

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

**Using SPSS to perform a contingency chi-square test**

## Using SPSS to perform a contingency chi-square test

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

In Table 16.1, the data is presented already summarised into a contingency table. SPSS normally receives the data in its primary form (i.e. details for each individual). The data for Table 16.1 is available in its [raw form](#) from this web site.

These can be pasted into two columns of SPSS set up for string variables. Label these as 'Design' and 'Expelled'. Then follow the menus:

*Analyze / Descriptive Statistics / Crosstabs ...*

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

The contingency table will be presented as below:

		Design		Total
		Control	Test	
Expelled	No	1732	1778	3510
	Yes	268	222	490
Total		2000	2000	4000

The key numbers are in the columns headed 'Control' and 'Test' and in the rows labelled 'No' and 'Yes'. These should be the same as those in Table 16.1.

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

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.921(b)	1	.027		
Continuity Correction(a)	4.710	1	.030		
Likelihood Ratio	4.928	1	.026		
Fisher's Exact Test				.030	.015
N of Valid Cases	4000				

P values are presented in the column headed 'Asymp. Sig.' There is both an uncorrected and a Yates' corrected P value (0.027 or 0.030 respectively). Both indicate statistical significance. As this is a 2x2 table, the corrected P value (0.030) is probably preferable (See Section 16.1.4).