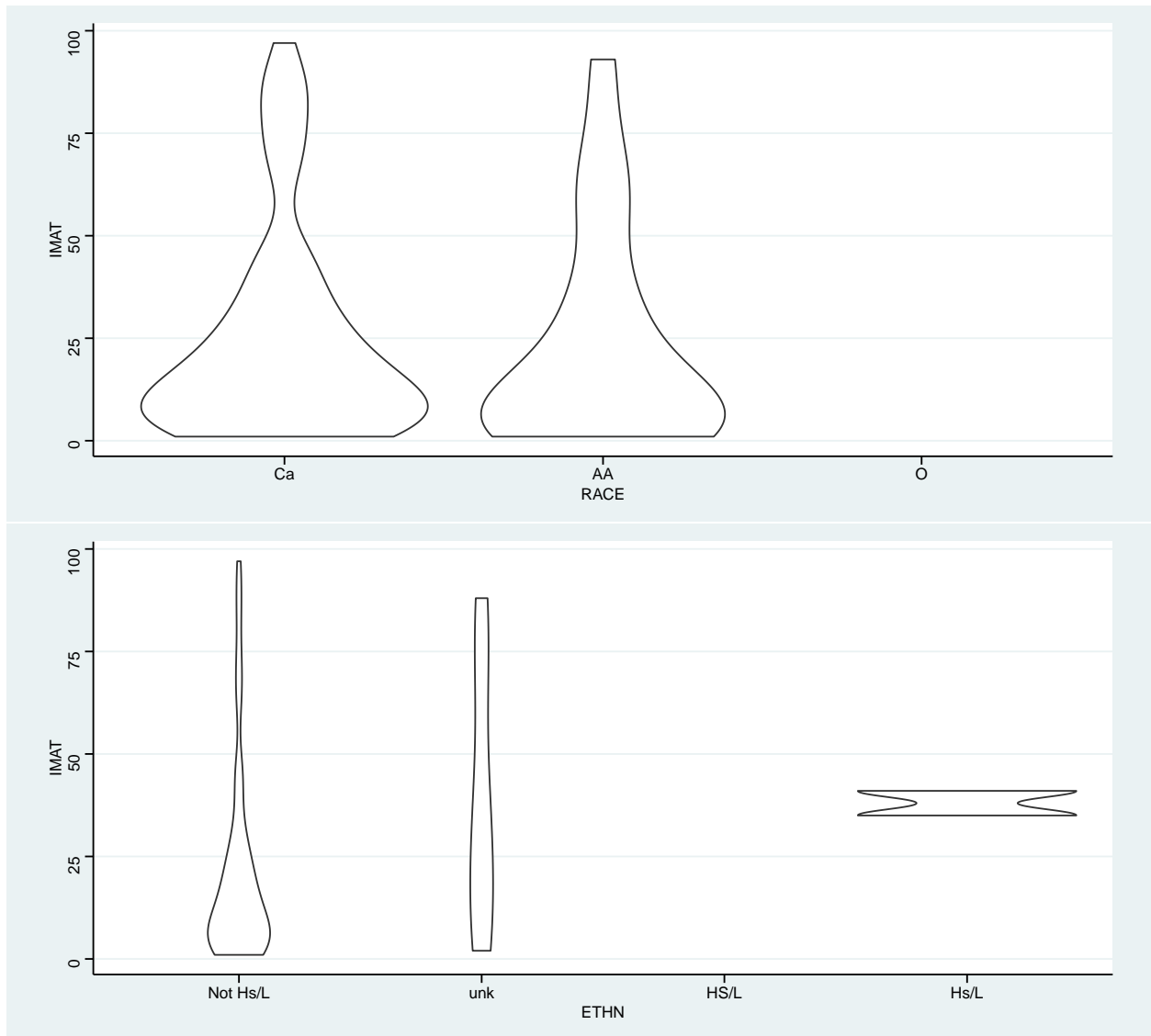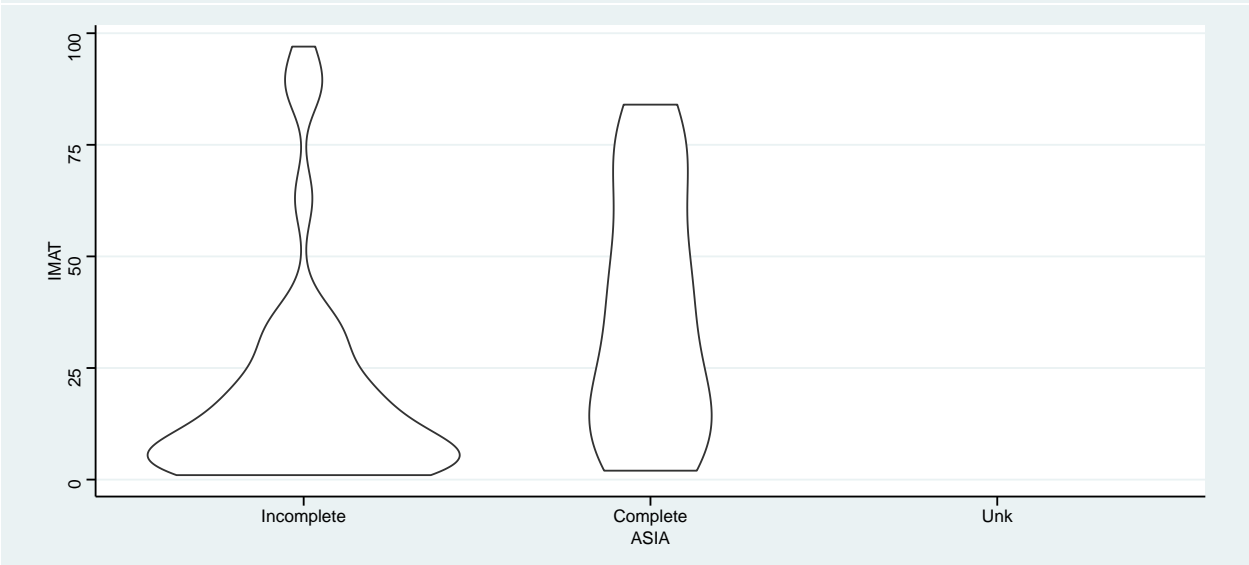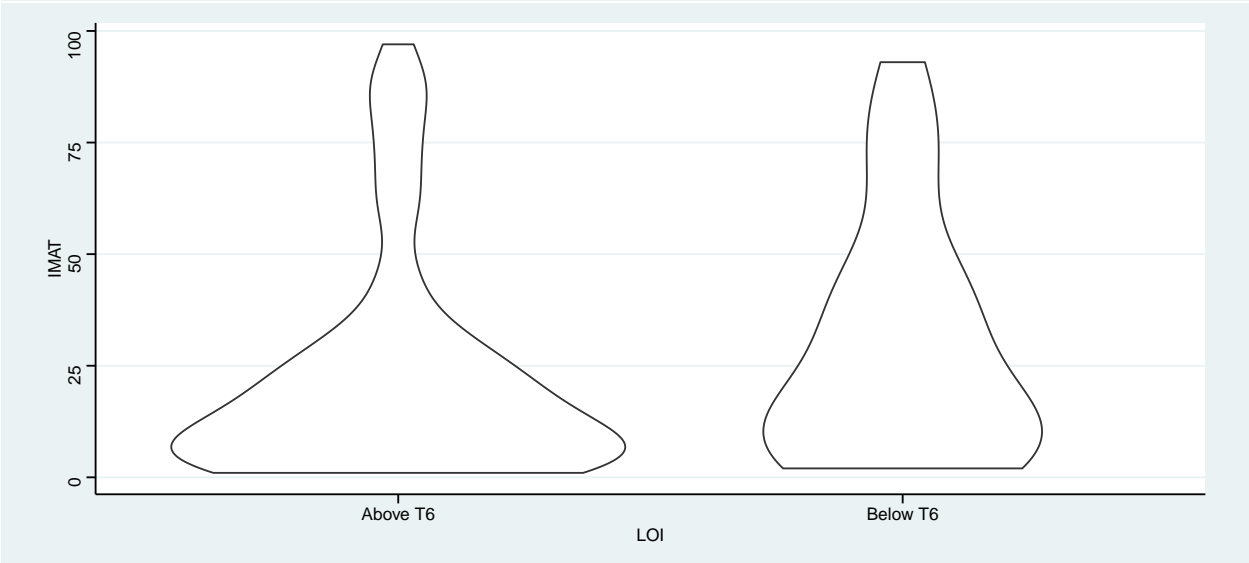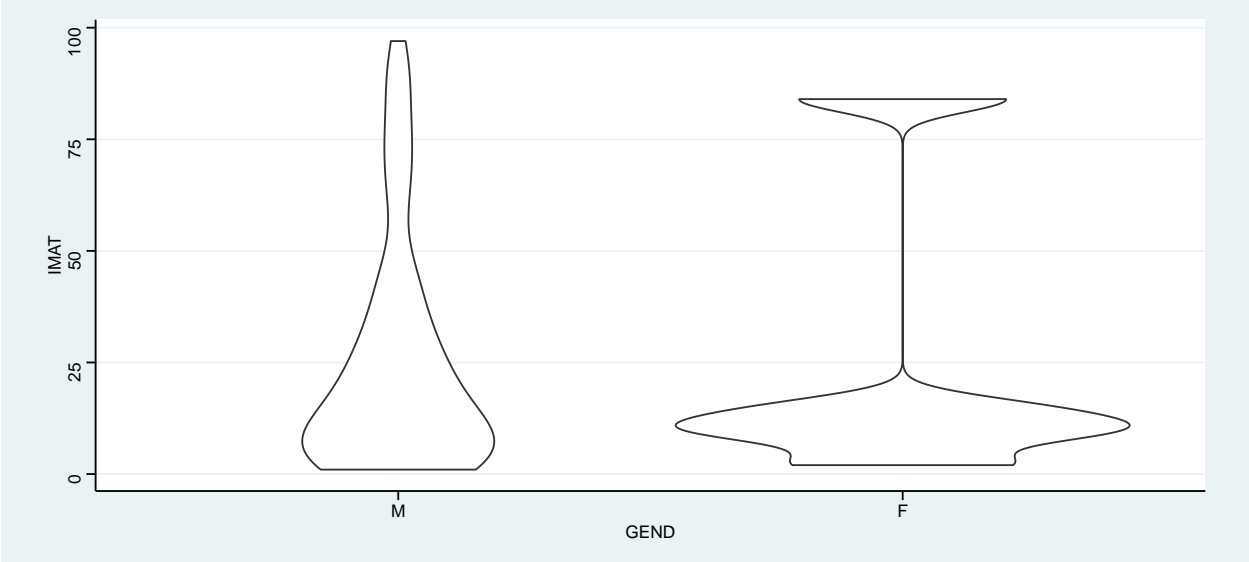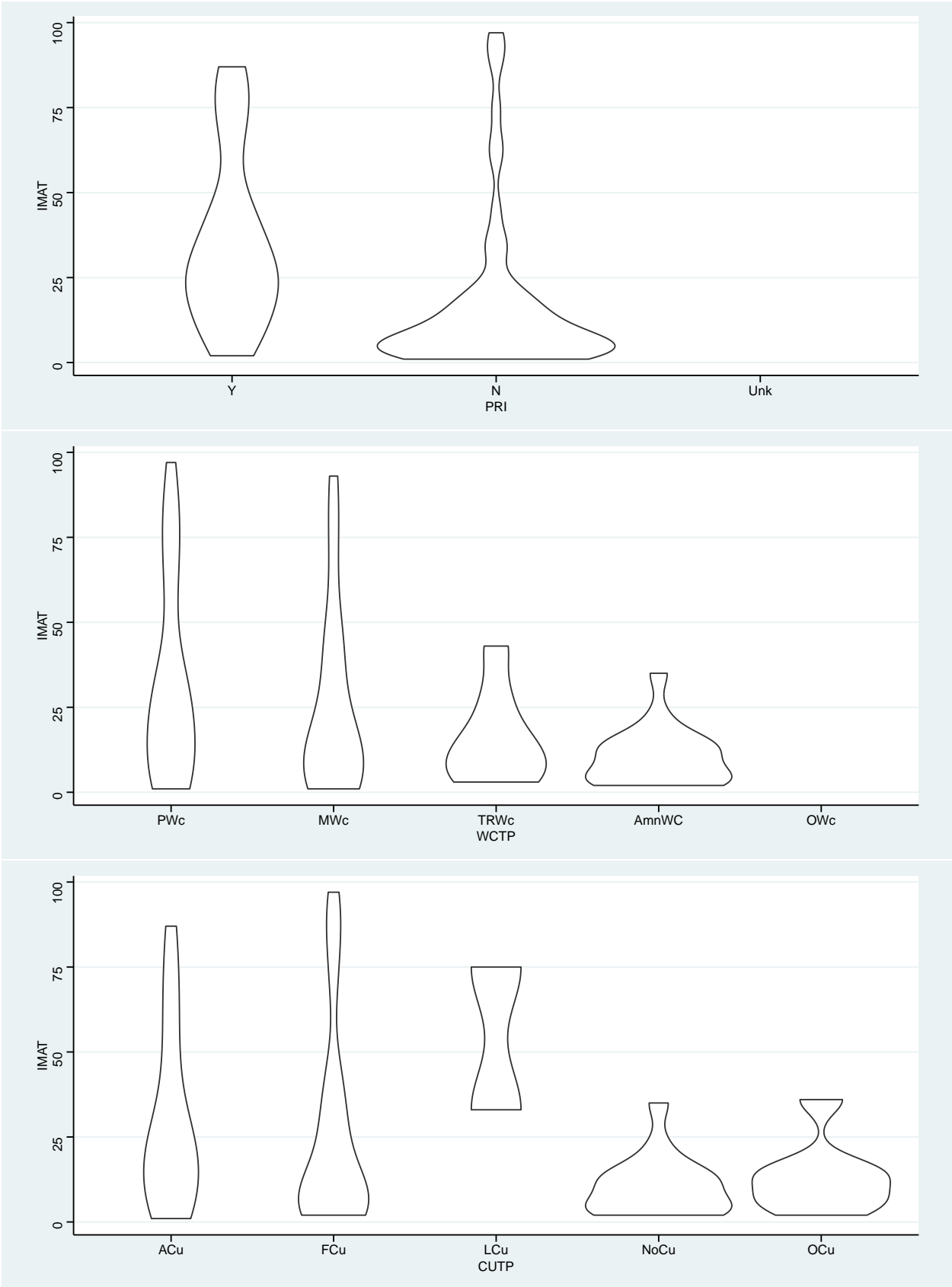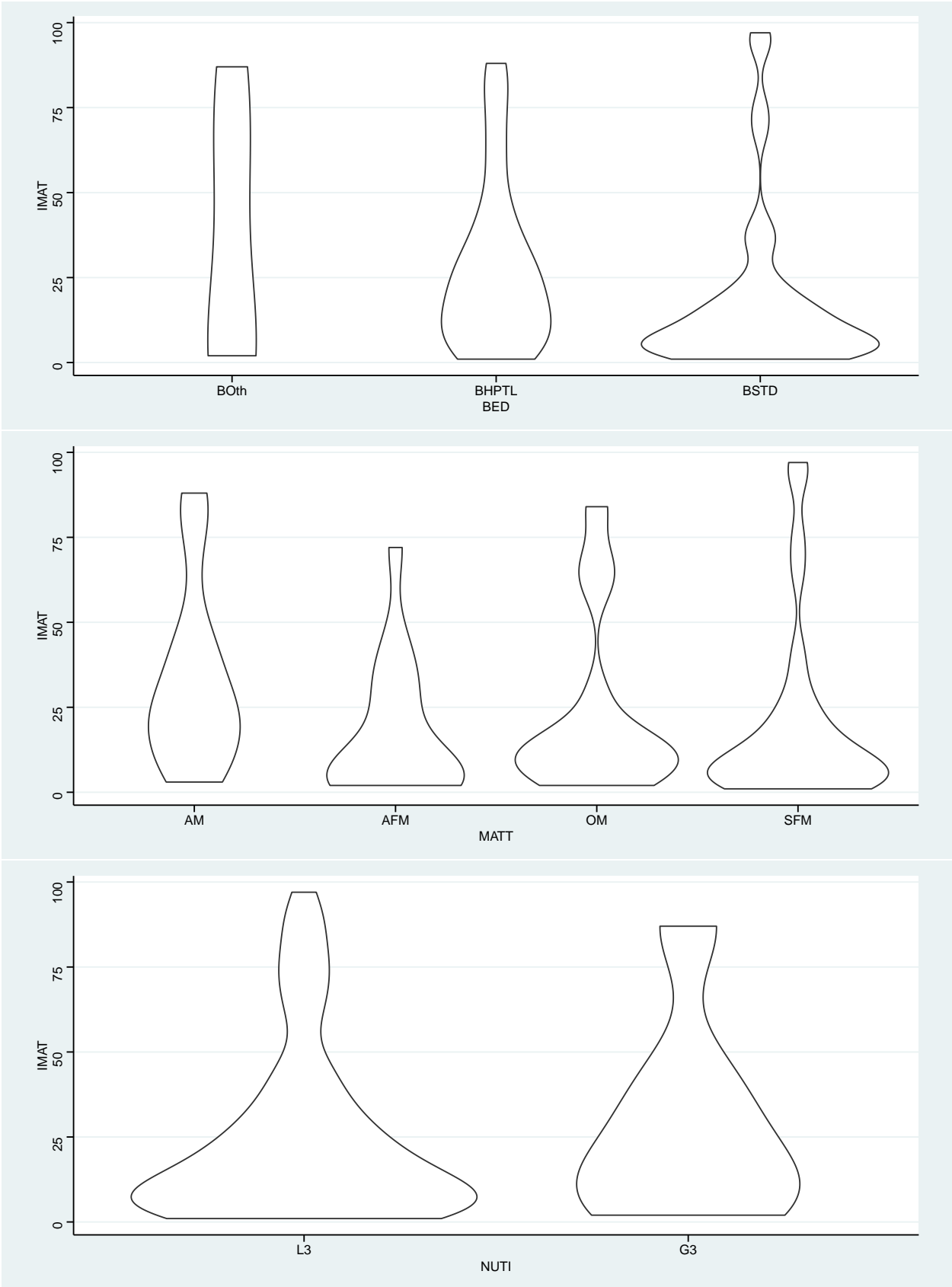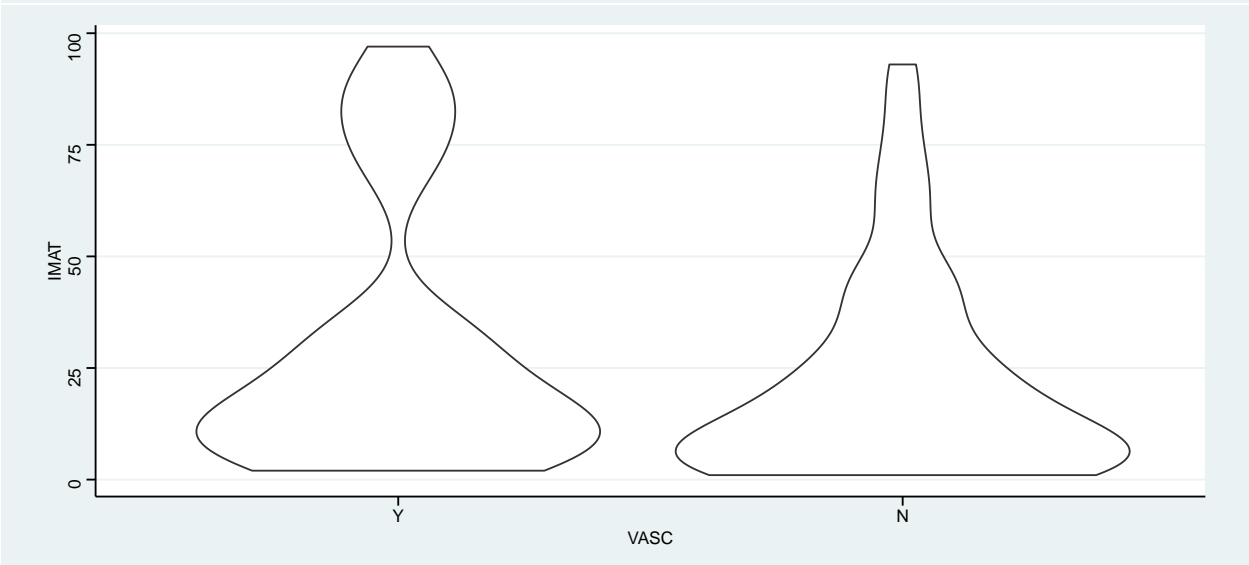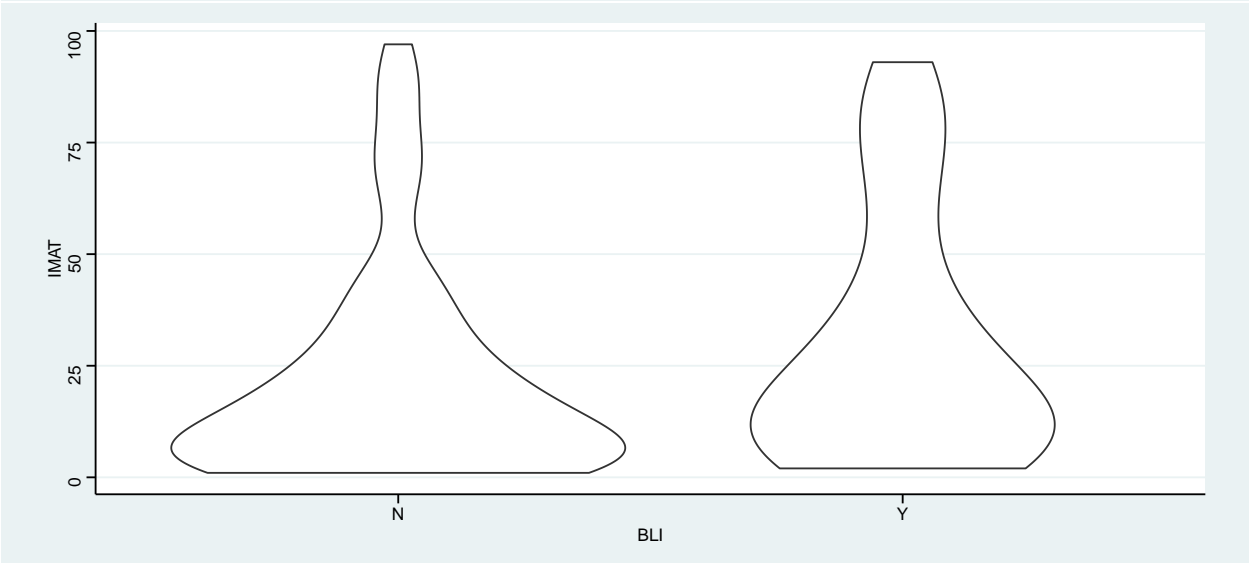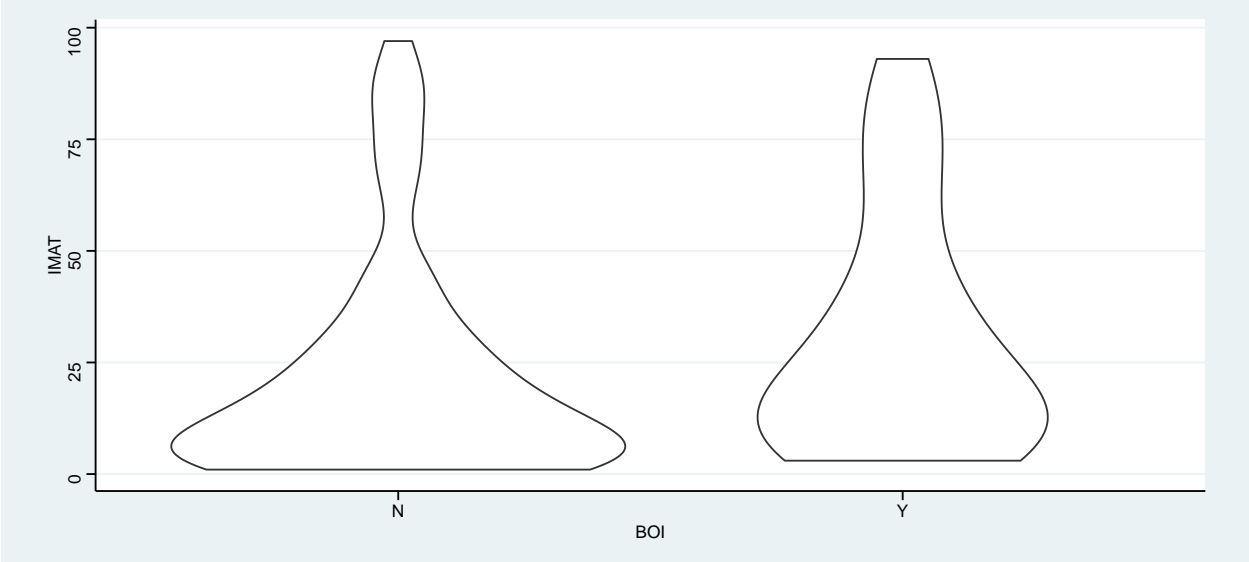# BEIPIR

Dr. Jiayang Sun, Gabriel Brehm

2023-02-22

Visualizations

NOTE: 1 ALBUMIN VALUE IS AT 999, NEED TO UNDERSTAND THAT

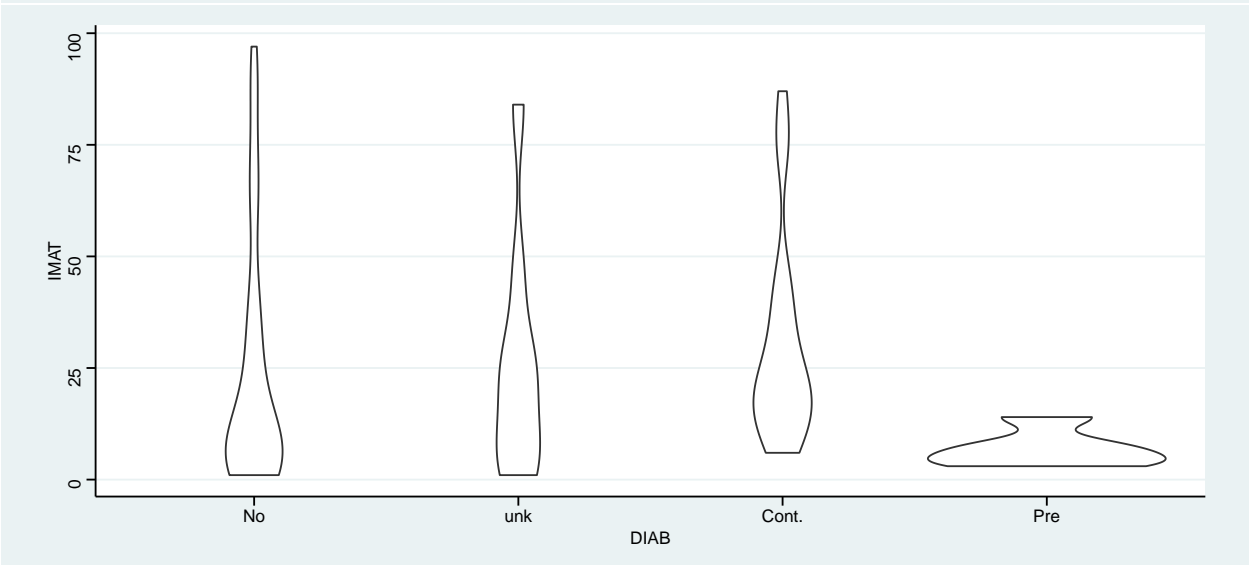AGEN YRIN IMAT SYRS WT HT BMI ALBM HGA1 HRSC
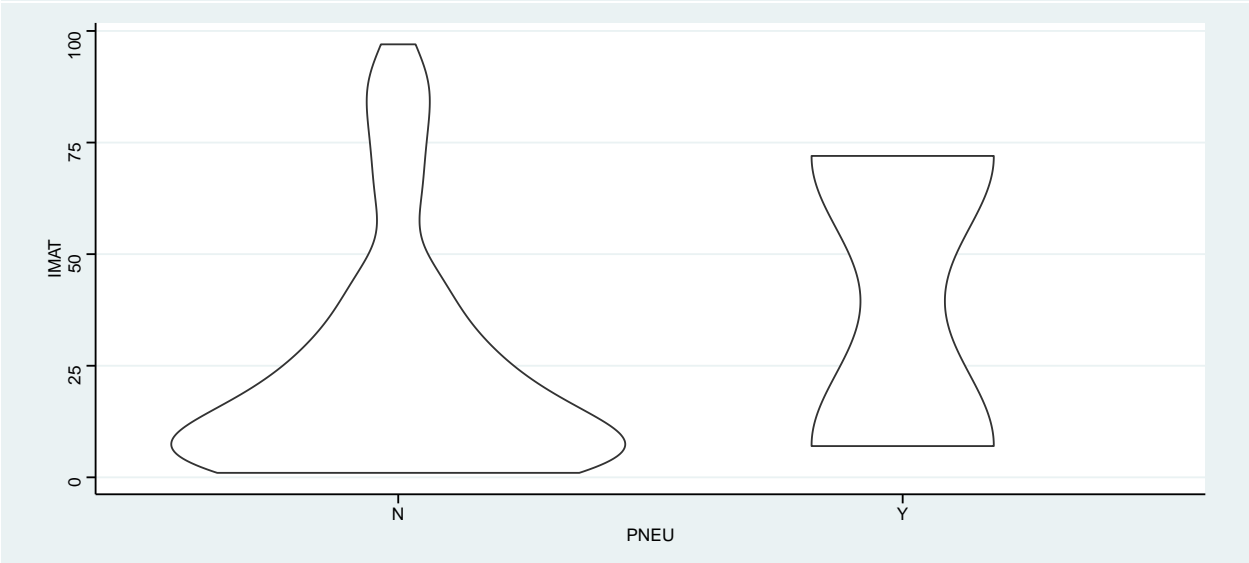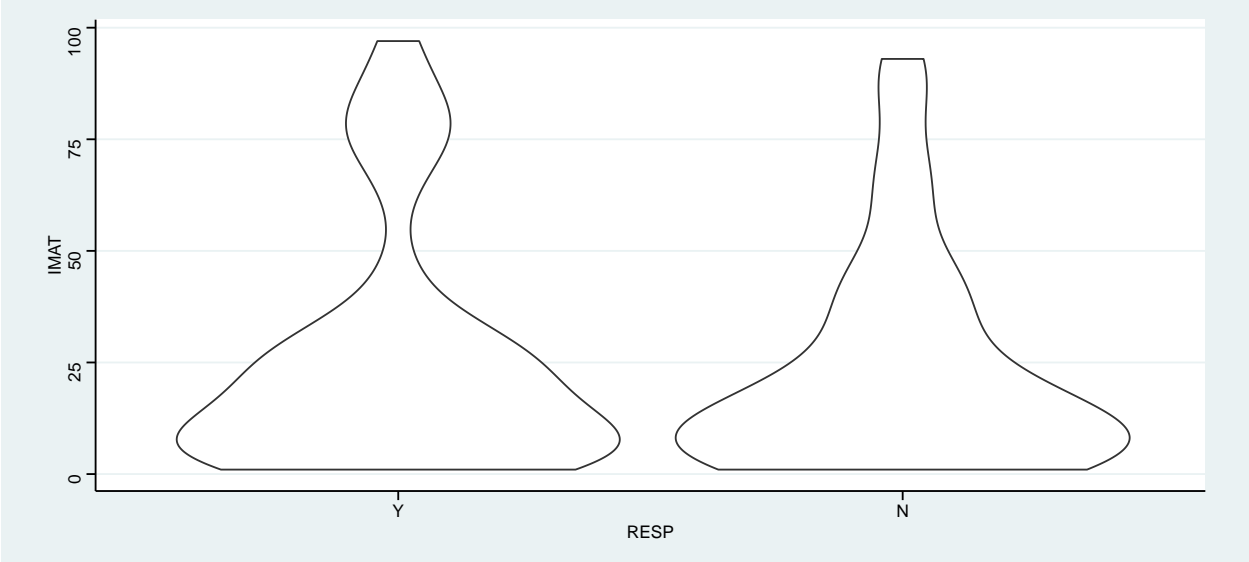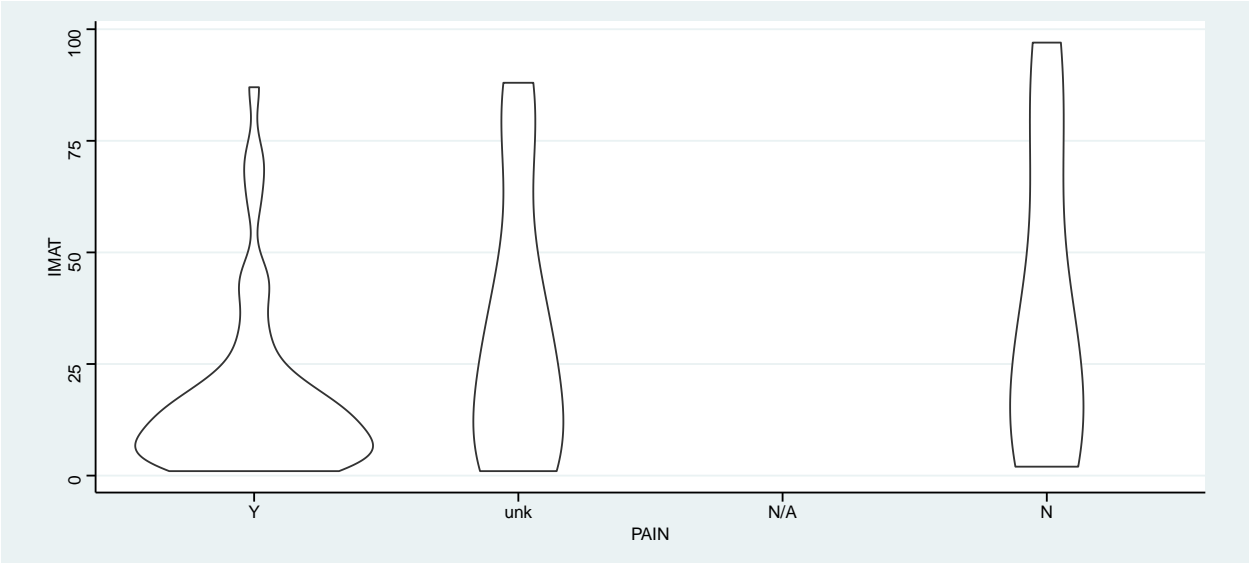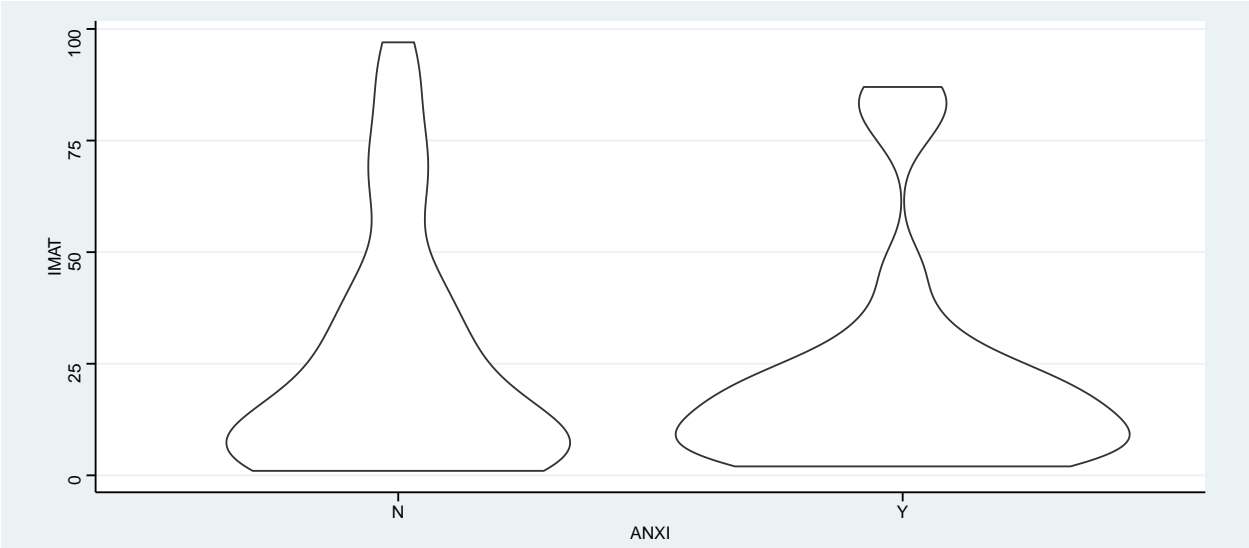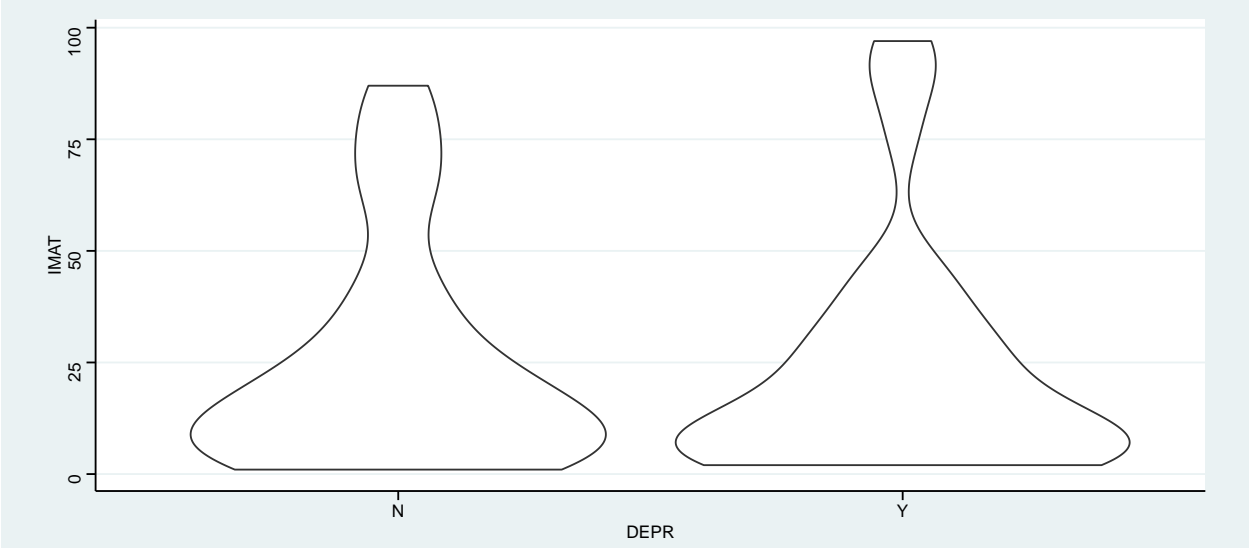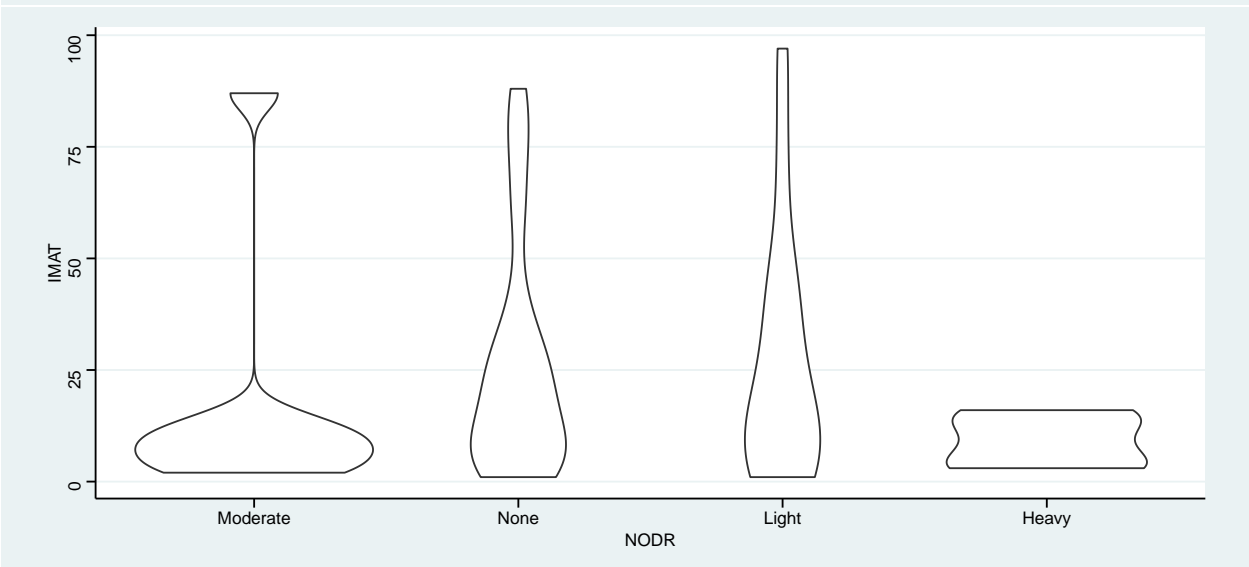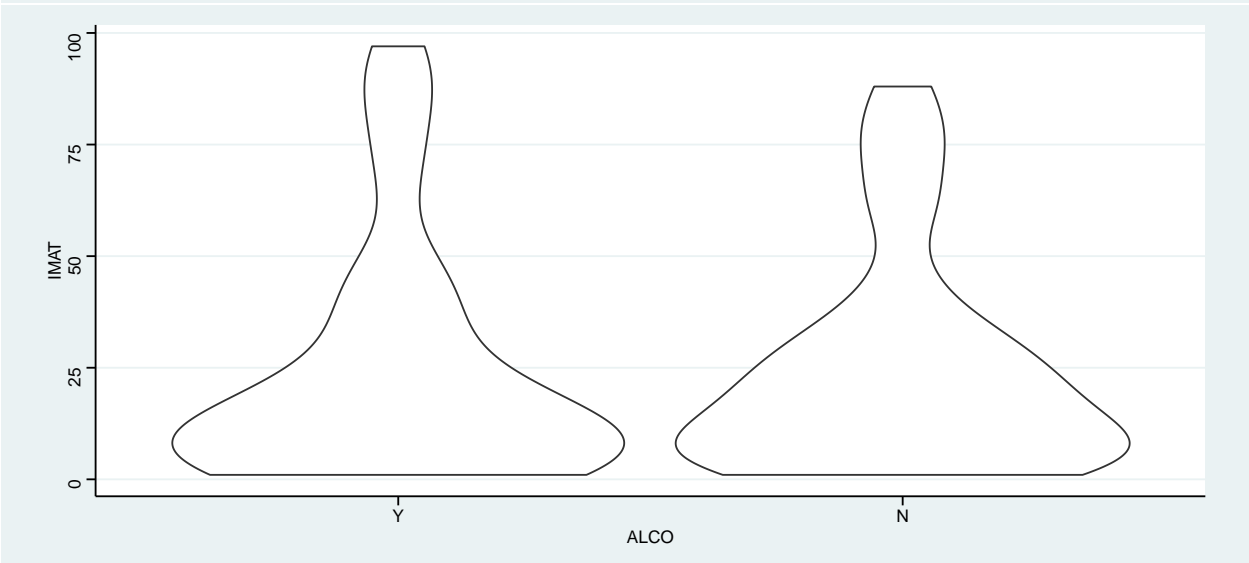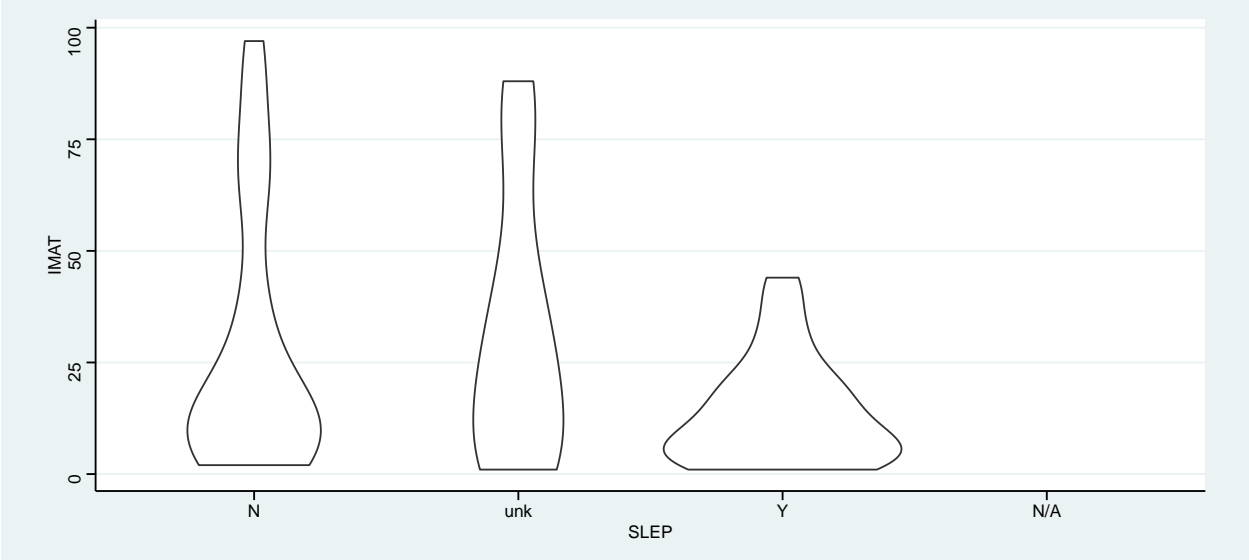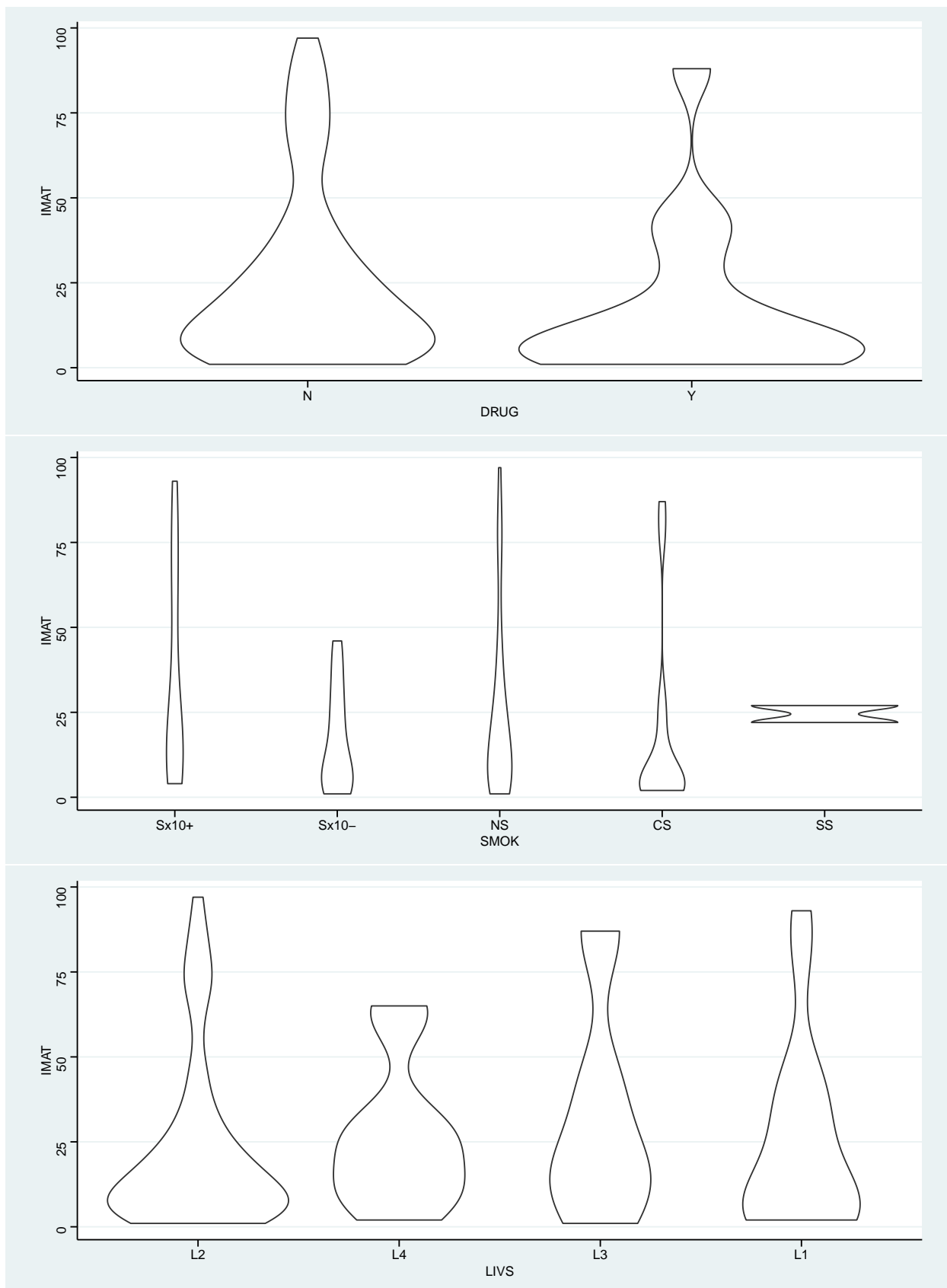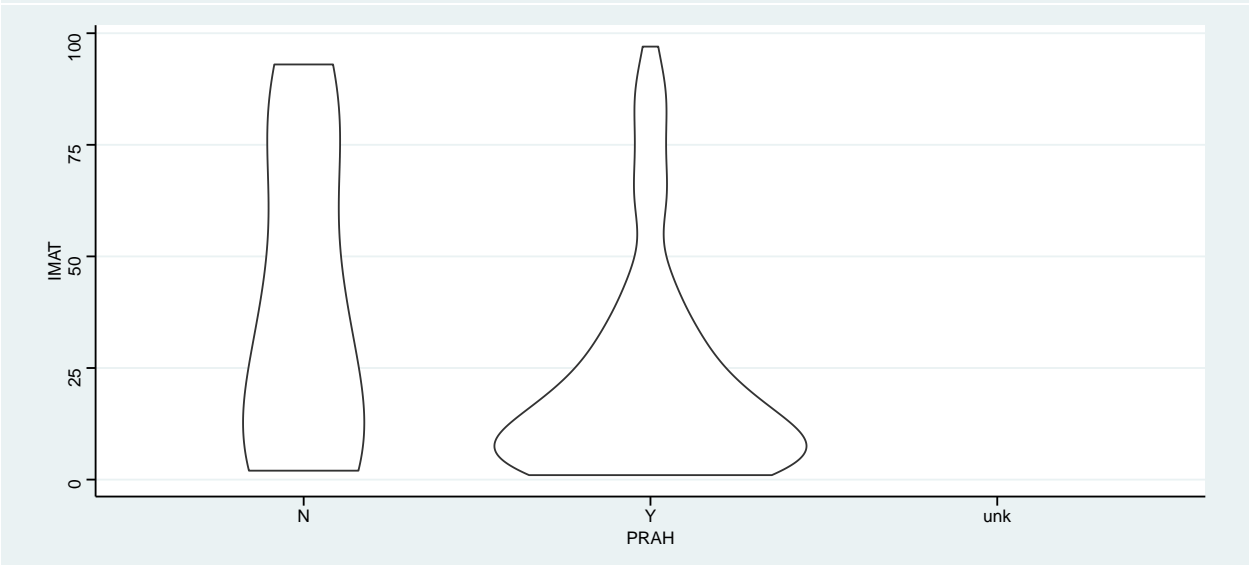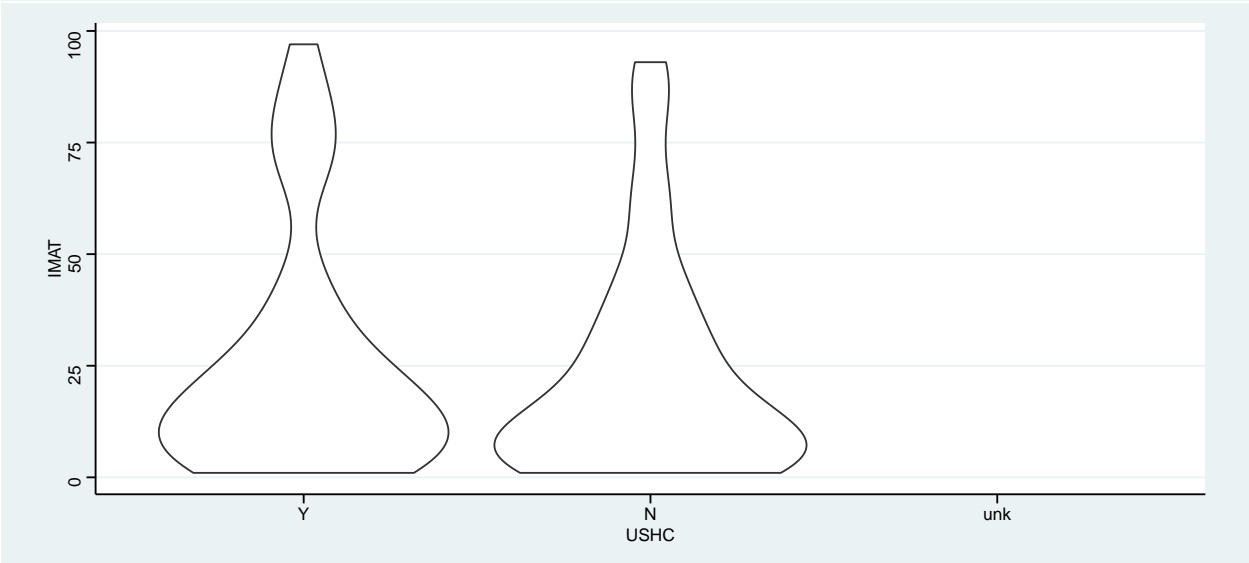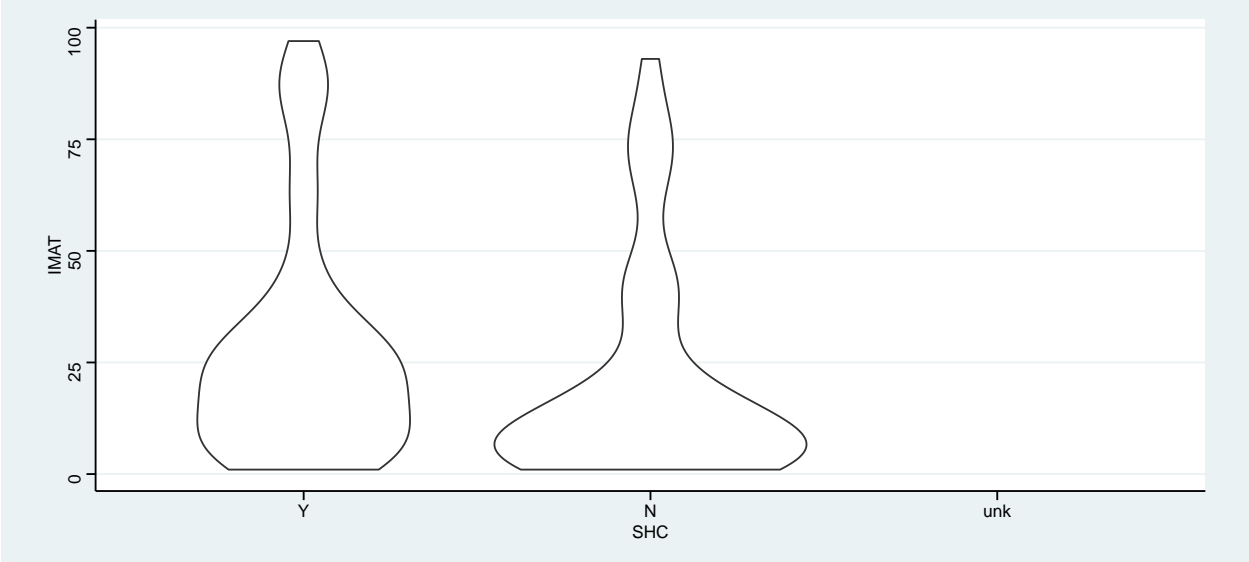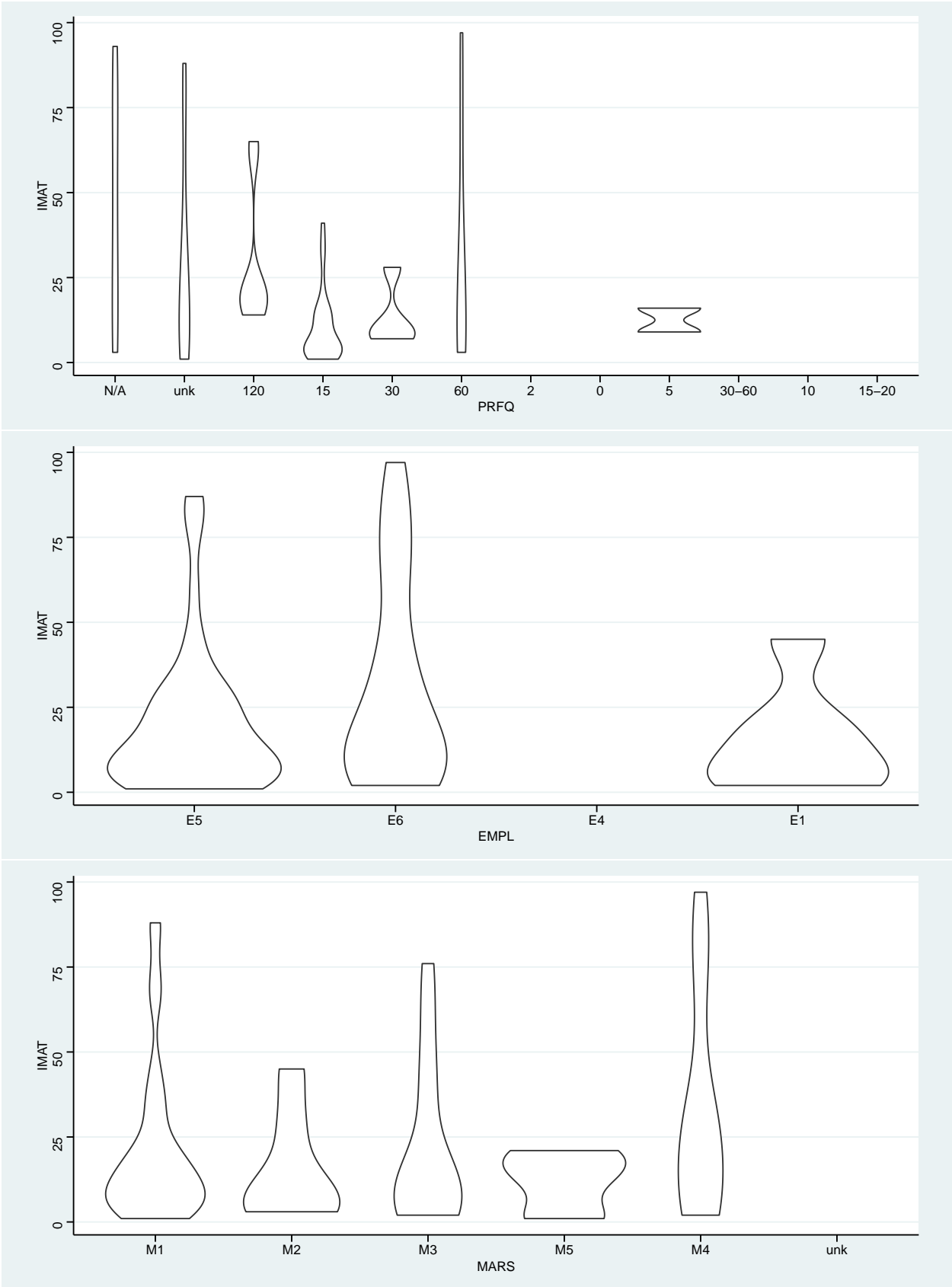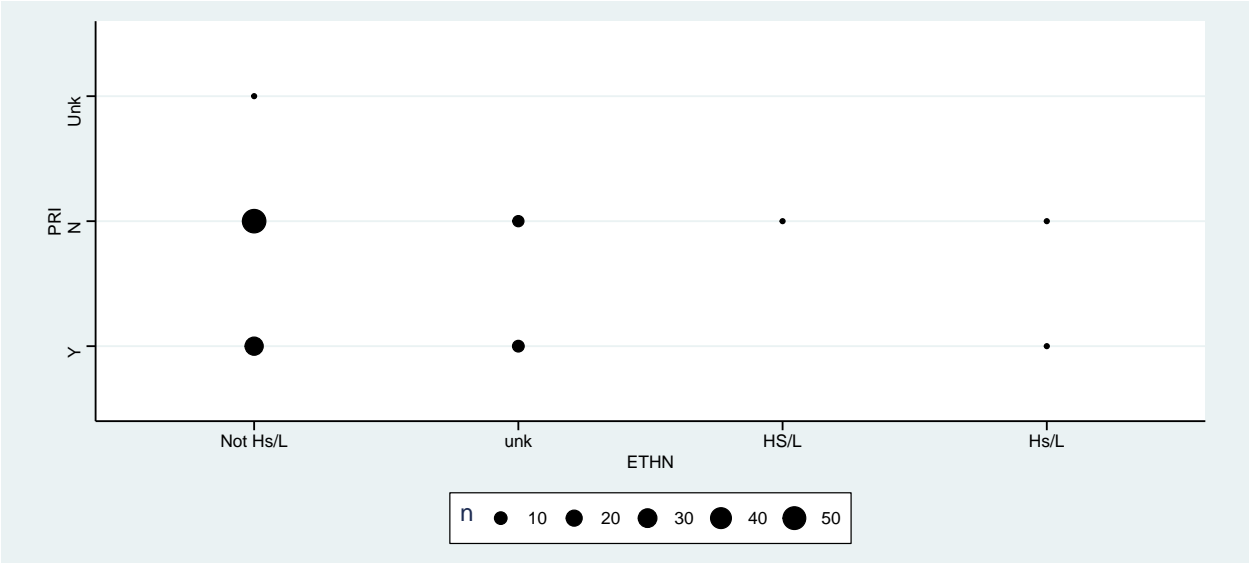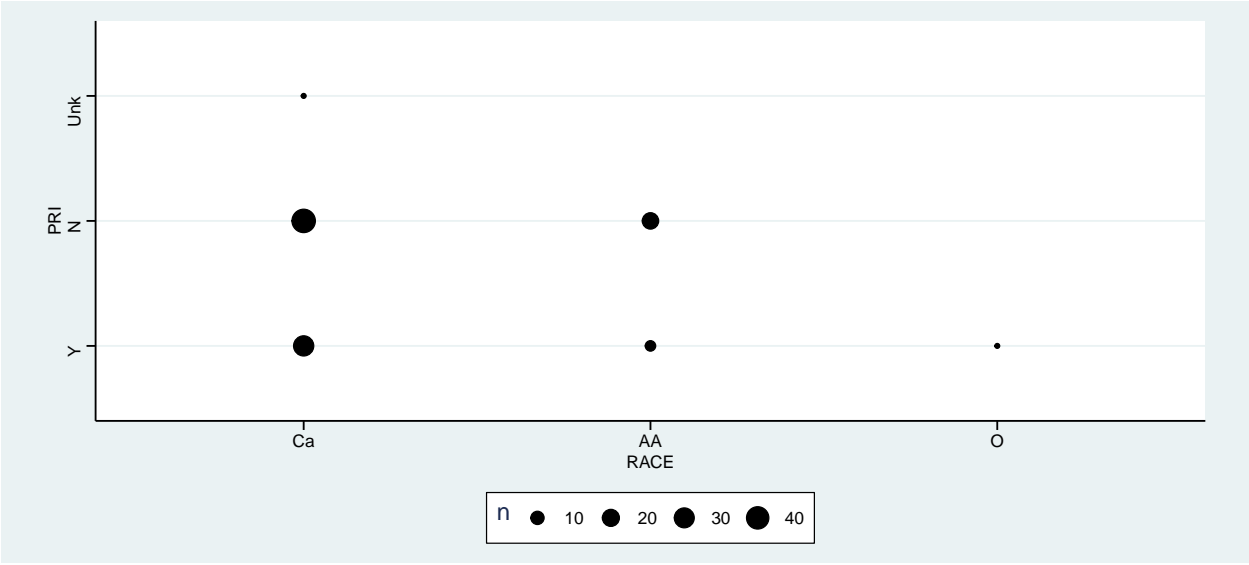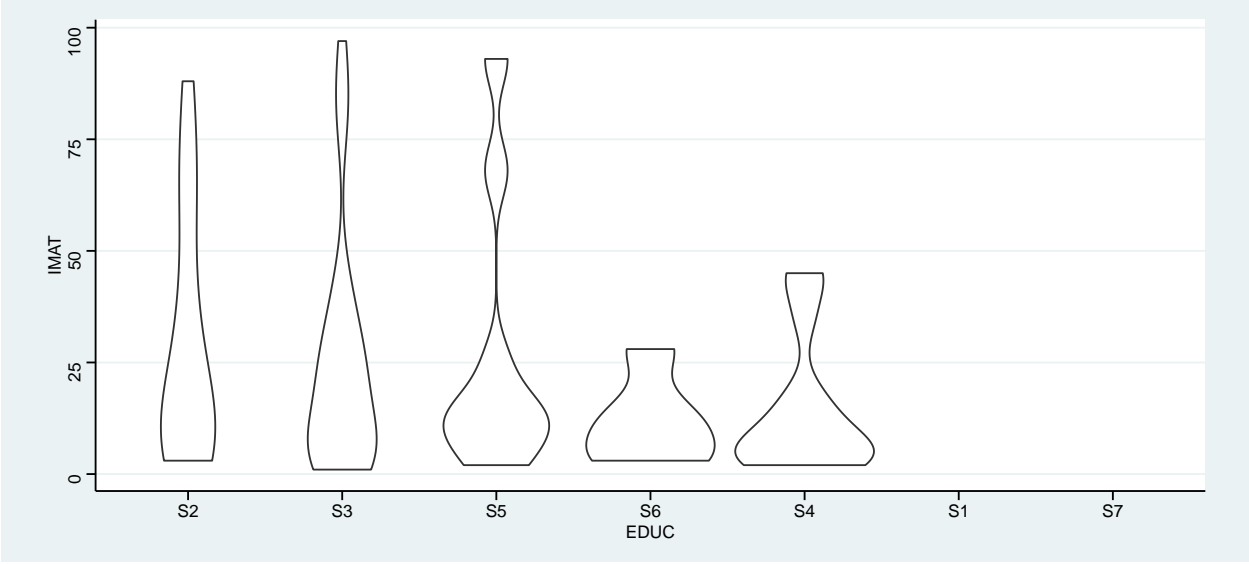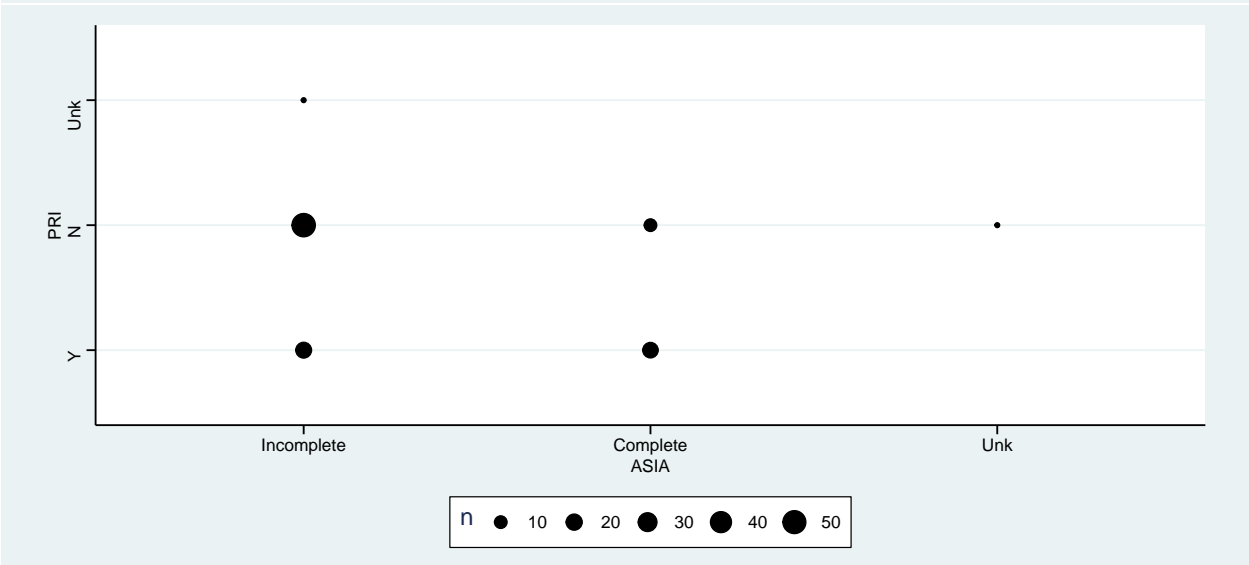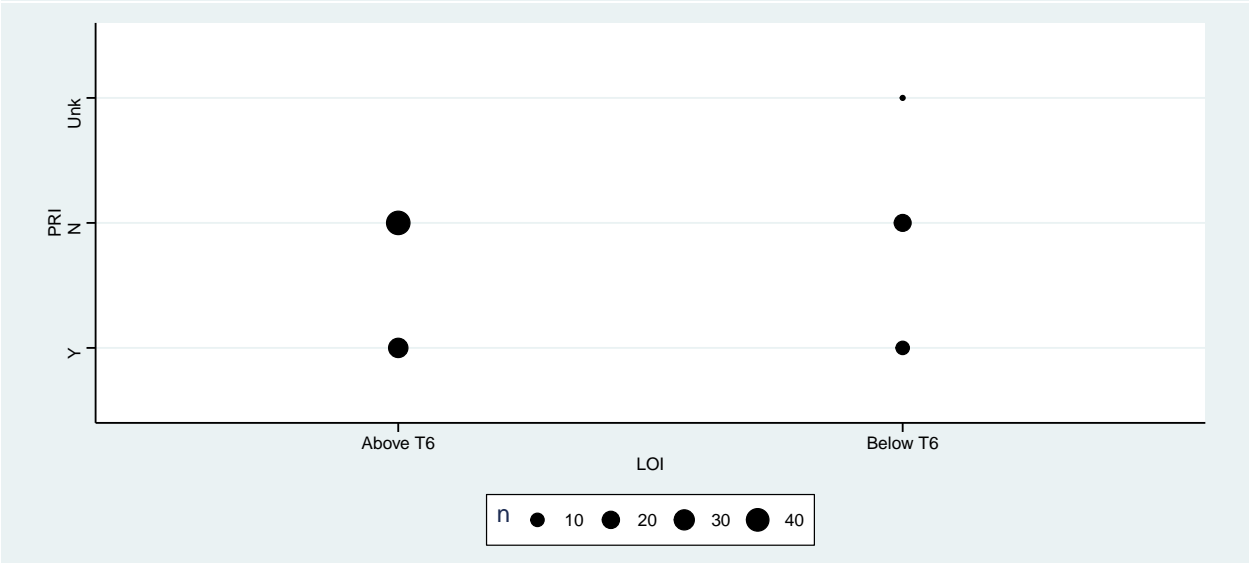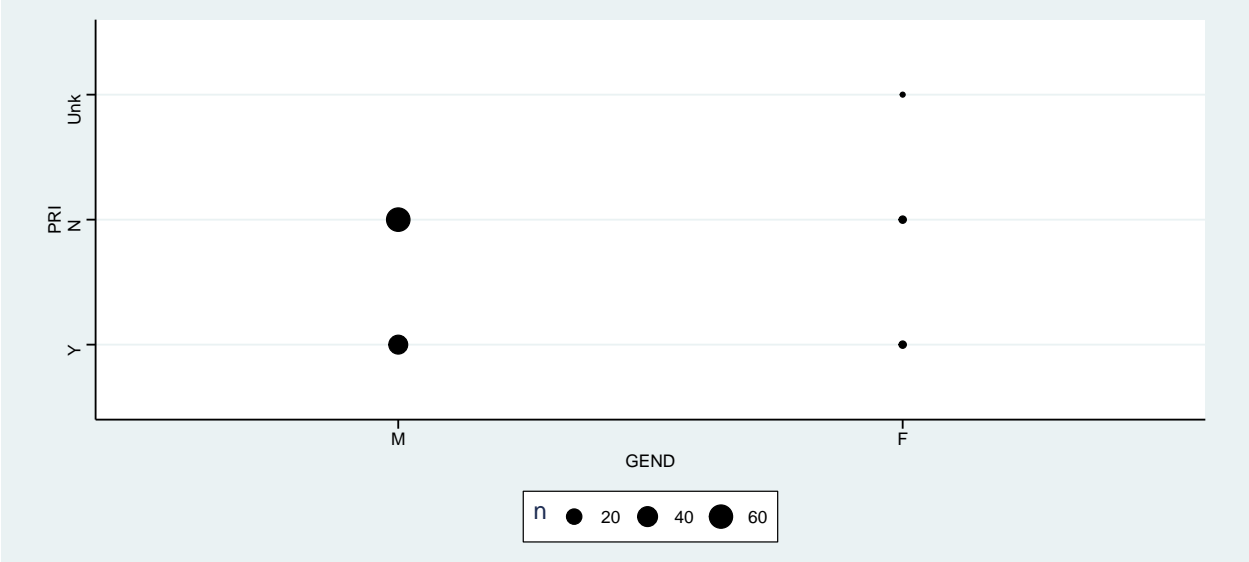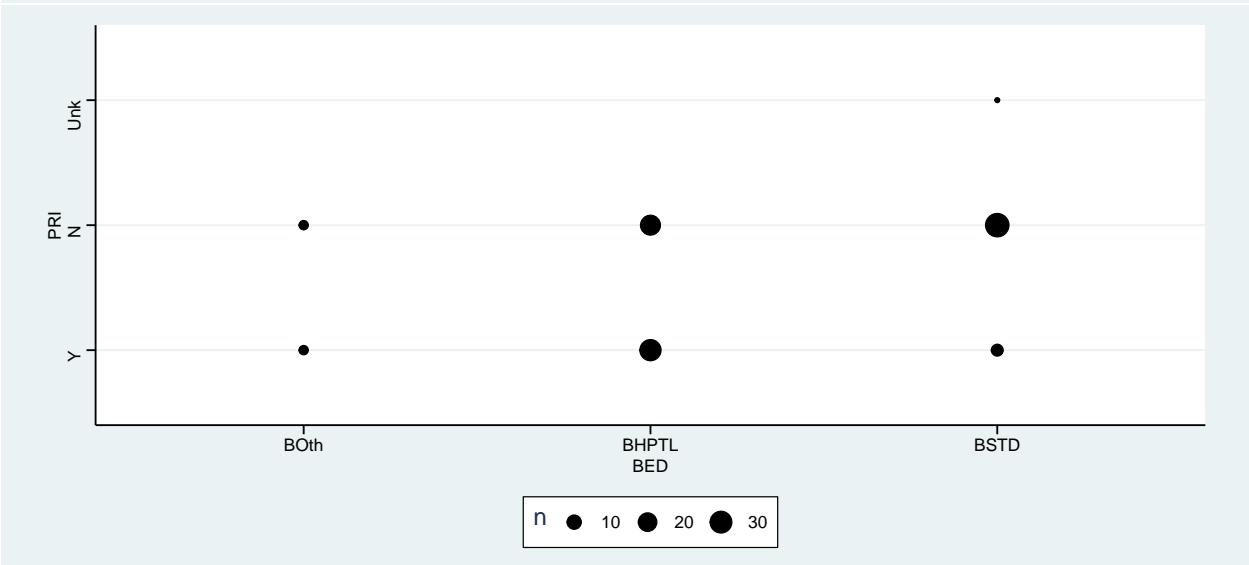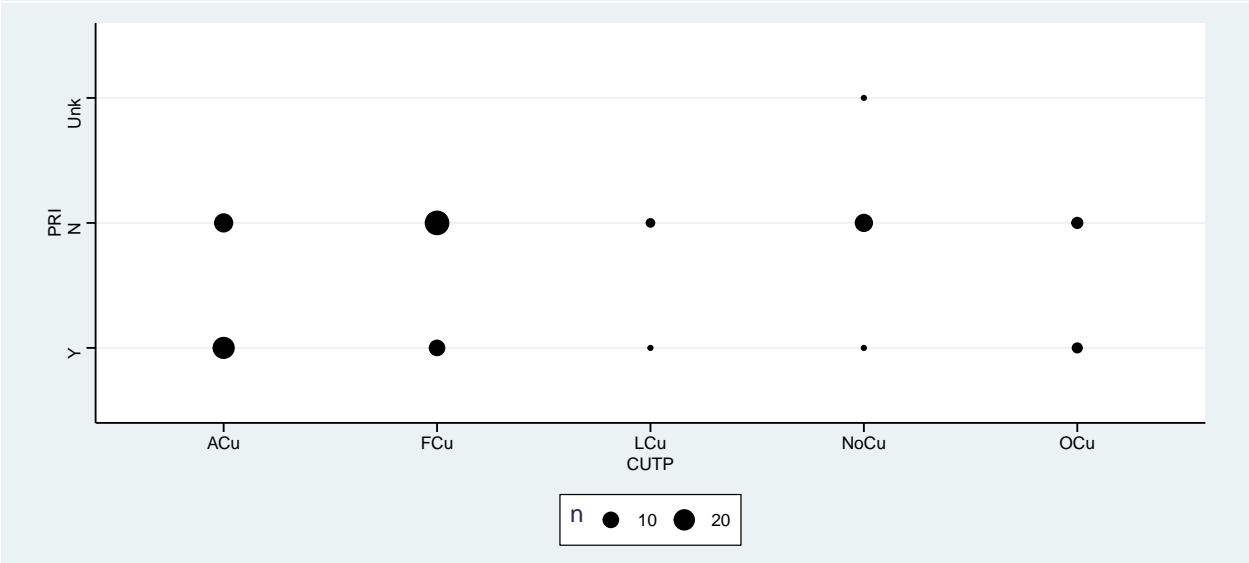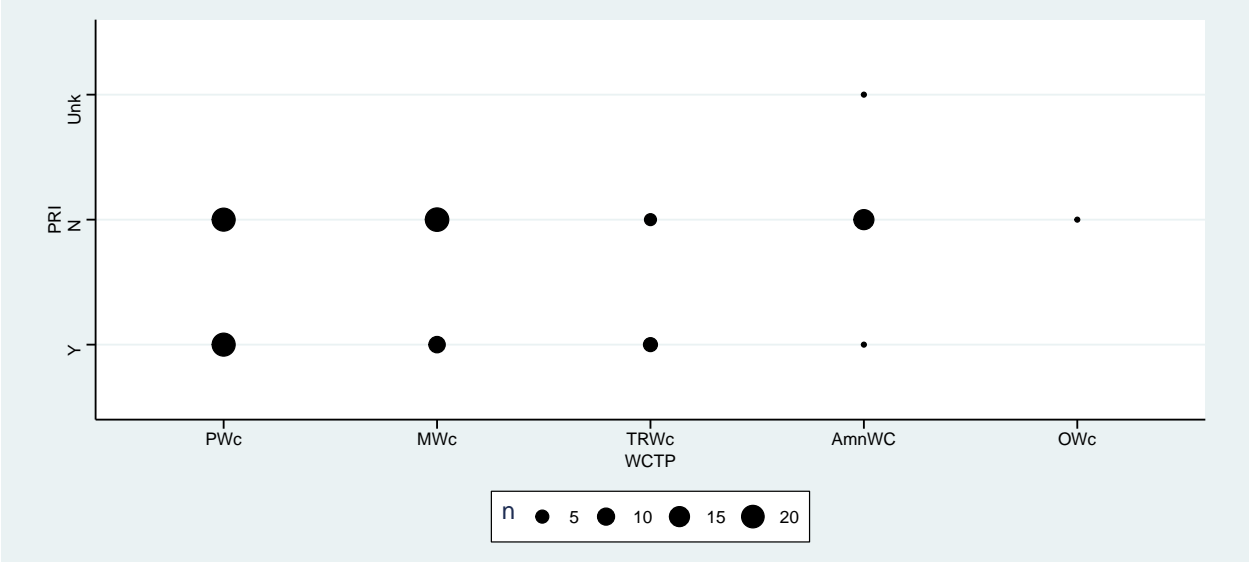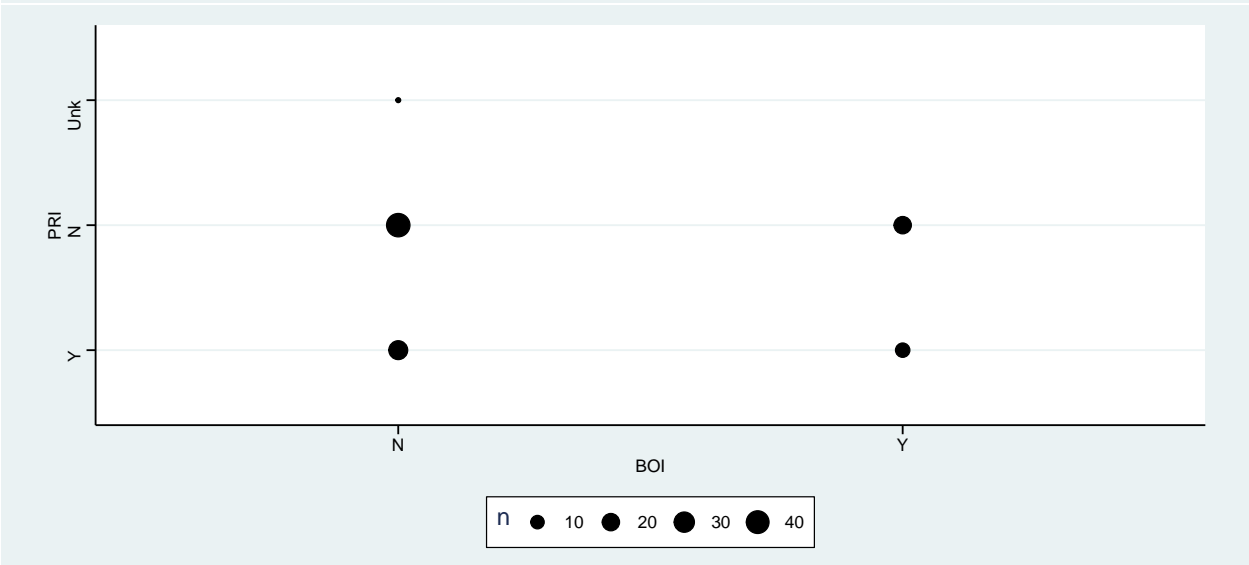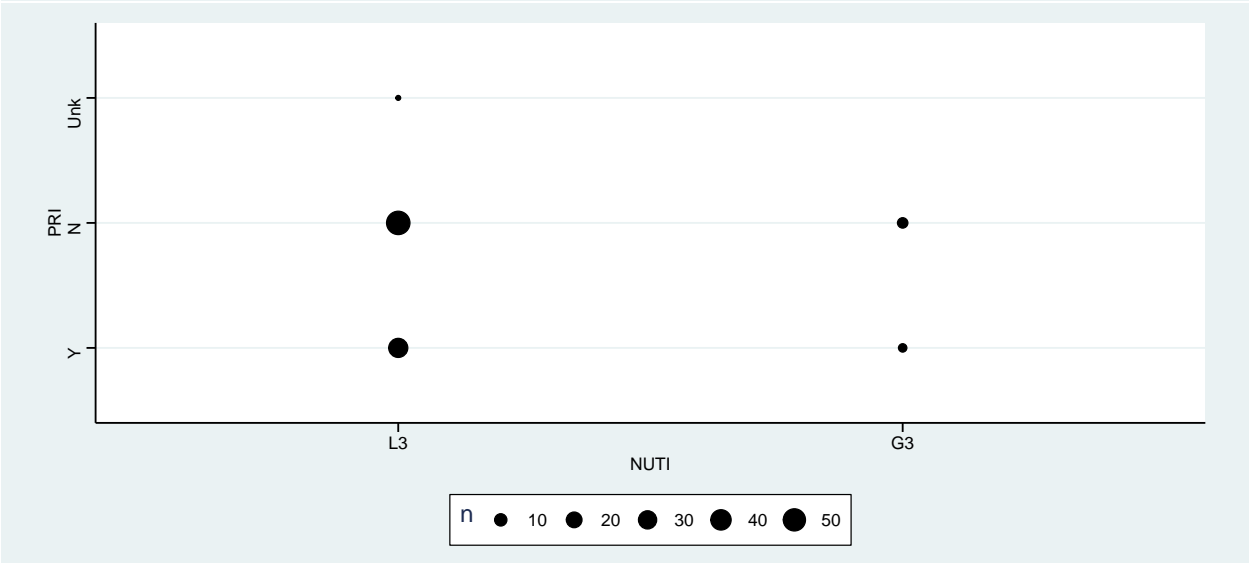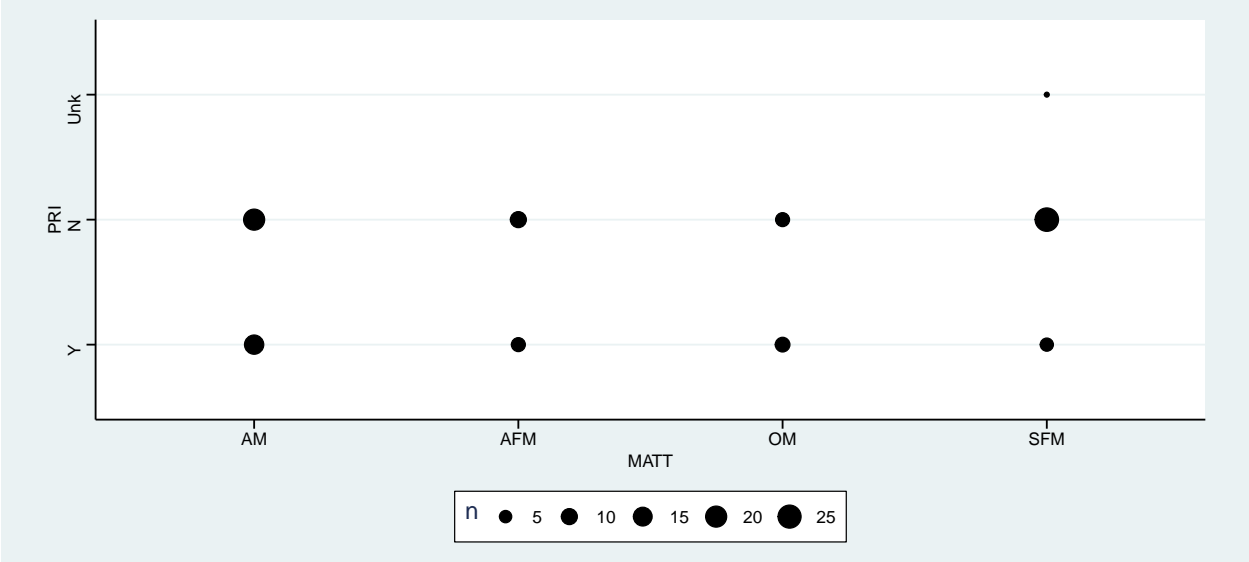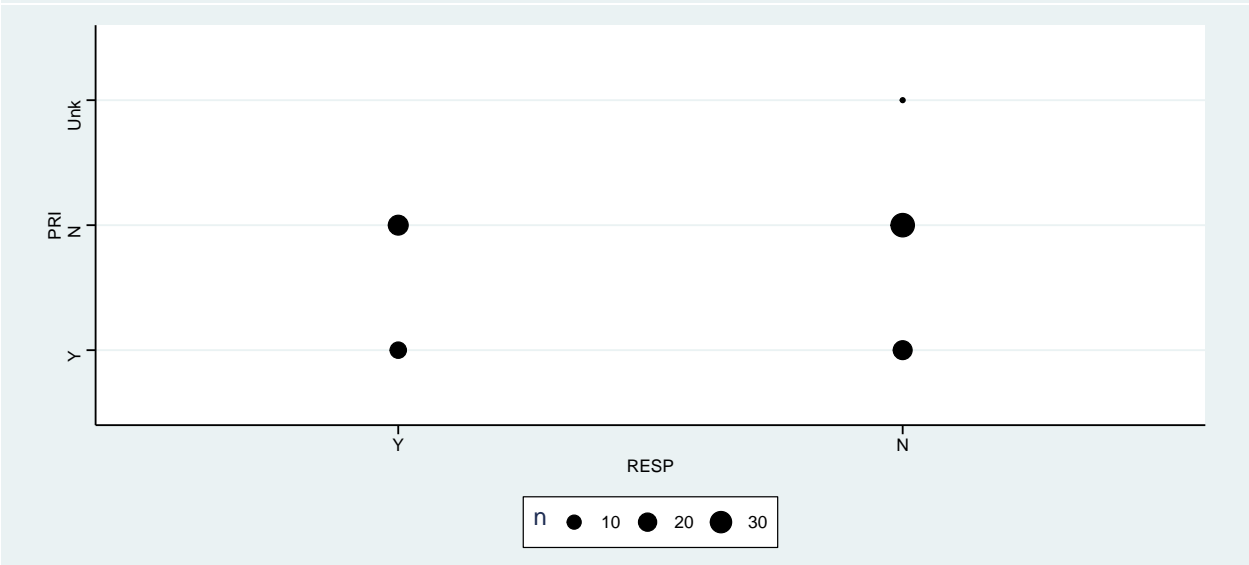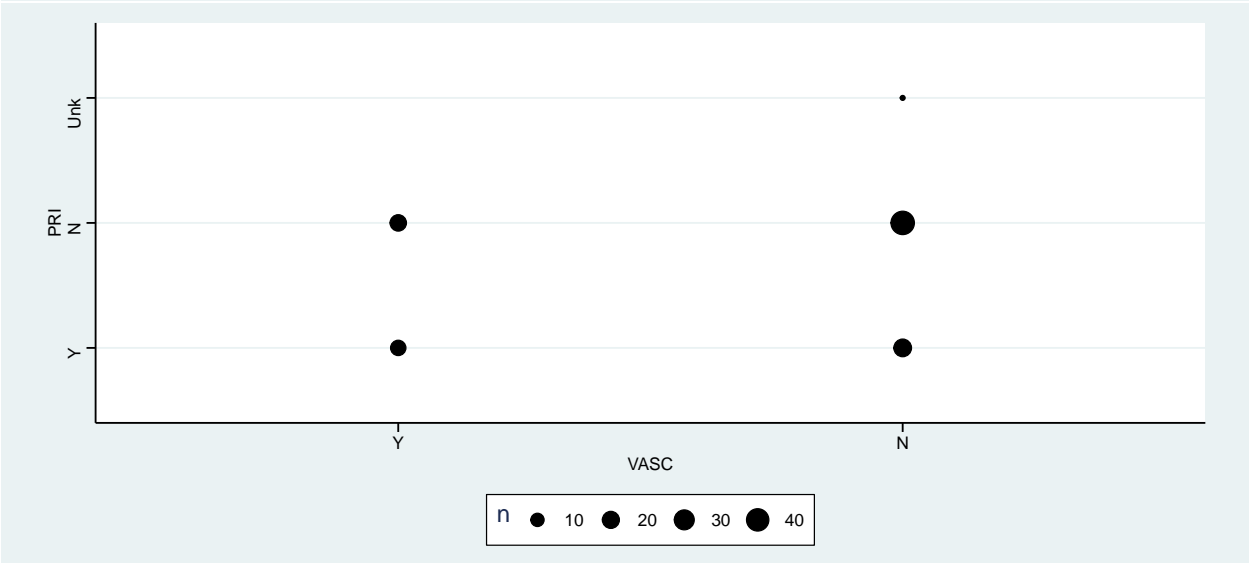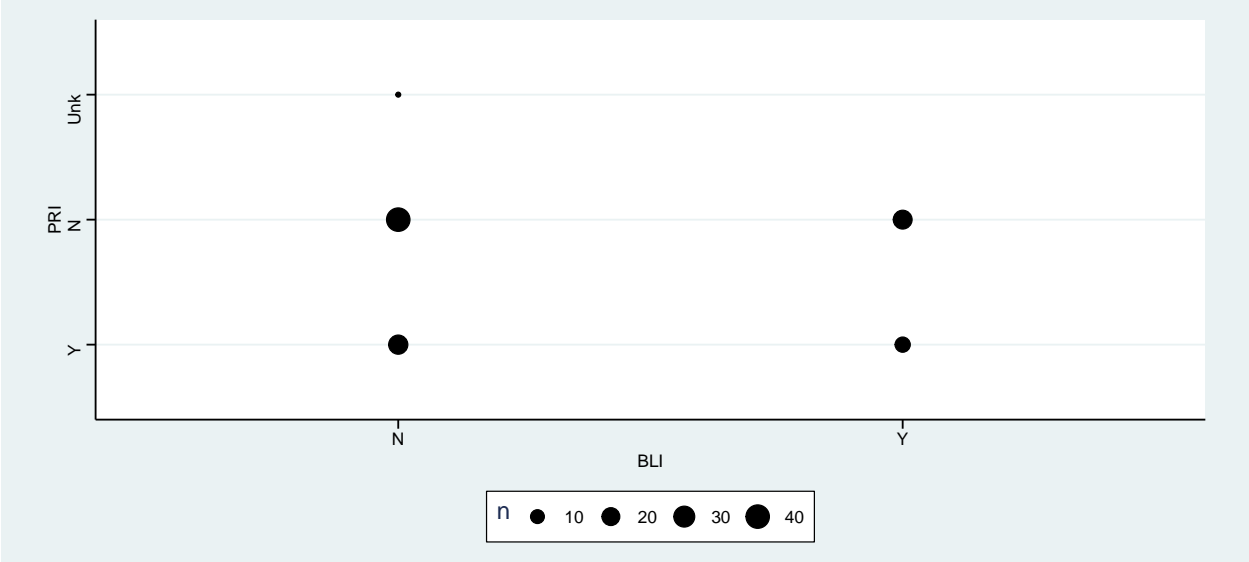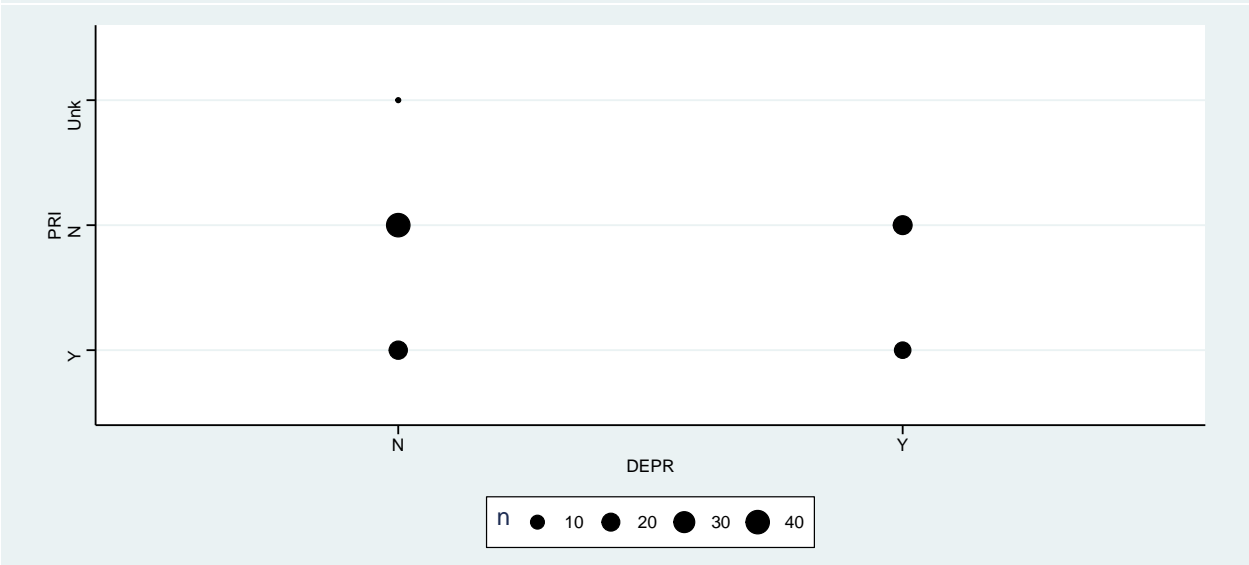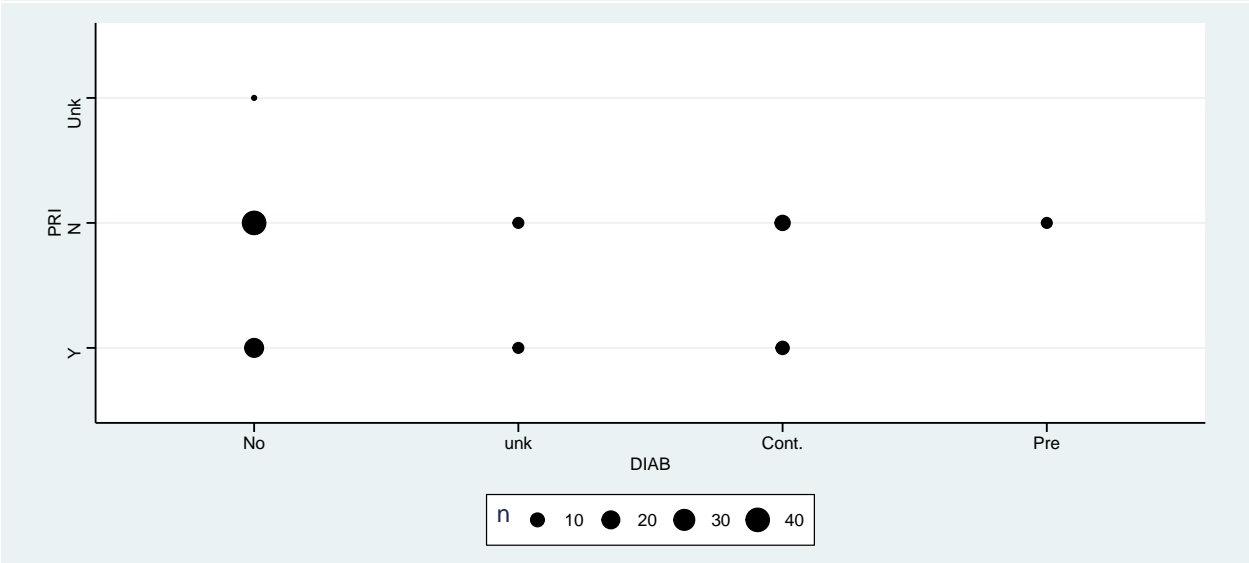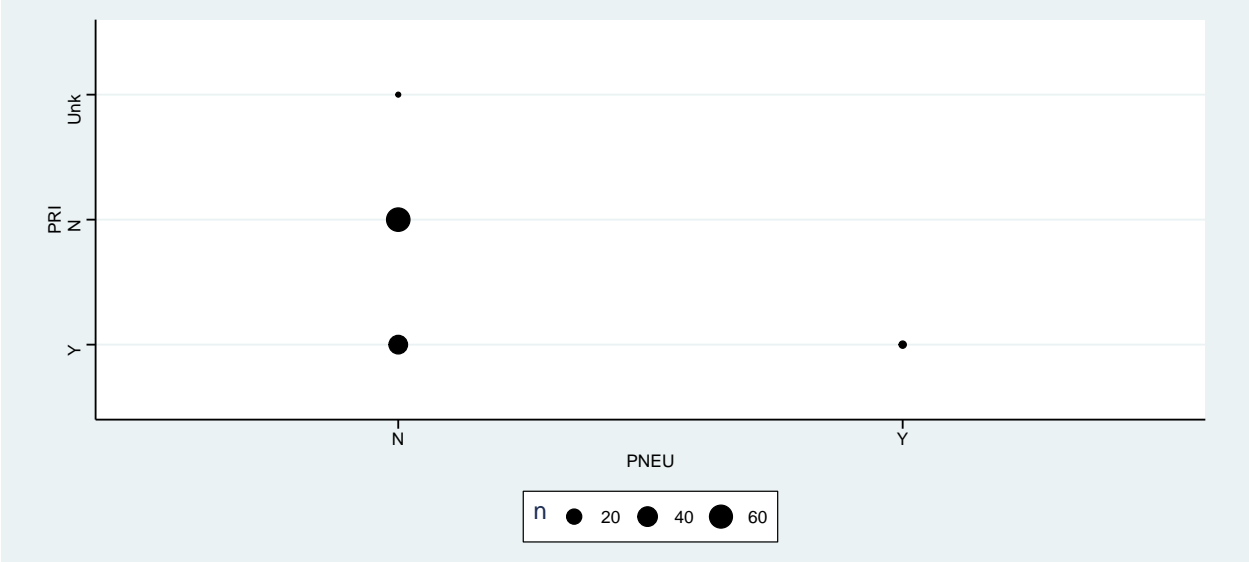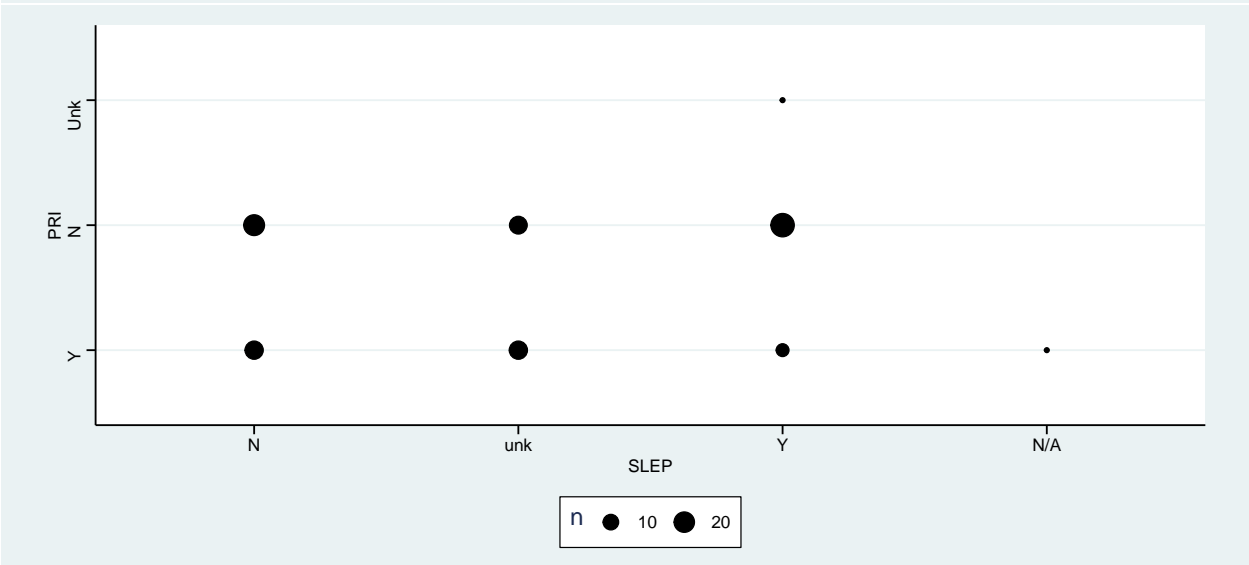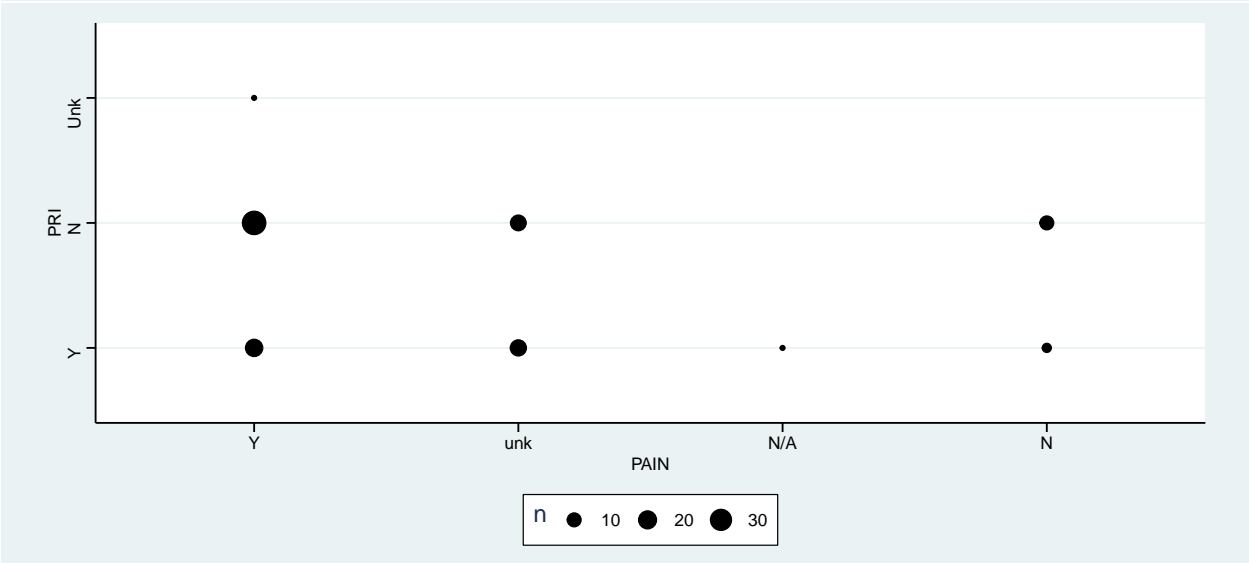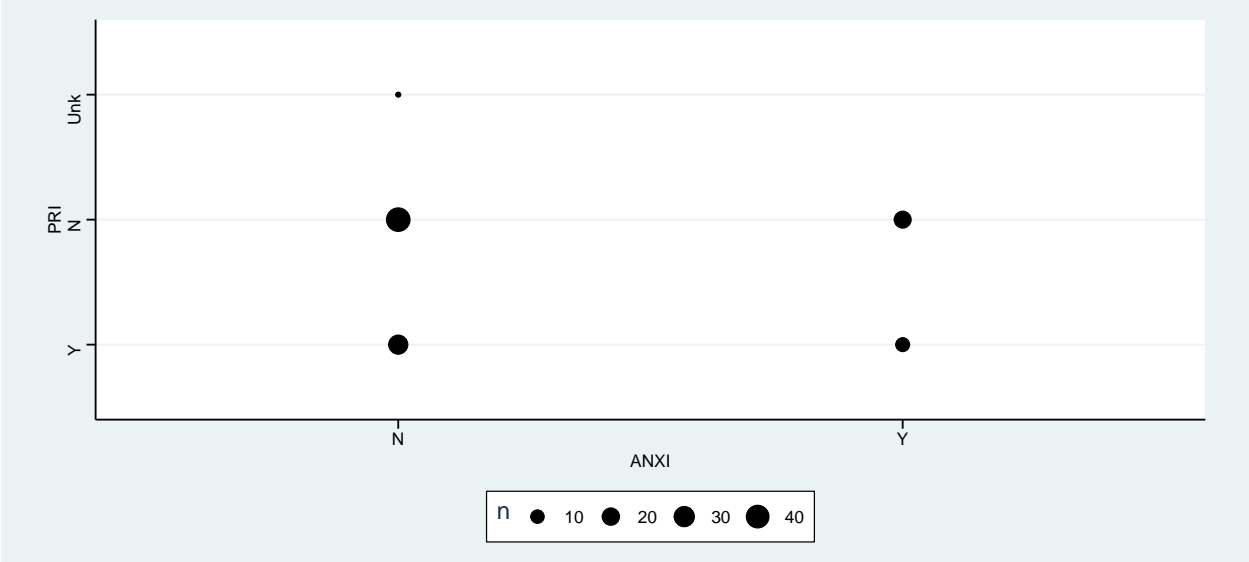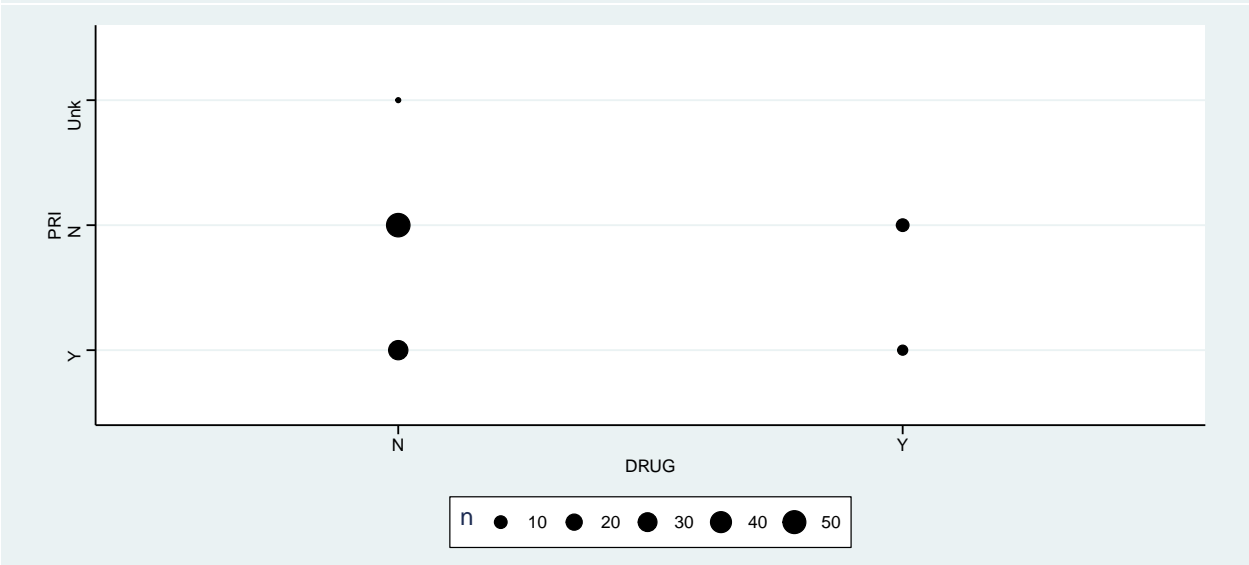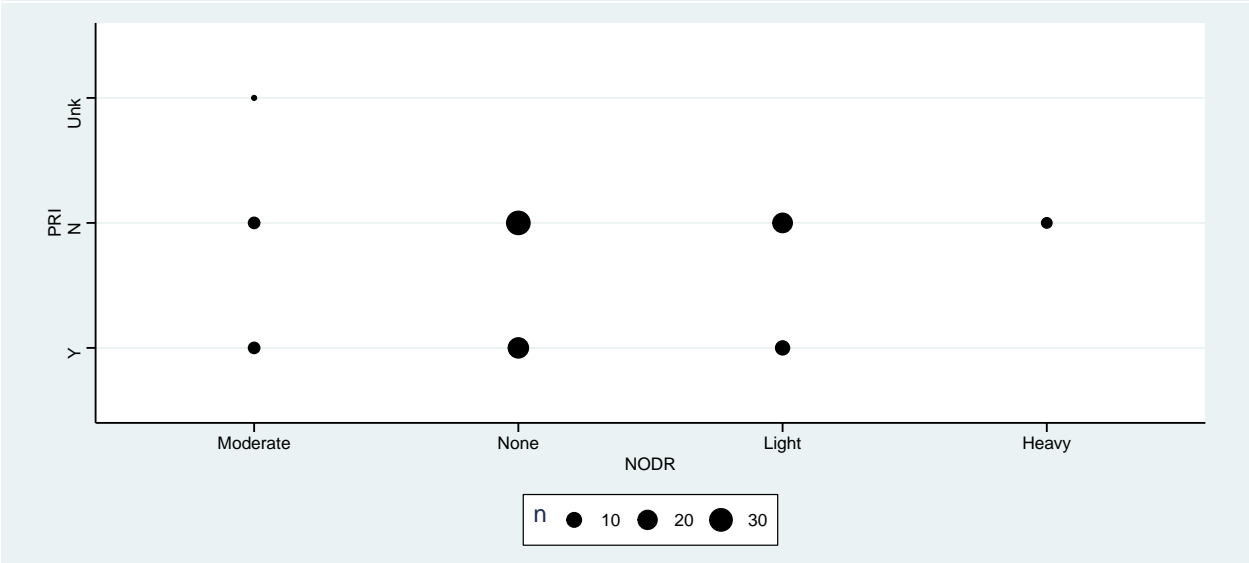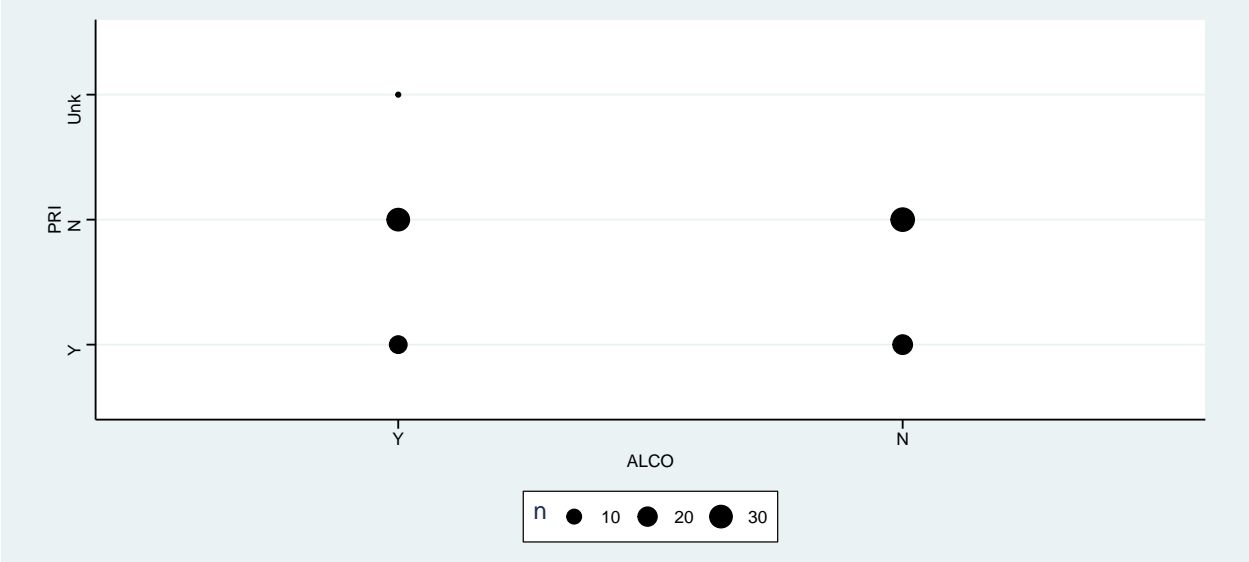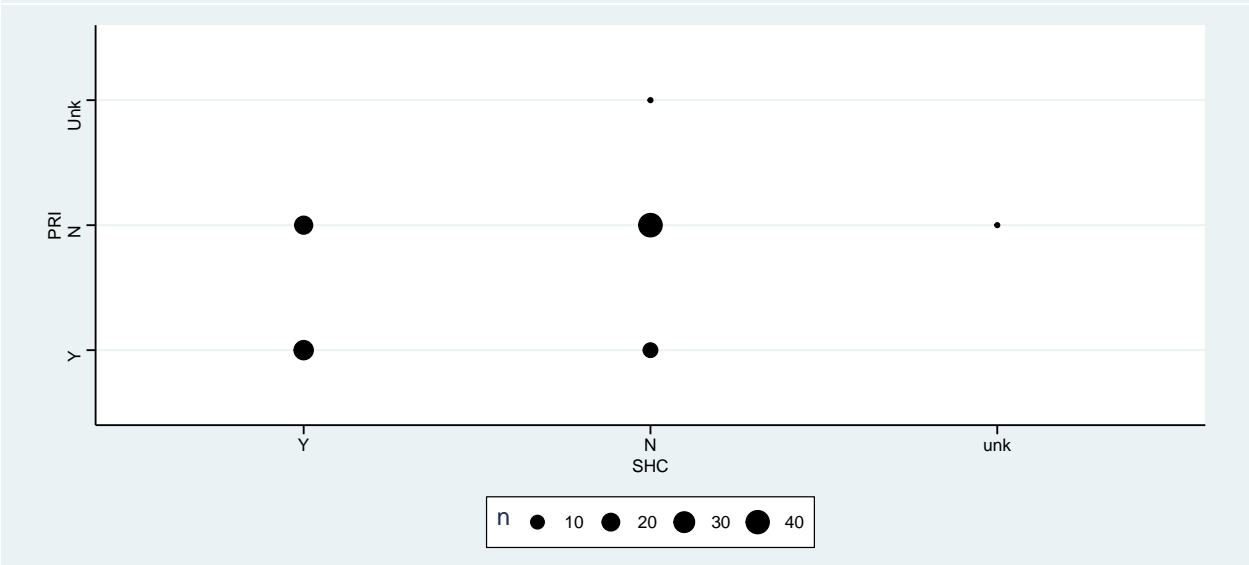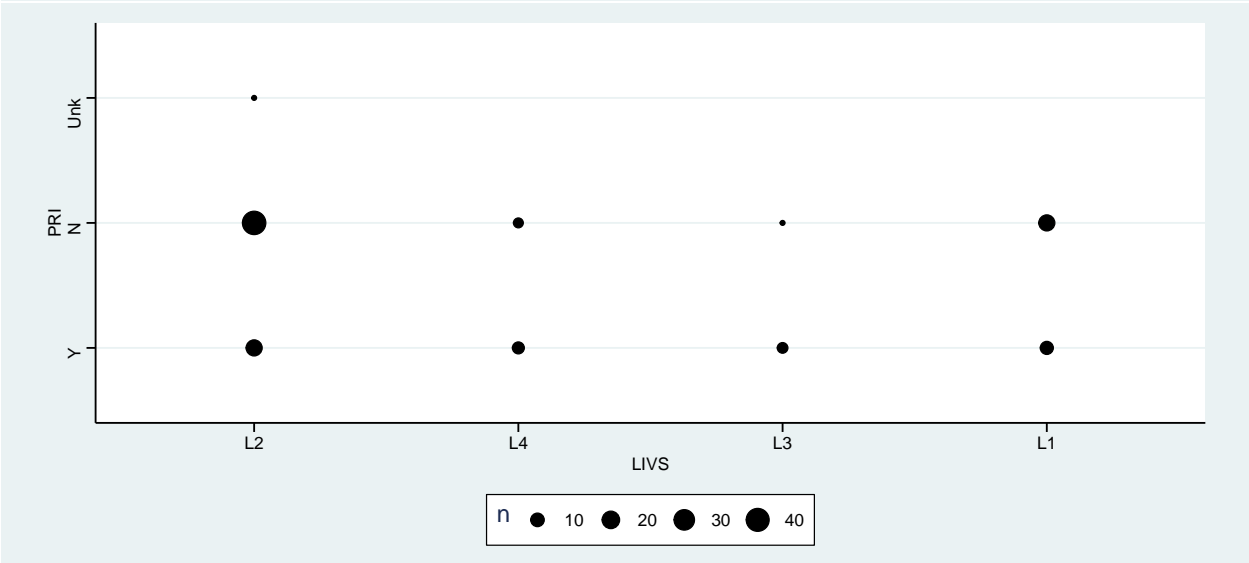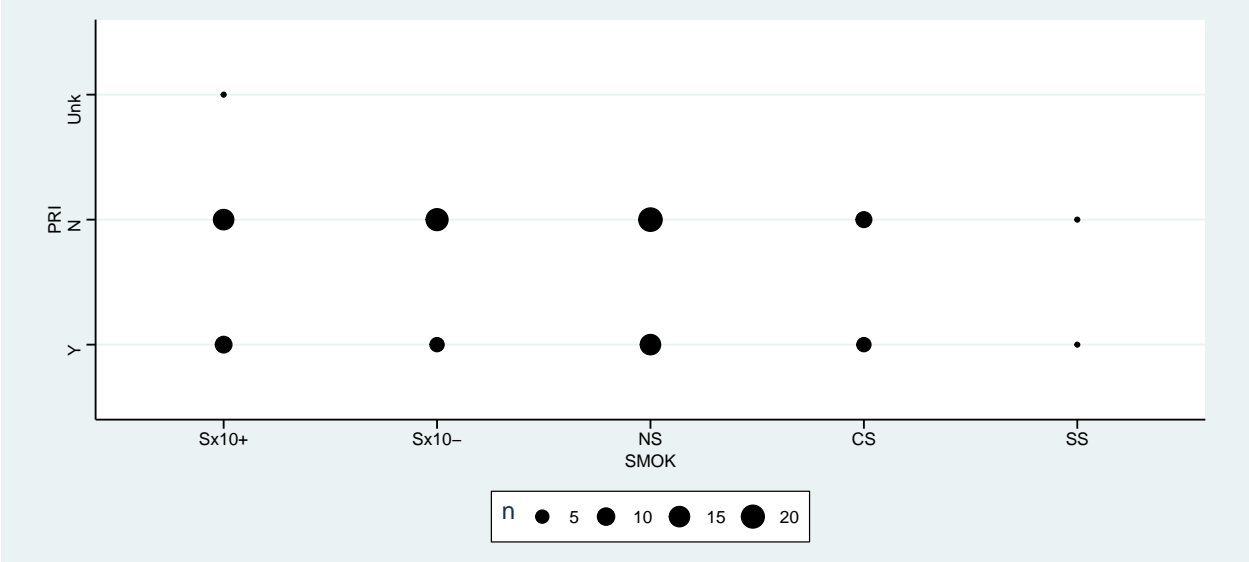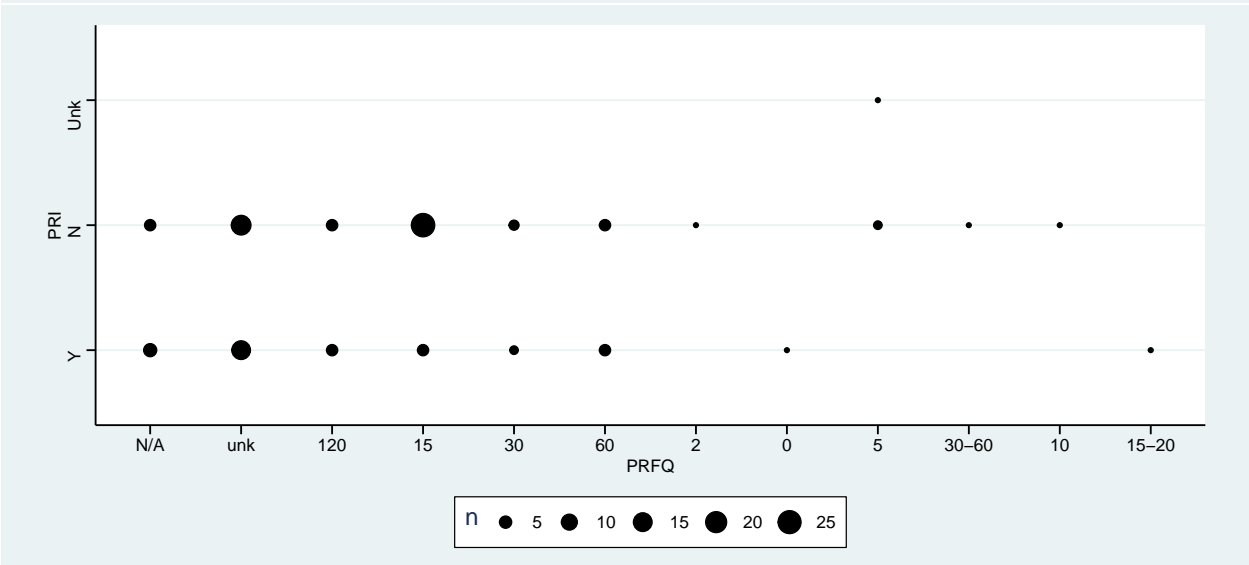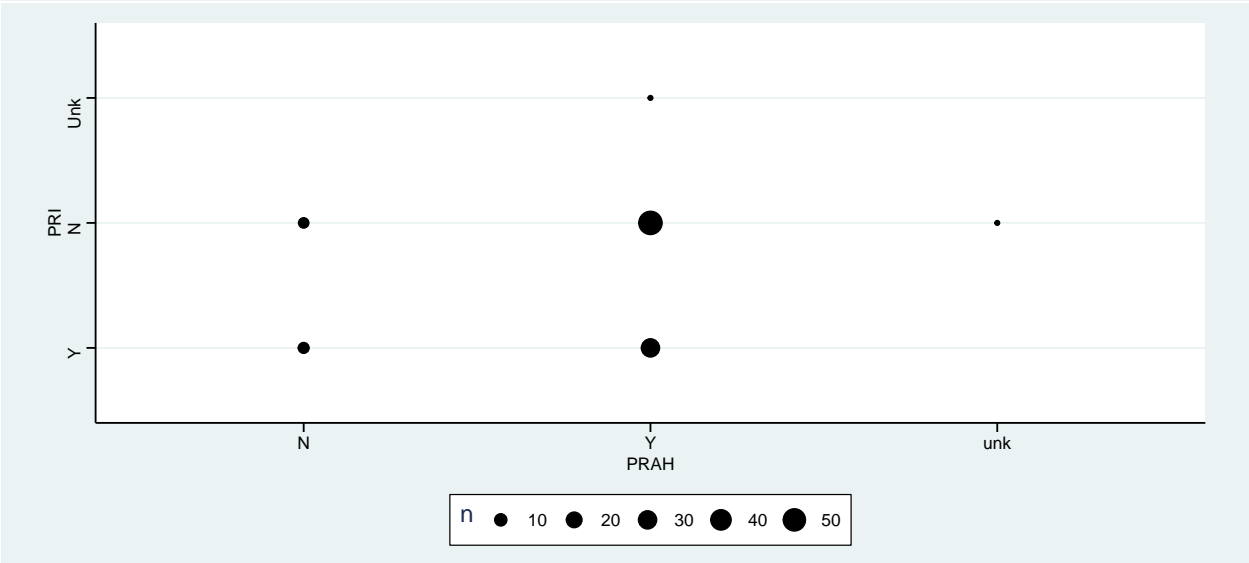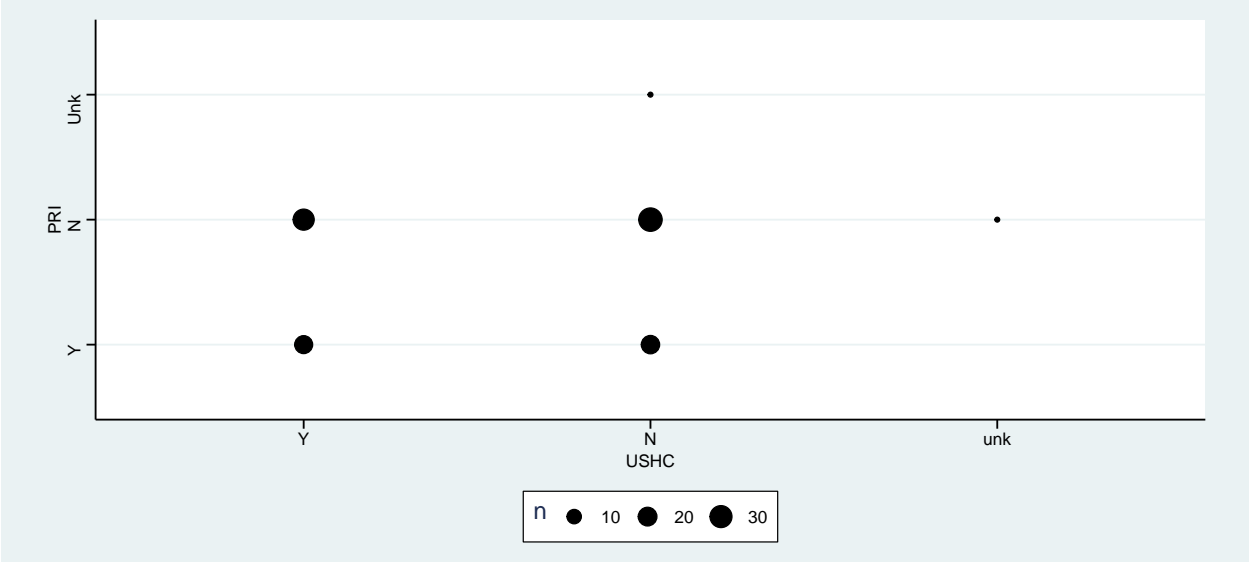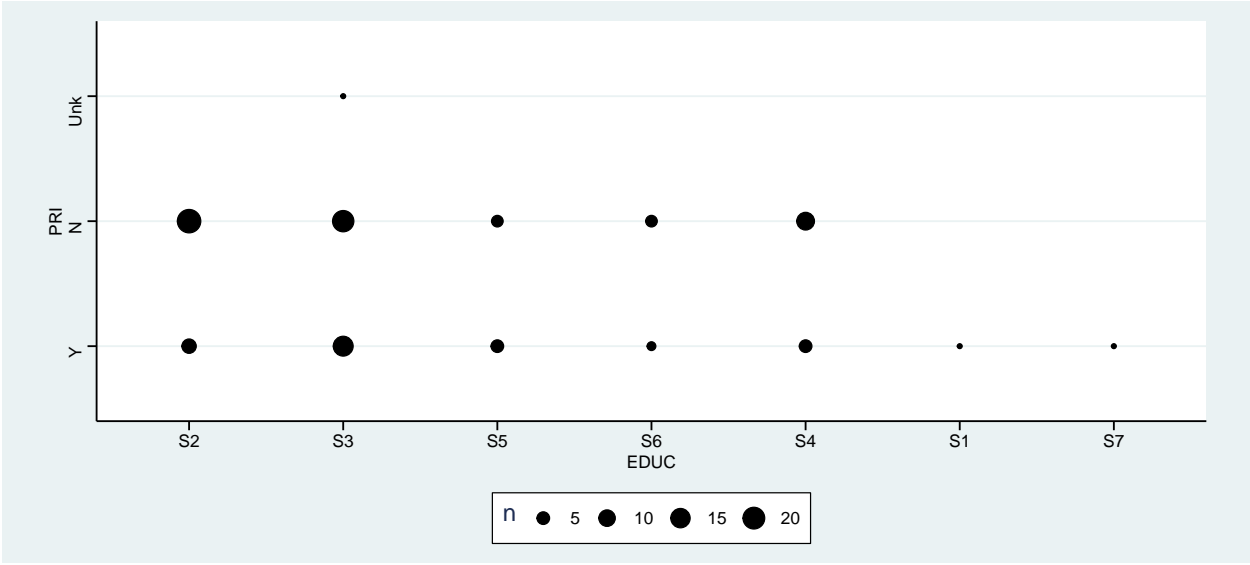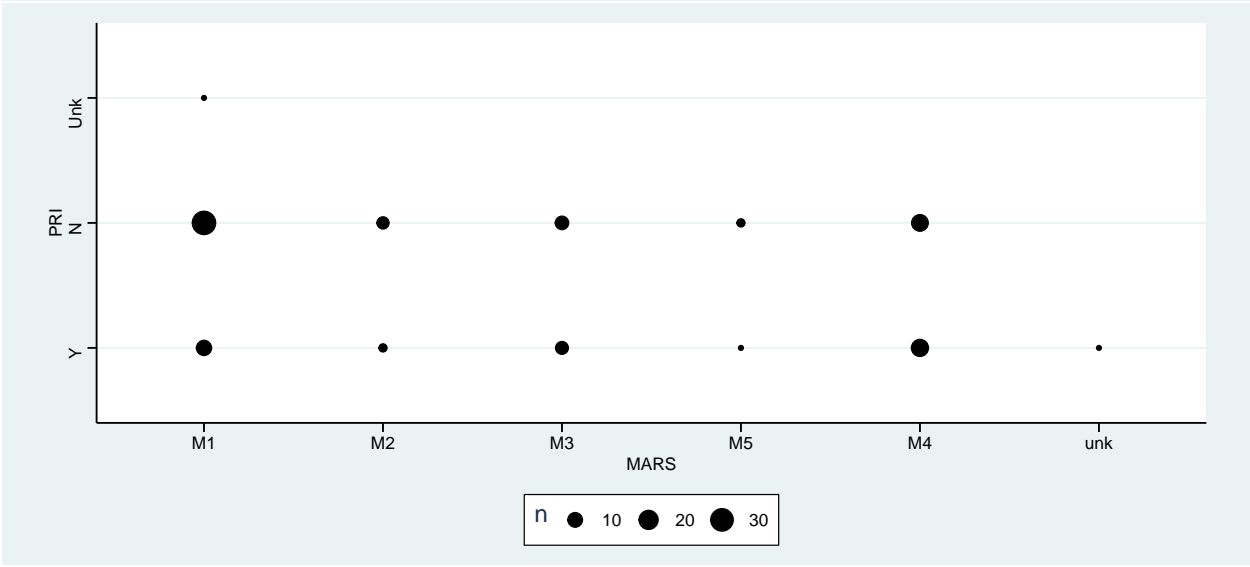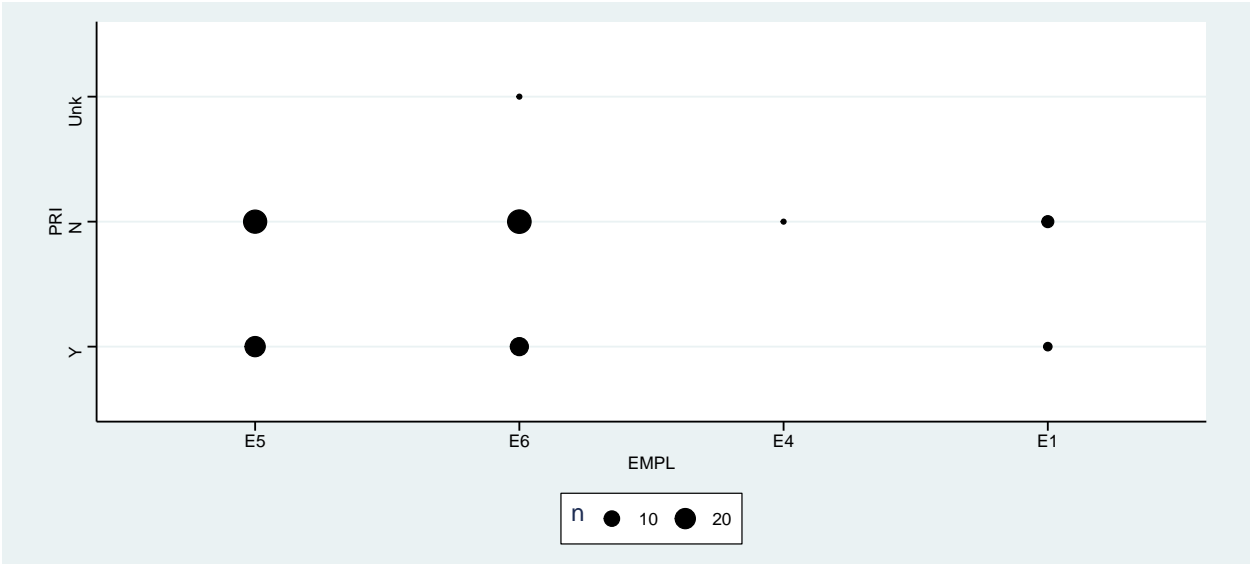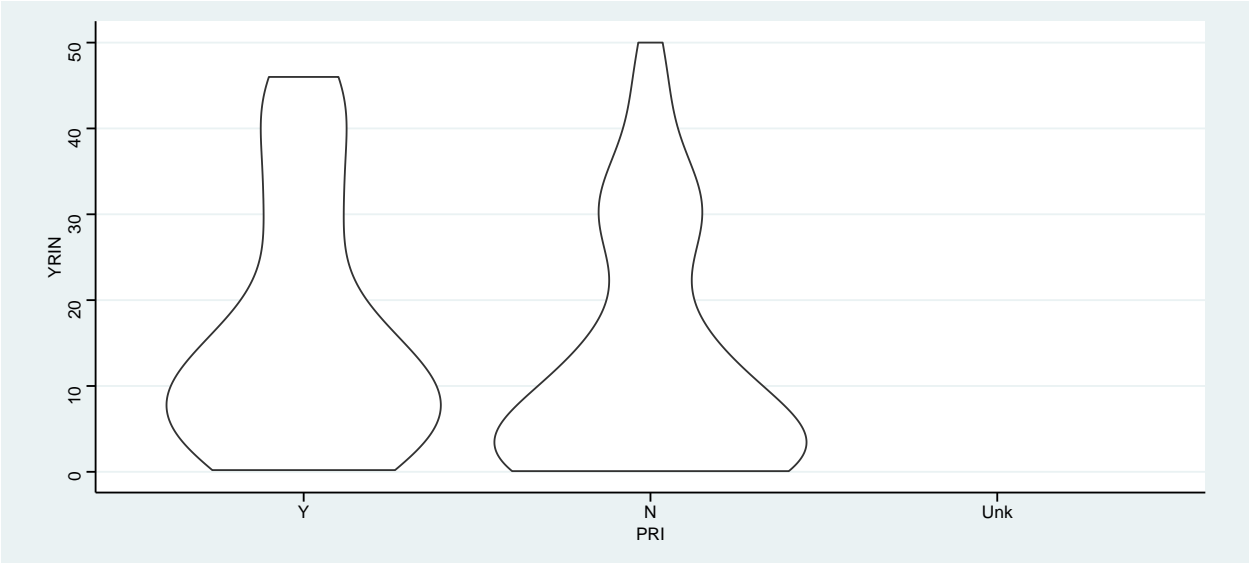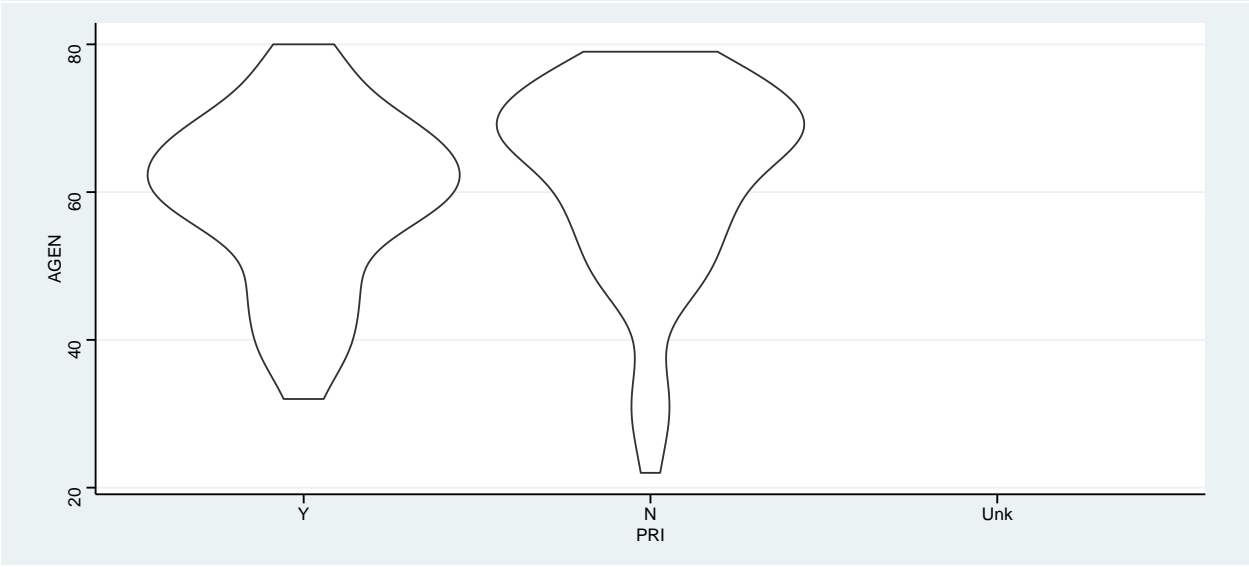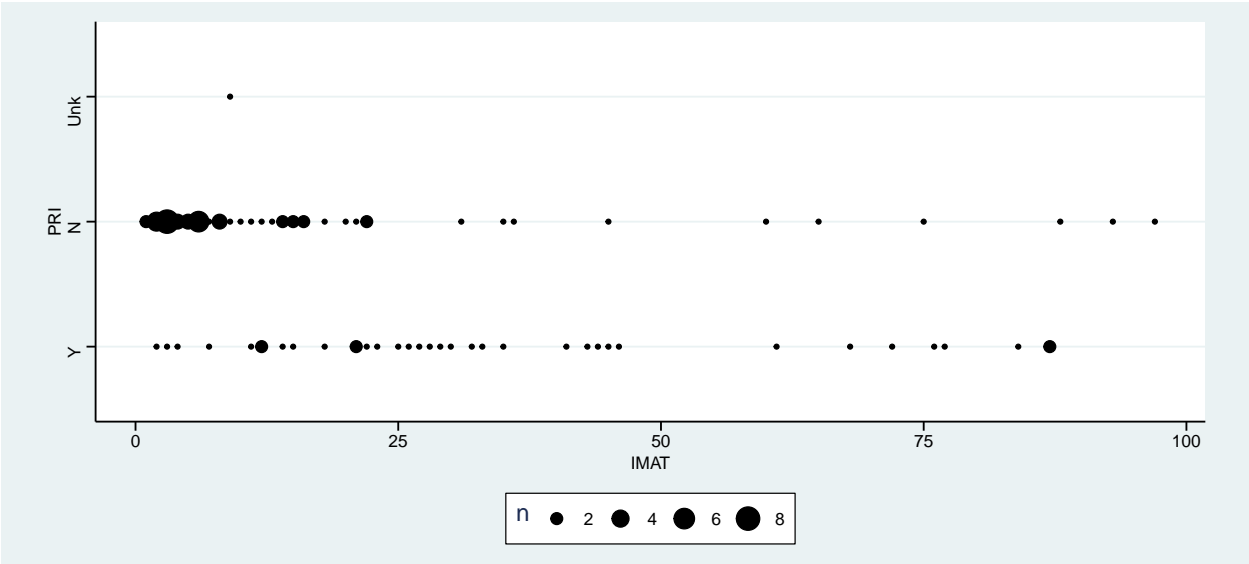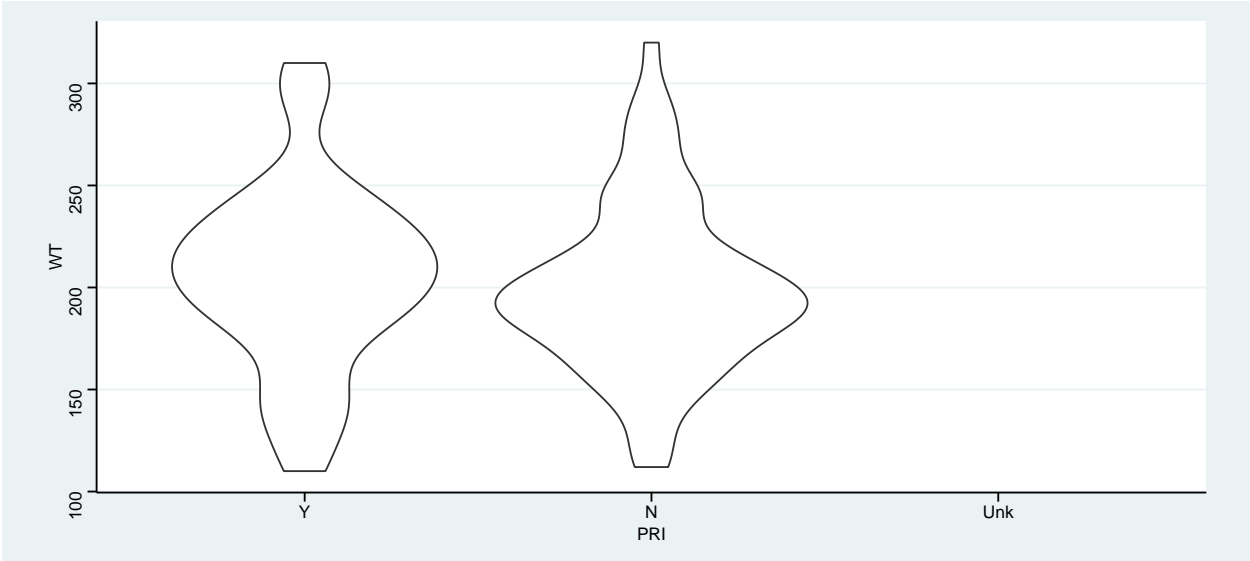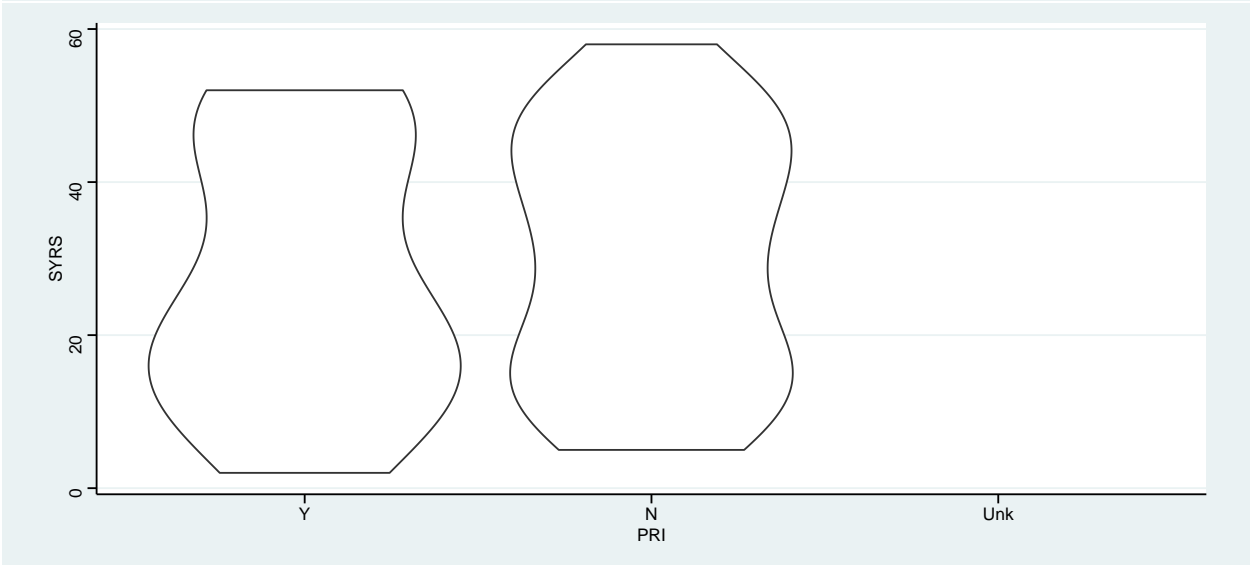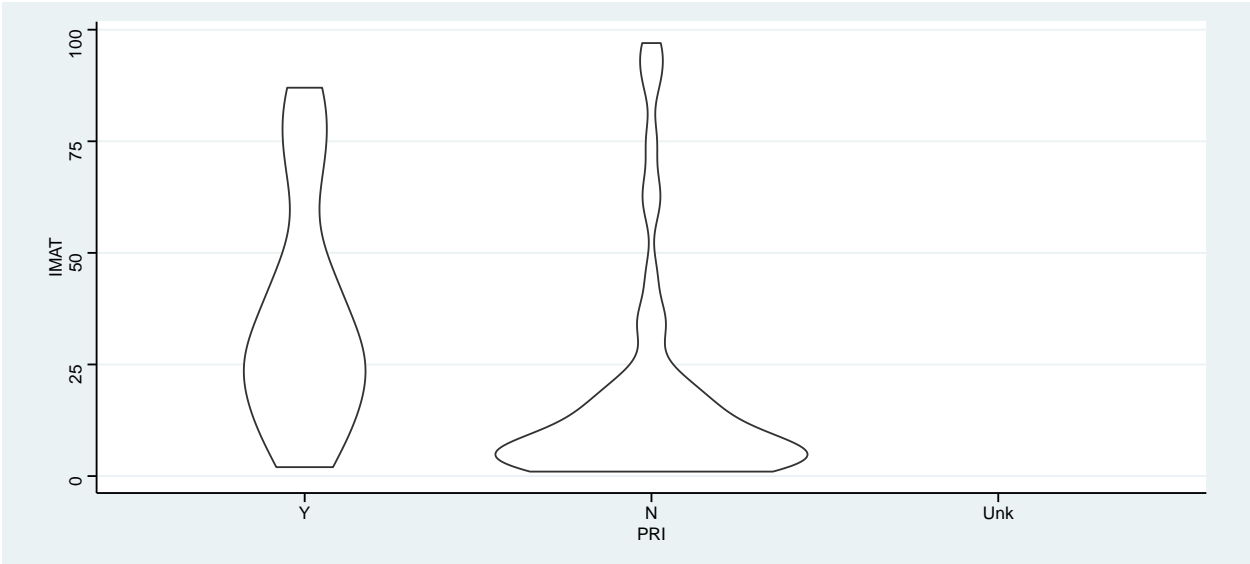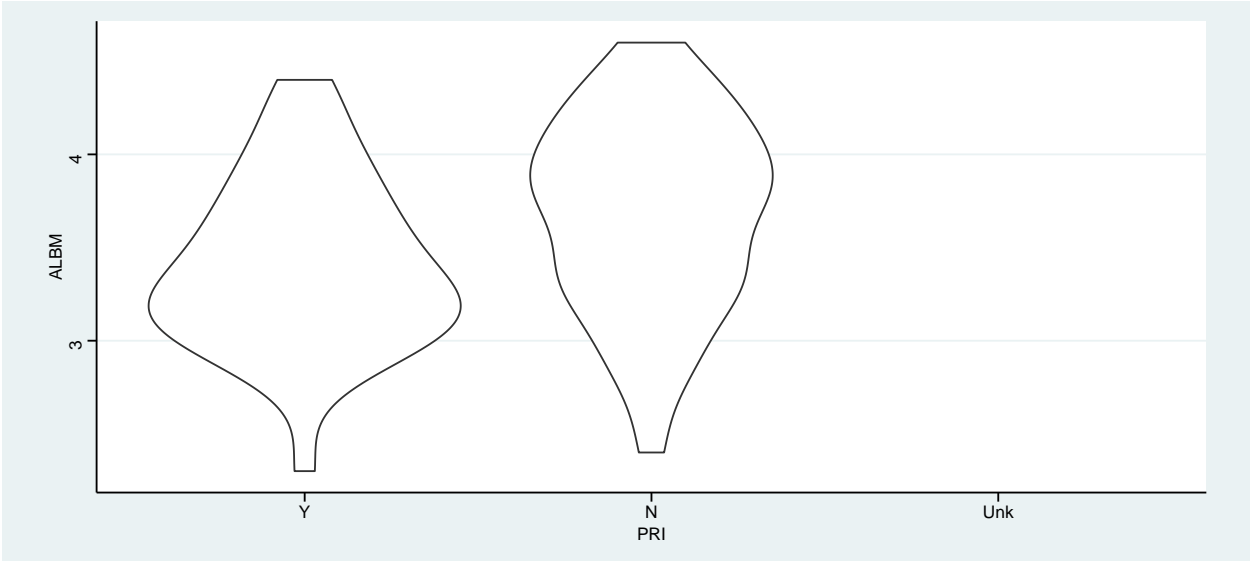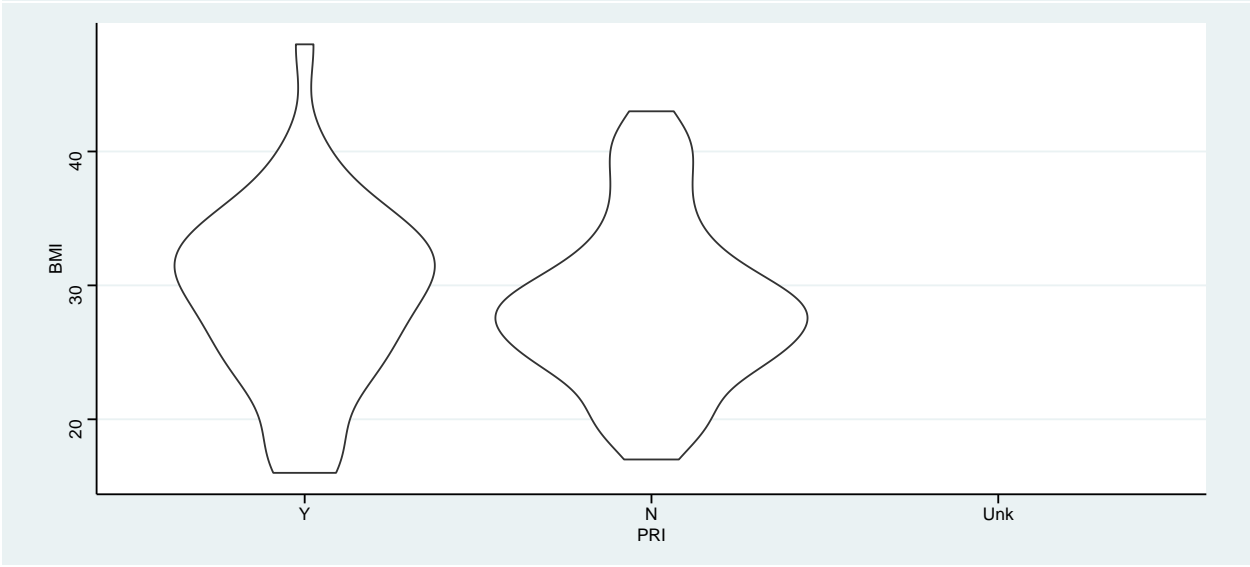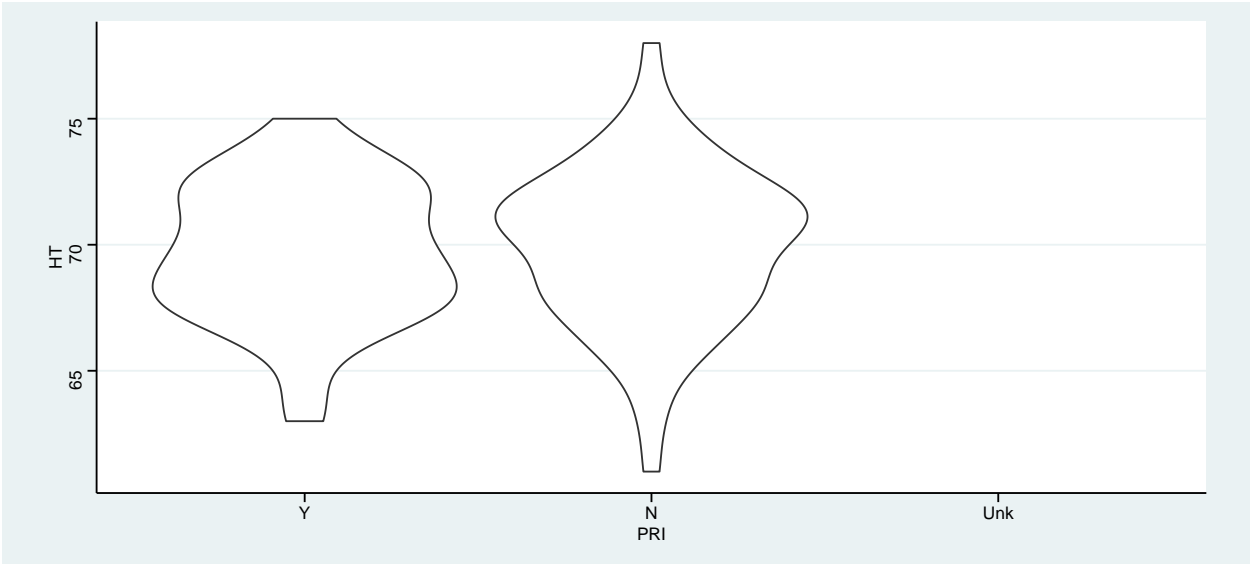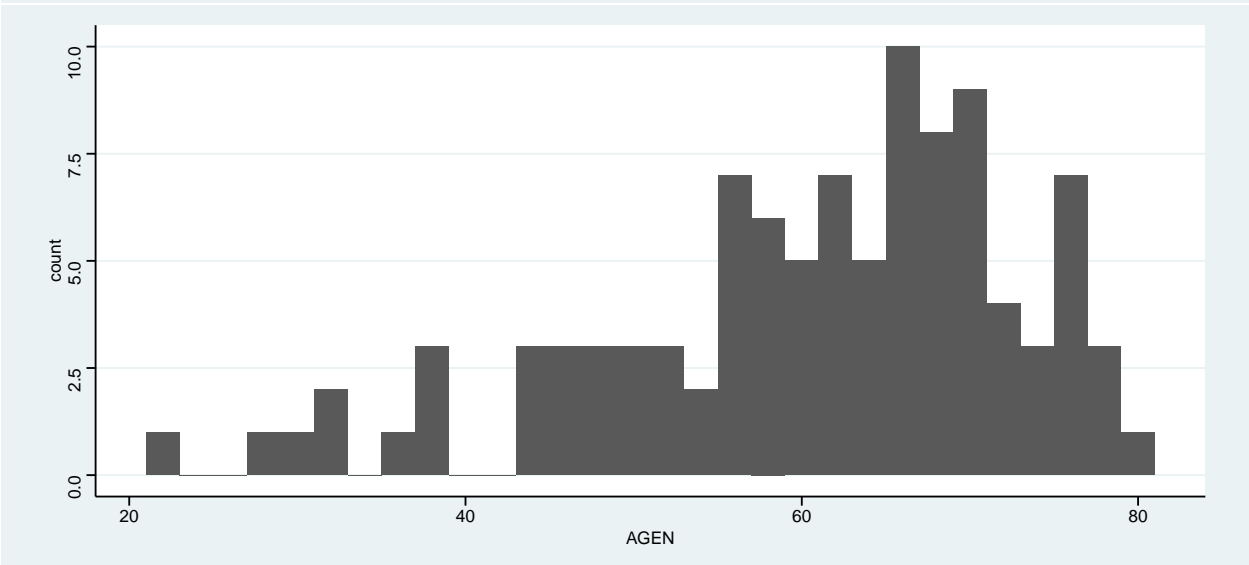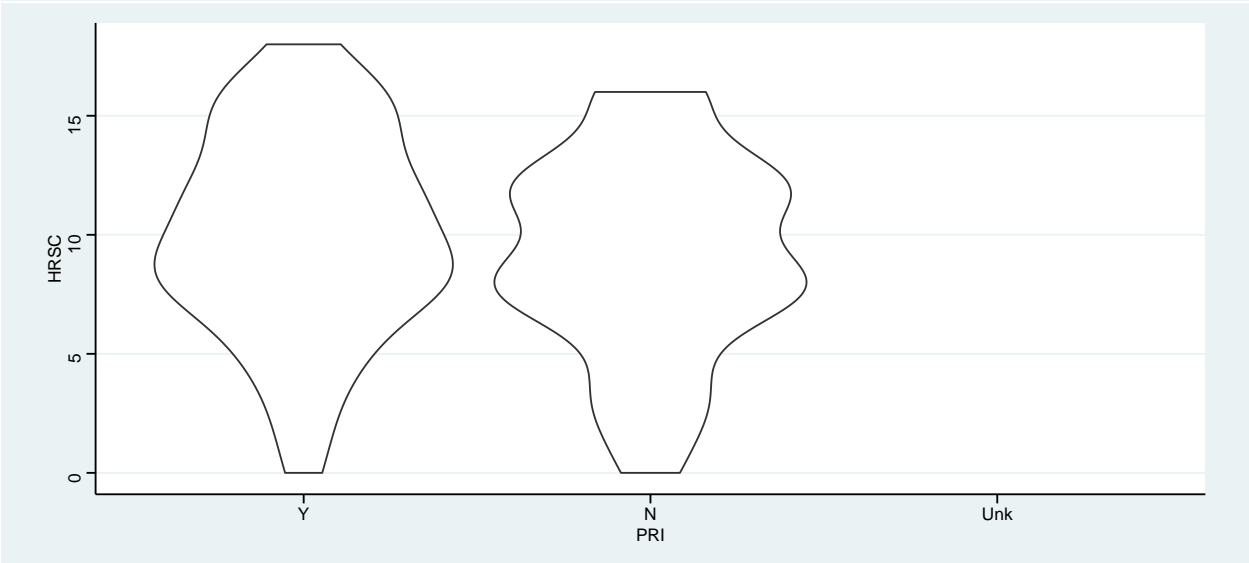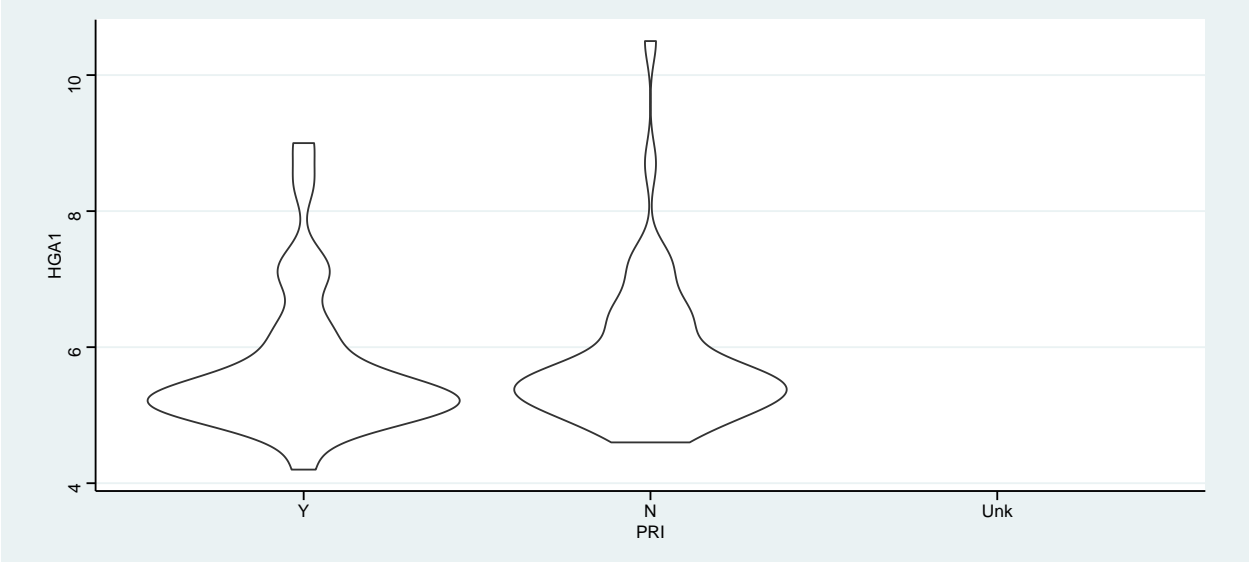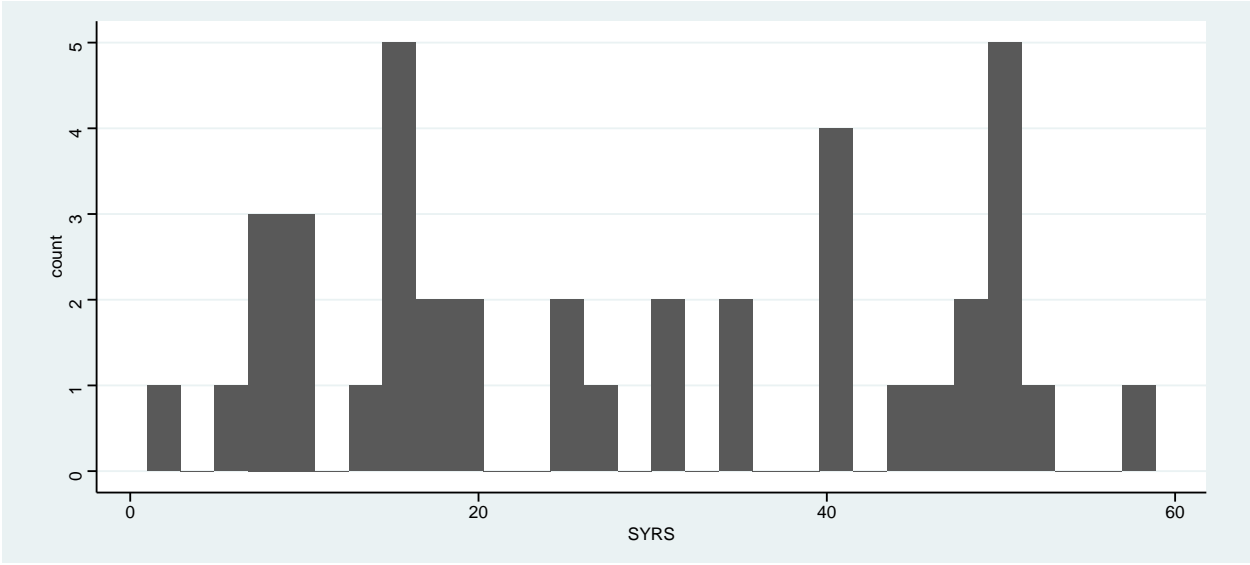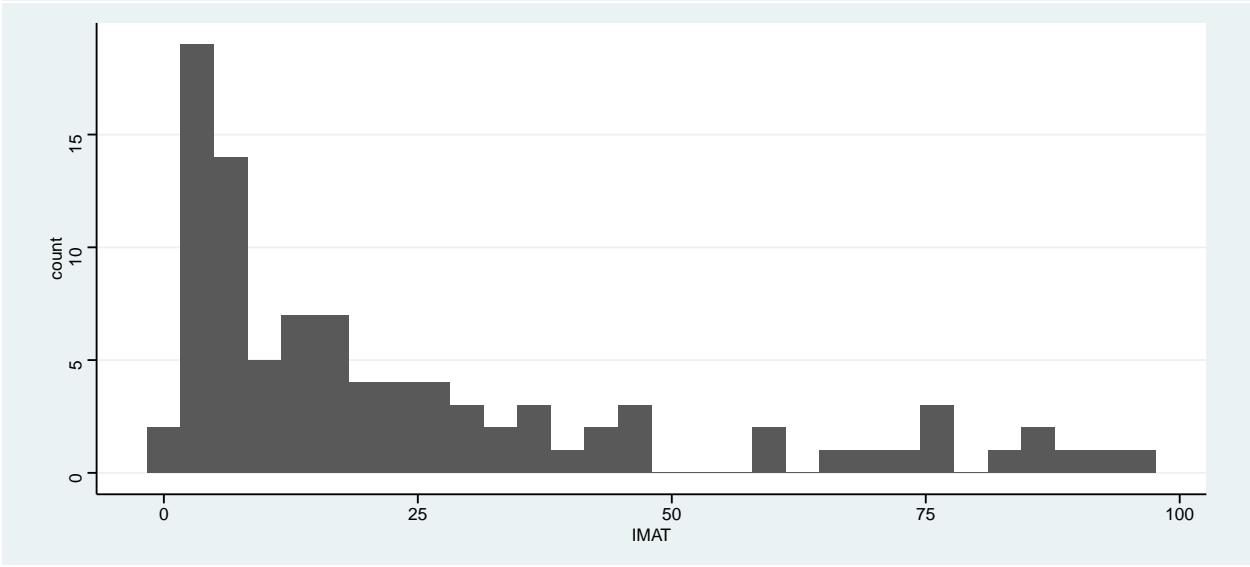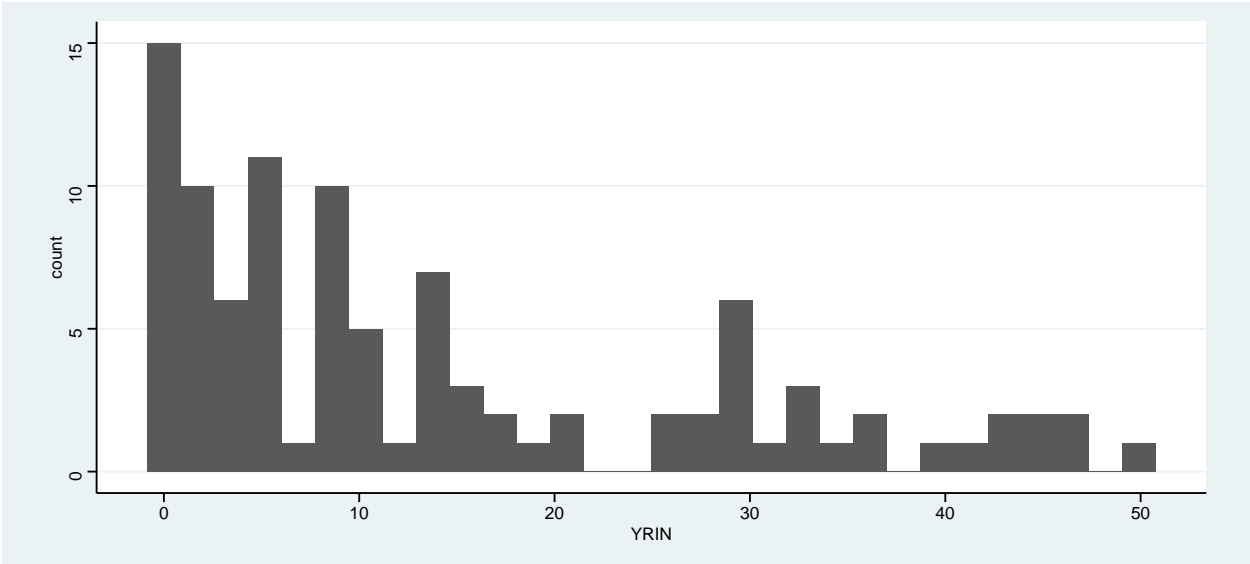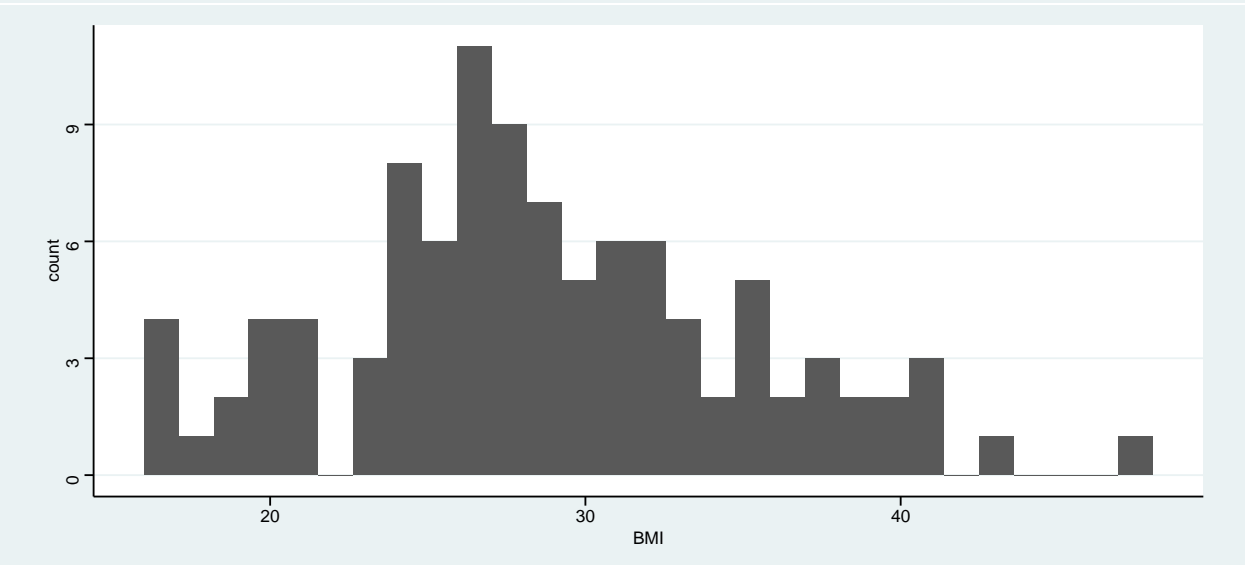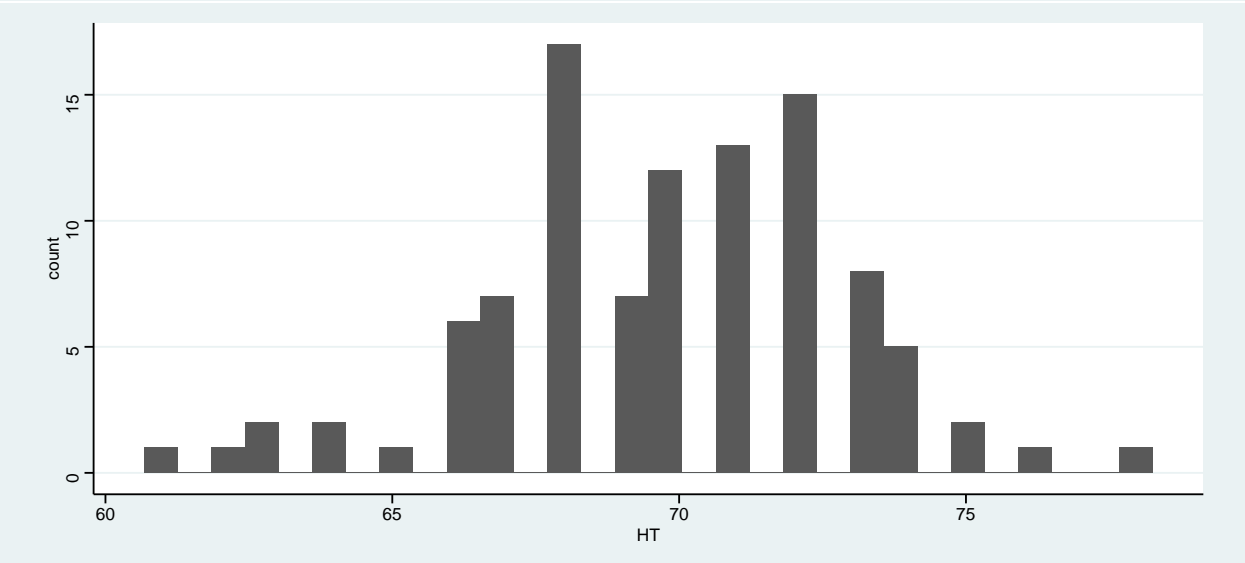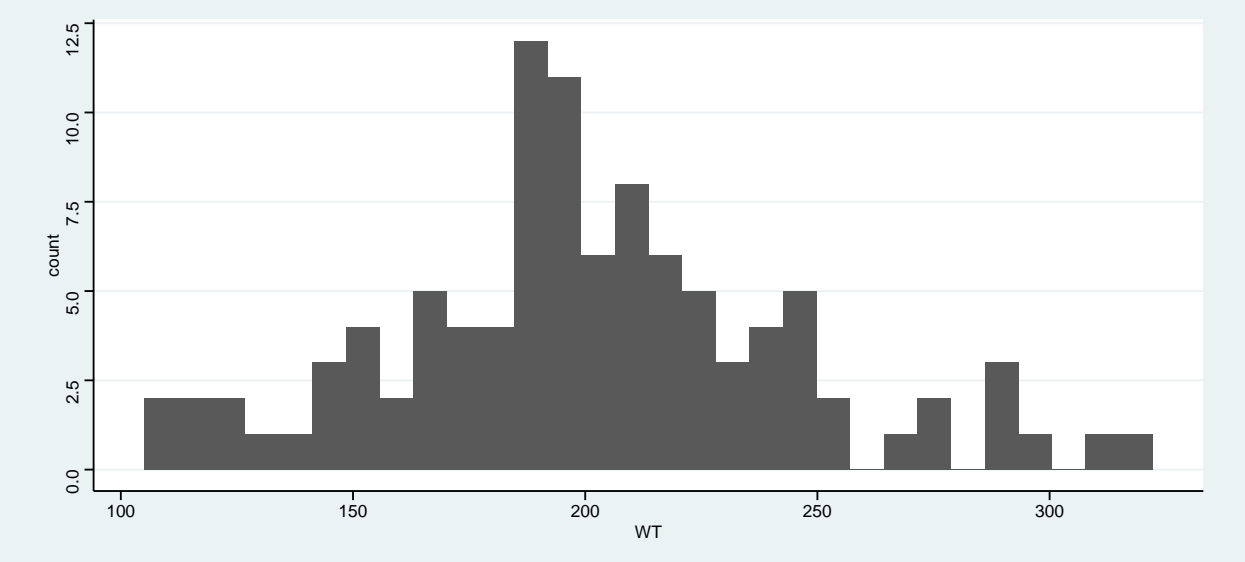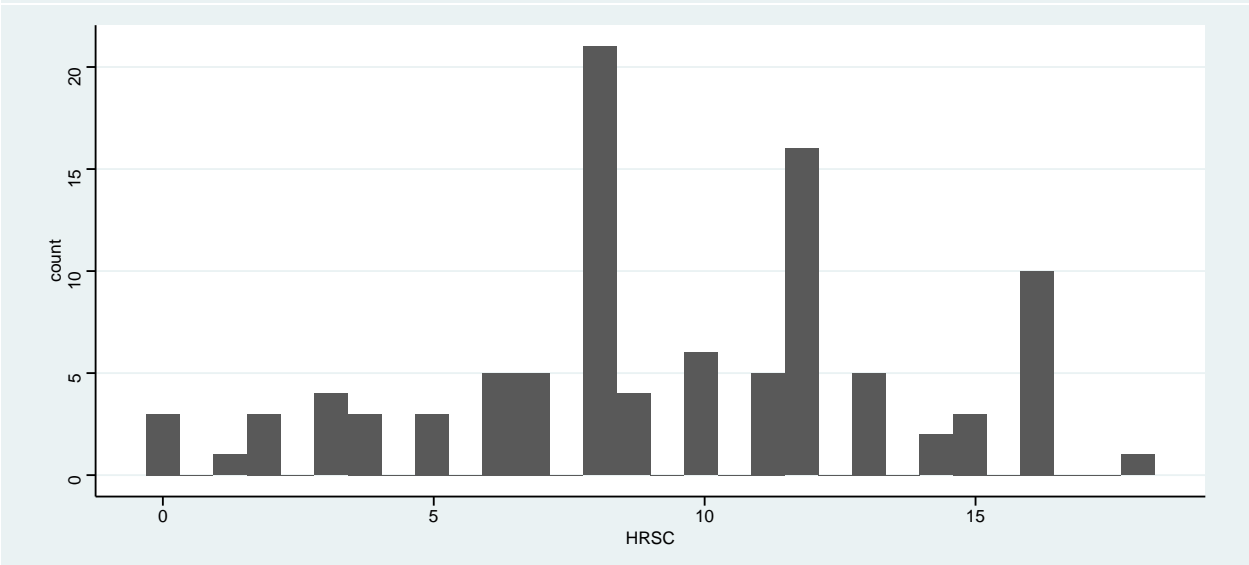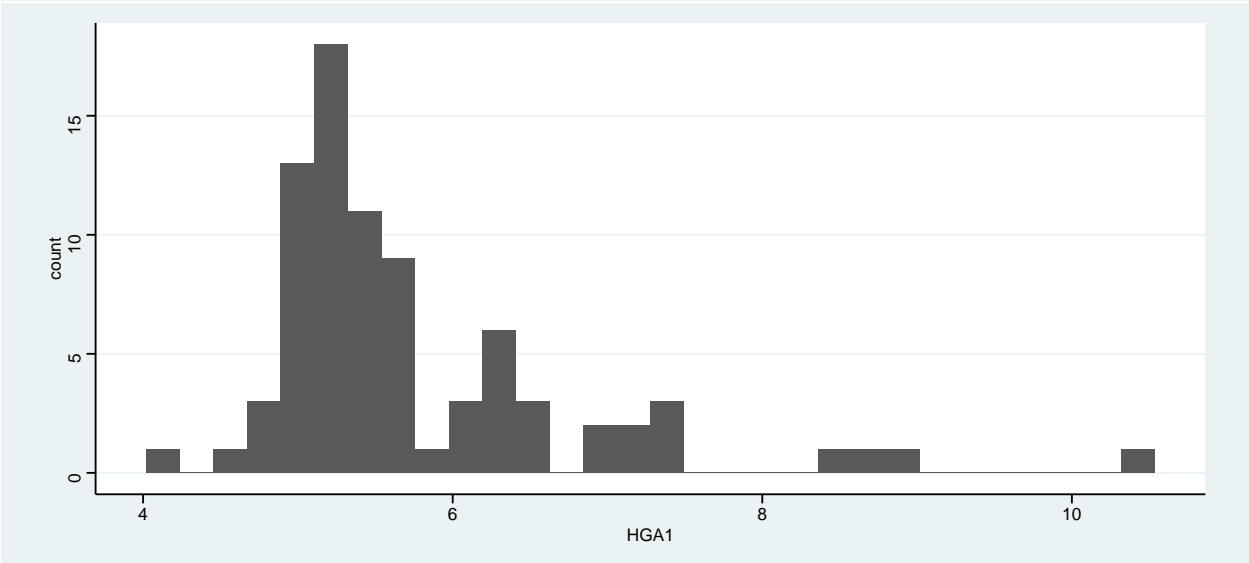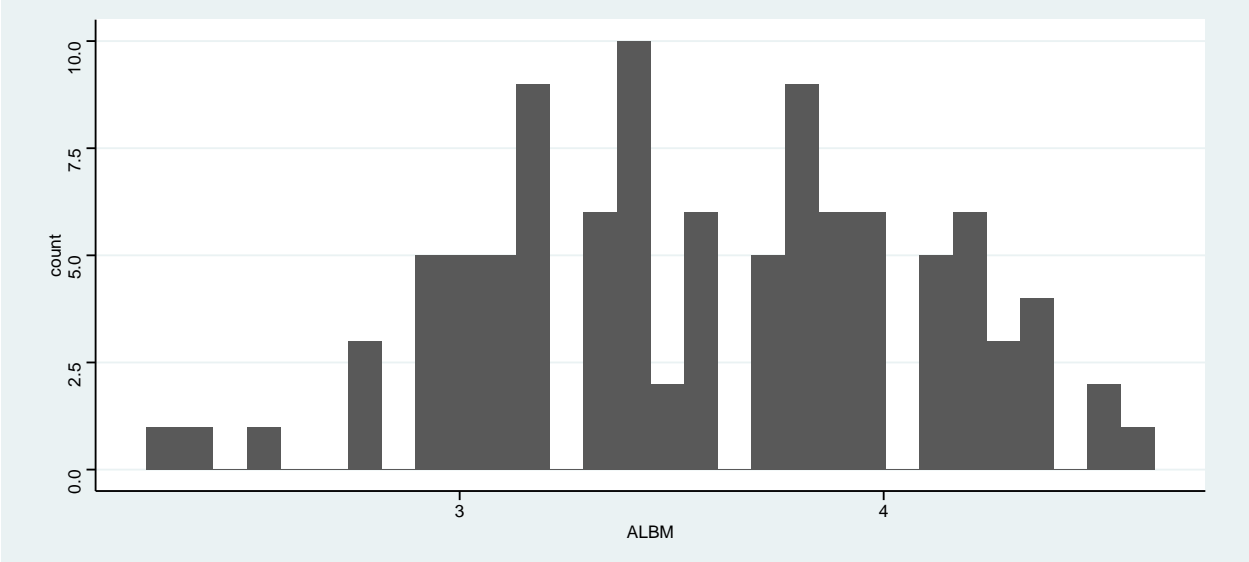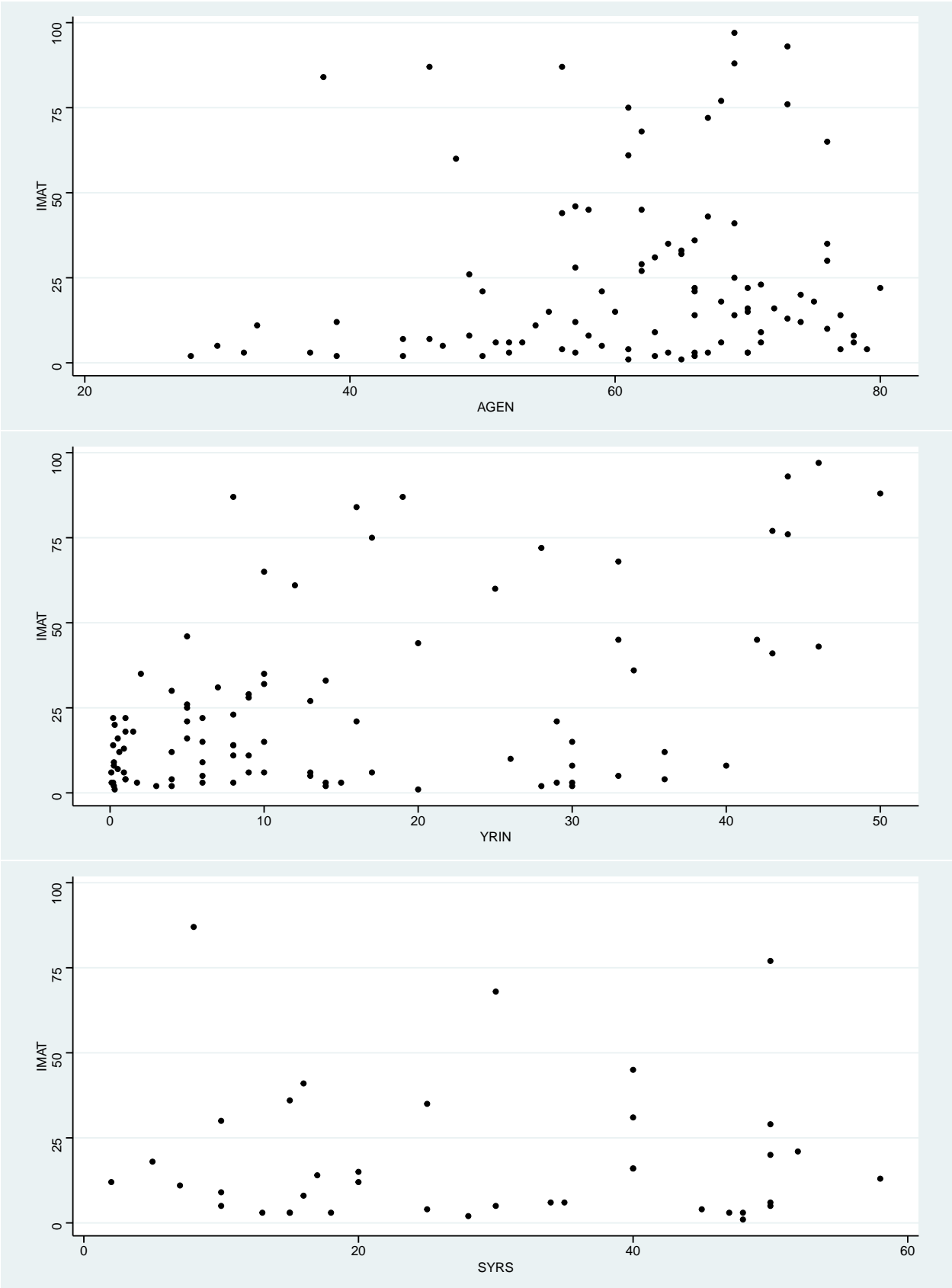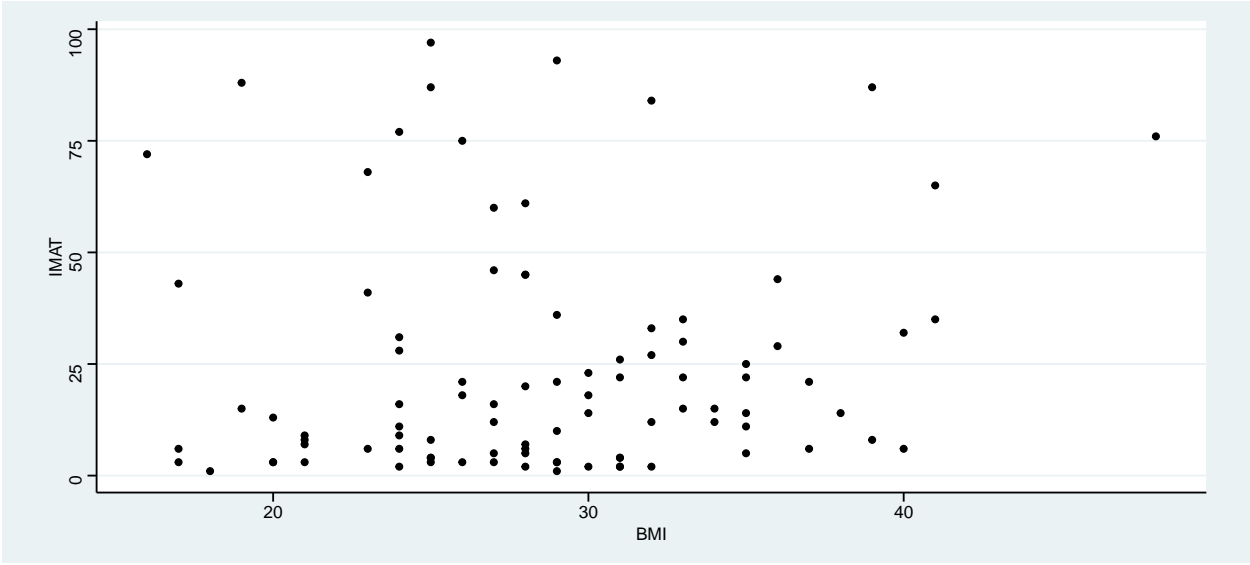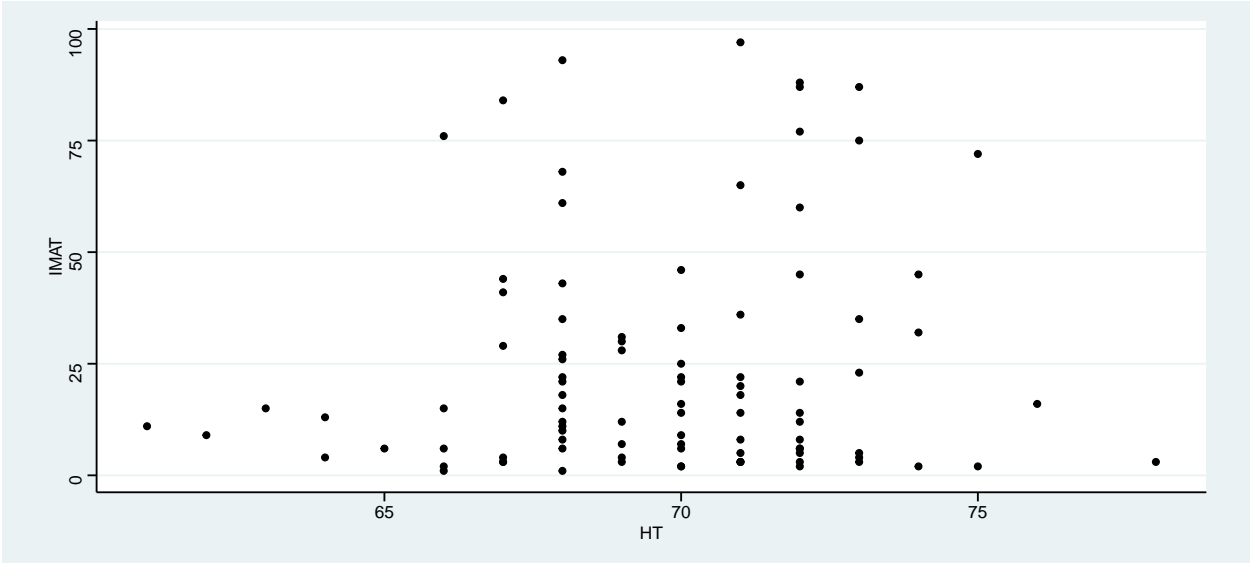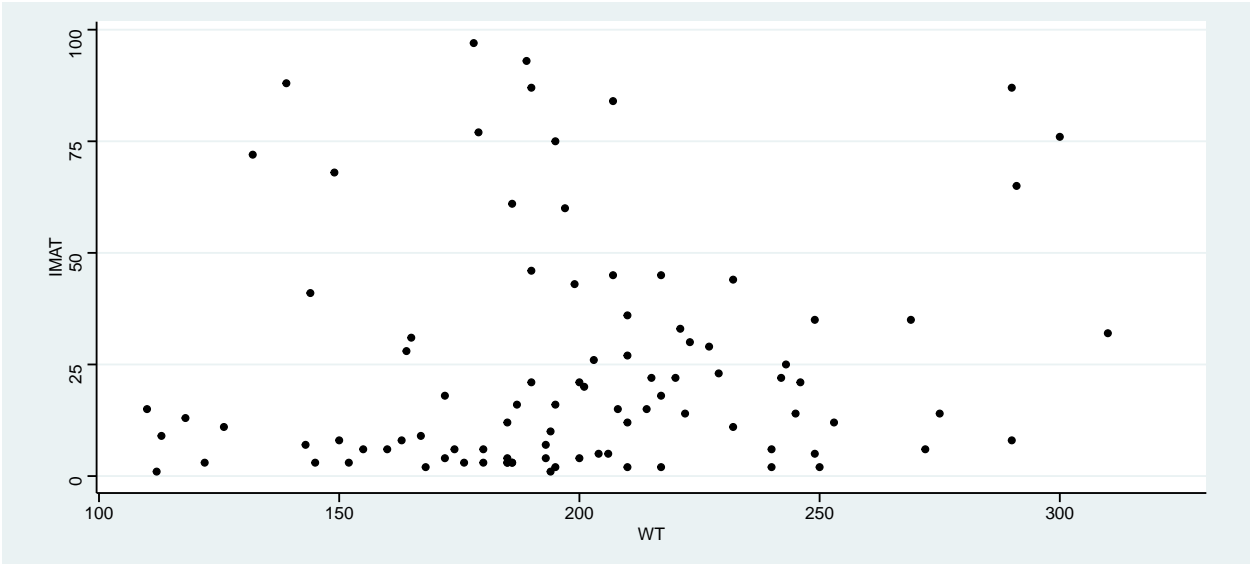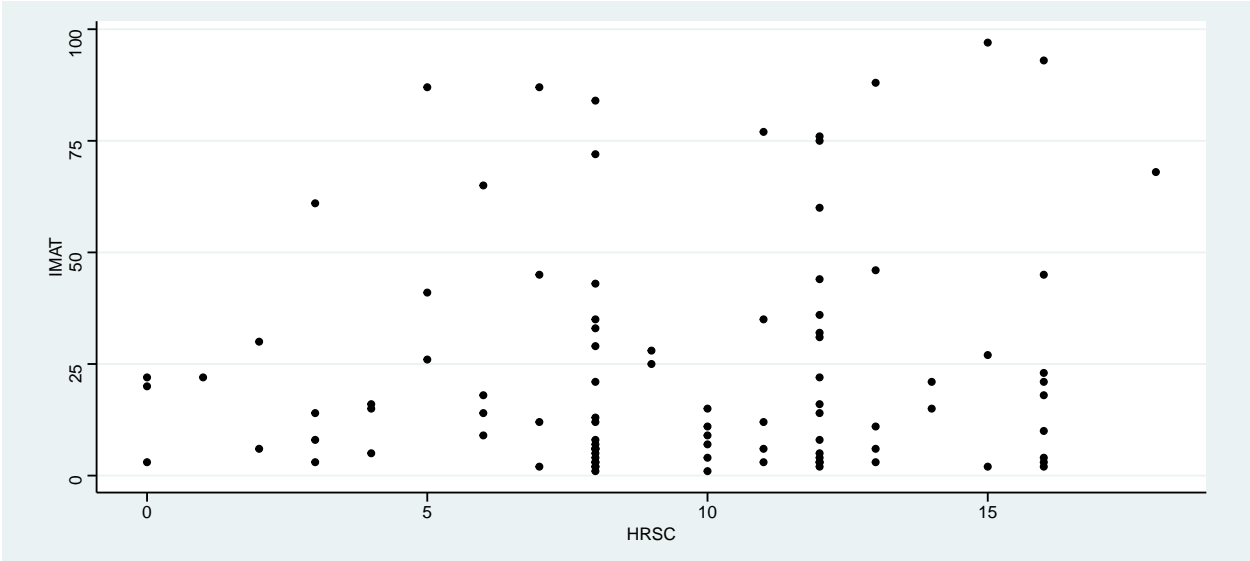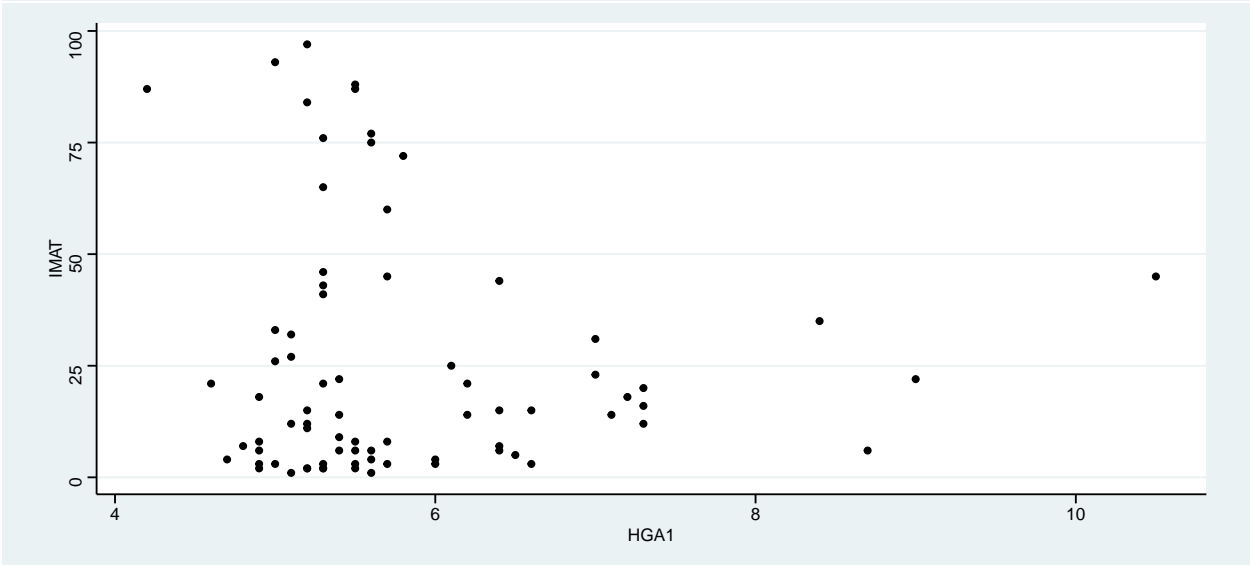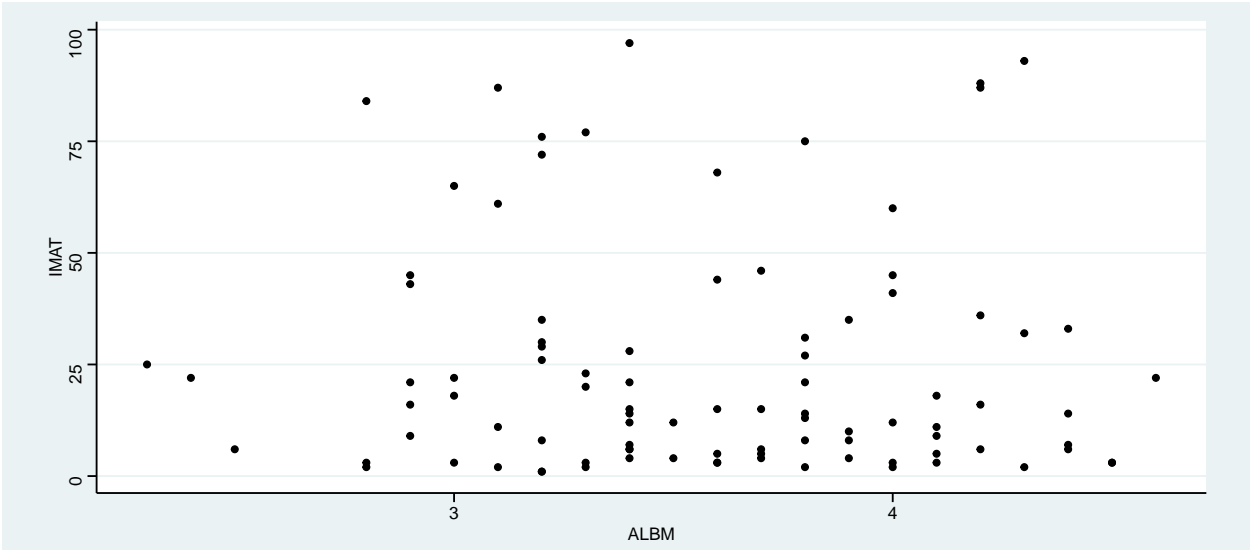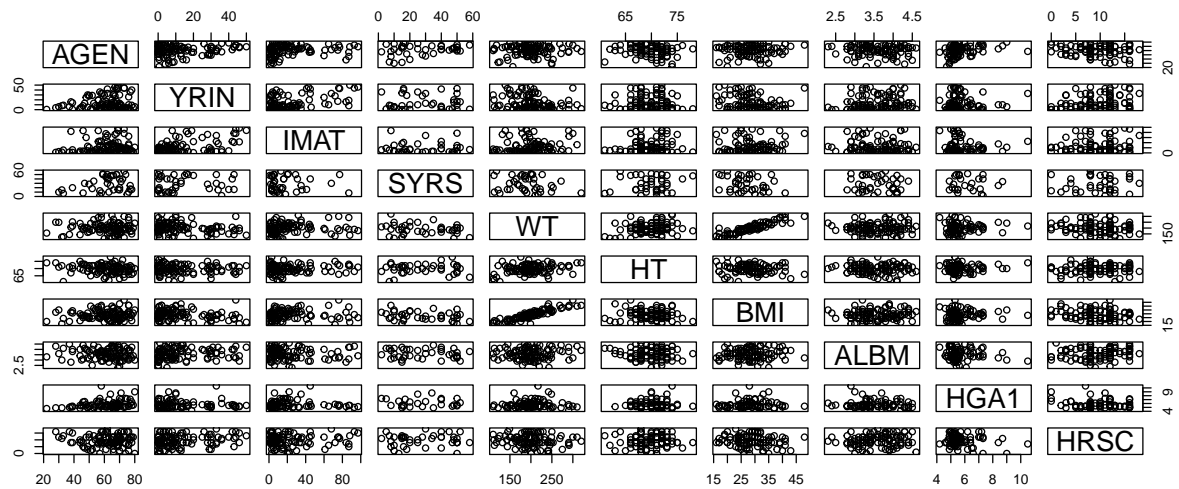
Numerical EDA

Try looking at distances between points (if possible), correlations, partial correlations

```
## [1] "Summary"
```

```
##       AGEN            YRIN          RACE          ETHN      GEND          LOI
##  Min.   :22.0   Min.   : 0.08   Ca:77    Not Hs/L:83   M:96   Above T6:71
##  1st Qu.:55.0   1st Qu.: 2.75   AA:23    unk     :15   F: 5   Below T6:30
##  Median :63.0   Median : 9.00   O : 1    HS/L    : 1
##  Mean   :60.9   Mean   :14.06            Hs/L    : 2
##  3rd Qu.:70.0   3rd Qu.:25.25
##  Max.   :80.0   Max.   :50.00
##                 NA's   :1
##        ASIA        PRI          IMAT            WCTP      CUTP        BED
##  Incomplete:72   Y :37   Min.   : 1.00    PWc  :42   ACu :37   BOth : 6
##  Complete  :28   N :63   1st Qu.: 5.25    MWc  :31   FCu :39   BHPTL:52
##  Unk       : 1   Unk: 1  Median :14.50    TRWc :10   LCu : 3   BSTD :43
##                          Mean   :24.39    AmnWC:17   NoCu:15
##                          3rd Qu.:32.75    Mwc  : 0   Acu : 0
##                          Max.   :97.00    OWc  : 1   Fcu : 0
##                          NA's   :7                   OCu : 7
##   MATT    NUTI    BOI    BLI    VASC    RESP    PNEU      DIAB     DEPR    ANXI
##  AM :36   L3:92   N:69   N:65   Y:33    Y:40    N:99   No   :64   N:62   N:71
##  AFM:17   G3: 9   Y:32   Y:36   N:68    N:61    Y: 2   unk  :10   Y:39   Y:30
##  OM :15                                         Cont.:22
##  SFM:33                                         Pre  : 5
##
##
##
##   PAIN    SLEP    ALCO        NODR    DRUG      SMOK        SYRS
##  Y  :58   N  :36   Y:47   Moderate:11   N:86   Sx10+:25   Min.   : 2.0
##  unk:29   unk:29   N:54   None    :56   Y:15   Sx10-:24   1st Qu.:15.0
```

```
## N/A: 1   Y :35          Light   :30          NS   :36   Median :26.5
## N  :13   N/A: 1         Heavy  : 4          CS   :14   Mean   :28.5
##                                             SS   : 2   3rd Qu.:45.5
##                                                        Max.   :58.0
##                                                        NA's   :61
##        WT              HT              BMI             ALBM
## Min.   :110.0   Min.   :61.00   Min.   :16.00   Min.   :2.300
## 1st Qu.:176.0   1st Qu.:68.00   1st Qu.:24.00   1st Qu.:3.200
## Median :197.0   Median :70.00   Median :28.00   Median :3.600
## Mean   :200.7   Mean   :69.77   Mean   :28.76   Mean   :3.581
## 3rd Qu.:223.0   3rd Qu.:72.00   3rd Qu.:32.00   3rd Qu.:4.000
## Max.   :320.0   Max.   :78.00   Max.   :48.00   Max.   :4.600
##
##       HGA1        LIVS      SHC       USHC       PRAH        PRFQ
## Min.   : 4.200   L2:59   Y  :46    Y  :45    N  :13   unk    :32
## 1st Qu.: 5.200   L4:11   N  :54    N  :55    Y  :87   15     :30
## Median : 5.400   L3: 6   unk: 1    unk: 1    unk: 1   N/A    :10
## Mean   : 5.772   L1:25                                120    : 8
## 3rd Qu.: 6.125                                        60     : 8
## Max.   :10.500                                        30     : 5
## NA's   :21                                            (Other): 8
##       HRSC        EMPL     MARS     EDUC
## Min.   : 0.00   E5:48   M1 :45   S2:31
## 1st Qu.: 7.00   E6:45   M2 : 8   S3:36
## Median : 9.00   E4: 1   M3 :15   S5: 9
## Mean   : 9.38   E2: 0   M5 : 3   S6: 6
## 3rd Qu.:12.00   E1: 7   M4 :29   S4:17
## Max.   :18.00           unk: 1   S1: 1
## NA's   :1               S7: 1

## [1] "Partial Correlations"

##              AGEN        YRIN        IMAT         SYRS          WT          HT
## AGEN   1.00000000  0.184616727 -0.03008723  0.157895047  0.06813894 -0.20592684
## YRIN   0.18461673  1.000000000  0.40773629 -0.006934976 -0.15801231 -0.09004768
## IMAT  -0.03008723  0.407736293  1.00000000  0.031243320  0.03570838  0.16440463
## SYRS   0.15789505 -0.006934976  0.03124332  1.000000000  0.29293948 -0.12546153
## WT     0.06813894 -0.158012311  0.03570838  0.292939476  1.00000000  0.72026984
## HT    -0.20592684 -0.090047680  0.16440463 -0.125461532  0.72026984  1.00000000
## BMI   -0.08819931  0.087306196  0.01670089 -0.358702364  0.96040940 -0.69740189
## ALBM   0.02716884  0.244882250 -0.18784317  0.044420695  0.18333689  0.00084650
## HGA1   0.47437001 -0.314211410  0.08255767 -0.003602310 -0.15301354  0.09246715
## HRSC   0.12637946  0.192157549 -0.12508961  0.106878221 -0.09861580  0.05095924
##              BMI         ALBM        HGA1        HRSC
## AGEN  -0.08819931  0.02716884  0.47437001  0.12637946
## YRIN   0.08730620  0.24488225 -0.31421141  0.19215755
## IMAT   0.01670089 -0.18784317  0.08255767 -0.12508961
## SYRS  -0.35870236  0.04442069 -0.00360231  0.10687822
## WT     0.96040940  0.18333689 -0.15301354 -0.09861580
## HT    -0.69740189  0.00084650  0.09246715  0.05095924
## BMI    1.00000000 -0.08099748  0.20623646  0.16022158
## ALBM  -0.08099748  1.00000000  0.06365532 -0.01287487
## HGA1   0.20623646  0.06365532  1.00000000 -0.11560858
## HRSC   0.16022158 -0.01287487 -0.11560858  1.00000000
```

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```
## [1] "Standardized Distances Check"
```
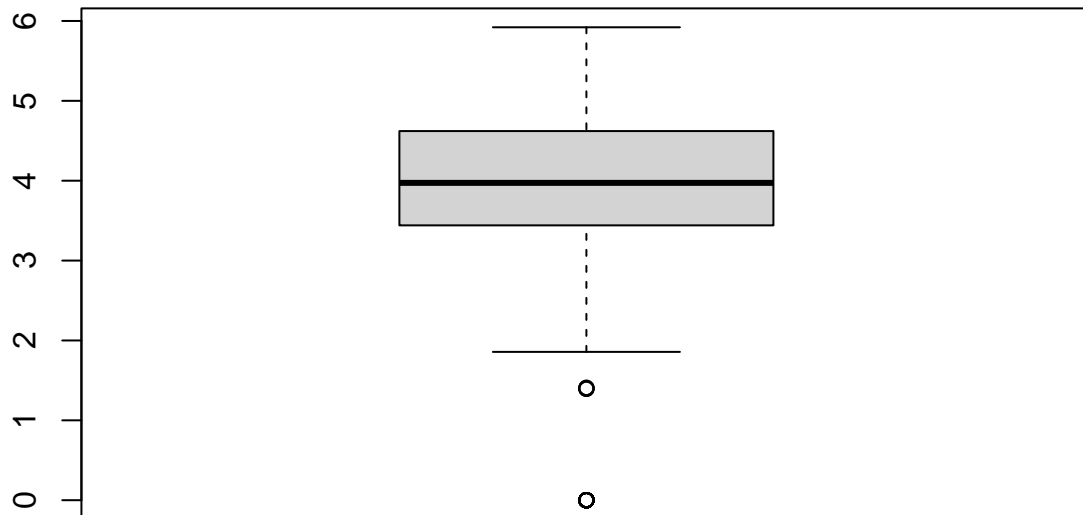

A slight tail indicates some potential signal in the noise, though it's not completely clear that there is very much signal here.

Some First Models

Just IMAT

```
## [1] "Guesses from EDA"
```

```
##
## Call:
## lm(formula = log(IMAT) ~ log(YRIN) + log(AGEN) + log(HGA1) +
##     ETHN + LOI + ASIA + PRI + BED + PRAH, data = visit_one)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.1999 -0.5472 -0.0483  0.4049  2.4873
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -6.02956    2.41029  -2.502  0.01497 *
## log(YRIN)     0.09967    0.07487   1.331  0.18789
## log(AGEN)     1.91410    0.59412   3.222  0.00202 **
```

```
## log(HGA1)      0.51749     0.77222    0.670  0.50522
## ETHNunk        0.78490     0.34670    2.264  0.02703 *
## ETHNHs/L       0.45950     1.07755    0.426  0.67125
## LOIBelow T6    0.42284     0.25958    1.629  0.10832
## ASIAComplete   0.52336     0.30240    1.731  0.08840 .
## PRIN          -0.74072     0.29382   -2.521  0.01424 *
## BEDBHPTL       0.05329     0.45699    0.117  0.90754
## BEDBSTD       -0.21822     0.46951   -0.465  0.64369
## PRAHY         -0.26337     0.33906   -0.777  0.44021
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.9877 on 63 degrees of freedom
##   (26 observations deleted due to missingness)
## Multiple R-squared:  0.4633, Adjusted R-squared:  0.3696
## F-statistic: 4.944 on 11 and 63 DF,  p-value: 1.743e-05


## [1] "Refining a bit"


##
## Call:
## lm(formula = log(IMAT) ~ log(YRIN) + log(AGEN) + ETHN + LOI +
##      ASIA + PRI, data = visit_one)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.1974 -0.4933  0.0000  0.4505  2.2674
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -5.4685     1.9478  -2.808 0.006221 **
## log(YRIN)      0.1202     0.0630   1.908 0.059850 .
## log(AGEN)      1.9373     0.4679   4.140 8.29e-05 ***
## ETHNunk        0.6691     0.2908   2.301 0.023900 *
## ETHNHs/L       0.6766     0.7047   0.960 0.339790
## LOIBelow T6    0.2530     0.2267   1.116 0.267650
## ASIAComplete   0.6720     0.2611   2.574 0.011825 *
## ASIAUnk        1.2242     0.9598   1.276 0.205669
## PRIN          -0.7812     0.2275  -3.434 0.000932 ***
## PRIUnk        -0.8290     0.9850  -0.842 0.402395
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.9435 on 83 degrees of freedom
##   (8 observations deleted due to missingness)
## Multiple R-squared:  0.4385, Adjusted R-squared:  0.3776
## F-statistic: 7.202 on 9 and 83 DF,  p-value: 1.172e-07
```

Just PRI

```
##
## Call:
## glm(formula = PRI ~ log(IMAT) + log(YRIN) + log(AGEN) + log(HGA1) +
```

```
##      LOI + ASIA + BED + MATT + WCTP + CUTP + SHC, family = binomial,
##      data = logit_data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.1675  -0.4713   0.1149   0.5916   2.5201
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -6.93237    8.08116  -0.858   0.3910
## log(IMAT)     -1.32989    0.53366  -2.492   0.0127 *
## log(YRIN)     -0.02436    0.26265  -0.093   0.9261
## log(AGEN)      2.21872    2.13581   1.039   0.2989
## log(HGA1)      1.54514    2.22930   0.693   0.4882
## LOIBelow T6   -0.60262    1.10354  -0.546   0.5850
## ASIAComplete  -1.50586    0.98610  -1.527   0.1267
## BEDBHPTL      -0.44940    1.96088  -0.229   0.8187
## BEDBSTD        1.74349    2.04879   0.851   0.3948
## MATTAFM       -1.71544    1.30022  -1.319   0.1871
## MATTOM        -0.78045    1.20644  -0.647   0.5177
## MATTSFM       -1.38371    1.36188  -1.016   0.3096
## WCTPMWc       -1.04672    1.12374  -0.931   0.3516
## WCTPTRWc      -2.71441    1.62180  -1.674   0.0942 .
## WCTPAmnWC     14.08839 2227.05191   0.006   0.9950
## WCTPOWc       12.73647 3956.18073   0.003   0.9974
## CUTPFCu        1.88348    1.06203   1.773   0.0762 .
## CUTPLCu        1.07530    1.80021   0.597   0.5503
## CUTPNoCu     -15.81301 2227.05176  -0.007   0.9943
## CUTPOCu       -1.55383    1.80975  -0.859   0.3906
## SHCN           1.35002    1.45045   0.931   0.3520
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 100.952  on 74  degrees of freedom
## Residual deviance:  53.793  on 54  degrees of freedom
##   (25 observations deleted due to missingness)
## AIC: 95.793
##
## Number of Fisher Scoring iterations: 16


##
## Call:
## glm(formula = PRI ~ log(IMAT) + log(YRIN) + log(AGEN) + LOI +
##      ASIA + WCTP + CUTP + SHC, family = binomial, data = logit_data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.2837  -0.6075   0.2253   0.6135   2.6357
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -2.04510    6.20705  -0.329  0.74179
```

```
## log(IMAT)      -0.94617    0.34488  -2.743  0.00608 **
## log(YRIN)      -0.13694    0.20919  -0.655  0.51271
## log(AGEN)       1.10055    1.55387   0.708  0.47878
## LOIBelow T6     0.06437    0.74058   0.087  0.93073
## ASIAComplete   -1.34262    0.77310  -1.737  0.08245 .
## ASIAUnk        15.85265 3956.18050   0.004  0.99680
## WCTPMWc         0.30018    0.78179   0.384  0.70101
## WCTPTRWc       -1.93201    1.26930  -1.522  0.12798
## WCTPAmnWC      16.19406 2384.18757   0.007  0.99458
## WCTPOWc        15.17582 3956.18045   0.004  0.99694
## CUTPFCu         1.75628    0.72437   2.425  0.01533 *
## CUTPLCu         1.68715    1.62081   1.041  0.29791
## CUTPNoCu      -14.90458 2384.18770  -0.006  0.99501
## CUTPOCu         0.54786    1.09113   0.502  0.61559
## SHCN            0.78276    0.81873   0.956  0.33904
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 123.156  on 91  degrees of freedom
## Residual deviance:  74.544  on 76  degrees of freedom
##   (8 observations deleted due to missingness)
## AIC: 106.54
##
## Number of Fisher Scoring iterations: 16
```

Multivariate Model

PRI & log(IMAT) vs. potential explainers, just seeing how this looks

```
## Response PRI :
##
## Call:
## lm(formula = PRI ~ log(YRIN) + log(AGEN) + log(HGA1) + LOI +
##     ASIA + BED + MATT + WCTP + CUTP + SHC + PRFQ, data = visit_one)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.0080 -0.2160  0.0000  0.2841  0.8683
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -0.260523   1.217758  -0.214   0.8315
## log(YRIN)    -0.030896   0.034902  -0.885   0.3804
## log(AGEN)     0.229741   0.287531   0.799   0.4281
## log(HGA1)     0.386886   0.401346   0.964   0.3398
## LOIBelow T6  -0.187365   0.138033  -1.357   0.1809
## ASIAComplete -0.340382   0.152840  -2.227   0.0306 *
## BEDBHPTL     -0.022394   0.220138  -0.102   0.9194
## BEDBSTD       0.092174   0.226571   0.407   0.6859
## MATTAFM      -0.094046   0.162464  -0.579   0.5653
## MATTOM       -0.123420   0.209669  -0.589   0.5588
```

```
## MATTSFM       0.014253   0.163278   0.087   0.9308
## WCTPMWc       -0.149151   0.171015  -0.872   0.3874
## WCTPTRWc      -0.185563   0.210525  -0.881   0.3824
## WCTPAmnWC     -0.150317   0.380330  -0.395   0.6944
## WCTPOWc        0.066259   0.516122   0.128   0.8984
## CUTPFCu        0.248008   0.145115   1.709   0.0938 .
## CUTPLCu       -0.006155   0.342741  -0.018   0.9857
## CUTPNoCu      -0.013490   0.370212  -0.036   0.9711
## CUTPOCu        0.034058   0.255499   0.133   0.8945
## SHCN           0.331783   0.207973   1.595   0.1171
## PRFQunk        0.291746   0.190734   1.530   0.1325
## PRFQ120        0.030454   0.285737   0.107   0.9156
## PRFQ15         0.417057   0.216014   1.931   0.0593 .
## PRFQ30         0.480133   0.437134   1.098   0.2774
## PRFQ60         0.242654   0.309980   0.783   0.4375
## PRFQ5                NA         NA      NA       NA
## PRFQ15-20      0.266393   0.526358   0.506   0.6151
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.437 on 49 degrees of freedom
##   (26 observations deleted due to missingness)
## Multiple R-squared:  0.4802, Adjusted R-squared:  0.215
## F-statistic:  1.81 on 25 and 49 DF,  p-value: 0.03777
##
##
## Response Y2 :
##
## Call:
## lm(formula = Y2 ~ log(YRIN) + log(AGEN) + log(HGA1) + LOI + ASIA +
##     BED + MATT + WCTP + CUTP + SHC + PRFQ, data = visit_one)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.9607 -0.4504  0.1024  0.4788  1.2990
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.87208    2.52088   0.346  0.73087
## log(YRIN)     0.15691    0.07225   2.172  0.03474 *
## log(AGEN)     0.77435    0.59522   1.301  0.19936
## log(HGA1)    -0.29076    0.83083  -0.350  0.72786
## LOIBelow T6   0.89693    0.28574   3.139  0.00287 **
## ASIAComplete  0.80731    0.31639   2.552  0.01389 *
## BEDBHPTL     -0.31493    0.45571  -0.691  0.49277
## BEDBSTD       0.20181    0.46902   0.430  0.66888
## MATTAFM      -0.83902    0.33632  -2.495  0.01602 *
## MATTOM       -0.13108    0.43403  -0.302  0.76392
## MATTSFM      -0.80023    0.33800  -2.368  0.02190 *
## WCTPMWc       0.09242    0.35402   0.261  0.79514
## WCTPTRWc     -0.76770    0.43581  -1.762  0.08438 .
## WCTPAmnWC     0.09811    0.78732   0.125  0.90134
## WCTPOWc      -0.31471    1.06842  -0.295  0.76958
## CUTPFCu       0.01118    0.30040   0.037  0.97048
```

```
## CUTPLCu        0.91384     0.70951    1.288   0.20380
## CUTPNoCu       0.33009     0.76638    0.431   0.66857
## CUTPOCu       -0.70606     0.52891   -1.335   0.18806
## SHCN          -1.05883     0.43052   -2.459   0.01749 *
## PRFQunk       -0.49542     0.39484   -1.255   0.21552
## PRFQ120       -0.12317     0.59150   -0.208   0.83591
## PRFQ15        -1.18468     0.44717   -2.649   0.01083 *
## PRFQ30        -1.63348     0.90491   -1.805   0.07720 .
## PRFQ60        -0.12504     0.64169   -0.195   0.84630
## PRFQ5              NA          NA       NA       NA
## PRFQ15-20     -0.92647     1.08961   -0.850   0.39931
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.9046 on 49 degrees of freedom
##   (26 observations deleted due to missingness)
## Multiple R-squared:  0.6498, Adjusted R-squared:  0.4712
## F-statistic: 3.637 on 25 and 49 DF,  p-value: 5.534e-05


##                  PRI:(Intercept) PRI:log(YRIN) PRI:log(AGEN) PRI:log(HGA1)
## PRI:(Intercept)     1.482934793 -2.384386e-03 -0.2831608762 -0.1399683750
## PRI:log(YRIN)      -0.002384386  1.218138e-03 -0.0007798527  0.0011203906
## PRI:log(AGEN)      -0.283160876 -7.798527e-04  0.0826740385 -0.0327112859
## PRI:log(HGA1)      -0.139968375  1.120391e-03 -0.0327112859  0.1610788499
## PRI:LOIBelow T6     0.029153182 -3.731384e-04 -0.0081175146  0.0051605837
## PRI:ASIAComplete   -0.008165141 -9.667858e-04  0.0062521262 -0.0137192197
## PRI:BEDBHPTL       -0.017517319 -2.414400e-04 -0.0041156203 -0.0038312073
## PRI:BEDBSTD        -0.018799319  4.952398e-04 -0.0051295334  0.0082377829
## PRI:MATTAFM        -0.023946866 -2.860810e-04  0.0031535767 -0.0008907143
## PRI:MATTOM         -0.026281194  4.854042e-04  0.0005010233  0.0124873821
## PRI:MATTSFM        -0.004960208  3.550016e-04 -0.0038148497  0.0056047624
## PRI:WCTPMWc        -0.011158068 -1.003845e-03  0.0057821111 -0.0078703169
## PRI:WCTPTRWc       -0.039384132  1.824870e-03  0.0055975699  0.0062514128
## PRI:WCTPAmnWC       0.056972522 -2.793089e-03  0.0020290565 -0.0346401283
## PRI:WCTPOWc         0.028122195  2.955770e-04  0.0118902799 -0.0590955144
## PRI:CUTPFCu         0.014169344 -1.652388e-04 -0.0031480998 -0.0038971865
## PRI:CUTPLCu         0.044530068 -1.213621e-03 -0.0126628597  0.0062745031
## PRI:CUTPNoCu       -0.024245099  2.186251e-03 -0.0092915264  0.0303252294
## PRI:CUTPOCu        -0.009159362 -6.061586e-04  0.0099191383 -0.0173924537
## PRI:SHCN           -0.045535289  9.024322e-04  0.0065213849  0.0009239762
## PRI:PRFQunk        -0.061640659  1.858671e-03  0.0072220570  0.0030923803
## PRI:PRFQ120         0.025573839  2.791468e-03 -0.0016051877 -0.0324214450
## PRI:PRFQ15         -0.030454666  1.372411e-03  0.0052619943 -0.0100993069
## PRI:PRFQ30         -0.044585846  2.074574e-03 -0.0026175911  0.0086701199
## PRI:PRFQ60         -0.026659866  1.064638e-03  0.0118834047 -0.0302276937
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20      -0.024929005  1.312014e-03 -0.0061168897  0.0158530519
## :(Intercept)       -0.737180884  1.185301e-03  0.1407619445  0.0695796005
## :log(YRIN)          0.001185301 -6.055479e-04  0.0003876721 -0.0005569568
## :log(AGEN)          0.140761944  3.876721e-04 -0.0410980450  0.0162610890
## :log(HGA1)          0.069579600 -5.569568e-04  0.0162610890 -0.0800738168
## :LOIBelow T6       -0.014492322  1.854906e-04  0.0040352931 -0.0025653749
## :ASIAComplete       0.004058969  4.805983e-04 -0.0031079910  0.0068199536
## :BEDBHPTL           0.008708025  1.200221e-04  0.0020459137  0.0019045293
```

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```
## :BEDBSTD            0.009345319 -2.461884e-04  0.0025499395 -0.0040950796
## :MATTAFM            0.011904213  1.422136e-04 -0.0015676728  0.0004427825
## :MATTOM             0.013064629 -2.412990e-04 -0.0002490634 -0.0062075955
## :MATTSFM            0.002465766 -1.764746e-04  0.0018963978 -0.0027861803
## :WCTPMWc            0.005546781  4.990207e-04 -0.0028743420  0.0039124088
## :WCTPTRWc           0.019578224 -9.071603e-04 -0.0027826048 -0.0031076363
## :WCTPAmnWC         -0.028321578  1.388471e-03 -0.0010086632  0.0172199348
## :WCTPOWc           -0.013979809 -1.469341e-04 -0.0059107704  0.0293769380
## :CUTPFCu           -0.007043715  8.214178e-05  0.0015649501  0.0019373282
## :CUTPLCu           -0.022136317  6.033023e-04  0.0062948271 -0.0031191147
## :CUTPNoCu           0.012052468 -1.086806e-03  0.0046189055 -0.0150749578
## :CUTPOCu            0.004553205  3.013271e-04 -0.0049308973  0.0086459529
## :SHCN               0.022636022 -4.486076e-04 -0.0032418420 -0.0004593173
## :PRFQunk            0.030642154 -9.239629e-04 -0.0035901527 -0.0015372515
## :PRFQ120           -0.012712997 -1.387665e-03  0.0007979539  0.0161170064
## :PRFQ15             0.015139302 -6.822386e-04 -0.0026157870  0.0050204608
## :PRFQ30             0.022164045 -1.031290e-03  0.0013012293 -0.0043099985
## :PRFQ60             0.013252871 -5.292415e-04 -0.0059073527  0.0150264719
## :PRFQ5                       NA           NA            NA            NA
## :PRFQ15-20          0.012392444 -6.522146e-04  0.0030407636 -0.0078807017
##                  PRI:LOIBelow T6 PRI:ASIAComplete  PRI:BEDBHPTL   PRI:BEDBSTD
## PRI:(Intercept)     2.915318e-02    -0.0081651412 -1.751732e-02 -1.879932e-02
## PRI:log(YRIN)      -3.731384e-04    -0.0009667858 -2.414400e-04  4.952398e-04
## PRI:log(AGEN)      -8.117515e-03     0.0062521262 -4.115620e-03 -5.129533e-03
## PRI:log(HGA1)       5.160584e-03    -0.0137192197 -3.831207e-03  8.237783e-03
## PRI:LOIBelow T6     1.905317e-02    -0.0043961123 -2.965271e-03  4.292740e-04
## PRI:ASIAComplete   -4.396112e-03     0.0233601461  1.258170e-03 -9.529167e-04
## PRI:BEDBHPTL       -2.965271e-03     0.0012581704  4.846074e-02  3.433213e-02
## PRI:BEDBSTD         4.292740e-04    -0.0009529167  3.433213e-02  5.133435e-02
## PRI:MATTAFM        -1.100243e-04     0.0006583768  7.336838e-03  3.985683e-03
## PRI:MATTOM          3.797202e-03    -0.0077910481  2.852711e-03  5.506519e-03
## PRI:MATTSFM        -2.158885e-03    -0.0004900812  4.185286e-03 -6.954057e-03
## PRI:WCTPMWc         4.784978e-04     0.0077444299  3.008317e-03  3.251253e-03
## PRI:WCTPTRWc       -8.717990e-04    -0.0044404374 -4.217605e-03 -1.885480e-04
## PRI:WCTPAmnWC       2.745814e-03     0.0144600062  3.271270e-03 -6.163892e-03
## PRI:WCTPOWc        -1.030775e-02     0.0191614537  5.822898e-04 -1.291175e-02
## PRI:CUTPFCu        -4.012979e-04     0.0034164465 -2.368177e-03 -5.275165e-03
## PRI:CUTPLCu         8.832584e-03    -0.0048594140 -2.341922e-03 -6.864896e-03
## PRI:CUTPNoCu        5.243440e-03    -0.0056261876  5.733831e-05  2.144032e-03
## PRI:CUTPOCu         6.391285e-04    -0.0034826670 -2.525570e-03 -1.489930e-02
## PRI:SHCN           -1.093852e-02    -0.0063077107  9.240794e-03 -3.203266e-03
## PRI:PRFQunk        -2.159499e-03     0.0003211667 -6.290187e-03 -7.069801e-03
## PRI:PRFQ120        -4.142736e-03     0.0065798881 -5.298620e-03 -1.236803e-02
## PRI:PRFQ15         -4.142805e-03     0.0070252213 -5.638412e-03 -1.064193e-02
## PRI:PRFQ30         -4.649287e-03     0.0043179762 -2.713590e-03 -1.495926e-02
## PRI:PRFQ60         -6.732778e-03     0.0072662096 -3.189110e-03 -9.519763e-03
## PRI:PRFQ5                    NA               NA            NA            NA
## PRI:PRFQ15-20       3.644623e-03    -0.0225096067 -1.065368e-02 -1.284950e-02
## :(Intercept)       -1.449232e-02     0.0040589688  8.708025e-03  9.345319e-03
## :log(YRIN)          1.854906e-04     0.0004805983  1.200221e-04 -2.461884e-04
## :log(AGEN)          4.035293e-03    -0.0031079910  2.045914e-03  2.549939e-03
## :log(HGA1)         -2.565375e-03     0.0068199536  1.904529e-03 -4.095080e-03
## :LOIBelow T6       -9.471512e-03     0.0021853489  1.474064e-03 -2.133961e-04
## :ASIAComplete       2.185349e-03    -0.0116125492 -6.254484e-04  4.737039e-04
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## :BEDBHPTL          1.474064e-03    -0.0006254484 -2.409029e-02 -1.706683e-02
## :BEDBSTD          -2.133961e-04     0.0004737039 -1.706683e-02 -2.551879e-02
## :MATTAFM           5.469413e-05    -0.0003272853 -3.647211e-03 -1.981321e-03
## :MATTOM           -1.887625e-03     0.0038730036 -1.418110e-03 -2.737343e-03
## :MATTSFM           1.073202e-03     0.0002436240 -2.080545e-03  3.456927e-03
## :WCTPMWc          -2.378658e-04    -0.0038498292 -1.495463e-03 -1.616229e-03
## :WCTPTRWc          4.333795e-04     0.0022073833  2.096611e-03  9.372899e-05
## :WCTPAmnWC        -1.364970e-03    -0.0071882056 -1.626179e-03  3.064129e-03
## :WCTPOWc           5.124082e-03    -0.0095253395 -2.894618e-04  6.418553e-03
## :CUTPFCu           1.994890e-04    -0.0016983478  1.177243e-03  2.622334e-03
## :CUTPLCu          -4.390761e-03     0.0024156606  1.164192e-03  3.412605e-03
## :CUTPNoCu         -2.606563e-03     0.0027968310 -2.850342e-05 -1.065818e-03
## :CUTPOCu          -3.177168e-04     0.0017312666  1.255485e-03  7.406581e-03
## :SHCN              5.437641e-03     0.0031356226 -4.593686e-03  1.592374e-03
## :PRFQunk           1.073507e-03    -0.0001596550  3.126911e-03  3.514465e-03
## :PRFQ120           2.059393e-03    -0.0032709245  2.633994e-03  6.148262e-03
## :PRFQ15            2.059428e-03    -0.0034923038  2.802908e-03  5.290206e-03
## :PRFQ30            2.311204e-03    -0.0021465067  1.348951e-03  7.436390e-03
## :PRFQ60            3.346928e-03    -0.0036121014  1.585337e-03  4.732364e-03
## :PRFQ5                      NA               NA            NA            NA
## :PRFQ15-20        -1.811776e-03     0.0111897380  5.296044e-03  6.387609e-03
##                     PRI:MATTAFM   PRI:MATTOM   PRI:MATTSFM   PRI:WCTPMWc
## PRI:(Intercept)   -2.394687e-02 -0.0262811937 -0.0049602083 -0.0111580681
## PRI:log(YRIN)     -2.860810e-04  0.0004854042  0.0003550016 -0.0010038447
## PRI:log(AGEN)      3.153577e-03  0.0005010233 -0.0038148497  0.0057821111
## PRI:log(HGA1)     -8.907143e-04  0.0124873821  0.0056047624 -0.0078703169
## PRI:LOIBelow T6   -1.100243e-04  0.0037972024 -0.0021588848  0.0004784978
## PRI:ASIAComplete   6.583768e-04 -0.0077910481 -0.0004900812  0.0077444299
## PRI:BEDBHPTL       7.336838e-03  0.0028527111  0.0041852861  0.0030083169
## PRI:BEDBSTD        3.985683e-03  0.0055065191 -0.0069540571  0.0032512529
## PRI:MATTAFM        2.639441e-02  0.0129699387  0.0122027068  0.0030314635
## PRI:MATTOM         1.296994e-02  0.0439610005  0.0123602720 -0.0030079820
## PRI:MATTSFM        1.220271e-02  0.0123602720  0.0266596396 -0.0024878029
## PRI:WCTPMWc        3.031463e-03 -0.0030079820 -0.0024878029  0.0292460997
## PRI:WCTPTRWc      -3.081225e-04 -0.0045986179 -0.0005380269  0.0066792113
## PRI:WCTPAmnWC      5.620426e-03 -0.0038716868 -0.0078668208  0.0249745413
## PRI:WCTPOWc        8.557433e-04 -0.0149825043 -0.0075339065  0.0211619975
## PRI:CUTPFCu        1.440042e-03 -0.0029553218 -0.0008968470 -0.0022311686
## PRI:CUTPLCu        3.658932e-03  0.0036047071 -0.0008520567 -0.0029528415
## PRI:CUTPNoCu       9.480001e-04  0.0052652499  0.0078326471 -0.0059605676
## PRI:CUTPOCu       -2.649666e-03 -0.0021951616  0.0052697469 -0.0073149880
## PRI:SHCN          -5.594183e-03 -0.0051781431  0.0003387182 -0.0163191532
## PRI:PRFQunk       -1.319834e-03 -0.0039036192  0.0006804867 -0.0062044044
## PRI:PRFQ120       -3.229553e-03 -0.0094237897 -0.0002939400 -0.0054818295
## PRI:PRFQ15        -6.067123e-03 -0.0147420386 -0.0027281556 -0.0025021800
## PRI:PRFQ30        -4.638836e-03 -0.0400706508 -0.0025823179  0.0016705858
## PRI:PRFQ60        -6.175386e-03 -0.0170194120 -0.0050637241  0.0012158545
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20      2.524487e-03  0.0086115758  0.0084154254 -0.0352542675
## :(Intercept)       1.190421e-02  0.0130646295  0.0024657664  0.0055467810
## :log(YRIN)         1.422136e-04 -0.0002412990 -0.0001764746  0.0004990207
## :log(AGEN)        -1.567673e-03 -0.0002490634  0.0018963978 -0.0028743420
## :log(HGA1)         4.427825e-04 -0.0062075955 -0.0027861803  0.0039124088
## :LOIBelow T6       5.469413e-05 -0.0018876251  0.0010732020 -0.0002378658
```

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## :ASIAComplete    -3.272853e-04  0.0038730036  0.0002436240 -0.0038498292
## :BEDBHPTL        -3.647211e-03 -0.0014181096 -0.0020805452 -0.0014954627
## :BEDBSTD         -1.981321e-03 -0.0027373426  0.0034569274 -0.0016162285
## :MATTAFM         -1.312091e-02 -0.0064474789 -0.0060660808 -0.0015069691
## :MATTOM          -6.447479e-03 -0.0218534283 -0.0061444079  0.0014952962
## :MATTSFM         -6.066081e-03 -0.0061444079 -0.0132527585  0.0012367103
## :WCTPMWc         -1.506969e-03  0.0014952962  0.0012367103 -0.0145385122
## :WCTPTRWc         1.531706e-04  0.0022860164  0.0002674583 -0.0033202990
## :WCTPAmnWC       -2.793967e-03  0.0019246520  0.0039106709 -0.0124150802
## :WCTPOWc         -4.253981e-04  0.0074479443  0.0037451760 -0.0105198287
## :CUTPFCu         -7.158586e-04  0.0014691184  0.0004458311  0.0011091350
## :CUTPLCu         -1.818890e-03 -0.0017919339  0.0004235654  0.0014678854
## :CUTPNoCu        -4.712598e-04 -0.0026174054 -0.0038936828  0.0029630544
## :CUTPOCu          1.317174e-03  0.0010912355 -0.0026196409  0.0036363496
## :SHCN             2.780921e-03  0.0025741038 -0.0001683800  0.0081124051
## :PRFQunk          6.561020e-04  0.0019405259 -0.0003382764  0.0030842680
## :PRFQ120          1.605441e-03  0.0046846548  0.0001461203  0.0027250692
## :PRFQ15           3.016024e-03  0.0073284065  0.0013561919  0.0012438573
## :PRFQ30           2.306009e-03  0.0199194988  0.0012836946 -0.0008304640
## :PRFQ60           3.069843e-03  0.0084605104  0.0025172251 -0.0006044128
## :PRFQ5                      NA            NA            NA            NA
## :PRFQ15-20       -1.254947e-03 -0.0042808956 -0.0041833874  0.0175252292
##                  PRI:WCTPTRWc PRI:WCTPAmnWC   PRI:WCTPOWc   PRI:CUTPFCu
## PRI:(Intercept)  -3.938413e-02  0.0569725217  0.0281221955  1.416934e-02
## PRI:log(YRIN)     1.824870e-03 -0.0027930893  0.0002955770 -1.652388e-04
## PRI:log(AGEN)     5.597570e-03  0.0020290565  0.0118902799 -3.148100e-03
## PRI:log(HGA1)     6.251413e-03 -0.0346401283 -0.0590955144 -3.897186e-03
## PRI:LOIBelow T6  -8.717990e-04  0.0027458144 -0.0103077548 -4.012979e-04
## PRI:ASIAComplete -4.440437e-03  0.0144600062  0.0191614537  3.416447e-03
## PRI:BEDBHPTL     -4.217605e-03  0.0032712705  0.0005822898 -2.368177e-03
## PRI:BEDBSTD      -1.885480e-04 -0.0061638921 -0.0129117498 -5.275165e-03
## PRI:MATTAFM      -3.081225e-04  0.0056204263  0.0008557433  1.440042e-03
## PRI:MATTOM       -4.598618e-03 -0.0038716868 -0.0149825043 -2.955322e-03
## PRI:MATTSFM      -5.380269e-04 -0.0078668208 -0.0075339065 -8.968470e-04
## PRI:WCTPMWc       6.679211e-03  0.0249745413  0.0211619975 -2.231169e-03
## PRI:WCTPTRWc      4.432064e-02 -0.0016579374  0.0056609968 -6.887363e-03
## PRI:WCTPAmnWC    -1.657937e-03  0.1446506443  0.0363272325  6.421310e-03
## PRI:WCTPOWc       5.660997e-03  0.0363272325  0.2663822870  6.657219e-04
## PRI:CUTPFCu      -6.887363e-03  0.0064213104  0.0006657219  2.105838e-02
## PRI:CUTPLCu       4.204507e-04  0.0105645735 -0.0059376319  9.715410e-03
## PRI:CUTPNoCu     -2.329876e-03 -0.1076523095 -0.0189870260  8.387962e-03
## PRI:CUTPOCu      -8.272911e-03  0.0036757150 -0.0007983597  1.073567e-02
## PRI:SHCN          3.063584e-03 -0.0237010769 -0.0069771824 -7.932387e-03
## PRI:PRFQunk       1.873429e-04 -0.0130734748  0.0194673792  3.745537e-03
## PRI:PRFQ120       5.341005e-03 -0.0029164250  0.0376199503  6.188051e-03
## PRI:PRFQ15        5.428792e-03 -0.0074159252  0.0326375894  4.140379e-03
## PRI:PRFQ30        1.679289e-02 -0.0081030078  0.0317225411  4.971732e-03
## PRI:PRFQ60        1.433914e-03 -0.0015660813  0.0390569197 -2.170609e-03
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20     5.599049e-04 -0.0373229121 -0.0163517451  7.406716e-03
## :(Intercept)      1.957822e-02 -0.0283215784 -0.0139798088 -7.043715e-03
## :log(YRIN)       -9.071603e-04  0.0013884711 -0.0001469341  8.214178e-05
## :log(AGEN)       -2.782605e-03 -0.0010086632 -0.0059107704  1.564950e-03
## :log(HGA1)       -3.107636e-03  0.0172199348  0.0293769380  1.937328e-03
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## :LOIBelow T6      4.333795e-04 -0.0013649702  0.0051240822  1.994890e-04
## :ASIAComplete     2.207383e-03 -0.0071882056 -0.0095253395 -1.698348e-03
## :BEDBHPTL         2.096611e-03 -0.0016261794 -0.0002894618  1.177243e-03
## :BEDBSTD          9.372899e-05  0.0030641290  0.0064185527  2.622334e-03
## :MATTAFM          1.531706e-04 -0.0027939670 -0.0004253981 -7.158586e-04
## :MATTOM           2.286016e-03  0.0019246520  0.0074479443  1.469118e-03
## :MATTSFM          2.674583e-04  0.0039106709  0.0037451760  4.458311e-04
## :WCTPMWc         -3.320299e-03 -0.0124150802 -0.0105198287  1.109135e-03
## :WCTPTRWc        -2.203221e-02  0.0008241763 -0.0028141349  3.423773e-03
## :WCTPAmnWC        8.241763e-04 -0.0719072007 -0.0180586102 -3.192094e-03
## :WCTPOWc         -2.814135e-03 -0.0180586102 -0.1324211494 -3.309366e-04
## :CUTPFCu          3.423773e-03 -0.0031920940 -0.0003309366 -1.046832e-02
## :CUTPLCu         -2.090100e-04 -0.0052517492  0.0029516529 -4.829622e-03
## :CUTPNoCu         1.158203e-03  0.0535149793  0.0094386299 -4.169735e-03
## :CUTPOCu          4.112542e-03 -0.0018272326  0.0003968722 -5.336803e-03
## :SHCN            -1.522937e-03  0.0117820291  0.0034684233  3.943265e-03
## :PRFQunk         -9.312994e-05  0.0064989477 -0.0096774179 -1.861942e-03
## :PRFQ120         -2.655064e-03  0.0014497824 -0.0187012324 -3.076139e-03
## :PRFQ15          -2.698704e-03  0.0036865264 -0.0162244538 -2.058221e-03
## :PRFQ30          -8.347904e-03  0.0040280817 -0.0157695746 -2.471495e-03
## :PRFQ60          -7.128122e-04  0.0007785138 -0.0194155635  1.079030e-03
## :PRFQ5                     NA            NA            NA            NA
## :PRFQ15-20       -2.783340e-04  0.0185535719  0.0081286069 -3.681948e-03
##                     PRI:CUTPLCu  PRI:CUTPNoCu   PRI:CUTPOCu      PRI:SHCN
## PRI:(Intercept)    0.0445300684 -2.424510e-02 -9.159362e-03 -0.0455352888
## PRI:log(YRIN)     -0.0012136207  2.186251e-03 -6.061586e-04  0.0009024322
## PRI:log(AGEN)     -0.0126628597 -9.291526e-03  9.919138e-03  0.0065213849
## PRI:log(HGA1)      0.0062745031  3.032523e-02 -1.739245e-02  0.0009239762
## PRI:LOIBelow T6    0.0088325843  5.243440e-03  6.391285e-04 -0.0109385180
## PRI:ASIAComplete  -0.0048594140 -5.626188e-03 -3.482667e-03 -0.0063077107
## PRI:BEDBHPTL      -0.0023419220  5.733831e-05 -2.525570e-03  0.0092407940
## PRI:BEDBSTD       -0.0068648962  2.144032e-03 -1.489930e-02 -0.0032032664
## PRI:MATTAFM        0.0036589318  9.480001e-04 -2.649666e-03 -0.0055941830
## PRI:MATTOM         0.0036047071  5.265250e-03 -2.195162e-03 -0.0051781431
## PRI:MATTSFM       -0.0008520567  7.832647e-03  5.269747e-03  0.0003387182
## PRI:WCTPMWc       -0.0029528415 -5.960568e-03 -7.314988e-03 -0.0163191532
## PRI:WCTPTRWc       0.0004204507 -2.329876e-03 -8.272911e-03  0.0030635842
## PRI:WCTPAmnWC      0.0105645735 -1.076523e-01  3.675715e-03 -0.0237010769
## PRI:WCTPOWc       -0.0059376319 -1.898703e-02 -7.983597e-04 -0.0069771824
## PRI:CUTPFCu        0.0097154095  8.387962e-03  1.073567e-02 -0.0079323872
## PRI:CUTPLCu        0.1174714870  6.273113e-04  9.438001e-03 -0.0061450547
## PRI:CUTPNoCu       0.0006273113  1.370573e-01  3.602748e-03 -0.0047023304
## PRI:CUTPOCu        0.0094380006  3.602748e-03  6.527958e-02  0.0016206471
## PRI:SHCN          -0.0061450547 -4.702330e-03  1.620647e-03  0.0432526949
## PRI:PRFQunk       -0.0091909142  8.729872e-03 -6.776203e-05  0.0071550015
## PRI:PRFQ120       -0.0013307563 -5.099170e-03  3.865042e-03  0.0141995582
## PRI:PRFQ15        -0.0026323272 -5.790037e-03  8.409860e-05  0.0067013781
## PRI:PRFQ30        -0.0027286571  3.804102e-03 -2.183299e-02  0.0206292562
## PRI:PRFQ60        -0.0087836405 -8.071022e-03 -1.059117e-02  0.0189786200
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20      0.0115009856  1.317037e-02  1.408157e-02  0.0270255844
## :(Intercept)      -0.0221363174  1.205247e-02  4.553205e-03  0.0226360219
## :log(YRIN)         0.0006033023 -1.086806e-03  3.013271e-04 -0.0004486076
## :log(AGEN)         0.0062948271  4.618906e-03 -4.930897e-03 -0.0032418420
```

```
## :log(HGA1)          -0.0031191147 -1.507496e-02  8.645953e-03 -0.0004593173
## :LOIBelow T6        -0.0043907610 -2.606563e-03 -3.177168e-04  0.0054376405
## :ASIAComplete        0.0024156606  2.796831e-03  1.731267e-03  0.0031356226
## :BEDBHPTL            0.0011641916 -2.850342e-05  1.255485e-03 -0.0045936859
## :BEDBSTD             0.0034126047 -1.065818e-03  7.406581e-03  0.0015923740
## :MATTAFM            -0.0018188895 -4.712598e-04  1.317174e-03  0.0027809212
## :MATTOM             -0.0017919339 -2.617405e-03  1.091236e-03  0.0025741038
## :MATTSFM             0.0004235654 -3.893683e-03 -2.619641e-03 -0.0001683800
## :WCTPMWc             0.0014678854  2.963054e-03  3.636350e-03  0.0081124051
## :WCTPTRWc           -0.0002090100  1.158203e-03  4.112542e-03 -0.0015229366
## :WCTPAmnWC          -0.0052517492  5.351498e-02 -1.827233e-03  0.0117820291
## :WCTPOWc             0.0029516529  9.438630e-03  3.968722e-04  0.0034684233
## :CUTPFCu            -0.0048296218 -4.169735e-03 -5.336803e-03  0.0039432645
## :CUTPLCu            -0.0583961850 -3.118424e-04 -4.691719e-03  0.0030547647
## :CUTPNoCu           -0.0003118424 -6.813246e-02 -1.790960e-03  0.0023375728
## :CUTPOCu            -0.0046917192 -1.790960e-03 -3.245109e-02 -0.0008056390
## :SHCN                0.0030547647  2.337573e-03 -8.056390e-04 -0.0215013229
## :PRFQunk             0.0045688902 -4.339702e-03  3.368514e-05 -0.0035568188
## :PRFQ120             0.0006615315  2.534845e-03 -1.921349e-03 -0.0070587344
## :PRFQ15              0.0013085547  2.878282e-03 -4.180621e-05 -0.0033313183
## :PRFQ30              0.0013564412 -1.891055e-03  1.085338e-02 -0.0102549980
## :PRFQ60              0.0043664306  4.012181e-03  5.264971e-03 -0.0094344511
## :PRFQ5                         NA            NA            NA            NA
## :PRFQ15-20          -0.0057172485 -6.547117e-03 -7.000081e-03 -0.0134346731
##                       PRI:PRFQunk    PRI:PRFQ120      PRI:PRFQ15     PRI:PRFQ30
## PRI:(Intercept)     -6.164066e-02  0.0255738386 -3.045467e-02 -0.044585846
## PRI:log(YRIN)        1.858671e-03  0.0027914682  1.372411e-03  0.002074574
## PRI:log(AGEN)        7.222057e-03 -0.0016051877  5.261994e-03 -0.002617591
## PRI:log(HGA1)        3.092380e-03 -0.0324214450 -1.009931e-02  0.008670120
## PRI:LOIBelow T6     -2.159499e-03 -0.0041427363 -4.142805e-03 -0.004649287
## PRI:ASIAComplete     3.211667e-04  0.0065798881  7.025221e-03  0.004317976
## PRI:BEDBHPTL        -6.290187e-03 -0.0052986199 -5.638412e-03 -0.002713590
## PRI:BEDBSTD         -7.069801e-03 -0.0123680258 -1.064193e-02 -0.014959262
## PRI:MATTAFM         -1.319834e-03 -0.0032295527 -6.067123e-03 -0.004638836
## PRI:MATTOM          -3.903619e-03 -0.0094237897 -1.474204e-02 -0.040070651
## PRI:MATTSFM          6.804867e-04 -0.0002939400 -2.728156e-03 -0.002582318
## PRI:WCTPMWc         -6.204404e-03 -0.0054818295 -2.502180e-03  0.001670586
## PRI:WCTPTRWc         1.873429e-04  0.0053410053  5.428792e-03  0.016792890
## PRI:WCTPAmnWC       -1.307347e-02 -0.0029164250 -7.415925e-03 -0.008103008
## PRI:WCTPOWc          1.946738e-02  0.0376199503  3.263759e-02  0.031722541
## PRI:CUTPFCu          3.745537e-03  0.0061880513  4.140379e-03  0.004971732
## PRI:CUTPLCu         -9.190914e-03 -0.0013307563 -2.632327e-03 -0.002728657
## PRI:CUTPNoCu         8.729872e-03 -0.0050991697 -5.790037e-03  0.003804102
## PRI:CUTPOCu         -6.776203e-05  0.0038650416  8.409860e-05 -0.021832986
## PRI:SHCN             7.155002e-03  0.0141995582  6.701378e-03  0.020629256
## PRI:PRFQunk          3.637933e-02  0.0301177094  2.825191e-02  0.034855270
## PRI:PRFQ120          3.011771e-02  0.0816453827  3.712015e-02  0.042876994
## PRI:PRFQ15           2.825191e-02  0.0371201454  4.666201e-02  0.042837203
## PRI:PRFQ30           3.485527e-02  0.0428769940  4.283720e-02  0.191085869
## PRI:PRFQ60           2.882034e-02  0.0410969527  3.398451e-02  0.051203836
## PRI:PRFQ5                      NA            NA            NA            NA
## PRI:PRFQ15-20        3.167840e-02  0.0312463904  2.230096e-02  0.029269901
## :(Intercept)         3.064215e-02 -0.0127129966  1.513930e-02  0.022164045
## :log(YRIN)          -9.239629e-04 -0.0013876652 -6.822386e-04 -0.001031290
```

```
## :log(AGEN)        -3.590153e-03  0.0007979539 -2.615787e-03  0.001301229
## :log(HGA1)        -1.537251e-03  0.0161170064  5.020461e-03 -0.004309998
## :LOIBelow T6       1.073507e-03  0.0020593933  2.059428e-03  0.002311204
## :ASIAComplete     -1.596550e-04 -0.0032709245 -3.492304e-03 -0.002146507
## :BEDBHPTL          3.126911e-03  0.0026339940  2.802908e-03  0.001348951
## :BEDBSTD           3.514465e-03  0.0061482624  5.290206e-03  0.007436390
## :MATTAFM           6.561020e-04  0.0016054411  3.016024e-03  0.002306009
## :MATTOM            1.940526e-03  0.0046846548  7.328407e-03  0.019919499
## :MATTSFM          -3.382764e-04  0.0001461203  1.356192e-03  0.001283695
## :WCTPMWc           3.084268e-03  0.0027250692  1.243857e-03 -0.000830464
## :WCTPTRWc         -9.312994e-05 -0.0026550642 -2.698704e-03 -0.008347904
## :WCTPAmnWC         6.498948e-03  0.0014497824  3.686526e-03  0.004028082
## :WCTPOWc          -9.677418e-03 -0.0187012324 -1.622445e-02 -0.015769575
## :CUTPFCu          -1.861942e-03 -0.0030761387 -2.058221e-03 -0.002471495
## :CUTPLCu           4.568890e-03  0.0006615315  1.308555e-03  0.001356441
## :CUTPNoCu         -4.339702e-03  0.0025348454  2.878282e-03 -0.001891055
## :CUTPOCu           3.368514e-05 -0.0019213487 -4.180621e-05  0.010853384
## :SHCN             -3.556819e-03 -0.0070587344 -3.331318e-03 -0.010254998
## :PRFQunk          -1.808451e-02 -0.0149717977 -1.404429e-02 -0.017326884
## :PRFQ120          -1.497180e-02 -0.0405866904 -1.845277e-02 -0.021314558
## :PRFQ15           -1.404429e-02 -0.0184527747 -2.319613e-02 -0.021294778
## :PRFQ30           -1.732688e-02 -0.0213145585 -2.129478e-02 -0.094990589
## :PRFQ60           -1.432686e-02 -0.0204296831 -1.689402e-02 -0.025453910
## :PRFQ5                      NA            NA            NA            NA
## :PRFQ15-20        -1.574763e-02 -0.0155328756 -1.108602e-02 -0.014550344
##                    PRI:PRFQ60 PRI:PRFQ5 PRI:PRFQ15-20 :(Intercept)
## PRI:(Intercept)   -0.0266598656        NA -0.0249290054 -0.737180884
## PRI:log(YRIN)      0.0010646378        NA  0.0013120141  0.001185301
## PRI:log(AGEN)      0.0118834047        NA -0.0061168897  0.140761944
## PRI:log(HGA1)     -0.0302276937        NA  0.0158530519  0.069579600
## PRI:LOIBelow T6   -0.0067327780        NA  0.0036446230 -0.014492322
## PRI:ASIAComplete   0.0072662096        NA -0.0225096067  0.004058969
## PRI:BEDBHPTL      -0.0031891101        NA -0.0106536776  0.008708025
## PRI:BEDBSTD       -0.0095197631        NA -0.0128495016  0.009345319
## PRI:MATTAFM       -0.0061753862        NA  0.0025244874  0.011904213
## PRI:MATTOM        -0.0170194120        NA  0.0086115758  0.013064629
## PRI:MATTSFM       -0.0050637241        NA  0.0084154254  0.002465766
## PRI:WCTPMWc        0.0012158545        NA -0.0352542675  0.005546781
## PRI:WCTPTRWc       0.0014339140        NA  0.0005599049  0.019578224
## PRI:WCTPAmnWC     -0.0015660813        NA -0.0373229121 -0.028321578
## PRI:WCTPOWc        0.0390569197        NA -0.0163517451 -0.013979809
## PRI:CUTPFCu       -0.0021706089        NA  0.0074067160 -0.007043715
## PRI:CUTPLCu       -0.0087836405        NA  0.0115009856 -0.022136317
## PRI:CUTPNoCu      -0.0080710223        NA  0.0131703745  0.012052468
## PRI:CUTPOCu       -0.0105911700        NA  0.0140815688  0.004553205
## PRI:SHCN           0.0189786200        NA  0.0270255844  0.022636022
## PRI:PRFQunk        0.0288203424        NA  0.0316784025  0.030642154
## PRI:PRFQ120        0.0410969527        NA  0.0312463904 -0.012712997
## PRI:PRFQ15         0.0339845076        NA  0.0223009615  0.015139302
## PRI:PRFQ30         0.0512038360        NA  0.0292699011  0.022164045
## PRI:PRFQ60         0.0960876949        NA  0.0209535171  0.013252871
## PRI:PRFQ5                   NA        NA            NA           NA
## PRI:PRFQ15-20      0.0209535171        NA  0.2770528720  0.012392444
## :(Intercept)       0.0132528708        NA  0.0123924439  6.354814424
```

```
## :log(YRIN)       -0.0005292415          NA -0.0006522146 -0.010217801
## :log(AGEN)       -0.0059073527          NA  0.0030407636 -1.213428148
## :log(HGA1)        0.0150264719          NA -0.0078807017 -0.599805907
## :LOIBelow T6      0.0033469275          NA -0.0018117765  0.124930014
## :ASIAComplete    -0.0036121014          NA  0.0111897380 -0.034990046
## :BEDBHPTL         0.0015853367          NA  0.0052960437 -0.075066896
## :BEDBSTD          0.0047323641          NA  0.0063876085 -0.080560643
## :MATTAFM          0.0030698428          NA -0.0012549465 -0.102619408
## :MATTOM           0.0084605104          NA -0.0042808956 -0.112622692
## :MATTSFM          0.0025172251          NA -0.0041833874 -0.021255960
## :WCTPMWc         -0.0006044128          NA  0.0175252292 -0.047815624
## :WCTPTRWc        -0.0007128122          NA -0.0002783340 -0.168772661
## :WCTPAmnWC        0.0007785138          NA  0.0185535719  0.244144115
## :WCTPOWc         -0.0194155635          NA  0.0081286069  0.120511930
## :CUTPFCu          0.0010790302          NA -0.0036819484  0.060719832
## :CUTPLCu          0.0043664306          NA -0.0057172485  0.190824521
## :CUTPNoCu         0.0040121814          NA -0.0065471175 -0.103897425
## :CUTPOCu          0.0052649706          NA -0.0070000808 -0.039250577
## :SHCN            -0.0094344511          NA -0.0134346731 -0.195132188
## :PRFQunk         -0.0143268643          NA -0.0157476329 -0.264148467
## :PRFQ120         -0.0204296831          NA -0.0155328756  0.109591466
## :PRFQ15          -0.0168940195          NA -0.0110860185 -0.130507256
## :PRFQ30          -0.0254539102          NA -0.0145503441 -0.191063545
## :PRFQ60          -0.0477661002          NA -0.0104161912 -0.114245413
## :PRFQ5                      NA          NA            NA           NA
## :PRFQ15-20       -0.0104161912          NA -0.1377255979 -0.106828165
##                    :log(YRIN)   :log(AGEN)    :log(HGA1)   :LOIBelow T6
## PRI:(Intercept)   1.185301e-03  0.1407619445  0.0695796005 -1.449232e-02
## PRI:log(YRIN)    -6.055479e-04  0.0003876721 -0.0005569568  1.854906e-04
## PRI:log(AGEN)     3.876721e-04 -0.0410980450  0.0162610890  4.035293e-03
## PRI:log(HGA1)    -5.569568e-04  0.0162610890 -0.0800738168 -2.565375e-03
## PRI:LOIBelow T6   1.854906e-04  0.0040352931 -0.0025653749 -9.471512e-03
## PRI:ASIAComplete  4.805983e-04 -0.0031079910  0.0068199536  2.185349e-03
## PRI:BEDBHPTL      1.200221e-04  0.0020459137  0.0019045293  1.474064e-03
## PRI:BEDBSTD      -2.461884e-04  0.0025499395 -0.0040950796 -2.133961e-04
## PRI:MATTAFM       1.422136e-04 -0.0015676728  0.0004427825  5.469413e-05
## PRI:MATTOM       -2.412990e-04 -0.0002490634 -0.0062075955 -1.887625e-03
## PRI:MATTSFM      -1.764746e-04  0.0018963978 -0.0027861803  1.073202e-03
## PRI:WCTPMWc       4.990207e-04 -0.0028743420  0.0039124088 -2.378658e-04
## PRI:WCTPTRWc     -9.071603e-04 -0.0027826048 -0.0031076363  4.333795e-04
## PRI:WCTPAmnWC     1.388471e-03 -0.0010086632  0.0172199348 -1.364970e-03
## PRI:WCTPOWc      -1.469341e-04 -0.0059107704  0.0293769380  5.124082e-03
## PRI:CUTPFCu       8.214178e-05  0.0015649501  0.0019373282  1.994890e-04
## PRI:CUTPLCu       6.033023e-04  0.0062948271 -0.0031191147 -4.390761e-03
## PRI:CUTPNoCu     -1.086806e-03  0.0046189055 -0.0150749578 -2.606563e-03
## PRI:CUTPOCu       3.013271e-04 -0.0049308973  0.0086459529 -3.177168e-04
## PRI:SHCN         -4.486076e-04 -0.0032418420 -0.0004593173  5.437641e-03
## PRI:PRFQunk      -9.239629e-04 -0.0035901527 -0.0015372515  1.073507e-03
## PRI:PRFQ120      -1.387665e-03  0.0007979539  0.0161170064  2.059393e-03
## PRI:PRFQ15       -6.822386e-04 -0.0026157870  0.0050204608  2.059428e-03
## PRI:PRFQ30       -1.031290e-03  0.0013012293 -0.0043099985  2.311204e-03
## PRI:PRFQ60       -5.292415e-04 -0.0059073527  0.0150264719  3.346928e-03
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20    -6.522146e-04  0.0030407636 -0.0078807017 -1.811776e-03
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```
## :(Intercept)      -1.021780e-02 -1.2134281484 -0.5998059070  1.249300e-01
## :log(YRIN)         5.220082e-03 -0.0033418995  0.0048012054 -1.599008e-03
## :log(AGEN)        -3.341900e-03  0.3542827203 -0.1401775399 -3.478595e-02
## :log(HGA1)         4.801205e-03 -0.1401775399  0.6902705390  2.211463e-02
## :LOIBelow T6      -1.599008e-03 -0.0347859521  0.0221146285  8.164848e-02
## :ASIAComplete     -4.142963e-03  0.0267922111 -0.0587909164 -1.883864e-02
## :BEDBHPTL         -1.034642e-03 -0.0176366511 -0.0164178572 -1.270706e-02
## :BEDBSTD           2.122249e-03 -0.0219815686  0.0353013375  1.839566e-03
## :MATTAFM          -1.225942e-03  0.0135140095 -0.0038169742 -4.714868e-04
## :MATTOM            2.080100e-03  0.0021470329  0.0535121276  1.627214e-02
## :MATTSFM           1.521287e-03 -0.0163477597  0.0240180655 -9.251460e-03
## :WCTPMWc          -4.301772e-03  0.0247780570 -0.0337266370  2.050505e-03
## :WCTPTRWc          7.820109e-03  0.0239872435  0.0267891536 -3.735917e-03
## :WCTPAmnWC        -1.196921e-02  0.0086951077 -0.1484432005  1.176663e-02
## :WCTPOWc           1.266635e-03  0.0509533682 -0.2532417669 -4.417178e-02
## :CUTPFCu          -7.080973e-04 -0.0134905394 -0.0167005974 -1.719680e-03
## :CUTPLCu          -5.200724e-03 -0.0542641012  0.0268881025  3.785024e-02
## :CUTPNoCu          9.368733e-03 -0.0398169404  0.1299525819  2.246969e-02
## :CUTPOCu          -2.597569e-03  0.0425064428 -0.0745318111  2.738855e-03
## :SHCN              3.867189e-03  0.0279460640  0.0039595115 -4.687479e-02
## :PRFQunk           7.964956e-03  0.0309486515  0.0132517649 -9.254091e-03
## :PRFQ120           1.196227e-02 -0.0068787042 -0.1389354862 -1.775285e-02
## :PRFQ15            5.881188e-03  0.0225492027 -0.0432785185 -1.775315e-02
## :PRFQ30            8.890165e-03 -0.0112171527  0.0371540296 -1.992357e-02
## :PRFQ60            4.562288e-03  0.0509239058 -0.1295346126 -2.885195e-02
## :PRFQ5                       NA            NA            NA            NA
## :PRFQ15-20         5.622369e-03 -0.0262126827  0.0679350185  1.561829e-02
##                  :ASIAComplete      :BEDBHPTL       :BEDBSTD       :MATTAFM
## PRI:(Intercept)   0.0040589688  8.708025e-03  9.345319e-03  1.190421e-02
## PRI:log(YRIN)     0.0004805983  1.200221e-04 -2.461884e-04  1.422136e-04
## PRI:log(AGEN)    -0.0031079910  2.045914e-03  2.549939e-03 -1.567673e-03
## PRI:log(HGA1)     0.0068199536  1.904529e-03 -4.095080e-03  4.427825e-04
## PRI:LOIBelow T6   0.0021853489  1.474064e-03 -2.133961e-04  5.469413e-05
## PRI:ASIAComplete -0.0116125492 -6.254484e-04  4.737039e-04 -3.272853e-04
## PRI:BEDBHPTL     -0.0006254484 -2.409029e-02 -1.706683e-02 -3.647211e-03
## PRI:BEDBSTD       0.0004737039 -1.706683e-02 -2.551879e-02 -1.981321e-03
## PRI:MATTAFM      -0.0003272853 -3.647211e-03 -1.981321e-03 -1.312091e-02
## PRI:MATTOM        0.0038730036 -1.418110e-03 -2.737343e-03 -6.447479e-03
## PRI:MATTSFM       0.0002436240 -2.080545e-03  3.456927e-03 -6.066081e-03
## PRI:WCTPMWc      -0.0038498292 -1.495463e-03 -1.616229e-03 -1.506969e-03
## PRI:WCTPTRWc      0.0022073833  2.096611e-03  9.372899e-05  1.531706e-04
## PRI:WCTPAmnWC    -0.0071882056 -1.626179e-03  3.064129e-03 -2.793967e-03
## PRI:WCTPOWc      -0.0095253395 -2.894618e-04  6.418553e-03 -4.253981e-04
## PRI:CUTPFCu      -0.0016983478  1.177243e-03  2.622334e-03 -7.158586e-04
## PRI:CUTPLCu       0.0024156606  1.164192e-03  3.412605e-03 -1.818890e-03
## PRI:CUTPNoCu      0.0027968310 -2.850342e-05 -1.065818e-03 -4.712598e-04
## PRI:CUTPOCu       0.0017312666  1.255485e-03  7.406581e-03  1.317174e-03
## PRI:SHCN          0.0031356226 -4.593686e-03  1.592374e-03  2.780921e-03
## PRI:PRFQunk      -0.0001596550  3.126911e-03  3.514465e-03  6.561020e-04
## PRI:PRFQ120      -0.0032709245  2.633994e-03  6.148262e-03  1.605441e-03
## PRI:PRFQ15       -0.0034923038  2.802908e-03  5.290206e-03  3.016024e-03
## PRI:PRFQ30       -0.0021465067  1.348951e-03  7.436390e-03  2.306009e-03
## PRI:PRFQ60       -0.0036121014  1.585337e-03  4.732364e-03  3.069843e-03
## PRI:PRFQ5                   NA            NA            NA            NA
```

```
## PRI:PRFQ15-20     0.0111897380  5.296044e-03  6.387609e-03 -1.254947e-03
## :(Intercept)     -0.0349900464 -7.506690e-02 -8.056064e-02 -1.026194e-01
## :log(YRIN)       -0.0041429631 -1.034642e-03  2.122249e-03 -1.225942e-03
## :log(AGEN)        0.0267922111 -1.763665e-02 -2.198157e-02  1.351401e-02
## :log(HGA1)       -0.0587909164 -1.641786e-02  3.530134e-02 -3.816974e-03
## :LOIBelow T6     -0.0188386423 -1.270706e-02  1.839566e-03 -4.714868e-04
## :ASIAComplete     0.1001051391  5.391632e-03 -4.083530e-03  2.821340e-03
## :BEDBHPTL         0.0053916324  2.076686e-01  1.471233e-01  3.144052e-02
## :BEDBSTD         -0.0040835299  1.471233e-01  2.199829e-01  1.707983e-02
## :MATTAFM          0.0028213396  3.144052e-02  1.707983e-02  1.131078e-01
## :MATTOM          -0.0333869467  1.222471e-02  2.359706e-02  5.558003e-02
## :MATTSFM         -0.0021001428  1.793519e-02 -2.980019e-02  5.229221e-02
## :WCTPMWc          0.0331871738  1.289153e-02  1.393258e-02  1.299072e-02
## :WCTPTRWc        -0.0190285881 -1.807368e-02 -8.079840e-04 -1.320396e-03
## :WCTPAmnWC        0.0619654056  1.401836e-02 -2.641410e-02  2.408519e-02
## :WCTPOWc          0.0821124993  2.495284e-03 -5.533067e-02  3.667113e-03
## :CUTPFCu          0.0146404844 -1.014834e-02 -2.260564e-02  6.171007e-03
## :CUTPLCu         -0.0208240269 -1.003583e-02 -2.941811e-02  1.567961e-02
## :CUTPNoCu        -0.0241098789  2.457116e-04  9.187811e-03  4.062461e-03
## :CUTPOCu         -0.0149242585 -1.082282e-02 -6.384789e-02 -1.135460e-02
## :SHCN            -0.0270304071  3.959954e-02 -1.372694e-02 -2.397273e-02
## :PRFQunk          0.0013762942 -2.695531e-02 -3.029619e-02 -5.655880e-03
## :PRFQ120          0.0281967677 -2.270615e-02 -5.300065e-02 -1.383959e-02
## :PRFQ15           0.0301051520 -2.416226e-02 -4.560384e-02 -2.599942e-02
## :PRFQ30           0.0185038056 -1.162854e-02 -6.410487e-02 -1.987878e-02
## :PRFQ60           0.0311378585 -1.366628e-02 -4.079500e-02 -2.646336e-02
## :PRFQ5                      NA            NA            NA            NA
## :PRFQ15-20       -0.0964603257 -4.565416e-02 -5.506392e-02  1.081818e-02
##                        :MATTOM       :MATTSFM       :WCTPMWc       :WCTPTRWc
## PRI:(Intercept)   0.0130646295  0.0024657664  0.0055467810  1.957822e-02
## PRI:log(YRIN)    -0.0002412990 -0.0001764746  0.0004990207 -9.071603e-04
## PRI:log(AGEN)    -0.0002490634  0.0018963978 -0.0028743420 -2.782605e-03
## PRI:log(HGA1)    -0.0062075955 -0.0027861803  0.0039124088 -3.107636e-03
## PRI:LOIBelow T6  -0.0018876251  0.0010732020 -0.0002378658  4.333795e-04
## PRI:ASIAComplete  0.0038730036  0.0002436240 -0.0038498292  2.207383e-03
## PRI:BEDBHPTL     -0.0014181096 -0.0020805452 -0.0014954627  2.096611e-03
## PRI:BEDBSTD      -0.0027373426  0.0034569274 -0.0016162285  9.372899e-05
## PRI:MATTAFM      -0.0064474789 -0.0060660808 -0.0015069691  1.531706e-04
## PRI:MATTOM       -0.0218534283 -0.0061444079  0.0014952962  2.286016e-03
## PRI:MATTSFM      -0.0061444079 -0.0132527585  0.0012367103  2.674583e-04
## PRI:WCTPMWc       0.0014952962  0.0012367103 -0.0145385122 -3.320299e-03
## PRI:WCTPTRWc      0.0022860164  0.0002674583 -0.0033202990 -2.203221e-02
## PRI:WCTPAmnWC     0.0019246520  0.0039106709 -0.0124150802  8.241763e-04
## PRI:WCTPOWc       0.0074479443  0.0037451760 -0.0105198287 -2.814135e-03
## PRI:CUTPFCu       0.0014691184  0.0004458311  0.0011091350  3.423773e-03
## PRI:CUTPLCu      -0.0017919339  0.0004235654  0.0014678854 -2.090100e-04
## PRI:CUTPNoCu     -0.0026174054 -0.0038936828  0.0029630544  1.158203e-03
## PRI:CUTPOCu       0.0010912355 -0.0026196409  0.0036363496  4.112542e-03
## PRI:SHCN          0.0025741038 -0.0001683800  0.0081124051 -1.522937e-03
## PRI:PRFQunk       0.0019405259 -0.0003382764  0.0030842680 -9.312994e-05
## PRI:PRFQ120       0.0046846548  0.0001461203  0.0027250692 -2.655064e-03
## PRI:PRFQ15        0.0073284065  0.0013561919  0.0012438573 -2.698704e-03
## PRI:PRFQ30        0.0199194988  0.0012836946 -0.0008304640 -8.347904e-03
## PRI:PRFQ60        0.0084605104  0.0025172251 -0.0006044128 -7.128122e-04
```

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## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20   -0.0042808956 -0.0041833874  0.0175252292 -2.783340e-04
## :(Intercept)    -0.1126226922 -0.0212559604 -0.0478156239 -1.687727e-01
## :log(YRIN)       0.0020801005  0.0015212869 -0.0043017717  7.820109e-03
## :log(AGEN)       0.0021470329 -0.0163477597  0.0247780570  2.398724e-02
## :log(HGA1)       0.0535121276  0.0240180655 -0.0337266370  2.678915e-02
## :LOIBelow T6     0.0162721358 -0.0092514601  0.0020505046 -3.735917e-03
## :ASIAComplete   -0.0333869467 -0.0021001428  0.0331871738 -1.902859e-02
## :BEDBHPTL        0.0122247113  0.0179351894  0.0128915283 -1.807368e-02
## :BEDBSTD         0.0235970639 -0.0298001926  0.0139325809 -8.079840e-04
## :MATTAFM         0.0555800253  0.0522922099  0.0129907180 -1.320396e-03
## :MATTOM          0.1883858960  0.0529674233 -0.0128900930 -1.970644e-02
## :MATTSFM         0.0529674233  0.1142444450 -0.0106609716 -2.305605e-03
## :WCTPMWc        -0.0128900930 -0.0106609716  0.1253281916  2.862240e-02
## :WCTPTRWc       -0.0197064384 -0.0023056046  0.0286223970  1.899270e-01
## :WCTPAmnWC      -0.0165913236 -0.0337116549  0.1070232998 -7.104753e-03
## :WCTPOWc        -0.0642044644 -0.0322850186  0.0906854217  2.425905e-02
## :CUTPFCu        -0.0126644284 -0.0038432548 -0.0095612176 -2.951439e-02
## :CUTPLCu         0.0154472368 -0.0036513151 -0.0126537995  1.801756e-03
## :CUTPNoCu        0.0225631540  0.0335652109 -0.0255427962 -9.984208e-03
## :CUTPOCu        -0.0094069168  0.0225824250 -0.0313468884 -3.545187e-02
## :SHCN           -0.0221898756  0.0014515077 -0.0699324005  1.312836e-02
## :PRFQunk        -0.0167281634  0.0029160871 -0.0265877088  8.028199e-04
## :PRFQ120        -0.0403837277 -0.0012596199 -0.0234912616  2.288779e-02
## :PRFQ15         -0.0631739978 -0.0116909539 -0.0107225817  2.326398e-02
## :PRFQ30         -0.1717145967 -0.0110659963  0.0071589545  7.196250e-02
## :PRFQ60         -0.0729332168 -0.0216995564  0.0052102965  6.144746e-03
## :PRFQ5                    NA            NA            NA            NA
## :PRFQ15-20       0.0369031507  0.0360625882 -0.1510749688  2.399358e-03
##                    :WCTPAmnWC       :WCTPOWc      :CUTPFCu      :CUTPLCu
## PRI:(Intercept)  -0.0283215784 -0.0139798088 -7.043715e-03 -0.0221363174
## PRI:log(YRIN)     0.0013884711 -0.0001469341  8.214178e-05  0.0006033023
## PRI:log(AGEN)    -0.0010086632 -0.0059107704  1.564950e-03  0.0062948271
## PRI:log(HGA1)     0.0172199348  0.0293769380  1.937328e-03 -0.0031191147
## PRI:LOIBelow T6  -0.0013649702  0.0051240822  1.994890e-04 -0.0043907610
## PRI:ASIAComplete -0.0071882056 -0.0095253395 -1.698348e-03  0.0024156606
## PRI:BEDBHPTL     -0.0016261794 -0.0002894618  1.177243e-03  0.0011641916
## PRI:BEDBSTD       0.0030641290  0.0064185527  2.622334e-03  0.0034126047
## PRI:MATTAFM      -0.0027939670 -0.0004253981 -7.158586e-04 -0.0018188895
## PRI:MATTOM        0.0019246520  0.0074479443  1.469118e-03 -0.0017919339
## PRI:MATTSFM       0.0039106709  0.0037451760  4.458311e-04  0.0004235654
## PRI:WCTPMWc      -0.0124150802 -0.0105198287  1.109135e-03  0.0014678854
## PRI:WCTPTRWc      0.0008241763 -0.0028141349  3.423773e-03 -0.0002090100
## PRI:WCTPAmnWC    -0.0719072007 -0.0180586102 -3.192094e-03 -0.0052517492
## PRI:WCTPOWc      -0.0180586102 -0.1324211494 -3.309366e-04  0.0029516529
## PRI:CUTPFCu      -0.0031920940 -0.0003309366 -1.046832e-02 -0.0048296218
## PRI:CUTPLCu      -0.0052517492  0.0029516529 -4.829622e-03 -0.0583961850
## PRI:CUTPNoCu      0.0535149793  0.0094386299 -4.169735e-03 -0.0003118424
## PRI:CUTPOCu      -0.0018272326  0.0003968722 -5.336803e-03 -0.0046917192
## PRI:SHCN          0.0117820291  0.0034684233  3.943265e-03  0.0030547647
## PRI:PRFQunk       0.0064989477 -0.0096774179 -1.861942e-03  0.0045688902
## PRI:PRFQ120       0.0014497824 -0.0187012324 -3.076139e-03  0.0006615315
## PRI:PRFQ15        0.0036865264 -0.0162244538 -2.058221e-03  0.0013085547
## PRI:PRFQ30        0.0040280817 -0.0157695746 -2.471495e-03  0.0013564412
```

```
## PRI:PRFQ60        0.0007785138 -0.0194155635  1.079030e-03  0.0043664306
## PRI:PRFQ5                   NA           NA            NA            NA
## PRI:PRFQ15-20     0.0185535719  0.0081286069 -3.681948e-03 -0.0057172485
## :(Intercept)      0.2441441152  0.1205119295  6.071983e-02  0.1908245207
## :log(YRIN)       -0.0119692141  0.0012666351 -7.080973e-04 -0.0052007236
## :log(AGEN)        0.0086951077  0.0509533682 -1.349054e-02 -0.0542641012
## :log(HGA1)       -0.1484432005 -0.2532417669 -1.670060e-02  0.0268881025
## :LOIBelow T6      0.0117666272 -0.0441717794 -1.719680e-03  0.0378502374
## :ASIAComplete     0.0619654056  0.0821124993  1.464048e-02 -0.0208240269
## :BEDBHPTL         0.0140183621  0.0024952842 -1.014834e-02 -0.0100358290
## :BEDBSTD         -0.0264141018 -0.0553306688 -2.260564e-02 -0.0294181116
## :MATTAFM          0.0240851898  0.0036671132  6.171007e-03  0.0156796056
## :MATTOM          -0.0165913236 -0.0642044644 -1.266443e-02  0.0154472368
## :MATTSFM         -0.0337116549 -0.0322850186 -3.843255e-03 -0.0036513151
## :WCTPMWc          0.1070232998  0.0906854217 -9.561218e-03 -0.0126537995
## :WCTPTRWc        -0.0071047525  0.0242590465 -2.951439e-02  0.0018017557
## :WCTPAmnWC        0.6198708165  0.1556729415  2.751722e-02  0.0452723238
## :WCTPOWc          0.1556729415  1.1415269287  2.852815e-03 -0.0254445099
## :CUTPFCu          0.0275172152  0.0028528153  9.024138e-02  0.0416334049
## :CUTPLCu          0.0452723238 -0.0254445099  4.163340e-02  0.5034000842
## :CUTPNoCu        -0.4613220032 -0.0813650251  3.594490e-02  0.0026882146
## :CUTPOCu          0.0157515263 -0.0034212077  4.600553e-02  0.0404446255
## :SHCN            -0.1015661284 -0.0298992915 -3.399263e-02 -0.0263333780
## :PRFQunk         -0.0560237081  0.0834234806  1.605074e-02 -0.0393857870
## :PRFQ120         -0.0124977441  0.1612126196  2.651763e-02 -0.0057026843
## :PRFQ15          -0.0317794342  0.1398617290  1.774275e-02 -0.0112803012
## :PRFQ30          -0.0347237863  0.1359404761  2.130534e-02 -0.0116931032
## :PRFQ60          -0.0067111217  0.1673704587 -9.301701e-03 -0.0376404990
## :PRFQ5                      NA           NA            NA            NA
## :PRFQ15-20       -0.1599397231 -0.0700720667  3.173997e-02  0.0492851266
##                     :CUTPNoCu      :CUTPOCu         :SHCN      :PRFQunk
## PRI:(Intercept)   1.205247e-02  4.553205e-03  0.0226360219  3.064215e-02
## PRI:log(YRIN)    -1.086806e-03  3.013271e-04 -0.0004486076 -9.239629e-04
## PRI:log(AGEN)     4.618906e-03 -4.930897e-03 -0.0032418420 -3.590153e-03
## PRI:log(HGA1)    -1.507496e-02  8.645953e-03 -0.0004593173 -1.537251e-03
## PRI:LOIBelow T6  -2.606563e-03 -3.177168e-04  0.0054376405  1.073507e-03
## PRI:ASIAComplete  2.796831e-03  1.731267e-03  0.0031356226 -1.596550e-04
## PRI:BEDBHPTL     -2.850342e-05  1.255485e-03 -0.0045936859  3.126911e-03
## PRI:BEDBSTD      -1.065818e-03  7.406581e-03  0.0015923740  3.514465e-03
## PRI:MATTAFM      -4.712598e-04  1.317174e-03  0.0027809212  6.561020e-04
## PRI:MATTOM       -2.617405e-03  1.091236e-03  0.0025741038  1.940526e-03
## PRI:MATTSFM      -3.893683e-03 -2.619641e-03 -0.0001683800 -3.382764e-04
## PRI:WCTPMWc       2.963054e-03  3.636350e-03  0.0081124051  3.084268e-03
## PRI:WCTPTRWc      1.158203e-03  4.112542e-03 -0.0015229366 -9.312994e-05
## PRI:WCTPAmnWC     5.351498e-02 -1.827233e-03  0.0117820291  6.498948e-03
## PRI:WCTPOWc       9.438630e-03  3.968722e-04  0.0034684233 -9.677418e-03
## PRI:CUTPFCu      -4.169735e-03 -5.336803e-03  0.0039432645 -1.861942e-03
## PRI:CUTPLCu      -3.118424e-04 -4.691719e-03  0.0030547647  4.568890e-03
## PRI:CUTPNoCu     -6.813246e-02 -1.790960e-03  0.0023375728 -4.339702e-03
## PRI:CUTPOCu      -1.790960e-03 -3.245109e-02 -0.0008056390  3.368514e-05
## PRI:SHCN          2.337573e-03 -8.056390e-04 -0.0215013229 -3.556819e-03
## PRI:PRFQunk      -4.339702e-03  3.368514e-05 -0.0035568188 -1.808451e-02
## PRI:PRFQ120       2.534845e-03 -1.921349e-03 -0.0070587344 -1.497180e-02
## PRI:PRFQ15        2.878282e-03 -4.180621e-05 -0.0033313183 -1.404429e-02
```

```
## PRI:PRFQ30       -1.891055e-03  1.085338e-02 -0.0102549980 -1.732688e-02
## PRI:PRFQ60        4.012181e-03  5.264971e-03 -0.0094344511 -1.432686e-02
## PRI:PRFQ5                   NA            NA            NA            NA
## PRI:PRFQ15-20    -6.547117e-03 -7.000081e-03 -0.0134346731 -1.574763e-02
## :(Intercept)     -1.038974e-01 -3.925058e-02 -0.1951321876 -2.641485e-01
## :log(YRIN)        9.368733e-03 -2.597569e-03  0.0038671889  7.964956e-03
## :log(AGEN)       -3.981694e-02  4.250644e-02  0.0279460640  3.094865e-02
## :log(HGA1)        1.299526e-01 -7.453181e-02  0.0039595115  1.325176e-02
## :LOIBelow T6      2.246969e-02  2.738855e-03 -0.0468747865 -9.254091e-03
## :ASIAComplete    -2.410988e-02 -1.492426e-02 -0.0270304071  1.376294e-03
## :BEDBHPTL         2.457116e-04 -1.082282e-02  0.0395995368 -2.695531e-02
## :BEDBSTD          9.187811e-03 -6.384789e-02 -0.0137269444 -3.029619e-02
## :MATTAFM          4.062461e-03 -1.135460e-02 -0.0239727295 -5.655880e-03
## :MATTOM           2.256315e-02 -9.406917e-03 -0.0221898756 -1.672816e-02
## :MATTSFM          3.356521e-02  2.258243e-02  0.0014515077  2.916087e-03
## :WCTPMWc         -2.554280e-02 -3.134689e-02 -0.0699324005 -2.658771e-02
## :WCTPTRWc        -9.984208e-03 -3.545187e-02  0.0131283648  8.028199e-04
## :WCTPAmnWC       -4.613220e-01  1.575153e-02 -0.1015661284 -5.602371e-02
## :WCTPOWc         -8.136503e-02 -3.421208e-03 -0.0298992915  8.342348e-02
## :CUTPFCu          3.594490e-02  4.600553e-02 -0.0339926264  1.605074e-02
## :CUTPLCu          2.688215e-03  4.044463e-02 -0.0263333780 -3.938579e-02
## :CUTPNoCu         5.873309e-01  1.543884e-02 -0.0201508772  3.741008e-02
## :CUTPOCu          1.543884e-02  2.797423e-01  0.0069449525 -2.903803e-04
## :SHCN            -2.015088e-02  6.944953e-03  0.1853505971  3.066130e-02
## :PRFQunk          3.741008e-02 -2.903803e-04  0.0306612988  1.558962e-01
## :PRFQ120         -2.185145e-02  1.656285e-02  0.0608493091  1.290633e-01
## :PRFQ15          -2.481202e-02  3.603874e-04  0.0287173883  1.210678e-01
## :PRFQ30           1.630170e-02 -9.356081e-02  0.0884024673  1.493651e-01
## :PRFQ60          -3.458672e-02 -4.538630e-02  0.0813290028  1.235037e-01
## :PRFQ5                      NA            NA            NA            NA
## :PRFQ15-20        5.643895e-02  6.034369e-02  0.1158126266  1.357513e-01
##                     :PRFQ120      :PRFQ15      :PRFQ30       :PRFQ60 :PRFQ5
## PRI:(Intercept)  -0.0127129966  1.513930e-02  0.022164045  0.0132528708     NA
## PRI:log(YRIN)    -0.0013876652 -6.822386e-04 -0.001031290 -0.0005292415     NA
## PRI:log(AGEN)     0.0007979539 -2.615787e-03  0.001301229 -0.0059073527     NA
## PRI:log(HGA1)     0.0161170064  5.020461e-03 -0.004309998  0.0150264719     NA
## PRI:LOIBelow T6   0.0020593933  2.059428e-03  0.002311204  0.0033469275     NA
## PRI:ASIAComplete -0.0032709245 -3.492304e-03 -0.002146507 -0.0036121014     NA
## PRI:BEDBHPTL      0.0026339940  2.802908e-03  0.001348951  0.0015853367     NA
## PRI:BEDBSTD       0.0061482624  5.290206e-03  0.007436390  0.0047323641     NA
## PRI:MATTAFM       0.0016054411  3.016024e-03  0.002306009  0.0030698428     NA
## PRI:MATTOM        0.0046846548  7.328407e-03  0.019919499  0.0084605104     NA
## PRI:MATTSFM       0.0001461203  1.356192e-03  0.001283695  0.0025172251     NA
## PRI:WCTPMWc       0.0027250692  1.243857e-03 -0.000830464 -0.0006044128     NA
## PRI:WCTPTRWc     -0.0026550642 -2.698704e-03 -0.008347904 -0.0007128122     NA
## PRI:WCTPAmnWC     0.0014497824  3.686526e-03  0.004028082  0.0007785138     NA
## PRI:WCTPOWc      -0.0187012324 -1.622445e-02 -0.015769575 -0.0194155635     NA
## PRI:CUTPFCu      -0.0030761387 -2.058221e-03 -0.002471495  0.0010790302     NA
## PRI:CUTPLCu       0.0006615315  1.308555e-03  0.001356441  0.0043664306     NA
## PRI:CUTPNoCu      0.0025348454  2.878282e-03 -0.001891055  0.0040121814     NA
## PRI:CUTPOCu      -0.0019213487 -4.180621e-05  0.010853384  0.0052649706     NA
## PRI:SHCN         -0.0070587344 -3.331318e-03 -0.010254998 -0.0094344511     NA
## PRI:PRFQunk      -0.0149717977 -1.404429e-02 -0.017326884 -0.0143268643     NA
## PRI:PRFQ120      -0.0405866904 -1.845277e-02 -0.021314558 -0.0204296831     NA
```

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## PRI:PRFQ15      -0.0184527747 -2.319613e-02 -0.021294778 -0.0168940195   NA
## PRI:PRFQ30      -0.0213145585 -2.129478e-02 -0.094990589 -0.0254539102   NA
## PRI:PRFQ60      -0.0204296831 -1.689402e-02 -0.025453910 -0.0477661002   NA
## PRI:PRFQ5                  NA           NA           NA           NA   NA
## PRI:PRFQ15-20   -0.0155328756 -1.108602e-02 -0.014550344 -0.0104161912   NA
## :(Intercept)     0.1095914664 -1.305073e-01 -0.191063545 -0.1142454132   NA
## :log(YRIN)       0.0119622674  5.881188e-03  0.008890165  0.0045622882   NA
## :log(AGEN)      -0.0068787042  2.254920e-02 -0.011217153  0.0509239058   NA
## :log(HGA1)      -0.1389354862 -4.327852e-02  0.037154030 -0.1295346126   NA
## :LOIBelow T6    -0.0177528512 -1.775315e-02 -0.019923569 -0.0288519462   NA
## :ASIAComplete    0.0281967677  3.010515e-02  0.018503806  0.0311378585   NA
## :BEDBHPTL       -0.0227061543 -2.416226e-02 -0.011628537 -0.0136662803   NA
## :BEDBSTD        -0.0530006505 -4.560384e-02 -0.064104865 -0.0407950019   NA
## :MATTAFM        -0.0138395890 -2.599942e-02 -0.019878783 -0.0264633572   NA
## :MATTOM         -0.0403837277 -6.317400e-02 -0.171714597 -0.0729332168   NA
## :MATTSFM        -0.0012596199 -1.169095e-02 -0.011065996 -0.0216995564   NA
## :WCTPMWc        -0.0234912616 -1.072258e-02  0.007158954  0.0052102965   NA
## :WCTPTRWc        0.0228877882  2.326398e-02  0.071962504  0.0061447457   NA
## :WCTPAmnWC      -0.0124977441 -3.177943e-02 -0.034723786 -0.0067111217   NA
## :WCTPOWc         0.1612126196  1.398617e-01  0.135940476  0.1673704587   NA
## :CUTPFCu         0.0265176311  1.774275e-02  0.021305341 -0.0093017014   NA
## :CUTPLCu        -0.0057026843 -1.128030e-02 -0.011693103 -0.0376404990   NA
## :CUTPNoCu       -0.0218514512 -2.481202e-02  0.016301704 -0.0345867188   NA
## :CUTPOCu         0.0165628471  3.603874e-04 -0.093560807 -0.0453862976   NA
## :SHCN            0.0608493091  2.871739e-02  0.088402467  0.0813290028   NA
## :PRFQunk         0.1290632975  1.210678e-01  0.149365147  0.1235036960   NA
## :PRFQ120         0.3498746256  1.590708e-01  0.183740608  0.1761126039   NA
## :PRFQ15          0.1590708078  1.999605e-01  0.183570092  0.1456336718   NA
## :PRFQ30          0.1837406075  1.835701e-01  0.818859494  0.2194235899   NA
## :PRFQ60          0.1761126039  1.456337e-01  0.219423590  0.4117642072   NA
## :PRFQ5                     NA           NA           NA           NA   NA
## :PRFQ15-20       0.1339000294  9.556622e-02  0.125430188  0.0897920215   NA
##                     :PRFQ15-20
## PRI:(Intercept)    0.0123924439
## PRI:log(YRIN)     -0.0006522146
## PRI:log(AGEN)      0.0030407636
## PRI:log(HGA1)     -0.0078807017
## PRI:LOIBelow T6   -0.0018117765
## PRI:ASIAComplete   0.0111897380
## PRI:BEDBHPTL       0.0052960437
## PRI:BEDBSTD        0.0063876085
## PRI:MATTAFM       -0.0012549465
## PRI:MATTOM        -0.0042808956
## PRI:MATTSFM       -0.0041833874
## PRI:WCTPMWc        0.0175252292
## PRI:WCTPTRWc      -0.0002783340
## PRI:WCTPAmnWC      0.0185535719
## PRI:WCTPOWc        0.0081286069
## PRI:CUTPFCu       -0.0036819484
## PRI:CUTPLCu       -0.0057172485
## PRI:CUTPNoCu      -0.0065471175
## PRI:CUTPOCu       -0.0070000808
## PRI:SHCN          -0.0134346731
## PRI:PRFQunk       -0.0157476329
```

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## PRI:PRFQ120    -0.0155328756
## PRI:PRFQ15     -0.0110860185
## PRI:PRFQ30     -0.0145503441
## PRI:PRFQ60     -0.0104161912
## PRI:PRFQ5                 NA
## PRI:PRFQ15-20  -0.1377255979
## :(Intercept)   -0.1068281651
## :log(YRIN)      0.0056223685
## :log(AGEN)     -0.0262126827
## :log(HGA1)      0.0679350185
## :LOIBelow T6    0.0156182879
## :ASIAComplete  -0.0964603257
## :BEDBHPTL      -0.0456541611
## :BEDBSTD       -0.0550639169
## :MATTAFM        0.0108181756
## :MATTOM         0.0369031507
## :MATTSFM        0.0360625882
## :WCTPMWc       -0.1510749688
## :WCTPTRWc       0.0023993581
## :WCTPAmnWC     -0.1599397231
## :WCTPOWc       -0.0700720667
## :CUTPFCu        0.0317399699
## :CUTPLCu        0.0492851266
## :CUTPNoCu       0.0564389519
## :CUTPOCu        0.0603436892
## :SHCN           0.1158126266
## :PRFQunk        0.1357513292
## :PRFQ120        0.1339000294
## :PRFQ15         0.0955662195
## :PRFQ30         0.1254301880
## :PRFQ60         0.0897920215
## :PRFQ5                    NA
## :PRFQ15-20      1.1872535428
```