

## LAB SESSION 4

- VER:16.1; add4:3, 1; add2:8, 11; (add2:12)

### Outline of session:

- brief tutorial of Minitab's logistic regression menus (using `mice` and `nocardia` datasets),,
- individual work on first VER logistic regression exercise: VER 16:1,
- suggested further work on extra “Exercises from Session 4: Logistic regression”,  
# 3: logistic two-factor design,  
# 1: logistic regression with single quantitative predictor,
- (maybe) work on extra linear modelling exercises (Exercises 8, 11 (12) for Session 2),
- (maybe) discussion of earlier exercises or lecture material, individually with instructor,
- (maybe) review/demonstration for selected questions from exercises at 15:30?

### Notes for specific exercises:

- add4:3: two data formats (grouped, ungrouped with frequencies), see solution files.

Solution files: at VHM 802, Exercises and Datasets page.

## LOGISTIC REGRESSION IN MINITAB 21

Two menus (under **Stat-Regression**):

- simple Binary Fitted Line Plot menu (one continuous predictor),
- main analysis menu:  
Stat-Regression-Binary Logistic...

Notes on setup and options:

- choice between binary and grouped data formats,
- similar menu layout as for linear models, e.g. derived terms (interactions, polynomials) are defined in the Model submenu,
- ANOVA table-like layout of tests (either Wald or likelihood-ratio, deviance  $\sim -2 \ln L$ ).

Features to be discussed later in course (lectures 4b and 5a):

- model fit statistics:  $R^2$ , AIC etc., ROC curve,
- diagnostic plots and statistics, with some similarity to linear models, but based on *covariate patterns*,
- Hosmer-Lemeshow goodness-of-fit test for ungrouped data.