Belgian population norms for the EQ-5D-5L, 2013 and 2018

Appendix 1. Fitted models for Belgian EQ-5D population norms, 2013 and 2018

2021-06-14

Contents

2013

Mobility

Age-Sex-Region

```
Fitted model:
MO ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + sex:region + sex:age.ns1 + region:age.ns3

Coefficients:
                 Estimate Std. Error  z value  Pr(>|z|)
(Intercept)      -2.94934    0.26970 -10.9355 < 2.2e-16 ***
sexF              0.49529    0.10388   4.7681 1.860e-06 ***
regionBR          0.10372    0.24833   0.4176   0.67621
regionWA          0.15991    0.14627   1.0932   0.27429
age.ns1           1.37630    0.32698   4.2091 2.564e-05 ***
age.ns2           0.47025    0.33828   1.3901   0.16449
age.ns3           1.36165    0.30795   4.4217 9.792e-06 ***
age.ns4           1.69002    0.26750   6.3179 2.651e-10 ***
age.ns5           3.50173    0.65733   5.3272 9.973e-08 ***
age.ns6           5.92939    0.51429  11.5292 < 2.2e-16 ***
sexF:regionBR    -0.38402    0.27824  -1.3802   0.16753
sexF:regionWA    -0.33043    0.15825  -2.0880   0.03679 *
sexF:age.ns1     -0.78955    0.32016  -2.4661   0.01366 *
regionBR:age.ns3  0.86712    0.49178   1.7632   0.07786 .
regionWA:age.ns3  0.58538    0.28402   2.0611   0.03930 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5034.416
```

Age-Sex

```
Fitted model:
MO ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + sex:age.ns1

Coefficients:
               Estimate Std. Error  z value  Pr(>|z|)
(Intercept)   -2.885305   0.264039 -10.9276 < 2.2e-16 ***
sexF           0.360869   0.084964   4.2473 2.164e-05 ***
age.ns1        1.365510   0.326667   4.1801 2.913e-05 ***
age.ns2        0.470059   0.338032   1.3906   0.16435
age.ns3        1.614839   0.287732   5.6123 1.997e-08 ***
age.ns4        1.679986   0.267058   6.2907 3.160e-10 ***
age.ns5        3.493951   0.656528   5.3219 1.027e-07 ***
age.ns6        5.930911   0.512918  11.5631 < 2.2e-16 ***
sexF:age.ns1  -0.786186   0.319644  -2.4596   0.01391 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5035.332
```

Age-Region

```
Fitted model:
MO ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + region:age.ns3

Coefficients:
                 Estimate Std. Error  z value  Pr(>|z|)
(Intercept)     -2.683302   0.262504 -10.2219 < 2.2e-16 ***
regionBR        -0.099814   0.203956  -0.4894 0.6245682
regionWA        -0.023952   0.117718  -0.2035 0.8387656
age.ns1          0.954686   0.285751   3.3410 0.0008348 ***
age.ns2          0.477508   0.337610   1.4144 0.1572519
age.ns3          1.353352   0.307126   4.4065 1.051e-05 ***
age.ns4          1.686069   0.266348   6.3303 2.446e-10 ***
age.ns5          3.582870   0.655692   5.4643 4.649e-08 ***
age.ns6          6.024822   0.511229  11.7850 < 2.2e-16 ***
regionBR:age.ns3 0.860081   0.491947   1.7483 0.0804082 .
regionWA:age.ns3 0.591693   0.283510   2.0870 0.0368855 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5045.941
```

Sex-Region

```
Fitted model:
MO ~ region + sex + region:sex

Coefficients:
               Estimate Std. Error  z value  Pr(>|z|)
(Intercept)   -1.786708   0.067333 -26.5355 < 2.2e-16 ***
regionBR       0.176482   0.190227   0.9277   0.35354
regionWA       0.225549   0.111260   2.0272   0.04264 *
sexF           0.455377   0.087612   5.1977 2.018e-07 ***
regionBR:sexF -0.400782   0.258926  -1.5479   0.12166
regionWA:sexF -0.289505   0.148243  -1.9529   0.05083 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5690.252
```

Age

```
Fitted model:
MO ~ age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 + age.ns6

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.69480    0.25887 -10.4100 < 2.2e-16 ***
age.ns1      0.95063    0.28560   3.3285 0.0008731 ***
age.ns2      0.47641    0.33730   1.4124 0.1578259
age.ns3      1.60617    0.28695   5.5974 2.176e-08 ***
age.ns4      1.68224    0.26613   6.3211 2.598e-10 ***
age.ns5      3.56853    0.65468   5.4508 5.013e-08 ***
```

```
age.ns6        6.02832    0.51051  11.8084 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5046.203
```

Sex

```
Fitted model:
MO ~ sex

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.700174   0.051285 -33.1513 < 2.2e-16 ***
sexF         0.332358   0.067770   4.9042  9.38e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5686.995
```

Region

```
Fitted model:
MO ~ region

Coefficients:
             Estimate Std. Error  z value Pr(>|z|)
(Intercept) -1.534361   0.042921 -35.7481   <2e-16 ***
regionBR    -0.047003   0.128908  -0.3646   0.7154
regionWA     0.062048   0.073348   0.8460   0.3976
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5712.105
```

Intercept

```
Fitted model:
MO ~ 1

Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.518644   0.033458 -45.389 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5708.002
```

Self-care

Age-Sex-Region

```
Fitted model:
SC ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns2 +
    region:age.ns4

Coefficients:
                  Estimate Std. Error z value  Pr(>|z|)
(Intercept)       -5.68674    0.74859 -7.5966 3.040e-14 ***
sexF               0.24968    0.11212  2.2268  0.025960 *
regionBR          -0.99457    0.37877 -2.6258  0.008645 **
regionWA          -0.65332    0.21361 -3.0585  0.002225 **
age.ns1            3.38035    0.71302  4.7409 2.128e-06 ***
age.ns2            1.06379    0.55236  1.9259  0.054114 .
age.ns3            7.39647    1.57549  4.6947 2.670e-06 ***
age.ns4            8.59676    0.61063 14.0785 < 2.2e-16 ***
regionBR:age.ns2   3.09798    1.02228  3.0305  0.002442 **
regionWA:age.ns2   2.00468    0.62129  3.2267  0.001252 **
regionBR:age.ns4  -4.40324    1.55150 -2.8380  0.004539 **
regionWA:age.ns4  -2.50988    0.89392 -2.8077  0.004989 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2526.539
```

Age-Sex

```
Fitted model:
SC ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -5.96672    0.75396 -7.9138 2.497e-15 ***
sexF         0.24703    0.11164  2.2128  0.026915 *
age.ns1      3.38869    0.72079  4.7014 2.584e-06 ***
age.ns2      1.93949    0.50454  3.8441  0.000121 ***
age.ns3      7.45365    1.59357  4.6773 2.906e-06 ***
age.ns4      7.50228    0.51197 14.6537 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2532.886
```

Age-Region

```
Fitted model:
SC ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns2 +
    region:age.ns4

Coefficients:
              Estimate Std. Error z value  Pr(>|z|)
(Intercept)   -5.54361    0.74329 -7.4582 8.772e-14 ***
regionBR      -0.99318    0.37844 -2.6244  0.008680 **
regionWA      -0.64781    0.21355 -3.0335  0.002417 **
```

```
age.ns1             3.37086    0.71104  4.7408 2.129e-06 ***
age.ns2             1.04576    0.55110  1.8976  0.057754 .
age.ns3             7.41598    1.57036  4.7225 2.330e-06 ***
age.ns4             8.67355    0.60916 14.2387 < 2.2e-16 ***
regionBR:age.ns2 3.09900    1.02104  3.0351  0.002404 **
regionWA:age.ns2 2.00087    0.62121  3.2209  0.001278 **
regionBR:age.ns4 -4.39871    1.54917 -2.8394  0.004520 **
regionWA:age.ns4 -2.50043    0.89315 -2.7995  0.005117 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2527.699
```

Sex-Region

```
Fitted model:
SC ~ region + sex

Coefficients:
              Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.769595   0.089383 -30.9857 < 2.2e-16 ***
regionBR    -0.353926   0.213997  -1.6539   0.09815 .
regionWA    -0.212528   0.115994  -1.8322   0.06692 .
sexF         0.416802   0.104855   3.9750 7.037e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2992.017
```

Age

```
Fitted model:
SC ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -5.82438    0.74872 -7.7791 7.304e-15 ***
age.ns1      3.38077    0.71893  4.7025 2.569e-06 ***
age.ns2      1.92023    0.50331  3.8152 0.0001361 ***
age.ns3      7.47519    1.58859  4.7055 2.532e-06 ***
age.ns4      7.58325    0.51054 14.8533 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2533.989
```

Sex

```
Fitted model:
SC ~ sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.85564    0.08172 -34.9443 < 2.2e-16 ***
sexF         0.41519    0.10481   3.9614 7.452e-05 ***
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2992.026
```

Region

```
Fitted model:
SC ~ region

Coefficients:
            Estimate Std. Error  z value Pr(>|z|)
(Intercept) -2.535517   0.062865 -40.3328  < 2e-16 ***
regionBR    -0.350339   0.213770  -1.6389  0.10124
regionWA    -0.209878   0.115847  -1.8117  0.07003 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 3004.335
```

Intercept

```
Fitted model:
SC ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -2.621441   0.051103 -51.297 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 3004.259
```

Usual activities

Age-Sex-Region

```
Fitted model:
DA ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + region:age.ns1 + region:age.ns3 + region:age.ns6

Coefficients:
                   Estimate Std. Error  z value  Pr(>|z|)
(Intercept)       -2.683850   0.241673 -11.1053 < 2.2e-16 ***
sexF               0.297461   0.071365   4.1682 3.071e-05 ***
regionBR          -0.331511   0.314974  -1.0525 0.2925698
regionWA           0.410878   0.159259   2.5799 0.0098817 **
age.ns1            1.337048   0.307025   4.3548 1.332e-05 ***
age.ns2            0.510604   0.303324   1.6834 0.0923055 .
age.ns3            1.124131   0.302011   3.7221 0.0001975 ***
age.ns4            0.402398   0.272076   1.4790 0.1391430
age.ns5            3.346156   0.582848   5.7410 9.410e-09 ***
age.ns6            7.155047   0.602542  11.8748 < 2.2e-16 ***
regionBR:age.ns1   0.121863   0.775513   0.1571 0.8751358
regionWA:age.ns1  -1.323223   0.427076  -3.0983 0.0019462 **
regionBR:age.ns3   1.428557   0.637358   2.2414 0.0250018 *
regionWA:age.ns3   0.142454   0.342142   0.4164 0.6771480
regionBR:age.ns6  -0.929194   1.295387  -0.7173 0.4731826
regionWA:age.ns6  -2.390843   0.732047  -3.2660 0.0010909 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5245.64
```

Age-Sex

```
Fitted model:
DA ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.498786   0.225388 -11.0866 < 2.2e-16 ***
sexF         0.292416   0.071079   4.1140 3.889e-05 ***
age.ns1      0.829391   0.248624   3.3359 0.0008502 ***
age.ns2      0.449804   0.299469   1.5020 0.1330961
age.ns3      1.213560   0.257121   4.7198 2.361e-06 ***
age.ns4      0.344544   0.269256   1.2796 0.2006802
age.ns5      3.250178   0.573125   5.6710 1.420e-08 ***
age.ns6      6.242520   0.520273  11.9985 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5270.732
```

Age-Region

```
Fitted model:
DA ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
```

```
         age.ns6 + region:age.ns1 + region:age.ns3 + region:age.ns6

Coefficients:
                Estimate Std. Error  z value  Pr(>|z|)
(Intercept)     -2.53176    0.23810 -10.6330 < 2.2e-16 ***
regionBR        -0.32838    0.31487  -1.0429 0.2969811
regionWA         0.40930    0.15902   2.5739 0.0100545 *
age.ns1          1.32027    0.30657   4.3065 1.658e-05 ***
age.ns2          0.52843    0.30288   1.7447 0.0810414 .
age.ns3          1.11527    0.30141   3.7002 0.0002154 ***
age.ns4          0.41115    0.27133   1.5153 0.1296979
age.ns5          3.42710    0.58148   5.8937 3.776e-09 ***
age.ns6          7.20793    0.60052  12.0028 < 2.2e-16 ***
regionBR:age.ns1  0.10625    0.77591   0.1369 0.8910826
regionWA:age.ns1 -1.29289    0.42675  -3.0296 0.0024488 **
regionBR:age.ns3  1.42884    0.63704   2.2430 0.0248994 *
regionWA:age.ns3  0.14733    0.34161   0.4313 0.6662685
regionBR:age.ns6 -0.94435    1.29501  -0.7292 0.4658669
regionWA:age.ns6 -2.33169    0.73097  -3.1898 0.0014235 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5259.663
```

Sex-Region

```
Fitted model:
DA ~ region + sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.812410   0.059270 -30.5790 < 2.2e-16 ***
regionBR    -0.043417   0.132448  -0.3278  0.743060
regionWA     0.239176   0.072803   3.2852  0.001019 **
sexF         0.361310   0.068432   5.2798 1.293e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 5618.934
```

Age

```
Fitted model:
DA ~ age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 + age.ns6

Coefficients:
          Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.35062    0.22177 -10.5993 < 2.2e-16 ***
age.ns1      0.82207    0.24833   3.3104 0.0009317 ***
age.ns2      0.46842    0.29909   1.5662 0.1173094
age.ns3      1.20765    0.25662   4.7059 2.527e-06 ***
age.ns4      0.35198    0.26857   1.3106 0.1899980
age.ns5      3.33311    0.57189   5.8282 5.602e-09 ***
age.ns6      6.31446    0.51866  12.1745 < 2.2e-16 ***
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 5284.351

Sex

Fitted model:
DA ~ sex

```
Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.738256   0.051970 -33.4476 < 2.2e-16 ***
sexF         0.361467   0.068366   5.2872 1.242e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 5625.477

Region

Fitted model:
DA ~ region

```
Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.614550   0.044067 -36.6383 < 2.2e-16 ***
regionBR    -0.040851   0.132163  -0.3091 0.7572499
regionWA     0.239868   0.072625   3.3028 0.0009572 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 5643.703

Intercept

Fitted model:
DA ~ 1

```
Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.539889   0.033688 -45.711 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 5650.352

Pain/Discomfort

Age-Sex-Region

```
Fitted model:
PD ~ sex + region + age.ns1 + age.ns2 + sex:age.ns2 + region:age.ns1

Coefficients:
                  Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -1.023428   0.111880 -9.1476 < 2.2e-16 ***
sexF              0.350807   0.069062  5.0796 3.783e-07 ***
regionBR         -0.280611   0.297356 -0.9437 0.3453290
regionWA         -0.324998   0.174142 -1.8663 0.0620024 .
age.ns1           1.948138   0.218490  8.9164 < 2.2e-16 ***
age.ns2           0.935529   0.277902  3.3664 0.0007616 ***
sexF:age.ns2      0.768437   0.366849  2.0947 0.0361979 *
regionBR:age.ns1  1.306045   0.669251  1.9515 0.0509972 .
regionWA:age.ns1  1.700300   0.376811  4.5123 6.412e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8032.205
```

Age-Sex

```
Fitted model:
PD ~ sex + age.ns1 + age.ns2 + sex:age.ns2

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.146401   0.090839 -12.6202 < 2.2e-16 ***
sexF         0.352745   0.068633   5.1396 2.754e-07 ***
age.ns1      2.538674   0.170482  14.8912 < 2.2e-16 ***
age.ns2      0.875635   0.275933   3.1734  0.001507 **
sexF:age.ns2 0.763051   0.364608   2.0928  0.036367 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8095.647
```

Age-Region

```
Fitted model:
PD ~ region + age.ns1 + age.ns2 + region:age.ns1

Coefficients:
                  Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -0.82238    0.10397 -7.9094 2.586e-15 ***
regionBR         -0.26651    0.29637 -0.8992   0.36852
regionWA         -0.33425    0.17351 -1.9265   0.05405 .
age.ns1           1.93742    0.21763  8.9024 < 2.2e-16 ***
age.ns2           1.43394    0.17984  7.9733 1.545e-15 ***
regionBR:age.ns1  1.27669    0.66710  1.9138   0.05565 .
regionWA:age.ns1  1.72184    0.37558  4.5845 4.551e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
AIC: 8053.632
```

Sex-Region

```
Fitted model:
PD ~ region + sex

Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.268916   0.042584 -6.3150 2.701e-10 ***
regionBR     0.178883   0.097429  1.8360   0.06635 .
regionWA     0.359328   0.057199  6.2821 3.341e-10 ***
sexF         0.274416   0.051713  5.3065 1.117e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8342.736
```

Age

```
Fitted model:
PD ~ age.ns1 + age.ns2

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -0.946020   0.081329 -11.6320 < 2.2e-16 ***
age.ns1      2.532005   0.169794  14.9122 < 2.2e-16 ***
age.ns2      1.371039   0.178430   7.6839 1.543e-14 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8118.001
```

Sex

```
Fitted model:
PD ~ sex

Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.144485   0.037163 -3.8879 0.0001011 ***
sexF         0.274192   0.051541  5.3199 1.038e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8377.356
```

Region

```
Fitted model:
PD ~ region

Coefficients:
             Estimate Std. Error z value   Pr(>|z|)
```

```
(Intercept) -0.126285    0.032856 -3.8436 0.0001212 ***
regionBR     0.179870    0.097201  1.8505 0.0642422 .
regionWA     0.359056    0.057065  6.2921 3.133e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8367.511
```

Intercept

```
Fitted model:
PD ~ 1

Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept) -0.0019757  0.0256896 -0.0769   0.9387

AIC: 8402.324
```

Anxiety/Depression

Age-Sex-Region

```
Fitted model:
AD ~ sex + region + age.ns1 + age.ns2 + sex:age.ns1 + region:age.ns2

Coefficients:
                 Estimate Std. Error  z value  Pr(>|z|)
(Intercept)     -2.436978   0.156027 -15.6189 < 2.2e-16 ***
sexF             1.050844   0.189481   5.5459 2.924e-08 ***
regionBR         0.857829   0.141593   6.0584 1.375e-09 ***
regionWA         0.929297   0.080408  11.5572 < 2.2e-16 ***
age.ns1          1.731967   0.311598   5.5583 2.723e-08 ***
age.ns2          0.493653   0.257715   1.9155 0.0554286 .
sexF:age.ns1    -1.432007   0.402059  -3.5617 0.0003685 ***
regionBR:age.ns2 -1.233365   0.754273  -1.6352 0.1020131
regionWA:age.ns2 -1.409131   0.426003  -3.3078 0.0009403 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6625.151
```

Age-Sex

```
Fitted model:
AD ~ sex + age.ns1 + age.ns2 + sex:age.ns1

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept)  -1.92908    0.14698 -13.1243 < 2.2e-16 ***
sexF          0.98154    0.18476   5.3124 1.082e-07 ***
age.ns1       1.50405    0.30383   4.9503 7.409e-07 ***
age.ns2      -0.20602    0.19391  -1.0625 0.2880290
sexF:age.ns1 -1.30642    0.39176  -3.3348 0.0008537 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6947.732
```

Age-Region

```
Fitted model:
AD ~ region + age.ns1 + age.ns2 + region:age.ns2

Coefficients:
                 Estimate Std. Error  z value  Pr(>|z|)
(Intercept)     -1.823498   0.101146 -18.0285 < 2.2e-16 ***
regionBR         0.857196   0.140927   6.0825 1.183e-09 ***
regionWA         0.917745   0.080083  11.4599 < 2.2e-16 ***
age.ns1          0.897068   0.194811   4.6048 4.128e-06 ***
age.ns2          0.578486   0.257079   2.2502 0.0244342 *
regionBR:age.ns2 -1.207319   0.751684  -1.6062 0.1082401
regionWA:age.ns2 -1.419123   0.425466  -3.3355 0.0008516 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
AIC: 6677.911
```

Sex-Region

```
Fitted model:
AD ~ region + sex

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.711325   0.055145 -31.0333 < 2.2e-16 ***
regionBR     0.977058   0.103986   9.3961 < 2.2e-16 ***
regionWA     1.072365   0.063778  16.8140 < 2.2e-16 ***
sexF         0.411700   0.060598   6.7939 1.091e-11 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6656.28
```

Age

```
Fitted model:
AD ~ age.ns1 + age.ns2

Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.357507   0.091041 -14.911 < 2.2e-16 ***
age.ns1      0.736499   0.189186   3.893 9.902e-05 ***
age.ns2     -0.125030   0.193255  -0.647    0.5177
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6998.644
```

Sex

```
Fitted model:
AD ~ sex

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.235863   0.044371 -27.8531 < 2.2e-16 ***
sexF         0.395483   0.058962   6.7074 1.981e-11 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6964.538
```

Region

```
Fitted model:
AD ~ region

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
```

```
(Intercept) -1.484926   0.042250 -35.1463 < 2.2e-16 ***
regionBR     0.971852   0.103489   9.3908 < 2.2e-16 ***
regionWA     1.065592   0.063471  16.7887 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6699.607
```

Intercept

```
Fitted model:
AD ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.021142   0.029111 -35.077 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7006.794
```

Any problem

Age-Sex-Region

```
Fitted model:
ANY1 ~ sex + region + age.ns1 + region:age.ns1

Coefficients:
                 Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -0.754835   0.076197 -9.9064 < 2.2e-16 ***
sexF              0.319479   0.053942  5.9226 3.169e-09 ***
regionBR          0.289591   0.204040  1.4193  0.155815
regionWA          0.358999   0.122872  2.9217  0.003481 **
age.ns1           2.419187   0.203101 11.9113 < 2.2e-16 ***
regionBR:age.ns1  0.612643   0.669514  0.9151  0.360162
regionWA:age.ns1  0.797016   0.377474  2.1114  0.034734 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 7832.174
```

Age-Sex

```
Fitted model:
ANY1 ~ sex + age.ns1

Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.588868   0.061252 -9.6138 < 2.2e-16 ***
sexF         0.317919   0.053471  5.9456 2.754e-09 ***
age.ns1      2.563404   0.163070 15.7196 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 7928.965
```

Age-Region

```
Fitted model:
ANY1 ~ region + age.ns1 + region:age.ns1

Coefficients:
                 Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -0.595433   0.070816 -8.4082 < 2.2e-16 ***
regionBR          0.299321   0.203211  1.4730  0.140762
regionWA          0.355423   0.122414  2.9034  0.003691 **
age.ns1           2.433470   0.202225 12.0335 < 2.2e-16 ***
regionBR:age.ns1  0.578279   0.665846  0.8685  0.385127
regionWA:age.ns1  0.804337   0.375849  2.1401  0.032350 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 7863.935
```

Sex-Region

Fitted model:
ANY1 ~ region + sex

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.010081   0.042602 -0.2366 0.8129469
regionBR     0.354328   0.100416  3.5286 0.0004177 ***
regionWA     0.525765   0.059304  8.8656 < 2.2e-16 ***
sexF         0.336343   0.052699  6.3823 1.744e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 8107.501

Age

Fitted model:
ANY1 ~ age.ns1

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.430576   0.054758 -7.8633 3.742e-15 ***
age.ns1      2.577506   0.162327 15.8785 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 7961.066

Sex

Fitted model:
ANY1 ~ sex

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.174943   0.037208  4.7018 2.579e-06 ***
sexF        0.334144   0.052331  6.3852 1.712e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 8185.785

Region

Fitted model:
ANY1 ~ region

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.162869   0.032899  4.9505 7.401e-07 ***
regionBR    0.354146   0.100081  3.5386 0.0004023 ***
regionWA    0.523966   0.059105  8.8650 < 2.2e-16 ***
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8145.016
```

Intercept

```
Fitted model:
ANY1 ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.346215   0.026076  13.277 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8223.391
```

Index value

Age-Sex-Region

```
Fitted model:
index ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 +
    age.ns5 + age.ns6 + sex:age.ns5 + sex:age.ns6 + region:age.ns2 +
    region:age.ns4 + region:age.ns6

Coefficients:
                   Estimate Std. Error t value  Pr(>|t|)
(Intercept)       0.9580301  0.0165295 57.9586 < 2.2e-16 ***
sexF             -0.0276563  0.0088602 -3.1214 0.0018134 **
regionBR         -0.0136375  0.0264356 -0.5159 0.6059702
regionWA          0.0075609  0.0157128  0.4812 0.6304092
age.ns1          -0.0669149  0.0180584 -3.7055 0.0002140 ***
age.ns2          -0.0203817  0.0262888 -0.7753 0.4382117
age.ns3          -0.1395134  0.0195489 -7.1367 1.139e-12 ***
age.ns4           0.0563143  0.0299380  1.8810 0.0600436 .
age.ns5          -0.3082656  0.0524830 -5.8736 4.627e-09 ***
age.ns6          -0.5998881  0.0797581 -7.5213 6.719e-14 ***
sexF:age.ns5     -0.1248317  0.0494455 -2.5246 0.0116222 *
sexF:age.ns6     -0.2479852  0.0712131 -3.4823 0.0005027 ***
regionBR:age.ns2 -0.0654296  0.0666136 -0.9822 0.3260501
regionWA:age.ns2 -0.1476401  0.0380879 -3.8763 0.0001078 ***
regionBR:age.ns4 -0.0759916  0.0836324 -0.9086 0.3635987
regionWA:age.ns4 -0.1726549  0.0496833 -3.4751 0.0005163 ***
regionBR:age.ns6  0.1642332  0.1619985  1.0138 0.3107448
regionWA:age.ns6  0.4193342  0.1018866  4.1157 3.942e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 220.6843
```

Age-Sex

```
Fitted model:
index ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + sex:age.ns5 + sex:age.ns6

Coefficients:
              Estimate Std. Error t value  Pr(>|t|)
(Intercept)  0.9605682  0.0156268 61.4693 < 2.2e-16 ***
sexF        -0.0288887  0.0089512 -3.2274 0.0012599 **
age.ns1     -0.0663042  0.0182131 -3.6405 0.0002757 ***
age.ns2     -0.0703676  0.0228124 -3.0846 0.0020527 **
age.ns3     -0.1418085  0.0197047 -7.1967 7.389e-13 ***
age.ns4      0.0038898  0.0249167  0.1561 0.8759533
age.ns5     -0.3171470  0.0528236 -6.0039 2.106e-09 ***
age.ns6     -0.4610318  0.0731391 -6.3035 3.240e-10 ***
sexF:age.ns5 -0.1234308  0.0499481 -2.4712 0.0135099 *
sexF:age.ns6 -0.2579159  0.0719305 -3.5856 0.0003405 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
AIC: 224.7789
```

Age-Region

```
Fitted model:
index ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    age.ns6 + region:age.ns2 + region:age.ns4 + region:age.ns6

Coefficients:
                    Estimate Std. Error  t value  Pr(>|t|)
(Intercept)        0.9443941  0.0160447  58.8602 < 2.2e-16 ***
regionBR          -0.0135312  0.0265654  -0.5094 0.6105319
regionWA           0.0082033  0.0157888   0.5196 0.6033983
age.ns1           -0.0670852  0.0181426  -3.6977 0.0002207 ***
age.ns2           -0.0194746  0.0264024  -0.7376 0.4607993
age.ns3           -0.1423745  0.0196240  -7.2551 4.835e-13 ***
age.ns4            0.0687362  0.0298602   2.3019 0.0213925 *
age.ns5           -0.4075491  0.0424134  -9.6090 < 2.2e-16 ***
age.ns6           -0.7953643  0.0599996 -13.2562 < 2.2e-16 ***
regionBR:age.ns2  -0.0656038  0.0669411  -0.9800 0.3271365
regionWA:age.ns2  -0.1499056  0.0382733  -3.9167 9.133e-05 ***
regionBR:age.ns4  -0.0774606  0.0840429  -0.9217 0.3567543
regionWA:age.ns4  -0.1780147  0.0499148  -3.5664 0.0003664 ***
regionBR:age.ns6   0.1669071  0.1627875   1.0253 0.3052836
regionWA:age.ns6   0.4242956  0.1023577   4.1452 3.468e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 222.7147
```

Sex-Region

```
Fitted model:
index ~ region + sex

Coefficients:
              Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.8988819  0.0052896 169.9331 < 2.2e-16 ***
regionBR    -0.0295650  0.0121684  -2.4297   0.01516 *
regionWA    -0.0501184  0.0071109  -7.0481 2.141e-12 ***
sexF        -0.0394796  0.0064406  -6.1298 9.690e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 241.0079
```

Age

```
Fitted model:
index ~ age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 + age.ns6

Coefficients:
             Estimate Std. Error  t value  Pr(>|t|)
(Intercept) 0.946554   0.015083  62.7548 < 2.2e-16 ***
age.ns1    -0.066581   0.018300  -3.6384  0.000278 ***
```

```
age.ns2      -0.070131    0.022909   -3.0612   0.002220 **
age.ns3      -0.144828    0.019781   -7.3214 2.974e-13 ***
age.ns4       0.014939    0.024813    0.6021   0.547159
age.ns5      -0.416647    0.042581   -9.7849 < 2.2e-16 ***
age.ns6      -0.661849    0.050831  -13.0205 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 226.8403
```

Sex

```
Fitted model:
index ~ sex

Coefficients:
              Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.8812671  0.0046722 188.6188 < 2.2e-16 ***
sexF        -0.0397090  0.0064814  -6.1266 9.881e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 243.9846
```

Region

```
Fitted model:
index ~ region

Coefficients:
              Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.8784494  0.0041267 212.8682 < 2.2e-16 ***
regionBR    -0.0298278  0.0122262  -2.4397   0.01475 *
regionWA    -0.0503209  0.0071447  -7.0431 2.217e-12 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 243.2428
```

Intercept

```
Fitted model:
index ~ 1

Coefficients:
            Estimate Std. Error t value  Pr(>|t|)
(Intercept) 0.8606324  0.0032536  264.52 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 246.2459
```

Visual Analogue Scale

Age-Sex-Region

Fitted model:
```
VAS ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 +
    sex:region + region:age.ns1 + region:age.ns2 + region:age.ns4
```

Coefficients:
```
                 Estimate Std. Error t value  Pr(>|t|)
(Intercept)      82.65816    1.13361 72.9162 < 2.2e-16 ***
sexF             -1.92690    0.60699 -3.1745  0.001513 **
regionBR          4.06179    2.31738  1.7528  0.079725 .
regionWA          2.53395    1.29714  1.9535  0.050835 .
age.ns1          -5.20085    1.35709 -3.8324  0.000129 ***
age.ns2          -2.83583    1.75503 -1.6158  0.106213
age.ns3         -21.45309    2.59667 -8.2618 < 2.2e-16 ***
age.ns4         -33.18574    3.44967 -9.6200 < 2.2e-16 ***
sexF:regionBR     1.97638    1.79913  1.0985  0.272046
sexF:regionWA     1.57442    1.05025  1.4991  0.133931
regionBR:age.ns1 -6.63868    3.61045 -1.8387  0.066031 .
regionWA:age.ns1 -3.63719    2.04279 -1.7805  0.075073 .
regionBR:age.ns2 -9.31758    5.34055 -1.7447  0.081120 .
regionWA:age.ns2 -7.43097    3.06027 -2.4282  0.015219 *
regionBR:age.ns4 16.71395   10.27282  1.6270  0.103818
regionWA:age.ns4 12.36216    6.10691  2.0243  0.043009 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 1311340

Age-Sex

Fitted model:
```
VAS ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4
```

Coefficients:
```
            Estimate Std. Error  t value   Pr(>|t|)
(Intercept) 83.78001    1.02421  81.7993  < 2.2e-16 ***
sexF        -1.29385    0.47626  -2.7167   0.006624 **
age.ns1     -6.90702    1.12902  -6.1177 1.044e-09 ***
age.ns2     -5.71576    1.40555  -4.0666 4.867e-05 ***
age.ns3    -21.76709    2.59053  -8.4026  < 2.2e-16 ***
age.ns4    -28.91233    2.84947 -10.1465  < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 1312287

Age-Region

Fitted model:
```
VAS ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns1 +
    region:age.ns2 + region:age.ns4
```

Coefficients:

```
                 Estimate Std. Error t value  Pr(>|t|)
(Intercept)       81.6299     1.0860 75.1638 < 2.2e-16 ***
regionBR           5.2099     2.0549  2.5354 0.0112719 *
regionWA           3.4414     1.1511  2.9897 0.0028105 **
age.ns1           -5.1297     1.3580 -3.7774 0.0001609 ***
age.ns2           -2.7171     1.7562 -1.5471 0.1219119
age.ns3          -21.7103     2.5970 -8.3599 < 2.2e-16 ***
age.ns4          -33.8142     3.4473 -9.8088 < 2.2e-16 ***
regionBR:age.ns1  -6.7829     3.6087 -1.8796 0.0602398 .
regionWA:age.ns1  -3.7621     2.0442 -1.8404 0.0657926 .
regionBR:age.ns2  -9.4818     5.3441 -1.7743 0.0760989 .
regionWA:age.ns2  -7.5476     3.0622 -2.4648 0.0137543 *
regionBR:age.ns4  17.2675    10.2711  1.6812 0.0928102 .
regionWA:age.ns4  12.7669     6.1045  2.0914 0.0365598 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 1313048
```

Sex-Region

```
Fitted model:
VAS ~ region + sex + region:sex

Coefficients:
             Estimate Std. Error  t value   Pr(>|t|)
(Intercept) 78.18845    0.45270 172.7143 < 2.2e-16 ***
regionBR    -0.37007    1.34951  -0.2742    0.7839
regionWA    -0.50232    0.78657  -0.6386    0.5231
sexF        -2.45460    0.62927  -3.9007 9.757e-05 ***
regionBR:sexF  2.53908  1.86526   1.3612    0.1735
regionWA:sexF  1.64809  1.08977   1.5123    0.1305
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 1413231
```

Age

```
Fitted model:
VAS ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
             Estimate Std. Error  t value  Pr(>|t|)
(Intercept) 83.12334    0.99611  83.4479 < 2.2e-16 ***
age.ns1     -6.90014    1.12995  -6.1066 1.119e-09 ***
age.ns2     -5.65131    1.40652  -4.0179 5.983e-05 ***
age.ns3    -22.03728    2.59078  -8.5061 < 2.2e-16 ***
age.ns4    -29.38050    2.84662 -10.3212 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 1314020
```

Sex

Fitted model:
```
VAS ~ sex
```

Coefficients:
```
            Estimate Std. Error  t value  Pr(>|t|)
(Intercept) 78.00613    0.35548 219.4391 < 2.2e-16 ***
sexF        -1.74548    0.49313  -3.5396 0.0004055 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 1412503

Region

Fitted model:
```
VAS ~ region
```

Coefficients:
```
            Estimate Std. Error  t value Pr(>|t|)
(Intercept) 76.91808    0.31498 244.2021   <2e-16 ***
regionBR     0.94458    0.93318   1.0122   0.3115
regionWA     0.34650    0.54532   0.6354   0.5252
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 1417196

Intercept

Fitted model:
```
VAS ~ 1
```

Coefficients:
```
            Estimate Std. Error t value  Pr(>|t|)
(Intercept) 77.09910    0.24674  312.47 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 1416254

2018

Mobility

Age-Sex-Region

Fitted model:
```
MO ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns1
```

Coefficients:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	-2.515455	0.175168	-14.3602	< 2.2e-16	***
sexF	0.273360	0.063625	4.2964	1.736e-05	***
regionBR	0.207058	0.195117	1.0612	0.2885993	
regionWA	0.082043	0.118780	0.6907	0.4897491	
age.ns1	0.689369	0.210736	3.2712	0.0010707	**
age.ns2	0.958731	0.173068	5.5396	3.031e-08	***
age.ns3	2.805715	0.402402	6.9724	3.115e-12	***
age.ns4	5.233257	0.304105	17.2087	< 2.2e-16	***
regionBR:age.ns1	0.270557	0.435999	0.6205	0.5348983	
regionWA:age.ns1	0.920578	0.258278	3.5643	0.0003648	***

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 6454.851

Age-Sex

Fitted model:
```
MO ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4
```

Coefficients:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	-2.466861	0.167770	-14.7038	< 2.2e-16	***
sexF	0.277642	0.063361	4.3819	1.177e-05	***
age.ns1	1.059995	0.173768	6.1000	1.060e-09	***
age.ns2	0.936488	0.172304	5.4351	5.477e-08	***
age.ns3	2.786833	0.401378	6.9432	3.834e-12	***
age.ns4	5.232484	0.302255	17.3115	< 2.2e-16	***

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 6498.197

Age-Region

Fitted model:
```
MO ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns1
```

Coefficients:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	-2.372524	0.171706	-13.8174	< 2.2e-16	***
regionBR	0.215389	0.194570	1.1070	0.2682925	
regionWA	0.084984	0.118612	0.7165	0.4736878	
age.ns1	0.692781	0.210540	3.2905	0.0010001	**
age.ns2	0.954285	0.172743	5.5243	3.308e-08	***

```
age.ns3             2.827575    0.402674    7.0220 2.187e-12 ***
age.ns4             5.276486    0.302894   17.4202 < 2.2e-16 ***
regionBR:age.ns1  0.257109    0.434878    0.5912 0.5543733
regionWA:age.ns1  0.920131    0.257872    3.5682 0.0003595 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6469.844
```

Sex-Region

```
Fitted model:
MO ~ region + sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.759234   0.052461 -33.5344 < 2.2e-16 ***
regionBR     0.118925   0.106162   1.1202    0.2626
regionWA     0.339683   0.063081   5.3849 7.250e-08 ***
sexF         0.335434   0.059612   5.6270 1.834e-08 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7252.937
```

Age

```
Fitted model:
MO ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.32016    0.16410 -14.1383 < 2.2e-16 ***
age.ns1      1.06182    0.17362   6.1158 9.607e-10 ***
age.ns2      0.93196    0.17198   5.4192 5.987e-08 ***
age.ns3      2.81043    0.40166   6.9970 2.615e-12 ***
age.ns4      5.27473    0.30101  17.5233 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6513.971
```

Sex

```
Fitted model:
MO ~ sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.631944   0.044845 -36.3907 < 2.2e-16 ***
sexF         0.337243   0.059498   5.6681 1.444e-08 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7275.907
```

Region

```
Fitted model:
MO ~ region

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.578262   0.040042 -39.4149 < 2.2e-16 ***
regionBR     0.120391   0.105939   1.1364    0.2558
regionWA     0.341759   0.062940   5.4299 5.639e-08 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7281.558
```

Intercept

```
Fitted model:
MO ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.449140   0.029408 -49.276 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7305.011
```

Self-care

Age-Sex-Region

```
Fitted model:
SC ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns4

Coefficients:
                 Estimate Std. Error  z value Pr(>|z|)
(Intercept)      -3.60430    0.29386 -12.2655  < 2e-16 ***
sexF              0.12024    0.10453   1.1503  0.25003
regionBR          0.13111    0.19369   0.6769  0.49845
regionWA          0.26589    0.11093   2.3970  0.01653 *
age.ns1           0.72851    0.30415   2.3953  0.01661 *
age.ns2           0.63339    0.26708   2.3715  0.01771 *
age.ns3           1.99149    0.70121   2.8401  0.00451 **
age.ns4           6.11585    0.43045  14.2081  < 2e-16 ***
regionBR:age.ns4 -0.79034    0.91718  -0.8617  0.38885
regionWA:age.ns4 -1.48587    0.59186  -2.5105  0.01206 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2951.605
```

Age-Sex

```
Fitted model:
SC ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -3.48541    0.28822 -12.0929 < 2.2e-16 ***
sexF         0.12258    0.10441   1.1740  0.240380
age.ns1      0.71575    0.30343   2.3589  0.018329 *
age.ns2      0.60164    0.26564   2.2649  0.023522 *
age.ns3      2.01034    0.69683   2.8850  0.003914 **
age.ns4      5.52861    0.35580  15.5386 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 2952.546
```

Age-Region

```
Fitted model:
SC ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns4

Coefficients:
                 Estimate Std. Error  z value Pr(>|z|)
(Intercept)      -3.54204    0.28867 -12.2704  < 2e-16 ***
regionBR          0.13415    0.19365   0.6928  0.48846
regionWA          0.26791    0.11090   2.4158  0.01570 *
age.ns1           0.73113    0.30409   2.4043  0.01620 *
age.ns2           0.62813    0.26705   2.3522  0.01866 *
age.ns3           2.00292    0.70167   2.8545  0.00431 **
age.ns4           6.14679    0.42957  14.3091  < 2e-16 ***
```

```
regionBR:age.ns4 -0.77784     0.91762   -0.8477   0.39662
regionWA:age.ns4 -1.48324     0.59154   -2.5074   0.01216 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 2949.207
```

Sex-Region

```
Fitted model:
SC ~ region + sex

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.968926   0.086657 -34.2606 < 2.2e-16 ***
regionBR    -0.033410   0.181810  -0.1838  0.854197
regionWA     0.166544   0.105065   1.5852  0.112931
sexF         0.262361   0.099220   2.6442  0.008187 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 3360.001
```

Age

```
Fitted model:
SC ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -3.42103    0.28280 -12.0968 < 2.2e-16 ***
age.ns1      0.71850    0.30338   2.3683  0.017870 *
age.ns2      0.59606    0.26562   2.2440  0.024829 *
age.ns3      2.02226    0.69735   2.8999  0.003733 **
age.ns4      5.56194    0.35472  15.6798 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 2950.17
```

Sex

```
Fitted model:
SC ~ sex

Coefficients:
             Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.915819   0.075135 -38.8079 < 2.2e-16 ***
sexF         0.263728   0.099199   2.6586  0.007847 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 3357.568
```

Region

```
Fitted model:
SC ~ region

Coefficients:
            Estimate Std. Error  z value Pr(>|z|)
(Intercept) -2.826991   0.065643 -43.0664   <2e-16 ***
regionBR    -0.031855   0.181731  -0.1753   0.8609
regionWA     0.169166   0.105009   1.6110   0.1072
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 3363.257
```

Intercept

```
Fitted model:
SC ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -2.772109   0.049035 -56.533 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 3360.903
```

Usual activities

Age-Sex-Region

```
Fitted model:
DA ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.524997   0.158053 -15.9756 < 2.2e-16 ***
sexF         0.481404   0.062226   7.7364 1.023e-14 ***
regionBR     0.052364   0.114978   0.4554    0.6488
regionWA     0.359462   0.065377   5.4983 3.835e-08 ***
age.ns1      1.225036   0.160298   7.6423 2.134e-14 ***
age.ns2      0.137364   0.170439   0.8059    0.4203
age.ns3      2.349175   0.370743   6.3364 2.352e-10 ***
age.ns4      4.781207   0.291880  16.3807 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 6806.974
```

Age-Sex

```
Fitted model:
DA ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.380562   0.154540 -15.4042 < 2.2e-16 ***
sexF         0.483393   0.062089   7.7855 6.944e-15 ***
age.ns1      1.207359   0.159889   7.5512 4.312e-14 ***
age.ns2      0.141348   0.169922   0.8318    0.4055
age.ns3      2.289269   0.369017   6.2037 5.515e-10 ***
age.ns4      4.723505   0.290591  16.2548 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


AIC: 6831.548
```

Age-Region

```
Fitted model:
DA ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.264256   0.153600 -14.7412 < 2.2e-16 ***
regionBR     0.058531   0.114411   0.5116    0.6089
regionWA     0.362919   0.065081   5.5764 2.456e-08 ***
age.ns1      1.223113   0.159784   7.6548 1.936e-14 ***
age.ns2      0.133905   0.169610   0.7895    0.4298
age.ns3      2.387408   0.370519   6.4434 1.168e-10 ***
age.ns4      4.840391   0.289381  16.7267 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
AIC: 6864.321
```

Sex-Region

```
Fitted model:
DA ~ region + sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.822384   0.053398 -34.1286 < 2.2e-16 ***
regionBR    -0.051078   0.109939  -0.4646    0.6422
regionWA     0.303277   0.062838   4.8263 1.391e-06 ***
sexF         0.519916   0.060038   8.6598 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7264.995
```

Age

```
Fitted model:
DA ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -2.11704    0.15004 -14.1101 < 2.2e-16 ***
age.ns1      1.20517    0.15939   7.5612 3.992e-14 ***
age.ns2      0.13768    0.16910   0.8142    0.4155
age.ns3      2.32798    0.36884   6.3116 2.762e-10 ***
age.ns4      4.78163    0.28801  16.6022 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 6889.7
```

Sex

```
Fitted model:
DA ~ sex

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.722707   0.046261 -37.2387 < 2.2e-16 ***
sexF         0.520817   0.059937   8.6894 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7284.742
```

Region

```
Fitted model:
DA ~ region
```

```
Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.534454   0.039475 -38.872 < 2.2e-16 ***
regionBR    -0.047603   0.109430  -0.435    0.6636
regionWA     0.305570   0.062502   4.889 1.014e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7338.171
```

Intercept

```
Fitted model:
DA ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.433184   0.029264 -48.974 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 7358.451
```

Pain/Discomfort

Age-Sex-Region

```
Fitted model:
PD ~ sex + region + age.ns1 + sex:age.ns1 + region:age.ns1

Coefficients:
                  Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -0.722976   0.081674 -8.8520 < 2.2e-16 ***
sexF              0.235789   0.098035  2.4052  0.016166 *
regionBR         -0.131503   0.169562 -0.7755  0.438018
regionWA          0.145938   0.108011  1.3511  0.176650
age.ns1           2.014345   0.231425  8.7041 < 2.2e-16 ***
sexF:age.ns1      0.551324   0.283869  1.9422  0.052116 .
regionBR:age.ns1  0.517813   0.520191  0.9954  0.319528
regionWA:age.ns1  1.046700   0.319312  3.2780  0.001045 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9782.278
```

Age-Sex

```
Fitted model:
PD ~ sex + age.ns1 + sex:age.ns1

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.677987   0.069878 -9.7025  < 2e-16 ***
sexF          0.236698   0.097754  2.4214  0.01546 *
age.ns1       2.339980   0.201190 11.6307  < 2e-16 ***
sexF:age.ns1  0.546812   0.282523  1.9355  0.05293 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9858.004
```

Age-Region

```
Fitted model:
PD ~ region + age.ns1 + region:age.ns1

Coefficients:
                 Estimate Std. Error z value  Pr(>|z|)
(Intercept)      -0.60933    0.06410 -9.5060 < 2.2e-16 ***
regionBR         -0.13950    0.16885 -0.8262  0.408703
regionWA          0.14872    0.10759  1.3823  0.166887
age.ns1           2.31284    0.17930 12.8994 < 2.2e-16 ***
regionBR:age.ns1  0.56125    0.51613  1.0874  0.276851
regionWA:age.ns1  1.03662    0.31734  3.2665  0.001089 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9848.504
```

Sex-Region

Fitted model:
PD ~ region + sex

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.090375   0.038570 -2.3431   0.01912 *
regionBR    -0.061814   0.082981 -0.7449   0.45632
regionWA     0.415315   0.052032  7.9819 1.441e-15 ***
sexF         0.416620   0.046989  8.8663 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 10153.8

Age

Fitted model:
PD ~ age.ns1

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.563591   0.048668  -11.58 < 2.2e-16 ***
age.ns1      2.636259   0.140301   18.79 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 9925.121

Sex

Fitted model:
PD ~ sex

Coefficients:
```
            Estimate Std. Error z value Pr(>|z|)
(Intercept) 0.035847   0.033180  1.0804     0.28
sexF        0.416199   0.046765  8.8998   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

AIC: 10218.97

Region

Fitted model:
PD ~ region

Coefficients:
```
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.121641   0.030211  4.0263 5.666e-05 ***
regionBR    -0.058714   0.082533 -0.7114    0.4768
regionWA     0.415418   0.051762  8.0256 1.010e-15 ***
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 10229.34
```

Intercept

```
Fitted model:
PD ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.247965   0.023258  10.662 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 10295.14
```

Anxiety/Depression

Age-Sex-Region

```
Fitted model:
AD ~ sex + region + age.ns1 + age.ns2 + age.ns3 + sex:region +
    sex:age.ns1 + sex:age.ns2 + region:age.ns2

Coefficients:
                  Estimate Std. Error  z value  Pr(>|z|)
(Intercept)      -1.886336   0.172913 -10.9091  < 2.2e-16 ***
sexF              0.836536   0.191753   4.3626 1.285e-05 ***
regionBR          0.705052   0.319417   2.2073  0.027292 *
regionWA          0.371770   0.198517   1.8727  0.061105 .
age.ns1          -0.248749   0.171757  -1.4483  0.147545
age.ns2           1.056795   0.394141   2.6813  0.007335 **
age.ns3           0.210111   0.205619   1.0218  0.306854
sexF:regionBR     0.024893   0.176005   0.1414  0.887527
sexF:regionWA     0.297138   0.111755   2.6588  0.007841 **
sexF:age.ns1      0.458904   0.213693   2.1475  0.031754 *
sexF:age.ns2     -0.929241   0.390111  -2.3820  0.017219 *
regionBR:age.ns2  0.179047   0.652858   0.2743  0.783891
regionWA:age.ns2  1.168918   0.408651   2.8604  0.004231 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8816.038
```

Age-Sex

```
Fitted model:
AD ~ sex + age.ns1 + age.ns2 + age.ns3 + sex:age.ns1 + sex:age.ns2

Coefficients:
              Estimate Std. Error  z value  Pr(>|z|)
(Intercept)   -1.66336    0.14162 -11.7449  < 2.2e-16 ***
sexF           0.95662    0.18085   5.2896 1.226e-07 ***
age.ns1       -0.27234    0.16837  -1.6175  0.105763
age.ns2        1.42256    0.33401   4.2590 2.053e-05 ***
age.ns3        0.12805    0.20031   0.6393  0.522656
sexF:age.ns1   0.47135    0.20821   2.2639  0.023581 *
sexF:age.ns2  -0.98406    0.38159  -2.5789  0.009913 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9198.341
```

Age-Region

```
Fitted model:
AD ~ region + age.ns1 + age.ns2 + age.ns3 + region:age.ns2

Coefficients:
               Estimate Std. Error  z value  Pr(>|z|)
(Intercept)  -1.4292008  0.1278888 -11.1753  < 2.2e-16 ***
regionBR      0.7085197  0.2962691   2.3915  0.016781 *
```

```
regionWA            0.5361242  0.1819206    2.9470  0.003208 **
age.ns1            -0.0041141  0.1198984   -0.0343  0.972627
age.ns2             0.6113052  0.3184259    1.9198  0.054887 .
age.ns3             0.3436343  0.2026767    1.6955  0.089984 .
regionBR:age.ns2  0.1932702  0.6454887    0.2994  0.764622
regionWA:age.ns2  1.1450884  0.4024806    2.8451  0.004440 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8962.644
```

Sex-Region

```
Fitted model:
AD ~ region + sex + region:sex

Coefficients:
               Estimate Std. Error  z value  Pr(>|z|)
(Intercept)   -1.501976   0.055921 -26.8587 < 2.2e-16 ***
regionBR       0.803047   0.130016   6.1765 6.552e-10 ***
regionWA       0.874508   0.083211  10.5095 < 2.2e-16 ***
sexF           0.508746   0.073339   6.9369 4.007e-12 ***
regionBR:sexF -0.010053   0.175071  -0.0574  0.954208
regionWA:sexF  0.287501   0.111109   2.5876  0.009666 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 8833.306
```

Age

```
Fitted model:
AD ~ age.ns1 + age.ns2 + age.ns3

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.139025   0.092195 -12.3545 < 2.2e-16 ***
age.ns1     -0.018462   0.116569  -0.1584 0.8741571
age.ns2      0.942087   0.248791   3.7867 0.0001527 ***
age.ns3      0.261631   0.197938   1.3218 0.1862412
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9341.701
```

Sex

```
Fitted model:
AD ~ sex

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -1.105958   0.038377 -28.818 < 2.2e-16 ***
sexF         0.598347   0.050726  11.796 < 2.2e-16 ***
---
```

```
Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1

AIC: 9209.629
```

Region

```
Fitted model:
AD ~ region

Coefficients:
            Estimate Std. Error  z value  Pr(>|z|)
(Intercept) -1.223854   0.035979 -34.0155 < 2.2e-16 ***
regionBR     0.789914   0.086426   9.1398 < 2.2e-16 ***
regionWA     1.021123   0.054374  18.7797 < 2.2e-16 ***
---
Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1

AIC: 8976.248
```

Intercept

```
Fitted model:
AD ~ 1

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.78046    0.02486 -31.394 < 2.2e-16 ***
---
Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1

AIC: 9347.746
```

Any problem

Age-Sex-Region

```
Fitted model:
ANY1 ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 +
    age.ns5 + sex:age.ns2 + sex:age.ns4 + region:age.ns3
```

```
Coefficients:
                 Estimate Std. Error z value  Pr(>|z|)
(Intercept)     -0.809912   0.135443 -5.9797 2.235e-09 ***
sexF             0.940574   0.162684  5.7816 7.399e-09 ***
regionBR         0.225035   0.088283  2.5490 0.0108029 *
regionWA         0.643185   0.057499 11.1860 < 2.2e-16 ***
age.ns1          0.562803   0.126009  4.4664 7.956e-06 ***
age.ns2          1.407848   0.205995  6.8344 8.237e-12 ***
age.ns3          0.253865   0.206303  1.2305 0.2184941
age.ns4          3.372295   0.402863  8.3708 < 2.2e-16 ***
age.ns5          3.384605   0.424512  7.9729 1.550e-15 ***
sexF:age.ns2    -0.546649   0.271718 -2.0118 0.0442384 *
sexF:age.ns4    -1.520151   0.453402 -3.3528 0.0008001 ***
regionBR:age.ns3 0.517438   0.393577  1.3147 0.1886084
regionWA:age.ns3 0.575542   0.243582  2.3628 0.0181362 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9309.443
```

Age-Sex

```
Fitted model:
ANY1 ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    sex:age.ns4
```

```
Coefficients:
             Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.411430   0.109375 -3.7617 0.0001688 ***
sexF         0.651559   0.081389  8.0055 1.190e-15 ***
age.ns1      0.517975   0.124095  4.1740 2.993e-05 ***
age.ns2      1.095538   0.153504  7.1369 9.548e-13 ***
age.ns3      0.431423   0.188467  2.2891 0.0220722 *
age.ns4      2.870616   0.358108  8.0161 1.092e-15 ***
age.ns5      3.242079   0.418026  7.7557 8.786e-15 ***
sexF:age.ns4 -0.823997   0.300922 -2.7382 0.0061769 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9449.024
```

Age-Region

```
Fitted model:
ANY1 ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5 +
    region:age.ns3
```

```
Coefficients:
```

```
                Estimate Std. Error z value  Pr(>|z|)
(Intercept)     -0.330497  0.103412 -3.1959  0.001394 **
regionBR         0.223204  0.087675  2.5458  0.010902 *
regionWA         0.637329  0.057069 11.1677 < 2.2e-16 ***
age.ns1          0.534499  0.124330  4.2990 1.715e-05 ***
age.ns2          1.124758  0.153696  7.3181 2.516e-13 ***
age.ns3          0.238241  0.204686  1.1639  0.244450
age.ns4          2.637613  0.321409  8.2064 2.279e-16 ***
age.ns5          3.449499  0.420786  8.1978 2.449e-16 ***
regionBR:age.ns3 0.541411  0.391623  1.3825  0.166825
regionWA:age.ns3 0.581027  0.242496  2.3960  0.016574 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9402.297
```

Sex-Region

```
Fitted model:
ANY1 ~ region + sex

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.127865   0.039087  3.2713  0.001071 **
regionBR    0.150938   0.085783  1.7595  0.078485 .
regionWA    0.622071   0.055397 11.2294 < 2.2e-16 ***
sexF        0.494847   0.048895 10.1207 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9583.43
```

Age

```
Fitted model:
ANY1 ~ age.ns1 + age.ns2 + age.ns3 + age.ns4 + age.ns5

Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) -0.084528   0.099772 -0.8472   0.39688
age.ns1      0.502112   0.123084  4.0794 4.515e-05 ***
age.ns2      1.084685   0.151911  7.1403 9.313e-13 ***
age.ns3      0.424698   0.186967  2.2715   0.02312 *
age.ns4      2.497622   0.317494  7.8667 3.642e-15 ***
age.ns5      3.307847   0.414783  7.9749 1.525e-15 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9542.35
```

Sex

```
Fitted model:
ANY1 ~ sex
```

```
Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.332238   0.033633  9.8782 < 2.2e-16 ***
sexF        0.491642   0.048466 10.1441 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9708.585
```

Region

```
Fitted model:
ANY1 ~ region
```

```
Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept) 0.375569   0.030689 12.2379  < 2e-16 ***
regionBR    0.151654   0.085170  1.7806  0.07498 .
regionWA    0.618980   0.055030 11.2481  < 2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9683.21
```

Intercept

```
Fitted model:
ANY1 ~ 1
```

```
Coefficients:
            Estimate Std. Error z value  Pr(>|z|)
(Intercept) 0.577461   0.024049  24.012 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 9808.853
```

Index value

Age-Sex-Region

```
Fitted model:
index ~ sex + region + age.ns1 + age.ns2 + age.ns3 + age.ns4 +
    sex:region + sex:age.ns2 + region:age.ns1

Coefficients:
                  Estimate Std. Error  t value  Pr(>|t|)
(Intercept)      0.9368055  0.0130960  71.5337 < 2.2e-16 ***
sexF            -0.0243269  0.0080148  -3.0353  0.002416 **
regionBR        -0.0082181  0.0201788  -0.4073  0.683830
regionWA        -0.0364307  0.0125193  -2.9100  0.003631 **
age.ns1         -0.0747777  0.0164739  -4.5392 5.784e-06 ***
age.ns2          0.0156882  0.0199632   0.7859  0.431990
age.ns3         -0.2630481  0.0308633  -8.5230 < 2.2e-16 ***
age.ns4         -0.4354595  0.0314081 -13.8646 < 2.2e-16 ***
sexF:regionBR   -0.0218685  0.0209682  -1.0429  0.297030
sexF:regionWA   -0.0235010  0.0128202  -1.8331  0.066845 .
sexF:age.ns2    -0.0535998  0.0214914  -2.4940  0.012664 *
regionBR:age.ns1 -0.0513653  0.0397422  -1.2925  0.196258
regionWA:age.ns1 -0.0674812  0.0240073  -2.8109  0.004961 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 313.9397
```

Age-Sex

```
Fitted model:
index ~ sex + age.ns1 + age.ns2 + age.ns3 + age.ns4 + sex:age.ns2

Coefficients:
               Estimate Std. Error  t value  Pr(>|t|)
(Intercept)   0.9229097  0.0122569  75.2969 < 2.2e-16 ***
sexF         -0.0345959  0.0063579  -5.4414 5.544e-08 ***
age.ns1      -0.0992269  0.0136535  -7.2675 4.244e-13 ***
age.ns2       0.0162898  0.0202131   0.8059   0.42034
age.ns3      -0.2576217  0.0312549  -8.2426 < 2.2e-16 ***
age.ns4      -0.4310425  0.0318198 -13.5463 < 2.2e-16 ***
sexF:age.ns2 -0.0541652  0.0217352  -2.4921   0.01273 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 322.1728
```

Age-Region

```
Fitted model:
index ~ region + age.ns1 + age.ns2 + age.ns3 + age.ns4 + region:age.ns1

Coefficients:
               Estimate Std. Error  t value  Pr(>|t|)
(Intercept)    0.925074   0.012537  73.7896 < 2.2e-16 ***
regionBR      -0.020701   0.016892  -1.2255  0.220461
```

```
regionWA          -0.049179   0.010595  -4.6418 3.544e-06 ***
age.ns1           -0.075392   0.016559  -4.5530 5.417e-06 ***
age.ns2           -0.011699   0.016729  -0.6993  0.484397
age.ns3           -0.269244   0.031011  -8.6821 < 2.2e-16 ***
age.ns4           -0.445985   0.031538 -14.1411 < 2.2e-16 ***
regionBR:age.ns1 -0.049415   0.039939  -1.2373  0.216044
regionWA:age.ns1 -0.067459   0.024131  -2.7955  0.005202 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 316.9689
```

Sex-Region

```
Fitted model:
index ~ region + sex

Coefficients:
             Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.8915190  0.0050283 177.3000 < 2.2e-16 ***
regionBR    -0.0289869  0.0108222  -2.6785  0.007421 **
regionWA    -0.0696282  0.0066320 -10.4988 < 2.2e-16 ***
sexF        -0.0449734  0.0060603  -7.4210 1.364e-13 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 335.7904
```

Age

```
Fitted model:
index ~ age.ns1 + age.ns2 + age.ns3 + age.ns4

Coefficients:
             Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.905624   0.011920  75.9756 < 2.2e-16 ***
age.ns1     -0.099637   0.013723  -7.2607  4.46e-13 ***
age.ns2     -0.011227   0.016951  -0.6623    0.5078
age.ns3     -0.263974   0.031402  -8.4064 < 2.2e-16 ***
age.ns4     -0.441688   0.031949 -13.8249 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 325.3253
```

Sex

```
Fitted model:
index ~ sex

Coefficients:
             Estimate Std. Error  t value  Pr(>|t|)
(Intercept)  0.8666741  0.0044011 196.9200 < 2.2e-16 ***
sexF        -0.0455982  0.0061270  -7.4421 1.165e-13 ***
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 343.0837
```

Region

```
Fitted model:
index ~ region

Coefficients:
             Estimate Std. Error t value  Pr(>|t|)
(Intercept)  0.8684934  0.0039788 218.282 < 2.2e-16 ***
regionBR    -0.0292507  0.0108821  -2.688  0.007213 **
regionWA    -0.0701094  0.0066684 -10.514 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 339.4291
```

Intercept

```
Fitted model:
index ~ 1

Coefficients:
           Estimate Std. Error t value  Pr(>|t|)
(Intercept) 0.843147   0.003079  273.84 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC: 346.8233
```