

1) Blood IRON Concentration

Hypotheses (2 tailed)

$$H_0: \mu_{\text{child}} = 110$$

$$H_1: \mu_{\text{child}} \neq 110.$$

H_0 :
Concentration level for children in DISADVANTAGED URBAN AREA IS SAME AS general population.
(i.e. = 110).

H_1 : different from general population.

TS

$$TS = \left\{ \frac{\text{observed} - \text{Expected under } H_0}{S.E.} \right\}$$

$$= \frac{98 - 110}{\frac{25.5}{\sqrt{25}}} = \frac{-12}{5.1} = \underline{\underline{-2.35.}}$$

CV

$\alpha = 0.05$, tails: 2

$$df = n - 1 = 24. \quad = \underline{\underline{2.064}}$$

DECISION

$$\text{IS } |TS| > CV?$$

$$\text{IS } |-2.35| > 2.064?$$

YES

Reject H_0 . concentration level is different to general population.

one tailed test version

$$H_0: \mu_{\text{child}} \geq 110$$

(not less than general population)

$$H_1: \mu_{\text{child}} < 110$$

(less than general population)

$$\underline{TS} : \text{SAME AS BEFORE } \underline{-2.35}$$

$$\underline{CV} : \text{one tailed, } \alpha = 0.05, df = 21$$
$$CV = \underline{1.711}$$

3)
Decision

is $|TS| > CV?$

YES Reject H_0

Evidence to suggest that mean blood
Iron concentration levels are less
than for general population of
children.

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