

# 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>**  
**2007**  
**ISBN: 978-0-470-03468-2**

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

**Using SPSS to perform a Wilcoxon paired samples test**

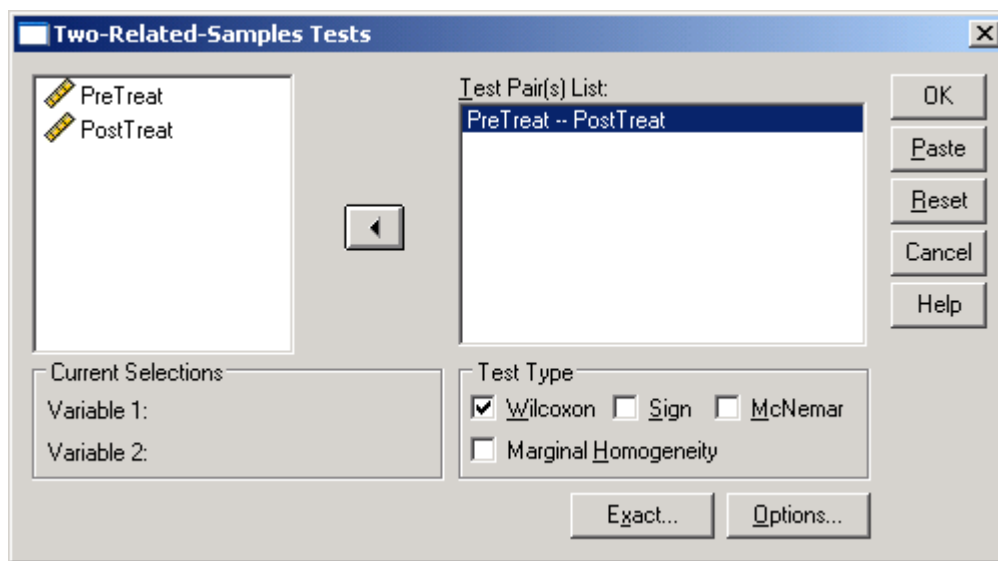
## Using SPSS to perform a Wilcoxon paired samples test

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

Label two columns as 'PreTreat' and 'PostTreat' to take numeric data and enter the data. Follow the menus:

*Analyze / Nonparametric Tests / 2 Related Samples*

Click on 'PreTest' and 'PostTest' so they are both highlighted and then move the pair into the 'Test Pair(s)' box. The 'Two-Related-Samples Tests' window should appear as:



Click 'OK' and the output will be:

#### Ranks

		N	Mean Rank	Sum of Ranks
PostTreat - PreTreat	Negative Ranks	4(a)	3.88	15.50
	Positive Ranks	21(b)	14.74	309.50
	Ties	3(c)		
	Total	28		

a PostTreat < PreTreat

b PostTreat > PreTreat

c PostTreat = PreTreat

#### Test Statistics(b)

	PostTreat - PreTreat
Z	-3.960(a)
Asymp. Sig. (2-tailed)	.000

a Based on negative ranks.

b Wilcoxon Signed Ranks Test

The last line of the second table provides a P value (Yellow; Apparently 0.000) which should be reported as  $<0.001$ . This is highly significant. See Chapter 17 for interpretation of non-parametric tests.