

# 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 Wilcoxon paired samples test**

## Using Minitab to perform a Wilcoxon paired samples test

### Example: Table 17.6 Haemoglobin levels (g/L) in a group of vegans before and after vitamin B12 supplementation

The test is not directly implemented in Minitab, but can be achieved indirectly. You have to generate a column of individual differences and these are then used as input for Minitab's 1-sample Wilcoxon procedure.

For Table 17.6, calculate the individual changes in haemoglobin levels, then follow the menus:

*Stats / Nonparametrics / 1-Sample Wilcoxon ...*

In the Variables box, indicate the one column containing the individual differences. Select 'Test median:' and click OK. The output is:

<b>Wilcoxon Signed Rank Test: Difference</b>					
Test of median = 0.000000 versus median not = 0.000000					
	N	for	Wilcoxon		Estimated
	N	Test	Statistic	P	Median
Difference	28	25	309.5	0.000	6.500

There is a P value on the last line (0.000) which is clearly significant. See Chapter 17 for interpretation of non-parametric tests.