

Health Science Statistics using R and R Commander by Robin Beaumont

Chapter 19 Comparing two sample means: Independent samples *t* test

Learning Outcomes

*** = more advanced outcomes**

Learning outcome	Tick box
Be able to describe the purpose of the independent samples <i>t</i> test and how this relates to a statistical model	q
Be able to give examples of appropriate use of the independent samples <i>t</i> test	q
Be able to select the appropriate R Commander menu option/dialog box options to produce a plot of means	q
Be able to explain the equal variance assumption	q
Be able to assess a boxplot with regard to the equal variance assumption and observed difference/similarity between the two samples	q
Be able to select the appropriate R Commander menu option/dialog box options to access the equal variance assumption and assess the output appropriately	q
Be able to select the appropriate R Commander menu option/dialog box options to carry out a independent samples <i>t</i> test	q
Be able to interpret a set of results including; <i>t</i> value, df, p-value, confidence interval and sample means	q
Be able to calculate and interpret the effect size (raw) for a independent samples <i>t</i> test	q
*Be able to calculate and interpret the effect size (standardised) for a independent samples <i>t</i> test	q
*Be able to use the <i>t.test()</i> function to carry out a independent samples <i>t</i> test (both wide and long format)	q
*Be able to use the <i>var.test()</i> function with data in wide format (separate column each group) to assess the equal variance assumption	q
*Be able to use the <i>leveneTest()</i> function with data in long format (grouping variable)	q
Be able to describe and provide an example of a dataset in wide and long format (repeated from chapter 18)	q
*Be able to use the <i>stack()</i> and <i>unstack()</i> functions to convert a dataset between wide and long format (chapter 18 extended)	q
*Be able to write up a set of results in the appropriate style	q