9.6 Hypothesis tests for one population when \( \sigma \) is unknown

Example:

The recommended daily dietary allowance (RDA) for zinc among males older than 50 years is 15 mg/day. The article “Nutrient Intakes and Dietary Patterns of Older Americans” reported that the zinc intake for a random sample of 25 males age 65-74 years had a mean of 11.3 and SD of 6.43.

The researcher is concerned that males in this age group may not be getting the RDA for zinc in their diets. Is there evidence to support this concern? Use \( \alpha = 0.05 \).

1. \( H_0 \) : 
2. \( H_a \) :

3. Critical values? t-tables?
   Large sample?
   Do we know \( \sigma \)?
   Assumption about the dist’n of zinc intake by males in the age group 65-74?

Hence, use
4. Test statistics?

\[ t = \]

5. Conclusion?

Reject \( H_0 \) if

Is the test statistics

Conclusion:
There is evidence that the mean zinc intake by males age 65-74 is

What type of error are we likely to commit in this test?

Type

p-value?

p-value \( = \)

(Not in tables, need computer to calculate).