

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

Using Minitab to perform a Mann-Whitney test

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Example: Table 17.1 Production of a toxic metabolite (μg) from an analgesic drug in smokers and non-smokers

The data is entered into Minitab in two columns. All we have to enter are the actual quantities of toxin produced. We do not have to work out the rankings – that is all part of the Mann-Whitney procedure. The test is run from the menus:

Stat / Nonparametrics / Mann-Whitney ...

We then complete two boxes labelled 'First Sample:' and 'Second Sample:' It makes little difference which sample we indicate in which box. The results for the toxin data are:

Mann-Whitney Test and CI: Smoke, Non-smoke

	N	Median
Smoke	20	11.050
Non-smoke	20	6.100

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Point estimate for ETA1-ETA2 is 3.225
95.0 Percent CI for ETA1-ETA2 is (0.150,6.599)
W = 488.0
Test of ETA1 = ETA2 vs ETA1 not = ETA2 is significant at 0.0360
The test is significant at 0.0360 (adjusted for ties)
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P values are provided at the end of the penultimate line and in the final line. The latter P value allowing for ties and is generally preferred. See Chapter 17 for explanation and discussion. With $P = 0.036$, the results are significant.

Note that the wording in the penultimate line ('is significant at'), will appear even if the results are not statistically significant!