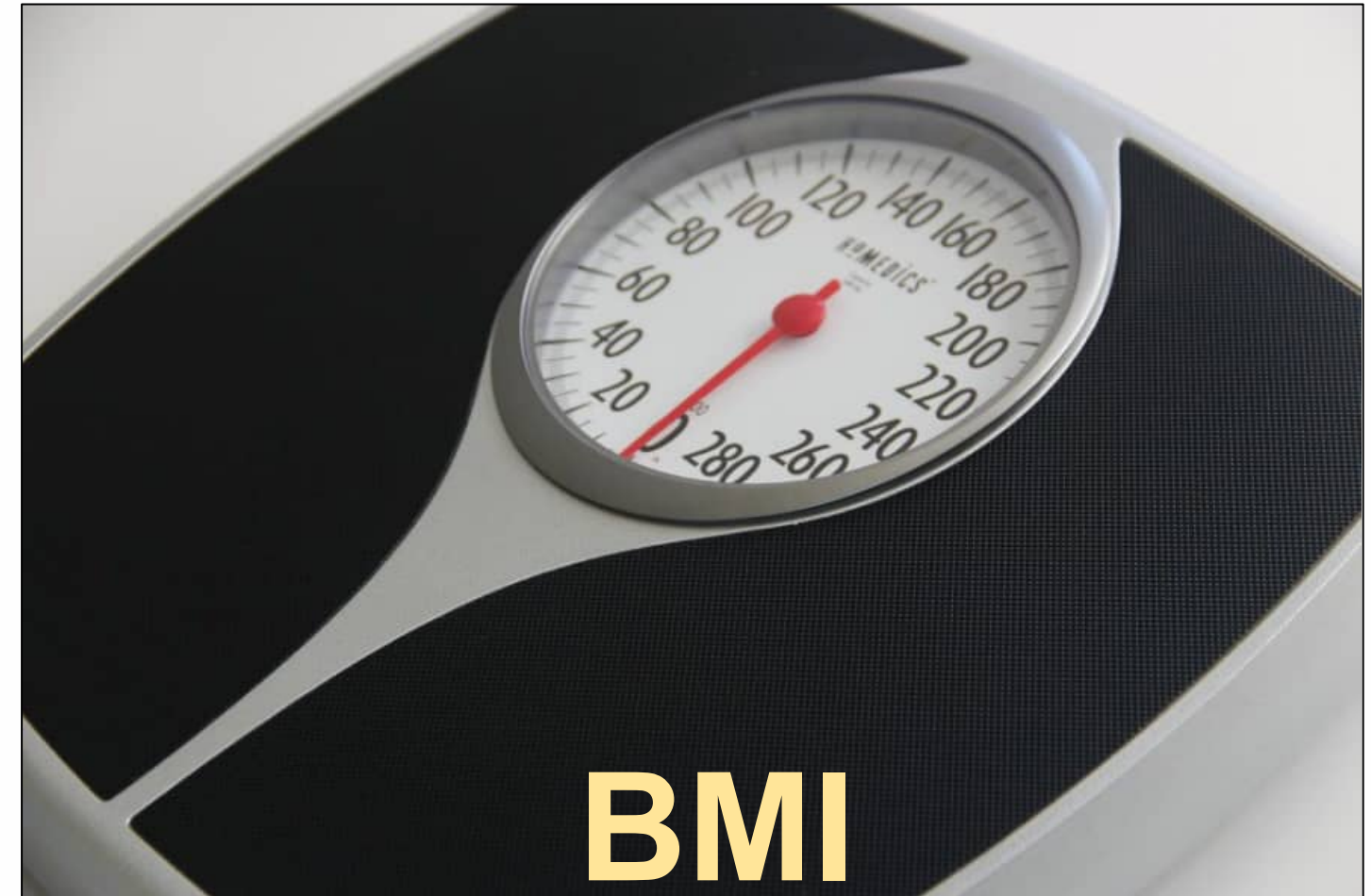
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**Considering Mexican-American**  
**adults (ages 18 - 29)**  
**living in the United States,**  
**do males have a significantly**  
**higher mean Body Mass Index**  
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**Test a Theory**  
**about Two Population Means**



## **Research Question:**

**In previous years 52% of parents believed electronics and social media was cause of teenager's lack of sleep.**

**Do more parents today believe that their teenager's lack of sleep is caused due to electronics and social media?**





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**Test a Theory  
about a Population Proportion**

# Get Excited for What is Ahead!

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