

## Sample size estimation for a repeated measures mixed model with normal data

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# Program to calculate sample size with normal data and a repeated measures
mixed model
#
# Brown and Prescott. Applied Mixed Models in Medicine. Wiley, 1999. P256.
#
# Programmed by J. Ranstam on March 25, 2009

n = function(m, s2b, rho, delta, alpha, power) {
  floor(1+2*(qnorm(1-alpha/2)+qnorm(power))**2*s2b*(1+(m-1)*rho)/
(m*delta**2))
}

n          # number of patients required per group
m      <- c(4)      # number of repeated measures
s2b    <- c(76)     # between-patient variance
rho    <- c(0.53)   # intraclass correlation
delta  <- c(5)      # difference to be detected
alpha  <- c(0.05)   # significance level
power  <- c(0.80)   # power

n(m, s2b, rho, delta, alpha, power)
```