

# Instructions for carrying out statistical procedures and tests using SPSS

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

**Essential Statistics for the Pharmaceutical Sciences**  
John Wiley & Sons Ltd <http://eu.wiley.com>

For all references to chapters or tables, see the above book.

**Using SPSS to perform a Fishers Exact test**

## Using SPSS to perform a Fishers Exact test

**Example: Section 18.5 The effect of vitamin C on the common cold.**

Download the spreadsheet Table\_18\_5 from the web site associated with the book.

The data can be pasted into two columns of SPSS set up for string variables. Label these as 'Treatment' and 'Cold'. Then follow the menus:

*Analyze / Descriptive Statistics / Crosstabs ...*

Move the variable 'Cold' into the 'Row(s)' box and 'Treatment' into the 'Column(s)' box. Then click the 'Statistics ...' button and check the option for 'Chi-square'.

Continue and OK.

The contingency table will be presented as below:

**Cold \* Treatment Crosstabulation**

Count		Treatment		Total
		Placebo	VitC	
Cold	N	1	3	4
	Y	3	1	4
Total		4	4	8

The results of the chi-square test are shown as:

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.000 <sup>a</sup>	1	.157		
Continuity Correction <sup>b</sup>	.500	1	.480		
Likelihood Ratio	2.093	1	.148		
<b>Fisher's Exact Test</b>				<b>.486</b>	.243
N of Valid Cases	8				

a. 4 cells (100.0%) have expected count less than 5. The minimum expected count is 2.00.

b. Computed only for a 2x2 table

There is a warning (Blue highlight) that all 4 cells have expected frequencies less than 5, which makes the chi-square test very unreliable.

The P value for Fisher's test (Yellow highlight) is given as 0.486 (Non significant).

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