

# 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 Kruskal-Wallis test**

## Using SPSS to perform a Kruskal-Wallis test

### Example: Table 17.7 Pain scores with three different analgesics.

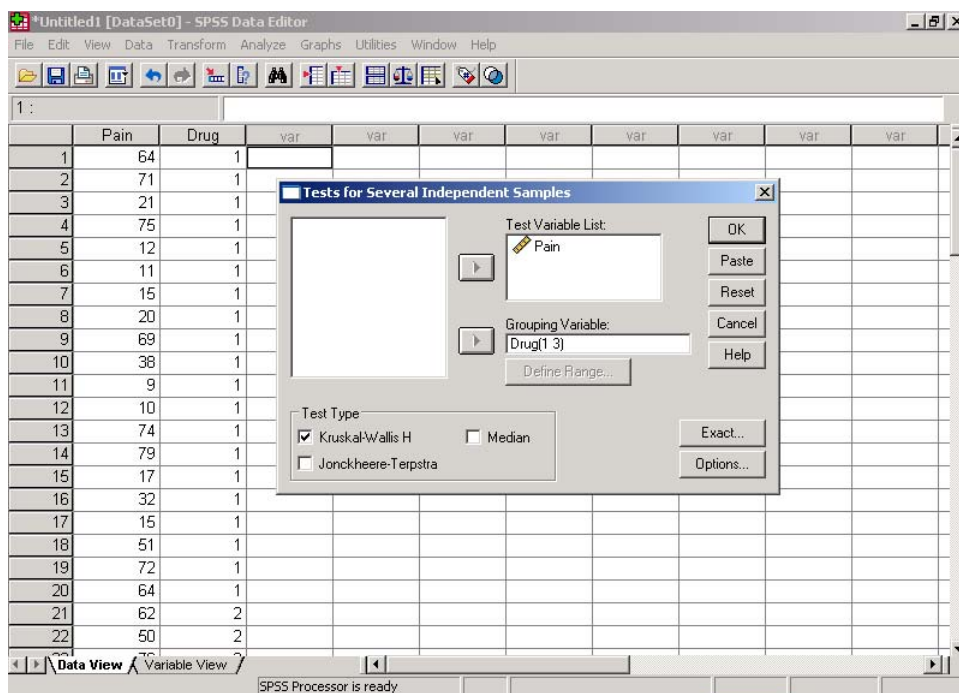
Data are entered in the same pattern as that used for the [one-way analysis of variance](#). The measured end-point data are all entered into a numeric column headed 'Pain' and another, headed 'Drug', carries codes indicating the group to which that result belongs. In the latter case, numeric codes (1, 2 or 3) have been used to represent the different drugs.

To clarify the final output, value labels should be included as previously described. ([one-way analysis of variance](#).) Use labels 1=Oxycod, 2=Morph, 3=Diamorph.

To execute the test, follow the menus:

*Analyze / Nonparametric Tests / K Independent Samples ...*

Move 'Pain' into the 'Test Variable List' box and 'Drug' into the 'Grouping Variable' box. Click the 'Define Range...' button and enter the minimum and maximum values that have been used to encode drugs (1 and 3 respectively). The screen should appear as:



Click 'Continue' and 'OK'. The output will be as on the next page:

### Ranks

	Drug	N	Mean Rank
Pain	Oxycod	20	30.95
	Morph	20	36.23
	Diamorph	20	24.33
	Total	60	

### Test Statistics(a,b)

	Pain
Chi-Square	4.670
df	2
Asymp. Sig.	.097

a Kruskal Wallis Test

b Grouping Variable: Drug

The mean rank values show that recorded pain scores are apparently highest for Morphine and lowest for Diamorphine. However, the lower table shows a P value (Beside 'Asymp. Sig.') of 0.097, so the results are not statistically significant.