

Instructions for carrying out statistical procedures and tests using Minitab

These instructions are closely linked to the author's book:

Essential Statistics for the Pharmaceutical Sciences
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For all references to chapters or tables, see the above book.

**Using Minitab to obtain a 95% confidence interval for the
difference between two proportions**

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Example: Table 16.1 A contingency table showing the effect of IUD design upon the number of women where the device was expelled.

The purpose of this procedure is to determine the difference in the proportion of individuals that fit a particular category under two distinct circumstances. Follow the menus:

Stat / Basic Statistics / 2 Proportions ...

Click on the radio button for 'Summarized data'.

This activates four boxes. They are arranged in two rows labelled 'First:' and 'Second'. These refer to the two groups of individuals. The two columns are headed 'Trials:' and 'Events:'. For Trials, enter the total number of individuals investigated and for Events you can enter the number for either of the two categories. In this example we will consider an expulsion as an 'Event', but you could just as well use the numbers where the device was retained.

In both 'Trials' boxes, enter 2000.

In the two Events boxes, enter 268 (First) and 222 (Second).

The Two proportions window will appear as below:

The screenshot shows the Minitab dialog box titled "2 Proportions (Test and Confidence Interval)". The "Summarized data" radio button is selected. The "First" row has "Trials" set to 2000 and "Events" set to 268. The "Second" row has "Trials" set to 2000 and "Events" set to 222. Buttons for "Select", "Options...", "Help", "OK", and "Cancel" are visible.

	Trials:	Events:
First:	2000	268
Second:	2000	222

Then output will be as on the next page:

Test and CI for Two Proportions

Sample	X	N	Sample p
1	268	2000	0.134000
2	222	2000	0.111000

Difference = $p(1) - p(2)$

Estimate for difference: 0.023

95% CI for difference: (0.00269176, 0.0433082)

Test for difference = 0 (vs not = 0): Z = 2.22 P-Value = 0.026

The penultimate line gives the confidence limits for the difference in outcomes as 0.0027 and 0.0433 i.e. the Test design gives an expulsion rate that is between 0.27 and 4.33 percentage points lower than that for the Control design.

See section 16.2 for full explanation.