

AssignmentC

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Contents

```
data0 <- readRDS("incomplete_data_g1.rds") # load incomplete
data1 <- readRDS("complete_data.rds")
```

```
data0["weight"] <- I(data0$bmi * (data0$height / 100)^2)
```

```
sex <- as.numeric(data0$sex) - 1
bmi <- data0$bmi
bmiSex <- sex * bmi
data0["bmiSex"] <- bmiSex
```

```
pred <- make.predictorMatrix(data0)
meth <- make.method(data0)

meth["weight"] <- "~ I(bmi * (height / 100)^2)"
meth["bmiSex"] <- "~ I(bmi*sex)"

pred[c("bmi", "bmiSex", "height"), "weight"] <- 0
pred[c("bmiSex", "sex", "bmi"), c("bmiSex", "sex", "bmi")] <- 0
pred[, "weight"] <- 0
```

```
mincorExample <- quickpred(data0, mincor = 0.2)
pred[c("bmi", "bmiSex", "height"), "weight"] <- 0
pred[c("bmiSex", "sex", "bmi"), c("bmiSex", "sex", "bmi")] <- 0
pred[, "weight"] <- 0
pred["smoke", ] <- 0
pred["smoke", c("intensity", "rest")] <- 1
pred["active", ] <- 0
pred["active", c("age", "intensity", "rest")] <- 1
```

```
imp1 <- mice(data0,
  predictorMatrix = pred,
  method = meth,
  maxit = 20,
  m = 30,
  seed = 123,
  print = FALSE)
```


[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

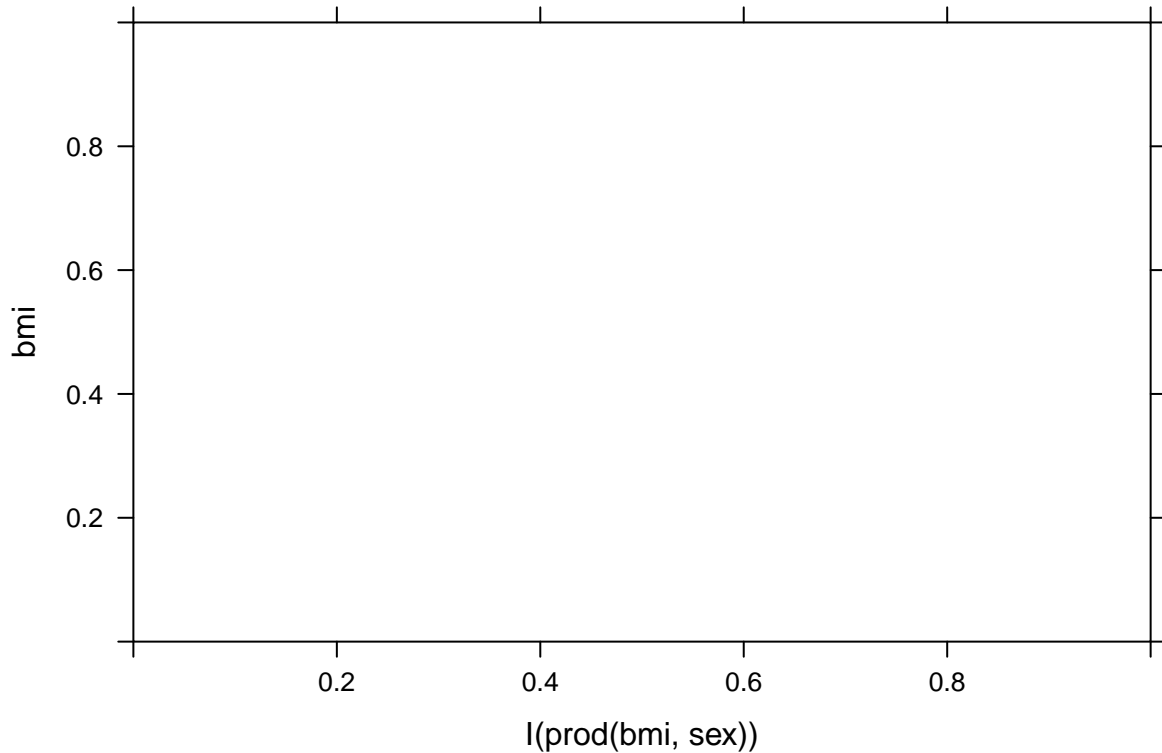
[illegible]

[illegible]

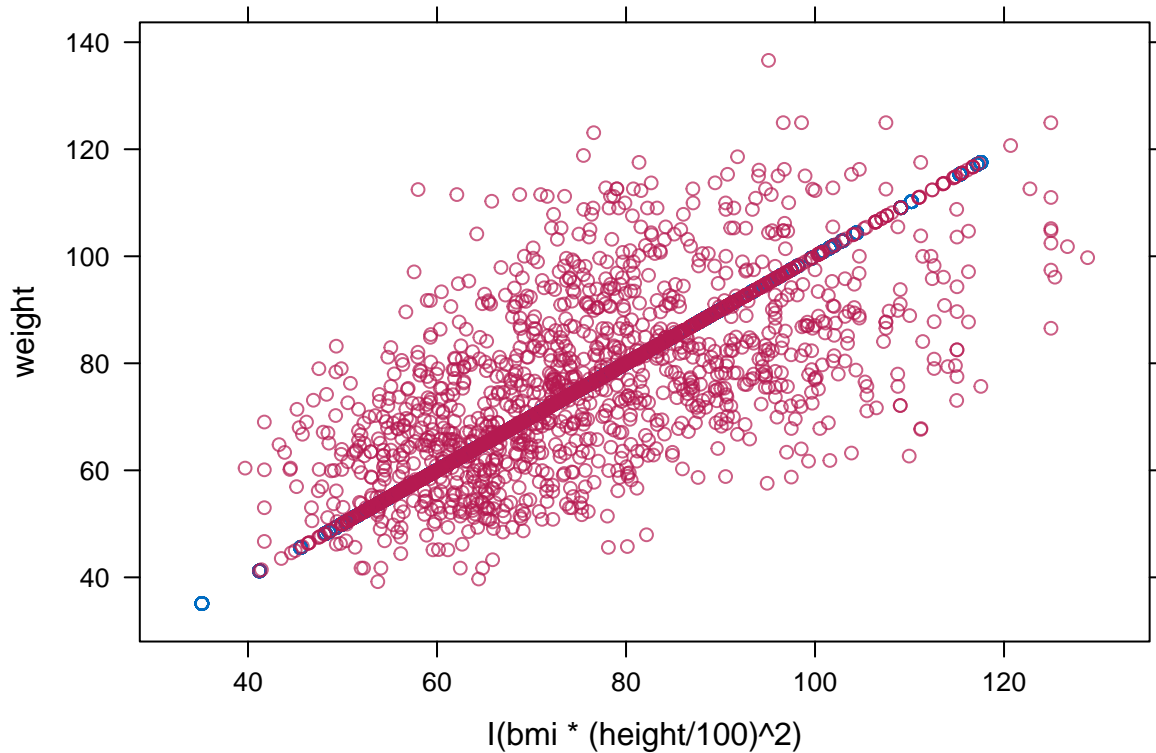
[illegible]

```
## Warning in Ops.factor(bmi, sex): '*' not meaningful for factors
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```

```
xyplot(imp1,
      bmi ~ I(prod(bmi, sex))
    )
```



```
xyplot(imp1,
      weight ~ I(bmi * (height/100)^2))
```

```
fitImp2 <- with(imp1, lm(active ~ age + bmi + sex + smoke + bmiSex))
est2 <- pool(fitImp2)
summary(est2)
```

```
##           term      estimate  std.error statistic      df      p.value
## 1 (Intercept) 88.9978458 13.2305422   6.726697 136.1696 4.397982e-10
## 2          age -0.8008969  0.1069223  -7.490456 140.4024 6.955769e-12
## 3          bmi  1.2845775  0.5107627   2.515018 126.3182 1.315785e-02
## 4  sexfemale 25.6532597 19.8531495   1.292151 146.1413 1.983445e-01
## 5   smokeyes  3.1236088  2.8076562   1.112533 135.1205 2.678847e-01
## 6    bmiSex -0.9161543  0.8423681  -1.087594 140.7648 2.786332e-01
```

```
est2
```

```
## Class: mipo      m = 30
##           term  m  estimate      ubar      b      t dfcom
## 1 (Intercept) 30 88.9978458 1.411328e+02 32.820409624 175.04724588 207
## 2          age 30 -0.8008969 9.341551e-03  0.002023383   0.01143238 207
## 3          bmi 30  1.2845775 2.035470e-01  0.055482143   0.26087853 207
## 4  sexfemale 30 25.6532597 3.277780e+02 64.228574824 394.14754557 207
## 5   smokeyes 30  3.1236088 6.334238e+00  1.498736843   7.88293318 207
## 6    bmiSex 30 -0.9161543 5.804653e-01  0.124953705   0.70958408 207
##           df      riv      lambda      fmi
## 1 136.1696 0.2403015 0.1937444 0.2053311
## 2 140.4024 0.2238203 0.1828866 0.1942827
```

```
## 3 126.3182 0.2816625 0.2197634 0.2318303
## 4 146.1413 0.2024832 0.1683875 0.1795395
## 5 135.1205 0.2444958 0.1964617 0.2080971
## 6 140.7648 0.2224402 0.1819641 0.1933443
```