

Assignment II for

EP16: Missing Values in Clinical Research

Multiple Imputation

13 – 17 May, 2019

Data

The **MI_{dat11}** data comprise 604 observations of 604 mothers measured repeatedly before and during pregnancy. All women were scheduled to have their weight measured once each trimester and were asked for their pre-pregnancy weight and BMI.

The dataset contains the following variables:

variable	explanation
ID	subject identifier
sex	sex of the child
lean	lean mass in kg
length	child's length at time of DXA scan in centimeters
bdate	child's birth date
BMC	bone mineral content of the child in grams, determined by DXA scan
birthwgt	birthweight (SD-score)
season	season of blood sampling
singleton	is the child a singleton birth?
sports	does the child do sports regularly?
weight	child's total weight in kg at DXA scan
sun	average sun light duration in minutes/day in the month before blood sampling
sun_birth	average sun light duration in the month before birth in hours/day
leanfrac	proportion of child's lean mass (lean mass/total mass; lean mass = total mass - fat mass)
ethn	child's ethnicity
vitD	mother's serum vitamin D concentrations in 10 nmol/L

Analysis model of interest

The analysis model of interest is a linear regression with outcome BMC, and covariates vitD, ethn, sex, leanfrac, sports, sun, season, length and weight.

We assume that vitD has a non-linear (quadratic) effect.