PhD Course in Basic Biostatistics
Exercise 7.1 SPSS

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The file *postterm.sav* contains the post term delivery data used at the lectures day 7. Below we will go through the analysis of these data in SPSS.

1. Make a two by two table showing the association between parity and post term delivery. Calculate, by hand, the odds for post term delivery in each of the two parity groups (no CI's).

2. Run the SPSS commands:
```
CROSSTABS
/TABLES=parity  BY ptd
/STATISTIC=RISK.
```
Find the odds ratio with confidence interval from page 4.

3. Run the SPSS commands:
```
LOGISTIC REGRESSION  ptd
/METHOD = ENTER parity
/PRINT = CI(95)
/CONTRAST (parity)=Indicator(1).
```
The last line sets the reference group for parity to the first value, i.e. parity=0.
This can be checked in the table **Categorical Variables Codings** the log odds for the reference group.
Now only look at the **Block 1 : Method=Enter – Variables in the Equation** section
Find the log odds ratio with standard error and the odds ratio with confidence intervals on page 11.
The output also contains two z-tests/Wald test, what do we test here?

Note, SPSS will only give you confidence intervals for the ORs the exp(B)s
Generate a new variable *age30= age-30*.
We will now look at the association between age and the risk of post term delivery among women with parity =0. Use "select cases" for this.

5. Run the SPSS commands
```
LOGISTIC REGRESSION  ptd
/METHOD = ENTER age30
/PRINT = CI(95)
```
Find all most of the estimates, confidence intervals, and the tests shown on page 19.

6. Calculate, based on the output, the odds ratio (with CI) for post term delivery comparing two women (both given birth to their first child), who differ 10 years in age.

Back to comparing the parity groups. Remember to unselect (`USE ALL`).

7. Run the SPSS commands

```
LOGISTIC REGRESSION ptd
/METHOD = ENTER parity age30 parity*age30
/PRINT = CI(95)
/CONTRAST (parity)=Indicator(1).
```

   Find the estimates with *se* in the lines Parity==0 and Difference and the z-test/Wald from page 27.
   Take the log to the confidence intervals in the SPSS output and compare to the confidence intervals on page 27.

8. Change the reference for parity to the parity>0 (`Indicator(2))` in the syntax above and compare with the Parity>0 line on page 27.

9. Run the SPSS commands

```
LOGISTIC REGRESSION ptd
/METHOD = ENTER parity age30
/PRINT = CI(95)
/CONTRAST (parity)=Indicator(1).
```

   Compare with page 29.
   Find the age-adjusted OR with confidence interval from page 29.
   Comment on the Wald-test.