

Assignment II for EP16: Missing Values in Clinical Research

Multiple Imputation

13 – 17 May, 2019

Data

The **Midat11** data comprise data of 604 children and their mothers on vitamin D exposure of the mother during pregnancy and child bone health, measured by **DXA scan**, at 6 years of age. Maternal serum samples were taken in the third trimester of pregnancy.

The dataset contains the following variables:

variable	explanation
ID	subject identifier
sex	child's sex
lean	lean mass in kg
length	child's length in cm at time of DXA scan
bdate	child's birth date
BMC	bone mineral content of the child in grams, determined by DXA scan
birthwgt	birthweight (standard deviation score)
season	season of blood sampling
singleton	is the child a singleton birth?
sports	does the child play 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 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.