

# 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**  
**John Wiley & Sons Ltd <http://eu.wiley.com>**  
**2007**  
**ISBN: 978-0-470-03468-2**

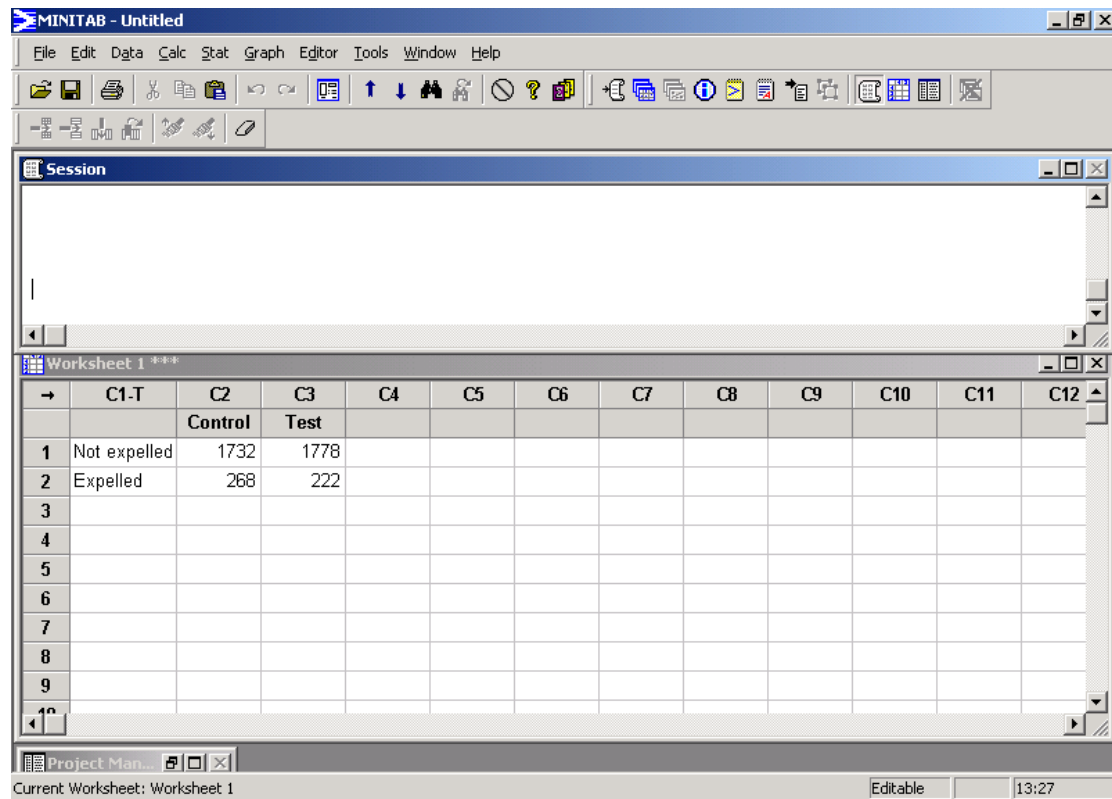
For all references to chapters or tables, see the above book.

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

## Using Minitab 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.

The data is entered into Minitab in exactly the same pattern as the corresponding contingency table. See below:



The screenshot shows the Minitab software interface. The main window is titled 'Worksheet 1' and contains a table with the following data:

	C1-T	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
		Control	Test									
1	Not expelled	1732	1778									
2	Expelled	268	222									
3												
4												
5												
6												
7												
8												
9												

The labels 'Not expelled' and 'Expelled' have been added purely for the sake of clarity and will play no part in the analysis. (They are not necessary.)

Follow the menus:

*Stat / Tables / Chi-Square Test (Table in Worksheet) ...*

In the right hand box, enter the names of the columns containing the data (C2 and C3 in this case). The output is shown on the next page:

### Chi-Square Test: Control, Test

Expected counts are printed below observed counts  
Chi-Square contributions are printed below expected counts

	Control	Test	Total
1	1732	1778	3510
	1755.00	1755.00	
	0.301	0.301	
2	268	222	490
	245.00	245.00	
	2.159	2.159	
Total	2000	2000	4000

Chi-Sq = 4.921, DF = 1, P-Value = 0.027

The P value is provided on the last line and is significant (0.027).

Note that Minitab only provides the P value without the Yates correction. The above analysis concerns a 2x2 table and many would have preferred the corrected value which is not available.