

### Your choices:

Test chosen: Power of a "not significant" unpaired  $t$  test

	N	SD
Group 1	17	86.6
Group 2	18	59.4

Significance level (alpha) = 0.05 (two-tailed)

### Explanation for 80% power:

Assume that the true difference between means is 72.28. Now imagine that you perform many experiments, with the same sample size used in the completed experiment. Due to random sampling, you won't find that the difference between means equals 72.28 in every experiment. Instead, you'll find that the difference between means will be greater than 72.28 in about half the experiments, and less than 72.28 in the other half.

In 80% (the power) of those experiments, the P value will be less than 0.05 (two-tailed) so the results will be deemed "statistically significant". In the remaining 20% of the experiments, the P value will be greater than 0.05 (two-tailed) so the results will be deemed "not statistically significant" and you will have made a Type II (beta) error.

Summary: Your experiment had a 80% power to detect a difference between means of 72.28 with a significance level (alpha) of 0.05 (two-tailed).

### Table of tradeoffs:

For any power you choose, this table shows the difference between means that can be detected.

Delta	Power (%)
110.59	99
93.01	95
83.63	90
77.31	85
72.28	<b>80</b>
67.97	75
64.10	70
57.11	60

50.57	50
44.03	40
37.04	30
28.85	20
17.50	10

---

Report created by GraphPad StatMate 2.00. 3/1/2004 1:25:50 PM