**Introduction to Hypothesis Testing**

**Discuss the Following Questions**

1. What is the difference between a bootstrap interval and a hypothesis test?

Holt, Beer, Kronenberger, Pisoni and Lalonde[[1]](#footnote-1) studied children with cochlear implants. Cochlear implants are devices that are surgically implanted into a person’s cochlea (the human’s sensory hearing organ) and are meant to help people with profound hearing loss. Forty-five parents of such children filled out the *Behavior Rating Inventory of Executive Function (BRIEF),* which measures executive function behaviors. Their scores were compared to a sample of normal-hearing children. A higher score would indicate that a child had higher executive function.

1. What would be an appropriate research question for the described article?
2. What would be the parameter of interest that would be used to answer the research question?
3. What are the hypothesis statements? Write the statements in both words and the appropriate symbols.

H0:

Ha:

1. How did the research question inform your hypothesis statements?

Holt et al. found that there was evidence that the true average score on the *BRIEF* for children with cochlear implants was significantly different from normal-hearing children.

1. What does it mean when the results are said to be statistically significant?
2. How is statistical significance used to answer a research question?
3. Provide an answer to the research question that you stated in question 2.
4. What was the purpose of conducting this hypothesis test? Why did the researchers not just look at the sample results?

1. Holt, R. F., Beer., J., Kronenberger, W. G., Pisoni, D. B., & Lalonde, K. (2012). Contribution of family environment to pediatric cochlear implant users’ speech and language outcome: Some preliminary findings. *Journal of Speech, Language, and Hearing Research, 55*, p. 848-864. [↑](#footnote-ref-1)