

Does wearing shoes affect the height of a vertical jump?

	Vertical Distance With Shoes in inches	Vertical Distance Without Shoes in inches
Katie	14	13.5
Lara	12.25	12
Adeline	11.75	13.75
Ludwika	15.5	16.3
Rodolfo	17.5	18
Hannah	10.75	10.5
Vedant	10.5	10.6
Michael	13.5	13.5
Kai	14.5	14.5
David	17.5	18.3

$$\bar{x} = 13.775 \quad s^2 = 2.532$$

$$\bar{y} = 14.095 \quad s^2 = 2.755$$



$$H_0: \mu_1 - \mu_2 = 0$$

$$H_1: \mu_1 - \mu_2 \neq 0$$

$$S_p^2 = 2.6435$$

$$T_0 = -0.271$$

$$T_{\alpha/2, n_1+n_2-2} = t_{0.025, 18} = 2.1$$

Conclusions:

$$|t_0| < 2.1$$

We cannot reject the null hypothesis!

So wearing shoes doesn't really affect the height of a vertical jump

