

## SPSS 13.0 HELP SHEET: *t*-test

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#### 1. How to enter data to do a *t*-test.

For general advice on data entry see the “How to enter data into SPSS” help sheet.

*t*-tests are used on unrelated data: Data for the dependent variable goes in one column and data for the independent variable goes in another. . In this example, the dependent variable is *BMD* and the independent variable is *SEX*. *BMD* is bone-density measurement measured in grams per square centimetre of the neck of the femur which is a scale level of measurement). *SEX* is measured at the nominal level: either 1 (value label = female) or 2 (value label = male).

#### Variable View:

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	id	Numeric	8	2		None	None	8	Right	Nominal
2	percgr_wo	Numeric	8	2	Without lamb	None	None	8	Right	Scale
3	percgr_w	Numeric	8	2	With lamb	None	None	8	Right	Scale

#### Data View (View – Value Labels off)

	BMD	SEX	var
1	.97	1	
2	.73	1	
3	1.02	2	
4	.87	1	
5	1.02	1	
6	.91	2	
7	.87	2	
8	.94	1	

#### Data View (View – Value Labels on)

	BMD	SEX	var
1	.97	female	
2	.73	female	
3	1.02	male	
4	.87	female	
5	1.02	female	
6	.91	male	
7	.87	male	
8	.94	female	

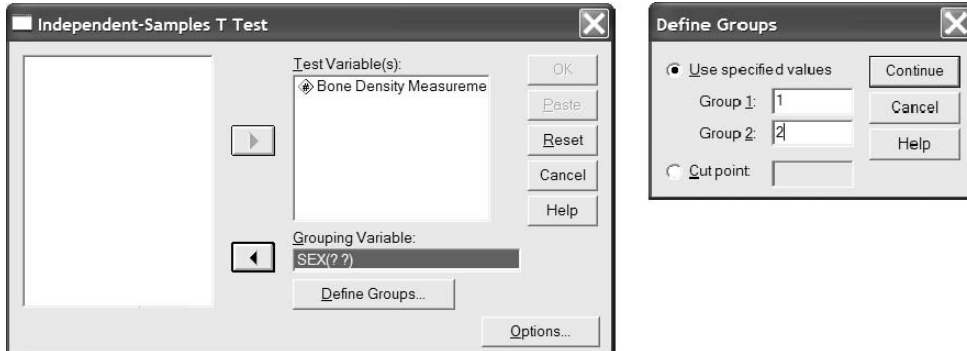
## 2. How to do a *t*-test.

To get SPSS to conduct a *t*-test :

Open your data file.

Select: Analyze – Compare Means – Independent-Samples T Test...

This will bring up the Independent-Samples T Test window (below, left):



Select the dependent variable, and send it to the **Test Variable(s) List** box (in the example above this is *Bone Density Measurement*). Select the independent variable, and send it to the **Grouping Variable** box (in the example above this is *Sex*).

Press the **Define Groups** button to bring up the Define Groups window (above right).

Under **Group 1** type the number code for the first sample (in the example above this is 1).

Under **Group 2** type the number code for the first sample (in the example above this is 2).

Click Continue and then OK.

The key elements of the output are:

**Group Statistics**

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Bone Density Measurement (g/square cm)	female	20	.8147	.11152	.02494
	male	20	.8800	.08709	.01947

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Bone Density Measurement (g/square cm)	Equal variances assumed	1.527	.224	-2.061	38	.046	-.06520	.03164	-.12925	-.00115
	Equal variances not assumed			-2.061	35.892	.047	-.06520	.03164	-.12938	-.00102

**STATISTIC**

**DEGRESS OF FREEDOM**

**P**