Compare Groups: Decrease by Treatment

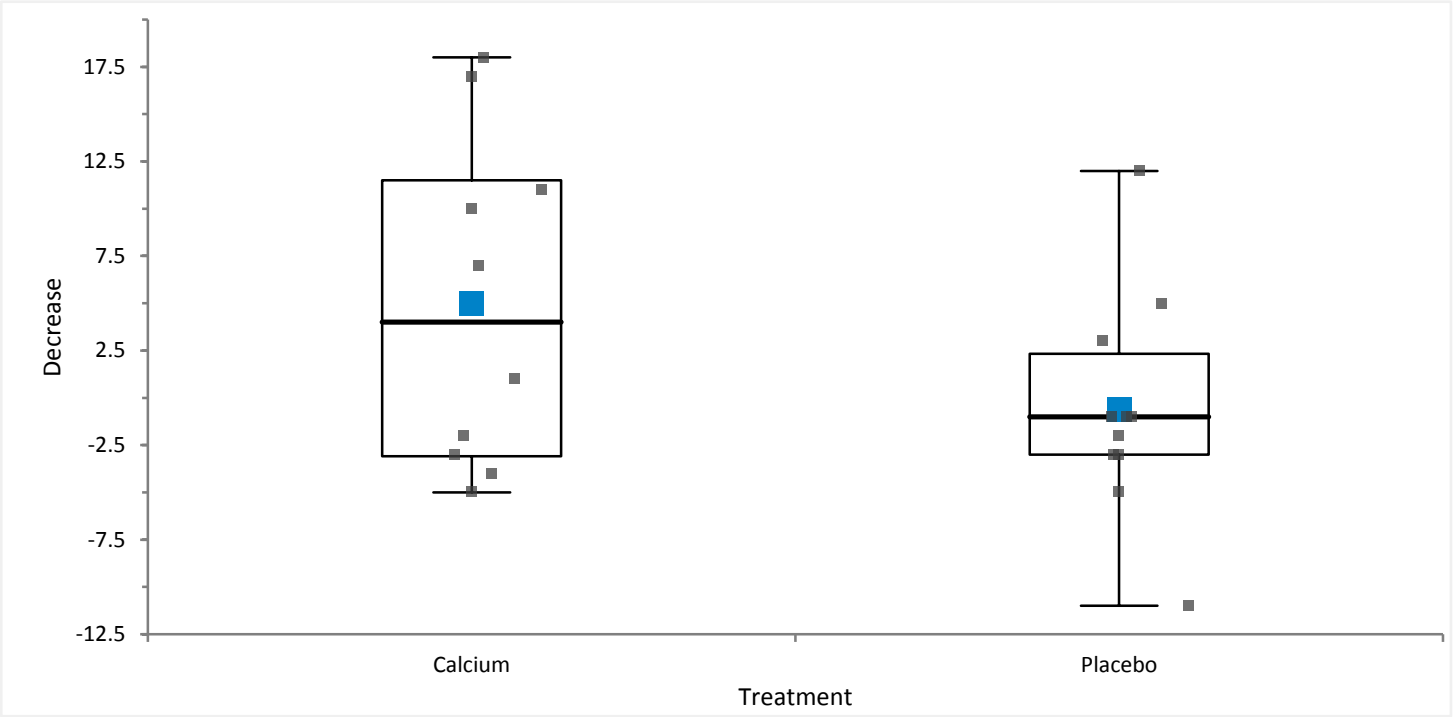
Analyse-it v4.60

Calcium and Blood pressure

http://lib.stat.cmu.edu/DASL/Stories/CalciumandBloodPressure.html

Last updated 2 February 2016 at 11:39 by Analyse-it Software, Ltd.

Descriptives



N	21

Decrease by Treatment	Minimum	1st Quartile	Median	3rd Quartile	Maximum	Inter-quartile range
Calcium	-5	-3.1	4.0	11.5	18	14.6
Placebo	-11	-3.0	-1.0	2.3	12	5.3

Dispersion

Variance ratio	0.45
95% CI	0.11 to 1.70

$\lambda = \sigma^2_{Placebo} / \sigma^2_{Calcium}$

Fisher F test

Hypothesized ratio	1
F statistic	0.45
Numerator DF	10
Denominator DF	9
p-value	0.2304[1]

H0: $\lambda = 1$

The ratio of the variances of the populations is equal to 1.

H1: $\lambda \neq 1$

The ratio of the variances of the populations is not equal to 1.

[1] Do not reject the null hypothesis at the 5% significance level.

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Location

Mean difference	-5.6
95% CI	-12.4 to 1.1
SE	3.22

$\mu_\Delta = \mu_{Placebo} - \mu_{Calcium}$

Student t test

Hypothesized difference	3
t statistic	-2.68
DF	19
p-value	0.0148[1]

H0: $\mu_\Delta = 3$

The difference between the means of the populations is equal to 3.

H1: $\mu_\Delta \neq 3$

The difference between the means of the populations is not equal to 3.

[1] Reject the null hypothesis in favour of the alternative hypothesis at the 5% significance level.

Compare Groups: Y by Brand

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Data A1:B22

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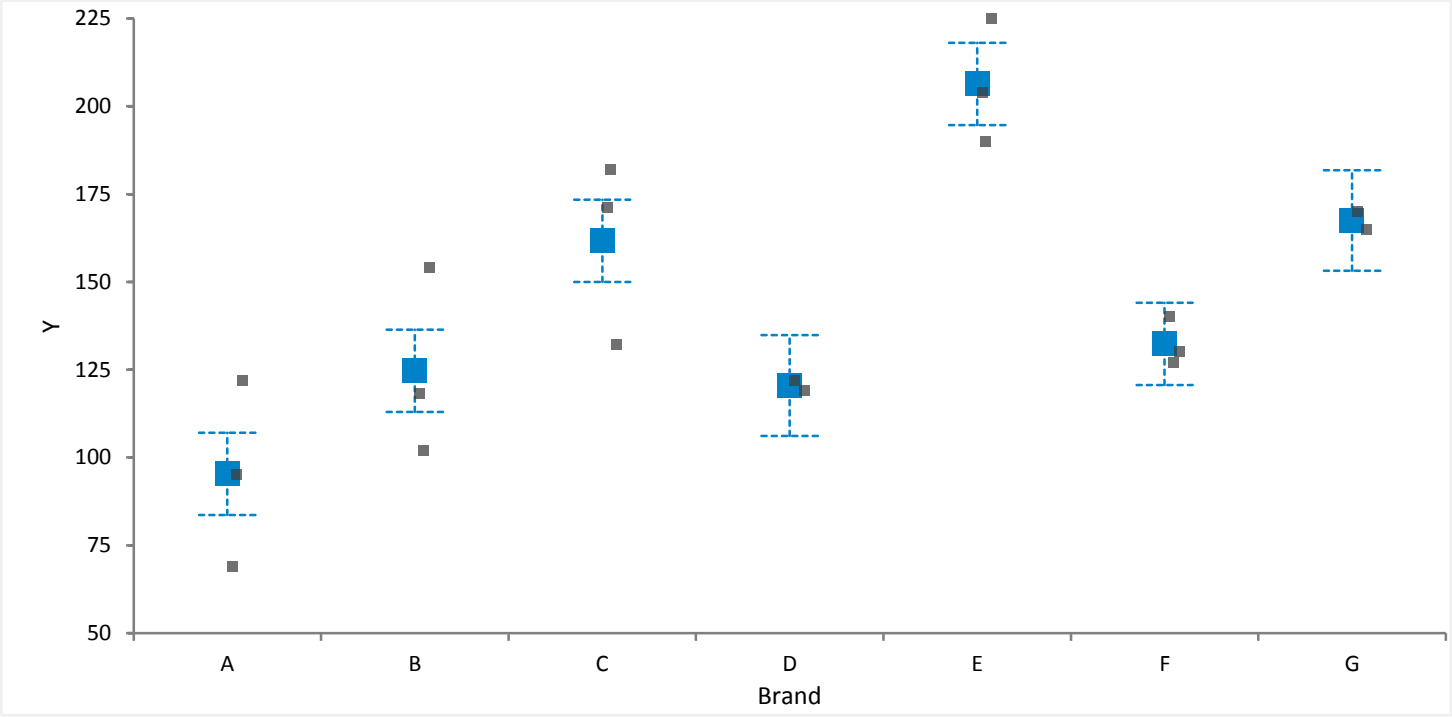
Descriptives



N	19

Y by Brand	N	Mean	Mean SE (based on pooled SD)	Variance	SD
A	3	95.3	11.71	702.3	26.5
B	3	124.7	11.71	709.3	26.6
C	3	161.7	11.71	690.3	26.3
D	2	120.5	14.34	4.5	2.1
E	3	206.3	11.71	310.3	17.6
F	3	132.3	11.71	46.3	6.8
G	2	167.5	14.34	12.5	3.5
Pooled	19			411.2	20.3

Dispersion

Levene test

F statistic	1.80
Numerator DF	6
Denominator DF	12
p-value	0.1814[1]

H0: $\sigma^2_1 = \sigma^2_2 = \sigma^2 \ldots$

The variance of the populations are all equal.

H1: $\sigma^2_i \neq \sigma^2_j$ for at least one i,j

The variance of the populations are not all equal.

[1] Do not reject the null hypothesis at the 5% significance level.

Compare Groups: Y by Brand

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Data A1:B22

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Location

ANOVA

Effect	SS	DF	MS	F	p-value
Model	23436.6	6	3906.1	9.50	0.0006 [1]
Error	4934.3	12	411.2		
Total	28370.9	18	1576.2		

H0: $\mu_1 = \mu_2 = \mu\ldots$

The mean of the populations are all equal.

H1: $\mu_i \neq \mu_j$ for at least one i,j

The mean of the populations are not all equal.

[1] Reject the null hypothesis in favour of the alternative hypothesis at the 5% significance level.

Compare Groups: Y by Brand

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Data A1:B22

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Multiple Comparisions

Tukey-Kramer all pairs comparisons

Contrast	Mean difference	Simultaneous 95% CI	0	p-value
E - A	111.0	53.1 to 168.9		0.0003 [1]
E - D	85.8	21.0 to 150.6		0.0076 [1]
E - B	81.7	23.7 to 139.6		0.0047 [1]
E - F	74.0	16.1 to 131.9		0.0100 [1]
G - A	72.2	7.4 to 137.0		0.0258 [1]
C - A	66.3	8.4 to 124.3		0.0215 [1]
G - D	47.0	-24.0 to 118.0		0.3096 [2]
E - C	44.7	-13.3 to 102.6		0.1799 [2]
G - B	42.8	-22.0 to 107.6		0.3112 [2]
C - D	41.2	-23.6 to 106.0		0.3504 [2]
E - G	38.8	-26.0 to 103.6		0.4105 [2]
F - A	37.0	-20.9 to 94.9		0.3456 [2]
C - B	37.0	-20.9 to 94.9		0.3456 [2]
G - F	35.2	-29.6 to 100.0		0.5152 [2]
B - A	29.3	-28.6 to 87.3		0.5874 [2]
C - F	29.3	-28.6 to 87.3		0.5874 [2]
D - A	25.2	-39.6 to 90.0		0.8121 [2]
F - D	11.8	-53.0 to 76.6		0.9938 [2]
F - B	7.7	-50.3 to 65.6		0.9989 [2]
G - C	5.8	-59.0 to 70.6		0.9999 [2]
B - D	4.2	-60.6 to 69.0		1.0000 [2]

H0: θ = 0

The difference between the means of the populations is equal to 0.

H1: θ ≠ 0

The difference between the means of the populations is not equal to 0.

[1] Reject the null hypothesis in favour of the alternative hypothesis at the 5% significance level.

[2] Do not reject the null hypothesis at the 5% significance level.

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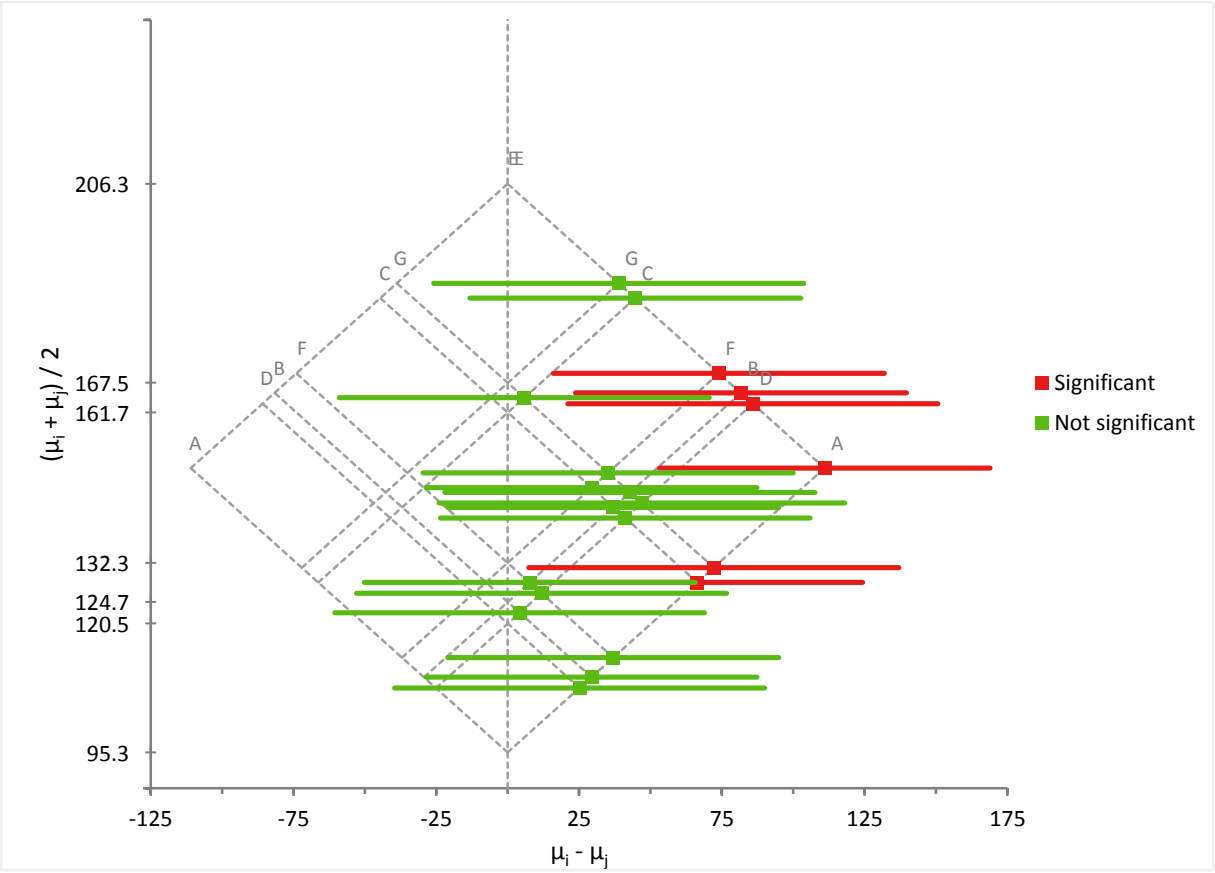
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