Data Analysis and Statistical Inference
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In-Video Quiz Questions for Unit 4: Part 3 – (2) Inference for a Small Sample Mean

(02:00) – slide 2, after "We're also given the standard deviations for both groups as well as the sample sizes which we know are both 22."

1. The 44 patients were first split into males and females, and then patients from each gender were randomized into the treatment and control groups. The resulting treatment and control groups had 22 patients each, 11 males and 11 females.

What is the strategy that results in equal numbers of males and females ending up in each treatment group called?

(a) stratifying

(b) blocking

(c) placebo

(d) blinding

(09:47) – slide 6, after "So our margin of error is 20, meaning that our confidence interval is going to be 32.1 to 72.1."

2. Which of the following is the true interpretation based on this confidence interval?

(a) 95% of distracted eaters consume between 32.1 g to 72.1 g of snacks after lunch.
(b) 95% of the time the true average snack consumption of distracted eaters is between 32.1 g and 72.1 g.
(c) 95% of random samples of 22 distracted eaters will yield average post-lunch snack consumption of 32.1 g and 72.1 g.
(d) We are 95% confident that the 22 distracted eaters in this sample consumed between 32.1 g to 72.1 g of snacks after lunch.
(e) None of the above.

(10:40) – slide 7, after "And remember as usual, the first step of a hypothesis test is to set your hypothesis."

3. Suppose the suggested serving size of these biscuits is 30 g. Do these data provide convincing evidence that the amount of snacks consumed by distracted eaters post-lunch is different than the suggested serving size? What are the appropriate hypotheses?

Also given below are some sample statistics.95% of distracted eaters consume between 32.1 g to 72.1 g of snacks after lunch.

$\bar{x} = 52.1, s = 45.1, n = 22$

(a) $H_0: \mu = 30;\ H_A: \mu \neq 30$
(b) $H_0: \mu = 30;\ H_A: \mu > 30$
(c) $H_0: \mu = 52.1;\ H_A: \mu > 52.1$
(d) $H_0: \mu = 52.1;\ H_A: \mu > 30$
(e) $H_0: \mu = 30;\ H_A: \mu \neq 52.1$

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Answers:

1. b
2. e
3. a