MAP : Seed report

Date: 2016-10-20

Table of Contents

[Available models 2](#_Toc464739403)

[female 6](#_Toc464739404)

[bnt 17](#_Toc464739405)

[bstory\_de 19](#_Toc464739406)

[bstory\_im 21](#_Toc464739407)

[categories 22](#_Toc464739408)

[digit\_b 24](#_Toc464739409)

[digit\_f 26](#_Toc464739410)

[digit\_o 28](#_Toc464739411)

[ideas 29](#_Toc464739412)

[line 31](#_Toc464739413)

[logic\_de 33](#_Toc464739414)

[logic\_im 34](#_Toc464739415)

[matrices 36](#_Toc464739416)

[mmse 37](#_Toc464739417)

[nart 39](#_Toc464739418)

[num\_comp 41](#_Toc464739419)

[symbol 42](#_Toc464739420)

[word\_de 44](#_Toc464739421)

[word\_im 46](#_Toc464739422)

[word\_rec 48](#_Toc464739423)

[Summary 49](#_Toc464739424)

[male 52](#_Toc464739425)

[bnt 63](#_Toc464739426)

[bstory\_de 65](#_Toc464739427)

[bstory\_im 66](#_Toc464739428)

[categories 68](#_Toc464739429)

[digit\_b 70](#_Toc464739430)

[digit\_f 72](#_Toc464739431)

[digit\_o 73](#_Toc464739432)

[ideas 75](#_Toc464739433)

[line 77](#_Toc464739434)

[logic\_de 78](#_Toc464739435)

[logic\_im 80](#_Toc464739436)

[matrices 82](#_Toc464739437)

[mmse 83](#_Toc464739438)

[nart 85](#_Toc464739439)

[num\_comp 86](#_Toc464739440)

[symbol 88](#_Toc464739441)

[word\_de 90](#_Toc464739442)

[word\_im 91](#_Toc464739443)

[word\_rec 93](#_Toc464739444)

[Summary 95](#_Toc464739445)

This report contains a searchable table, followed by publication-ready tables.

# Available models

Study **MAP** have contributed the following outcome pairs to the IASLA-2015-Portland model pool: NULL

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| fev | bnt | 8 |
| fev | bstory\_de | 8 |
| fev | bstory\_im | 8 |
| fev | categories | 8 |
| fev | digit\_b | 8 |
| fev | digit\_f | 8 |
| fev | digit\_o | 8 |
| fev | ideas | 8 |
| fev | line | 8 |
| fev | logic\_de | 8 |
| fev | logic\_im | 7 |
| fev | matrices | 8 |
| fev | mmse | 7 |
| fev | nart | 8 |
| fev | num\_comp | 8 |
| fev | symbol | 8 |
| fev | word\_de | 8 |
| fev | word\_im | 8 |
| fev | word\_rec | 8 |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | female | a | fev | bnt | 1 |
| map | female | a | fev | bstory\_de | 1 |
| map | female | a | fev | bstory\_im | 1 |
| map | female | a | fev | categories | 1 |
| map | female | a | fev | digit\_b | 1 |
| map | female | a | fev | digit\_f | 1 |
| map | female | a | fev | digit\_o | 1 |
| map | female | a | fev | ideas | 1 |
| map | female | a | fev | line | 1 |
| map | female | a | fev | logic\_de | 1 |
| map | female | a | fev | matrices | 1 |
| map | female | a | fev | mmse | 1 |
| map | female | a | fev | nart | 1 |
| map | female | a | fev | num\_comp | 1 |
| map | female | a | fev | symbol | 1 |
| map | female | a | fev | word\_de | 1 |
| map | female | a | fev | word\_im | 1 |
| map | female | a | fev | word\_rec | 1 |
| map | female | ae | fev | bnt | 1 |
| map | female | ae | fev | bstory\_de | 1 |
| map | female | ae | fev | bstory\_im | 1 |
| map | female | ae | fev | categories | 1 |
| map | female | ae | fev | digit\_b | 1 |
| map | female | ae | fev | digit\_f | 1 |
| map | female | ae | fev | digit\_o | 1 |
| map | female | ae | fev | ideas | 1 |
| map | female | ae | fev | line | 1 |
| map | female | ae | fev | logic\_de | 1 |
| map | female | ae | fev | logic\_im | 1 |
| map | female | ae | fev | matrices | 1 |
| map | female | ae | fev | mmse | 1 |
| map | female | ae | fev | nart | 1 |
| map | female | ae | fev | num\_comp | 1 |
| map | female | ae | fev | symbol | 1 |
| map | female | ae | fev | word\_de | 1 |
| map | female | ae | fev | word\_im | 1 |
| map | female | ae | fev | word\_rec | 1 |
| map | female | aeh | fev | bnt | 1 |
| map | female | aeh | fev | bstory\_de | 1 |
| map | female | aeh | fev | bstory\_im | 1 |
| map | female | aeh | fev | categories | 1 |
| map | female | aeh | fev | digit\_b | 1 |
| map | female | aeh | fev | digit\_f | 1 |
| map | female | aeh | fev | digit\_o | 1 |
| map | female | aeh | fev | ideas | 1 |
| map | female | aeh | fev | line | 1 |
| map | female | aeh | fev | logic\_de | 1 |
| map | female | aeh | fev | logic\_im | 1 |
| map | female | aeh | fev | matrices | 1 |
| map | female | aeh | fev | mmse | 1 |
| map | female | aeh | fev | nart | 1 |
| map | female | aeh | fev | num\_comp | 1 |
| map | female | aeh | fev | symbol | 1 |
| map | female | aeh | fev | word\_de | 1 |
| map | female | aeh | fev | word\_im | 1 |
| map | female | aeh | fev | word\_rec | 1 |
| map | female | aehplus | fev | bnt | 1 |
| map | female | aehplus | fev | bstory\_de | 1 |
| map | female | aehplus | fev | bstory\_im | 1 |
| map | female | aehplus | fev | categories | 1 |
| map | female | aehplus | fev | digit\_b | 1 |
| map | female | aehplus | fev | digit\_f | 1 |
| map | female | aehplus | fev | digit\_o | 1 |
| map | female | aehplus | fev | ideas | 1 |
| map | female | aehplus | fev | line | 1 |
| map | female | aehplus | fev | logic\_de | 1 |
| map | female | aehplus | fev | logic\_im | 1 |
| map | female | aehplus | fev | matrices | 1 |
| map | female | aehplus | fev | mmse | 1 |
| map | female | aehplus | fev | nart | 1 |
| map | female | aehplus | fev | num\_comp | 1 |
| map | female | aehplus | fev | symbol | 1 |
| map | female | aehplus | fev | word\_de | 1 |
| map | female | aehplus | fev | word\_im | 1 |
| map | female | aehplus | fev | word\_rec | 1 |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | male | a | fev | bnt | 1 |
| map | male | a | fev | bstory\_de | 1 |
| map | male | a | fev | bstory\_im | 1 |
| map | male | a | fev | categories | 1 |
| map | male | a | fev | digit\_b | 1 |
| map | male | a | fev | digit\_f | 1 |
| map | male | a | fev | digit\_o | 1 |
| map | male | a | fev | ideas | 1 |
| map | male | a | fev | line | 1 |
| map | male | a | fev | logic\_de | 1 |
| map | male | a | fev | logic\_im | 1 |
| map | male | a | fev | matrices | 1 |
| map | male | a | fev | nart | 1 |
| map | male | a | fev | num\_comp | 1 |
| map | male | a | fev | symbol | 1 |
| map | male | a | fev | word\_de | 1 |
| map | male | a | fev | word\_im | 1 |
| map | male | a | fev | word\_rec | 1 |
| map | male | ae | fev | bnt | 1 |
| map | male | ae | fev | bstory\_de | 1 |
| map | male | ae | fev | bstory\_im | 1 |
| map | male | ae | fev | categories | 1 |
| map | male | ae | fev | digit\_b | 1 |
| map | male | ae | fev | digit\_f | 1 |
| map | male | ae | fev | digit\_o | 1 |
| map | male | ae | fev | ideas | 1 |
| map | male | ae | fev | line | 1 |
| map | male | ae | fev | logic\_de | 1 |
| map | male | ae | fev | logic\_im | 1 |
| map | male | ae | fev | matrices | 1 |
| map | male | ae | fev | mmse | 1 |
| map | male | ae | fev | nart | 1 |
| map | male | ae | fev | num\_comp | 1 |
| map | male | ae | fev | symbol | 1 |
| map | male | ae | fev | word\_de | 1 |
| map | male | ae | fev | word\_im | 1 |
| map | male | ae | fev | word\_rec | 1 |
| map | male | aeh | fev | bnt | 1 |
| map | male | aeh | fev | bstory\_de | 1 |
| map | male | aeh | fev | bstory\_im | 1 |
| map | male | aeh | fev | categories | 1 |
| map | male | aeh | fev | digit\_b | 1 |
| map | male | aeh | fev | digit\_f | 1 |
| map | male | aeh | fev | digit\_o | 1 |
| map | male | aeh | fev | ideas | 1 |
| map | male | aeh | fev | line | 1 |
| map | male | aeh | fev | logic\_de | 1 |
| map | male | aeh | fev | logic\_im | 1 |
| map | male | aeh | fev | matrices | 1 |
| map | male | aeh | fev | mmse | 1 |
| map | male | aeh | fev | nart | 1 |
| map | male | aeh | fev | num\_comp | 1 |
| map | male | aeh | fev | symbol | 1 |
| map | male | aeh | fev | word\_de | 1 |
| map | male | aeh | fev | word\_im | 1 |
| map | male | aeh | fev | word\_rec | 1 |
| map | male | aehplus | fev | bnt | 1 |
| map | male | aehplus | fev | bstory\_de | 1 |
| map | male | aehplus | fev | bstory\_im | 1 |
| map | male | aehplus | fev | categories | 1 |
| map | male | aehplus | fev | digit\_b | 1 |
| map | male | aehplus | fev | digit\_f | 1 |
| map | male | aehplus | fev | digit\_o | 1 |
| map | male | aehplus | fev | ideas | 1 |
| map | male | aehplus | fev | line | 1 |
| map | male | aehplus | fev | logic\_de | 1 |
| map | male | aehplus | fev | logic\_im | 1 |
| map | male | aehplus | fev | matrices | 1 |
| map | male | aehplus | fev | mmse | 1 |
| map | male | aehplus | fev | nart | 1 |
| map | male | aehplus | fev | num\_comp | 1 |
| map | male | aehplus | fev | symbol | 1 |
| map | male | aehplus | fev | word\_de | 1 |
| map | male | aehplus | fev | word\_im | 1 |
| map | male | aehplus | fev | word\_rec | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *bnt*, *bstory\_de*, *bstory\_im*, *categories*, *digit\_b*, *digit\_f*, *digit\_o*, *ideas*, *line*, *logic\_de*, *logic\_im*, *matrices*, *mmse*, *nart*, *num\_comp*, *symbol*, *word\_de*, *word\_im*, *word\_rec*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | matrices | mmse | nart | num\_comp | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| a | Level | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68 (0.04) <.01 | 1.68(0.00) |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04(0.00) |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02(0.00) |
| a | Level \* education | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01(0.00) |
| a | Level \* height | 1.64 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.64 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.64 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.63 (0.22) <.01 | 1.64 (0.22) <.01 | 1.64 (0.22) <.01 | 1.64 (0.22) <.01 | 1.63(0.00) |
| a | Level \* smoking | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09(0.00) |
| a | Level \* cardio | -0.06 (0.05) .22 | -0.06 (0.05) .24 | -0.06 (0.05) .23 | -0.06 (0.05) .23 | -0.06 (0.05) .22 | -0.06 (0.05) .23 | -0.06 (0.05) .22 | -0.06 (0.05) .22 | -0.06 (0.05) .21 | -0.06 (0.05) .24 | -0.06 (0.05) .23 | -0.06 (0.05) .22 | -0.06 (0.05) .23 | -0.06 (0.05) .22 | -0.06 (0.05) .23 | -0.06 (0.05) .24 | -0.06 (0.05) .23 | -0.06 (0.05) .23 | -0.06 (0.05) .22 | -0.06(0.00) |
| a | Level \* diabetes | -0.03 (0.04) .40 | -0.03 (0.04) .40 | -0.03 (0.04) .38 | -0.03 (0.04) .40 | -0.03 (0.04) .42 | -0.03 (0.04) .40 | -0.03 (0.04) .39 | -0.03 (0.04) .42 | -0.03 (0.04) .40 | -0.03 (0.04) .39 | -0.03 (0.04) .39 | -0.03 (0.04) .39 | -0.03 (0.04) .41 | -0.03 (0.04) .37 | -0.04 (0.04) .36 | -0.03 (0.04) .40 | -0.03 (0.04) .40 | -0.03 (0.04) .37 | -0.03 (0.04) .41 | -0.03(0.00) |
| a | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .90 | 0.00 (0.00) .99 | 0.00 (0.00) .95 | 0.00 (0.00) .96 | 0.00 (0.00) .99 | 0.00 (0.00) .97 | 0.00 (0.00) .97 | 0.00 (0.00) .98 | 0.00 (0.00) .98 | 0.00 (0.00) .92 | 0.00 (0.00) .97 | 0.00 (0.00) .98 | 0.00 (0.00) .98 | 0.00 (0.00) .91 | 0.00 (0.00) .95 | 0.00 (0.00) .96 | 0.00 (0.00) .94 | 0.00 (0.00) .96 | 0.00 (0.00) .94 | 0.00(0.00) |
| a | Slope \* height | -0.07 (0.04) .09 | -0.07 (0.04) .08 | -0.07 (0.04) .08 | -0.07 (0.04) .08 | -0.07 (0.04) .07 | -0.07 (0.04) .11 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .08 | -0.07 (0.04) .08 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .11 | -0.07 (0.04) .08 | -0.07(0.00) |
| a | Slope \* smoking | 0.00 (0.00) .64 | 0.00 (0.00) .74 | 0.00 (0.00) .69 | 0.00 (0.00) .77 | 0.00 (0.00) .66 | 0.00 (0.00) .68 | 0.00 (0.00) .74 | 0.00 (0.00) .74 | 0.00 (0.00) .68 | 0.00 (0.00) .68 | 0.00 (0.00) .70 | 0.00 (0.00) .66 | 0.00 (0.00) .74 | 0.00 (0.00) .65 | 0.00 (0.00) .69 | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .74 | 0.00 (0.00) .61 | 0.00(0.00) |
| a | Slope \* cardio | -0.01 (0.01) .15 | -0.01 (0.01) .15 | -0.01 (0.01) .15 | -0.01 (0.01) .14 | -0.01 (0.01) .17 | -0.01 (0.01) .14 | -0.01 (0.01) .16 | -0.01 (0.01) .13 | -0.01 (0.01) .16 | -0.01 (0.01) .12 | -0.01 (0.01) .15 | -0.01 (0.01) .15 | -0.01 (0.01) .15 | -0.01 (0.01) .16 | -0.01 (0.01) .13 | -0.01 (0.01) .13 | -0.01 (0.01) .14 | -0.01 (0.01) .11 | -0.01 (0.01) .32 | -0.01(0.00) |
| a | Slope \* diabetes | -0.01 (0.01) .48 | -0.01 (0.01) .50 | -0.01 (0.01) .55 | -0.01 (0.01) .51 | -0.01 (0.01) .46 | -0.01 (0.01) .48 | -0.01 (0.01) .51 | -0.01 (0.01) .53 | -0.01 (0.01) .47 | -0.01 (0.01) .53 | -0.01 (0.01) .52 | -0.01 (0.01) .52 | -0.01 (0.01) .51 | -0.01 (0.01) .51 | -0.01 (0.01) .53 | -0.01 (0.01) .49 | -0.01 (0.01) .49 | -0.01 (0.01) .51 | -0.01 (0.01) .55 | -0.01(0.00) |
| b | Level | 13.47 (0.16) <.01 | 8.98 (0.16) <.01 | 9.37 (0.16) <.01 | 32.91 (0.76) <.01 | 5.19 (0.18) <.01 | 7.28 (0.20) <.01 | 6.50 (0.16) <.01 | 7.56 (0.06) <.01 | 8.16 (0.30) <.01 | 8.49 (0.37) <.01 | 10.20 (0.37) <.01 | 9.75 (0.26) <.01 | 27.66 (0.16) <.01 | 5.04 (0.22) <.01 | 23.14 (0.77) <.01 | 35.46 (1.05) <.01 | 5.57 (0.20) <.01 | 16.83 (0.39) <.01 | 9.75 (0.09) <.01 | --- |
| b | Slope | 0.09 (0.04) .02 | 0.06 (0.06) .31 | -0.03 (0.06) .59 | -0.05 (0.21) .80 | -0.01 (0.05) .90 | 0.04 (0.06) .46 | 0.07 (0.05) .16 | 0.02 (0.02) .34 | -0.04 (0.08) .64 | 0.27 (0.12) .03 | 0.26 (0.12) .03 | 0.03 (0.09) .71 | 0.05 (0.07) .49 | 0.04 (0.04) .38 | 0.28 (0.16) .09 | 0.50 (0.22) .02 | 0.12 (0.06) .03 | 0.40 (0.12) <.01 | 0.01 (0.03) .80 | --- |
| b | Level \* age | -0.02 (0.00) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.26 (0.03) <.01 | 0.00 (0.01) .66 | 0.00 (0.01) .55 | -0.00 (0.01) .52 | 0.00 (0.00) .12 | -0.01 (0.01) .26 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | 0.05 (0.01) <.01 | -0.18 (0.03) <.01 | -0.37 (0.04) <.01 | -0.06 (0.01) <.01 | -0.11 (0.02) <.01 | -0.01 (0.00) <.01 | --- |
| b | Level \* education | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 | 0.08 (0.02) <.01 | 0.78 (0.08) <.01 | 0.15 (0.02) <.01 | 0.14 (0.02) <.01 | 0.12 (0.02) <.01 | 0.02 (0.00) <.01 | 0.24 (0.03) <.01 | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.32 (0.02) <.01 | 0.15 (0.02) <.01 | 0.33 (0.02) <.01 | 0.52 (0.08) <.01 | 1.01 (0.10) <.01 | 0.14 (0.02) <.01 | 0.36 (0.04) <.01 | 0.01 (0.01) .19 | --- |
| b | Level \* height | 2.70 (0.67) <.01 | 0.41 (0.68) .54 | 0.84 (0.71) .24 | 12.72 (3.54) <.01 | 3.16 (0.82) <.01 | 3.13 (0.82) <.01 | 1.68 (0.59) <.01 | 0.38 (0.23) .11 | 3.07 (1.28) .02 | 5.51 (1.54) <.01 | 4.36 (1.42) <.01 | 4.10 (1.16) <.01 | 1.53 (0.63) .01 | 3.56 (0.87) <.01 | 13.80 (2.93) <.01 | 14.85 (3.91) <.01 | 2.75 (0.86) <.01 | 5.11 (1.62) <.01 | 0.59 (0.44) .18 | --- |
| b | Level \* smoking | -0.01 (0.08) .90 | 0.00 (0.10) .98 | 0.03 (0.10) .74 | -1.50 (0.46) <.01 | 0.00 (0.11) .98 | 0.00 (0.11) .97 | -0.06 (0.08) .45 | -0.03 (0.03) .31 | -0.28 (0.16) .09 | -0.06 (0.22) .80 | -0.20 (0.22) .35 | -0.00 (0.14) .98 | -0.09 (0.09) .32 | 0.09 (0.12) .45 | -0.69 (0.41) .10 | -0.78 (0.56) .16 | -0.34 (0.12) <.01 | -0.61 (0.22) .01 | -0.06 (0.05) .20 | --- |
| b | Level \* cardio | -0.12 (0.22) .59 | -0.26 (0.22) .22 | -0.13 (0.20) .51 | -1.50 (0.78) .05 | -0.61 (0.18) <.01 | 0.03 (0.22) .90 | -0.11 (0.15) .48 | -0.05 (0.06) .42 | 0.11 (0.32) .72 | -0.29 (0.51) .57 | -0.35 (0.50) .48 | -0.39 (0.28) .16 | -0.12 (0.17) .46 | -0.10 (0.28) .73 | -0.71 (0.84) .40 | -1.38 (1.19) .25 | -0.46 (0.28) .10 | -0.66 (0.51) .19 | -0.19 (0.16) .25 | --- |
| b | Level \* diabetes | -0.37 (0.17) .03 | -0.11 (0.16) .49 | 0.13 (0.15) .39 | -0.64 (0.78) .41 | 0.04 (0.20) .85 | 0.04 (0.19) .84 | -0.14 (0.15) .37 | -0.11 (0.06) .07 | -0.74 (0.29) .01 | -0.39 (0.36) .28 | -0.27 (0.36) .45 | -0.33 (0.26) .19 | -0.06 (0.17) .74 | -0.65 (0.23) <.01 | -2.16 (0.75) <.01 | -3.06 (1.01) <.01 | -0.09 (0.19) .63 | 0.12 (0.42) .77 | 0.02 (0.10) .85 | --- |
| b | Slope \* age | -0.00 (0.00) .15 | -0.01 (0.00) <.01 | -0.00 (0.00) .10 | -0.03 (0.01) <.01 | 0.00 (0.00) .78 | -0.00 (0.00) .71 | -0.00 (0.00) .14 | 0.00 (0.00) .66 | 0.00 (0.00) .98 | -0.01 (0.00) <.01 | -0.01 (0.00) .07 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.00 (0.00) .33 | -0.03 (0.01) <.01 | -0.06 (0.01) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.00 (0.00) .08 | --- |
| b | Slope \* education | -0.01 (0.00) .06 | -0.00 (0.01) .60 | 0.01 (0.01) .34 | 0.00 (0.03) .94 | -0.00 (0.00) .33 | -0.00 (0.01) .41 | -0.01 (0.00) .26 | -0.00 (0.00) .37 | 0.00 (0.01) .80 | 0.03 (0.01) .04 | 0.01 (0.01) .39 | -0.00 (0.01) .79 | -0.01 (0.01) .07 | -0.00 (0.00) .89 | -0.01 (0.02) .44 | -0.04 (0.02) .07 | 0.00 (0.01) .77 | -0.00 (0.01) .81 | 0.00 (0.00) .88 | --- |
| b | Slope \* height | -0.29 (0.15) .06 | 0.31 (0.31) .30 | 0.24 (0.26) .36 | 0.30 (0.98) .76 | 0.12 (0.24) .63 | -0.21 (0.26) .42 | 0.21 (0.21) .33 | 0.07 (0.09) .39 | 0.29 (0.36) .43 | 0.28 (0.56) .61 | 0.24 (0.52) .64 | 0.37 (0.36) .31 | 0.02 (0.26) .94 | 0.03 (0.16) .86 | -0.10 (0.72) .89 | 2.15 (1.08) .05 | 0.10 (0.28) .74 | -0.03 (0.52) .95 | 0.16 (0.12) .19 | --- |
| b | Slope \* smoking | -0.00 (0.02) .94 | -0.07 (0.04) .10 | -0.05 (0.04) .22 | 0.13 (0.13) .34 | 0.00 (0.03) .93 | -0.01 (0.03) .75 | -0.04 (0.03) .23 | 0.02 (0.01) .12 | 0.07 (0.05) .17 | -0.08 (0.07) .22 | -0.04 (0.07) .49 | -0.01 (0.04) .83 | 0.02 (0.04) .56 | 0.00 (0.02) .86 | -0.09 (0.10) .37 | -0.16 (0.14) .26 | -0.01 (0.04) .80 | -0.04 (0.08) .60 | 0.00 (0.02) .92 | --- |
| b | Slope \* cardio | 0.03 (0.05) .60 | 0.12 (0.09) .17 | -0.03 (0.08) .70 | -0.22 (0.27) .42 | 0.21 (0.07) <.01 | -0.10 (0.06) .11 | -0.07 (0.06) .26 | 0.02 (0.02) .45 | -0.15 (0.09) .07 | -0.02 (0.15) .88 | 0.07 (0.14) .63 | -0.01 (0.11) .94 | 0.06 (0.07) .34 | -0.03 (0.05) .55 | 0.04 (0.18) .84 | 0.13 (0.25) .61 | 0.02 (0.07) .79 | -0.02 (0.15) .89 | 0.03 (0.02) .30 | --- |
| b | Slope \* diabetes | 0.04 (0.05) .37 | 0.06 (0.07) .40 | -0.00 (0.05) .98 | -0.09 (0.24) .70 | -0.03 (0.07) .65 | -0.01 (0.06) .79 | 0.06 (0.04) .18 | 0.02 (0.02) .45 | 0.06 (0.09) .50 | 0.11 (0.12) .36 | 0.20 (0.12) .10 | 0.01 (0.08) .90 | 0.04 (0.07) .60 | -0.02 (0.05) .64 | 0.20 (0.21) .34 | -0.28 (0.27) .30 | -0.02 (0.05) .66 | 0.07 (0.13) .57 | -0.00 (0.02) .89 | --- |
| a | Var (Level) | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11(0.00) |
| a | Var (Slope) | 0.00 (0.00) .54 | 0.00 (0.00) .53 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .41 | 0.00 (0.00) .55 | 0.00 (0.00) .53 | 0.00 (0.00) .53 | 0.00 (0.00) .54 | 0.00 (0.00) .52 | 0.00 (0.00) .51 | 0.00 (0.00) .51 | 0.00 (0.00) .54 | 0.00 (0.00) .53 | 0.00 (0.00) .52 | 0.00 (0.00) .51 | 0.00 (0.00) .54 | 0.00 (0.00) .49 | 0.00 (0.00) .45 | 0.00(0.00) |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03(0.00) |
| a | Covar (Level, Slope) | 0.00 (0.00) .92 | 0.00 (0.00) .92 | 0.00 (0.00) .93 | 0.00 (0.00) .95 | -0.00 (0.00) .65 | 0.00 (0.00) .99 | 0.00 (0.00) .94 | 0.00 (0.00) .91 | 0.00 (0.00) .94 | 0.00 (0.00) .87 | 0.00 (0.00) .88 | 0.00 (0.00) .90 | 0.00 (0.00) .92 | 0.00 (0.00) .89 | 0.00 (0.00) .92 | 0.00 (0.00) .90 | 0.00 (0.00) .94 | 0.00 (0.00) .92 | -0.00 (0.00) .63 | -0.00(0.00) |
| b | Var (Level) | 1.21 (0.19) <.01 | 1.13 (0.15) <.01 | 1.06 (0.11) <.01 | 44.42 (3.11) <.01 | 2.30 (0.16) <.01 | 2.18 (0.14) <.01 | 1.05 (0.11) <.01 | 0.12 (0.02) <.01 | 4.45 (0.34) <.01 | 10.82 (0.66) <.01 | 9.80 (0.63) <.01 | 3.08 (0.28) <.01 | 0.97 (0.14) <.01 | 3.44 (0.20) <.01 | 33.58 (2.14) <.01 | 65.47 (4.58) <.01 | 2.72 (0.19) <.01 | 9.89 (0.68) <.01 | 0.56 (0.15) <.01 | --- |
| b | Var (Slope) | 0.04 (0.01) <.01 | 0.08 (0.03) <.01 | 0.05 (0.02) .01 | 1.17 (0.27) <.01 | 0.03 (0.01) .02 | 0.02 (0.01) .19 | 0.02 (0.01) .10 | 0.00 (0.00) .09 | 0.01 (0.03) .74 | 0.26 (0.06) <.01 | 0.22 (0.06) <.01 | 0.02 (0.03) .50 | 0.07 (0.04) .05 | 0.02 (0.01) .06 | 0.36 (0.15) .02 | 0.98 (0.31) <.01 | 0.06 (0.02) <.01 | 0.36 (0.08) <.01 | 0.00 (0.01) .72 | --- |
| b | Var (Residual) | 0.46 (0.02) <.01 | 2.33 (0.12) <.01 | 1.98 (0.07) <.01 | 21.49 (0.79) <.01 | 1.60 (0.06) <.01 | 1.60 (0.05) <.01 | 1.31 (0.06) <.01 | 0.20 (0.01) <.01 | 3.85 (0.16) <.01 | 5.85 (0.22) <.01 | 5.84 (0.21) <.01 | 3.34 (0.20) <.01 | 1.64 (0.08) <.01 | 0.71 (0.05) <.01 | 14.99 (0.80) <.01 | 23.68 (1.34) <.01 | 1.75 (0.08) <.01 | 5.85 (0.20) <.01 | 0.33 (0.06) <.01 | --- |
| b | Covar (Level, Slope) | -0.10 (0.03) <.01 | 0.10 (0.05) .05 | -0.04 (0.04) .32 | -0.15 (0.64) .81 | -0.08 (0.04) .02 | -0.01 (0.03) .86 | -0.07 (0.03) .02 | -0.01 (0.01) .11 | 0.08 (0.08) .35 | 0.11 (0.15) .46 | -0.19 (0.15) .21 | -0.04 (0.08) .65 | 0.01 (0.05) .84 | -0.04 (0.03) .21 | 0.13 (0.42) .75 | 1.70 (0.83) .04 | 0.00 (0.04) .92 | -0.08 (0.17) .65 | 0.01 (0.03) .68 | --- |
| ab | Covar (Levels) | 0.02 (0.02) .32 | 0.01 (0.02) .74 | 0.03 (0.02) .13 | 0.49 (0.10) <.01 | 0.08 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 | 0.02 (0.01) <.01 | 0.10 (0.03) <.01 | 0.03 (0.05) .51 | 0.05 (0.05) .26 | 0.12 (0.03) <.01 | 0.02 (0.02) .36 | 0.10 (0.03) <.01 | 0.28 (0.08) <.01 | 0.48 (0.11) <.01 | 0.03 (0.02) .22 | 0.13 (0.05) <.01 | 0.01 (0.01) .66 | --- |
| ab | Covar (Slopes) | 0.00 (0.00) .72 | -0.00 (0.00) .42 | -0.00 (0.00) .40 | 0.00 (0.01) .99 | 0.00 (0.00) .10 | 0.00 (0.00) .99 | -0.00 (0.00) .31 | 0.00 (0.00) .58 | 0.00 (0.00) .96 | -0.01 (0.00) .22 | -0.00 (0.00) .51 | 0.00 (0.00) .40 | -0.00 (0.00) .64 | 0.00 (0.00) .73 | -0.00 (0.01) .47 | -0.00 (0.01) .53 | -0.00 (0.00) .70 | -0.01 (0.01) .11 | 0.00 (0.00) .93 | --- |
| ab | Covar (Residuals) | -0.00 (0.00) .61 | -0.01 (0.01) .08 | -0.01 (0.01) .12 | -0.03 (0.02) .20 | -0.01 (0.01) .11 | 0.01 (0.01) .22 | 0.00 (0.00) .34 | -0.00 (0.00) .55 | -0.01 (0.01) .08 | -0.01 (0.01) .61 | -0.01 (0.01) .60 | -0.01 (0.01) .11 | 0.00 (0.00) .73 | 0.00 (0.00) .98 | 0.00 (0.02) .96 | 0.01 (0.03) .69 | 0.00 (0.01) .94 | 0.02 (0.01) .23 | 0.00 (0.00) .96 | --- |
|  | Correlation of Levels | 0.047 | 0.020 | 0.082 | 0.221 | 0.152 | 0.129 | 0.192 | 0.184 | 0.15 | 0.030 | 0.052 | 0.202 | 0.0523 | 0.16 | 0.1474 | 0.179 | 0.055 | 0.122 | 0.028 | 0.12(0.07) |
|  | Correlation of Slopes | NaN | -Inf | -Inf | NaN | 0.514 | NaN | -Inf | NaN | NaN | -Inf | -Inf | Inf | -Inf | NaN | -Inf | -Inf | -Inf | -Inf | 0.000 | --- |
|  | Correlation of Residuals | -0.018 | -0.056 | -0.039 | -0.035 | -0.044 | 0.034 | 0.027 | -0.013 | -0.04 | -0.018 | -0.015 | -0.047 | 0.0095 | 0.00 | 0.0016 | 0.014 | 0.000 | 0.044 | 0.000 | -0.01(0.03) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68.00(0.00) |
|  | LL | -10,996 | -13,364 | -13,000 | -17,768 | -12,922 | -12,912 | -12,272 | -8,961 | -14,221 | -15,361 | -15,290 | -13,347 | -12,767 | -11,928 | -16,843 | -17,753 | -13,147 | -15,337 | -10,214 | -1.360006e+04(2,370) |
|  | AIC | 22,127 | 26,864 | 26,135 | 35,672 | 25,980 | 25,959 | 24,679 | 18,058 | 28,578 | 30,858 | 30,716 | 26,830 | 25,670 | 23,991 | 33,822 | 35,642 | 26,429 | 30,811 | 20,564 | 2.733613e+04(4,741) |
|  | BIC | 22,462 | 27,198 | 26,470 | 36,006 | 26,315 | 26,294 | 25,013 | 18,393 | 28,913 | 31,192 | 31,051 | 27,164 | 26,004 | 24,326 | 34,156 | 35,977 | 26,763 | 31,145 | 20,898 | 2.767053e+04(4,741) |

## bnt

Gender = *female*; Process (a) = *fev*; Process (b) = *bnt*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .09 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .85 | 0.00 (0.00) .89 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .64 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .48 |
| b | Level | 14.14 (0.06) <.01 | 13.31 (0.14) <.01 | 13.35 (0.14) <.01 | 13.47 (0.16) <.01 |
| b | Slope | 0.04 (0.01) <.01 | 0.11 (0.04) <.01 | 0.11 (0.04) <.01 | 0.09 (0.04) .02 |
| b | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Level \* education | --- | 0.11 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.68 (0.67) <.01 | 2.70 (0.67) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.08) .90 |
| b | Level \* cardio | --- | --- | --- | -0.12 (0.22) .59 |
| b | Level \* diabetes | --- | --- | --- | -0.37 (0.17) .03 |
| b | Slope \* age | -0.00 (0.00) .24 | -0.00 (0.00) .20 | -0.00 (0.00) .11 | -0.00 (0.00) .15 |
| b | Slope \* education | --- | -0.01 (0.00) .02 | -0.01 (0.00) .04 | -0.01 (0.00) .06 |
| b | Slope \* height | --- | --- | -0.29 (0.15) .06 | -0.29 (0.15) .06 |
| b | Slope \* smoking | --- | --- | --- | -0.00 (0.02) .94 |
| b | Slope \* cardio | --- | --- | --- | 0.03 (0.05) .60 |
| b | Slope \* diabetes | --- | --- | --- | 0.04 (0.05) .37 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .53 | 0.00 (0.00) .54 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .51 | -0.00 (0.00) .54 | 0.00 (0.00) .92 | 0.00 (0.00) .92 |
| b | Var (Level) | 1.38 (0.22) <.01 | 1.26 (0.21) <.01 | 1.23 (0.20) <.01 | 1.21 (0.19) <.01 |
| b | Var (Slope) | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Var (Residual) | 0.46 (0.02) <.01 | 0.46 (0.02) <.01 | 0.46 (0.02) <.01 | 0.46 (0.02) <.01 |
| b | Covar (Level, Slope) | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.10 (0.03) <.01 | -0.10 (0.03) <.01 |
| ab | Covar (Levels) | 0.07 (0.02) <.01 | 0.04 (0.02) .04 | 0.02 (0.02) .29 | 0.02 (0.02) .32 |
| ab | Covar (Slopes) | 0.00 (0.00) .62 | 0.00 (0.00) .66 | 0.00 (0.00) .75 | 0.00 (0.00) .72 |
| ab | Covar (Residuals) | -0.00 (0.00) .60 | -0.00 (0.00) .58 | -0.00 (0.00) .60 | -0.00 (0.00) .61 |
|  | Correlation of Levels | 0.156 | 0.108 | 0.051 | 0.047 |
|  | Correlation of Slopes | Inf | Inf | NaN | NaN |
|  | Correlation of Residuals | -0.018 | -0.018 | -0.018 | -0.018 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -8,532 | -11,062 | -9,866 | -10,996 |
|  | AIC | 17,110 | 22,183 | 19,808 | 22,127 |
|  | BIC | 17,223 | 22,331 | 19,995 | 22,462 |

## bstory\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *bstory\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .24 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .11 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .73 | 0.00 (0.00) .98 | 0.00 (0.00) .99 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .74 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .50 |
| b | Level | 9.63 (0.08) <.01 | 8.92 (0.14) <.01 | 8.93 (0.14) <.01 | 8.98 (0.16) <.01 |
| b | Slope | 0.02 (0.03) .45 | 0.05 (0.06) .41 | 0.05 (0.06) .38 | 0.06 (0.06) .31 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.43 (0.68) .53 | 0.41 (0.68) .54 |
| b | Level \* smoking | --- | --- | --- | 0.00 (0.10) .98 |
| b | Level \* cardio | --- | --- | --- | -0.26 (0.22) .22 |
| b | Level \* diabetes | --- | --- | --- | -0.11 (0.16) .49 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .65 | -0.00 (0.01) .55 | -0.00 (0.01) .60 |
| b | Slope \* height | --- | --- | 0.31 (0.31) .32 | 0.31 (0.31) .30 |
| b | Slope \* smoking | --- | --- | --- | -0.07 (0.04) .10 |
| b | Slope \* cardio | --- | --- | --- | 0.12 (0.09) .17 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.07) .40 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .51 | 0.00 (0.00) .51 | 0.00 (0.00) .53 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .49 | -0.00 (0.00) .54 | 0.00 (0.00) .92 | 0.00 (0.00) .92 |
| b | Var (Level) | 1.22 (0.15) <.01 | 1.14 (0.15) <.01 | 1.14 (0.15) <.01 | 1.13 (0.15) <.01 |
| b | Var (Slope) | 0.09 (0.03) <.01 | 0.09 (0.03) <.01 | 0.08 (0.03) <.01 | 0.08 (0.03) <.01 |
| b | Var (Residual) | 2.32 (0.12) <.01 | 2.32 (0.12) <.01 | 2.32 (0.12) <.01 | 2.33 (0.12) <.01 |
| b | Covar (Level, Slope) | 0.10 (0.06) .08 | 0.10 (0.06) .07 | 0.10 (0.06) .07 | 0.10 (0.05) .05 |
| ab | Covar (Levels) | 0.03 (0.02) .23 | 0.01 (0.02) .66 | 0.01 (0.02) .70 | 0.01 (0.02) .74 |
| ab | Covar (Slopes) | -0.00 (0.00) .40 | -0.00 (0.00) .39 | -0.00 (0.00) .38 | -0.00 (0.00) .42 |
| ab | Covar (Residuals) | -0.01 (0.01) .08 | -0.01 (0.01) .07 | -0.01 (0.01) .08 | -0.01 (0.01) .08 |
|  | Correlation of Levels | 0.070 | 0.026 | 0.022 | 0.020 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.056 | -0.056 | -0.056 | -0.056 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,875 | -13,421 | -12,232 | -13,364 |
|  | AIC | 21,795 | 26,901 | 24,541 | 26,864 |
|  | BIC | 21,908 | 27,049 | 24,728 | 27,198 |

## bstory\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *bstory\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .38 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .06 | 0.00 (0.00) .12 | 0.00 (0.00) .09 |
| a | Slope \* education | --- | 0.00 (0.00) .74 | 0.00 (0.00) .96 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .69 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .55 |
| b | Level | 9.99 (0.07) <.01 | 9.41 (0.14) <.01 | 9.42 (0.14) <.01 | 9.37 (0.16) <.01 |
| b | Slope | -0.01 (0.03) .79 | -0.06 (0.06) .26 | -0.06 (0.06) .27 | -0.03 (0.06) .59 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Level \* education | --- | 0.08 (0.02) <.01 | 0.07 (0.02) <.01 | 0.08 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.86 (0.70) .22 | 0.84 (0.71) .24 |
| b | Level \* smoking | --- | --- | --- | 0.03 (0.10) .74 |
| b | Level \* cardio | --- | --- | --- | -0.13 (0.20) .51 |
| b | Level \* diabetes | --- | --- | --- | 0.13 (0.15) .39 |
| b | Slope \* age | -0.00 (0.00) .08 | -0.00 (0.00) .07 | -0.00 (0.00) .12 | -0.00 (0.00) .10 |
| b | Slope \* education | --- | 0.01 (0.01) .24 | 0.01 (0.01) .30 | 0.01 (0.01) .34 |
| b | Slope \* height | --- | --- | 0.24 (0.26) .36 | 0.24 (0.26) .36 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.04) .22 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.08) .70 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.05) .98 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .48 | -0.00 (0.00) .52 | 0.00 (0.00) .91 | 0.00 (0.00) .93 |
| b | Var (Level) | 1.12 (0.12) <.01 | 1.07 (0.12) <.01 | 1.06 (0.11) <.01 | 1.06 (0.11) <.01 |
| b | Var (Slope) | 0.05 (0.02) .01 | 0.05 (0.02) .01 | 0.05 (0.02) .01 | 0.05 (0.02) .01 |
| b | Var (Residual) | 1.98 (0.07) <.01 | 1.98 (0.07) <.01 | 1.98 (0.07) <.01 | 1.98 (0.07) <.01 |
| b | Covar (Level, Slope) | -0.04 (0.04) .35 | -0.04 (0.04) .30 | -0.04 (0.04) .31 | -0.04 (0.04) .32 |
| ab | Covar (Levels) | 0.05 (0.02) .02 | 0.03 (0.02) .10 | 0.03 (0.02) .15 | 0.03 (0.02) .13 |
| ab | Covar (Slopes) | -0.00 (0.00) .43 | -0.00 (0.00) .42 | -0.00 (0.00) .42 | -0.00 (0.00) .40 |
| ab | Covar (Residuals) | -0.01 (0.01) .11 | -0.01 (0.01) .10 | -0.01 (0.01) .11 | -0.01 (0.01) .12 |
|  | Correlation of Levels | 0.123 | 0.093 | 0.081 | 0.082 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.043 | -0.043 | -0.043 | -0.039 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,514 | -13,057 | -11,867 | -13,000 |
|  | AIC | 21,075 | 26,174 | 23,811 | 26,135 |
|  | BIC | 21,188 | 26,321 | 23,998 | 26,470 |

## categories

Gender = *female*; Process (a) = *fev*; Process (b) = *categories*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .76 | 0.00 (0.00) .96 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .77 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .14 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .51 |
| b | Level | 37.98 (0.43) <.01 | 31.61 (0.69) <.01 | 31.79 (0.69) <.01 | 32.91 (0.76) <.01 |
| b | Slope | -0.00 (0.10) .99 | -0.02 (0.20) .91 | -0.02 (0.20) .91 | -0.05 (0.21) .80 |
| b | Level \* age | -0.29 (0.04) <.01 | -0.27 (0.03) <.01 | -0.25 (0.03) <.01 | -0.26 (0.03) <.01 |
| b | Level \* education | --- | 0.85 (0.08) <.01 | 0.81 (0.08) <.01 | 0.78 (0.08) <.01 |
| b | Level \* height | --- | --- | 12.61 (3.55) <.01 | 12.72 (3.54) <.01 |
| b | Level \* smoking | --- | --- | --- | -1.50 (0.46) <.01 |
| b | Level \* cardio | --- | --- | --- | -1.50 (0.78) .05 |
| b | Level \* diabetes | --- | --- | --- | -0.64 (0.78) .41 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | 0.00 (0.02) .90 | 0.00 (0.03) .93 | 0.00 (0.03) .94 |
| b | Slope \* height | --- | --- | 0.29 (0.98) .76 | 0.30 (0.98) .76 |
| b | Slope \* smoking | --- | --- | --- | 0.13 (0.13) .34 |
| b | Slope \* cardio | --- | --- | --- | -0.22 (0.27) .42 |
| b | Slope \* diabetes | --- | --- | --- | -0.09 (0.24) .70 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .51 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .53 | -0.00 (0.00) .57 | 0.00 (0.00) .96 | 0.00 (0.00) .95 |
| b | Var (Level) | 53.00 (3.49) <.01 | 46.19 (3.22) <.01 | 45.34 (3.16) <.01 | 44.42 (3.11) <.01 |
| b | Var (Slope) | 1.18 (0.27) <.01 | 1.18 (0.27) <.01 | 1.18 (0.27) <.01 | 1.17 (0.27) <.01 |
| b | Var (Residual) | 21.49 (0.79) <.01 | 21.48 (0.79) <.01 | 21.49 (0.79) <.01 | 21.49 (0.79) <.01 |
| b | Covar (Level, Slope) | -0.12 (0.71) .86 | -0.15 (0.65) .82 | -0.17 (0.65) .79 | -0.15 (0.64) .81 |
| ab | Covar (Levels) | 0.81 (0.11) <.01 | 0.65 (0.11) <.01 | 0.54 (0.10) <.01 | 0.49 (0.10) <.01 |
| ab | Covar (Slopes) | 0.00 (0.01) .93 | 0.00 (0.01) .96 | 0.00 (0.01) .96 | 0.00 (0.01) .99 |
| ab | Covar (Residuals) | -0.03 (0.02) .22 | -0.03 (0.02) .22 | -0.03 (0.02) .20 | -0.03 (0.02) .20 |
|  | Correlation of Levels | 0.309 | 0.269 | 0.239 | 0.221 |
|  | Correlation of Slopes | Inf | NaN | NaN | NaN |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.035 | -0.035 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -15,315 | -17,829 | -16,639 | -17,768 |
|  | AIC | 30,675 | 35,718 | 33,354 | 35,672 |
|  | BIC | 30,789 | 35,865 | 33,540 | 36,006 |

## digit\_b

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_b*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.61 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .11 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .69 | 0.00 (0.00) .98 | 0.00 (0.00) .99 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .07 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .66 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .17 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .46 |
| b | Level | 6.35 (0.10) <.01 | 5.11 (0.16) <.01 | 5.16 (0.16) <.01 | 5.19 (0.18) <.01 |
| b | Slope | -0.04 (0.02) .16 | 0.00 (0.05) .99 | -0.00 (0.05) .98 | -0.01 (0.05) .90 |
| b | Level \* age | -0.01 (0.01) .39 | -0.00 (0.01) .61 | 0.00 (0.01) .86 | 0.00 (0.01) .66 |
| b | Level \* education | --- | 0.17 (0.02) <.01 | 0.15 (0.02) <.01 | 0.15 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.23 (0.82) <.01 | 3.16 (0.82) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.00 (0.11) .98 |
| b | Level \* cardio | --- | --- | --- | -0.61 (0.18) <.01 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.20) .85 |
| b | Slope \* age | 0.00 (0.00) .58 | 0.00 (0.00) .65 | 0.00 (0.00) .57 | 0.00 (0.00) .78 |
| b | Slope \* education | --- | -0.00 (0.00) .35 | -0.00 (0.00) .33 | -0.00 (0.00) .33 |
| b | Slope \* height | --- | --- | 0.09 (0.24) .70 | 0.12 (0.24) .63 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.03) .93 |
| b | Slope \* cardio | --- | --- | --- | 0.21 (0.07) <.01 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.07) .65 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .40 | 0.00 (0.00) .40 | 0.00 (0.00) .50 | 0.00 (0.00) .41 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .30 | -0.00 (0.00) .34 | 0.00 (0.00) .87 | -0.00 (0.00) .65 |
| b | Var (Level) | 2.62 (0.17) <.01 | 2.38 (0.16) <.01 | 2.31 (0.16) <.01 | 2.30 (0.16) <.01 |
| b | Var (Slope) | 0.04 (0.01) .02 | 0.04 (0.01) .02 | 0.03 (0.01) .03 | 0.03 (0.01) .02 |
| b | Var (Residual) | 1.60 (0.06) <.01 | 1.60 (0.06) <.01 | 1.61 (0.06) <.01 | 1.60 (0.06) <.01 |
| b | Covar (Level, Slope) | -0.10 (0.04) .01 | -0.09 (0.04) .02 | -0.09 (0.04) .02 | -0.08 (0.04) .02 |
| ab | Covar (Levels) | 0.14 (0.03) <.01 | 0.11 (0.03) <.01 | 0.08 (0.02) <.01 | 0.08 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .10 | 0.00 (0.00) .10 | 0.00 (0.00) .04 | 0.00 (0.00) .10 |
| ab | Covar (Residuals) | -0.01 (0.01) .09 | -0.01 (0.01) .09 | -0.01 (0.01) .05 | -0.01 (0.01) .11 |
|  | Correlation of Levels | 0.240 | 0.200 | 0.161 | 0.152 |
|  | Correlation of Slopes | 0.500 | 0.500 | Inf | 0.514 |
|  | Correlation of Residuals | -0.044 | -0.049 | -0.053 | -0.044 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,460 | -12,987 | -11,793 | -12,922 |
|  | AIC | 20,966 | 26,034 | 23,662 | 25,980 |
|  | BIC | 21,079 | 26,182 | 23,849 | 26,315 |

## digit\_f

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_f*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.61 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .75 | 0.00 (0.00) .97 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .09 | -0.07 (0.04) .11 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .68 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .14 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .48 |
| b | Level | 8.36 (0.09) <.01 | 7.25 (0.17) <.01 | 7.29 (0.17) <.01 | 7.28 (0.20) <.01 |
| b | Slope | -0.01 (0.02) .62 | 0.03 (0.05) .57 | 0.03 (0.05) .61 | 0.04 (0.06) .46 |
| b | Level \* age | -0.00 (0.01) .62 | -0.00 (0.01) .89 | 0.00 (0.01) .56 | 0.00 (0.01) .55 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.14 (0.02) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.13 (0.81) <.01 | 3.13 (0.82) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.00 (0.11) .97 |
| b | Level \* cardio | --- | --- | --- | 0.03 (0.22) .90 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.19) .84 |
| b | Slope \* age | 0.00 (0.00) .87 | -0.00 (0.00) .79 | -0.00 (0.00) .68 | -0.00 (0.00) .71 |
| b | Slope \* education | --- | -0.01 (0.01) .36 | -0.00 (0.01) .44 | -0.00 (0.01) .41 |
| b | Slope \* height | --- | --- | -0.21 (0.25) .42 | -0.21 (0.26) .42 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.03) .75 |
| b | Slope \* cardio | --- | --- | --- | -0.10 (0.06) .11 |
| b | Slope \* diabetes | --- | --- | --- | -0.01 (0.06) .79 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .53 | 0.00 (0.00) .53 | 0.00 (0.00) .55 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .56 | -0.00 (0.00) .61 | 0.00 (0.00) .98 | 0.00 (0.00) .99 |
| b | Var (Level) | 2.43 (0.15) <.01 | 2.23 (0.14) <.01 | 2.18 (0.14) <.01 | 2.18 (0.14) <.01 |
| b | Var (Slope) | 0.02 (0.01) .16 | 0.02 (0.01) .15 | 0.02 (0.01) .16 | 0.02 (0.01) .19 |
| b | Var (Residual) | 1.60 (0.05) <.01 | 1.59 (0.05) <.01 | 1.59 (0.05) <.01 | 1.60 (0.05) <.01 |
| b | Covar (Level, Slope) | -0.02 (0.03) .57 | -0.01 (0.03) .72 | -0.01 (0.03) .81 | -0.01 (0.03) .86 |
| ab | Covar (Levels) | 0.12 (0.02) <.01 | 0.09 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .88 | 0.00 (0.00) .91 | 0.00 (0.00) .94 | 0.00 (0.00) .99 |
| ab | Covar (Residuals) | 0.01 (0.01) .21 | 0.01 (0.01) .22 | 0.01 (0.01) .23 | 0.01 (0.01) .22 |
|  | Correlation of Levels | 0.208 | 0.168 | 0.126 | 0.129 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.034 | 0.034 | 0.034 | 0.034 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,436 | -12,971 | -11,779 | -12,912 |
|  | AIC | 20,919 | 26,001 | 23,633 | 25,959 |
|  | BIC | 21,032 | 26,149 | 23,820 | 26,294 |

## digit\_o

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_o*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.61 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .39 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .75 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .74 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .16 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .51 |
| b | Level | 7.33 (0.07) <.01 | 6.39 (0.14) <.01 | 6.42 (0.14) <.01 | 6.50 (0.16) <.01 |
| b | Slope | 0.02 (0.02) .46 | 0.06 (0.04) .18 | 0.06 (0.04) .17 | 0.07 (0.05) .16 |
| b | Level \* age | -0.01 (0.01) .20 | -0.01 (0.01) .34 | -0.00 (0.01) .62 | -0.00 (0.01) .52 |
| b | Level \* education | --- | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Level \* height | --- | --- | 1.66 (0.58) <.01 | 1.68 (0.59) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.06 (0.08) .45 |
| b | Level \* cardio | --- | --- | --- | -0.11 (0.15) .48 |
| b | Level \* diabetes | --- | --- | --- | -0.14 (0.15) .37 |
| b | Slope \* age | -0.00 (0.00) .08 | -0.00 (0.00) .06 | -0.00 (0.00) .11 | -0.00 (0.00) .14 |
| b | Slope \* education | --- | -0.01 (0.00) .25 | -0.01 (0.00) .21 | -0.01 (0.00) .26 |
| b | Slope \* height | --- | --- | 0.22 (0.21) .31 | 0.21 (0.21) .33 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.03) .23 |
| b | Slope \* cardio | --- | --- | --- | -0.07 (0.06) .26 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.04) .18 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .51 | 0.00 (0.00) .51 | 0.00 (0.00) .53 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .51 | -0.00 (0.00) .55 | 0.00 (0.00) .92 | 0.00 (0.00) .94 |
| b | Var (Level) | 1.22 (0.12) <.01 | 1.08 (0.11) <.01 | 1.06 (0.11) <.01 | 1.05 (0.11) <.01 |
| b | Var (Slope) | 0.02 (0.01) .08 | 0.02 (0.01) .08 | 0.02 (0.01) .08 | 0.02 (0.01) .10 |
| b | Var (Residual) | 1.31 (0.06) <.01 | 1.31 (0.06) <.01 | 1.31 (0.06) <.01 | 1.31 (0.06) <.01 |
| b | Covar (Level, Slope) | -0.08 (0.03) .02 | -0.07 (0.03) .03 | -0.07 (0.03) .02 | -0.07 (0.03) .02 |
| ab | Covar (Levels) | 0.10 (0.02) <.01 | 0.08 (0.02) <.01 | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .34 | -0.00 (0.00) .33 | -0.00 (0.00) .30 | -0.00 (0.00) .31 |
| ab | Covar (Residuals) | 0.00 (0.00) .33 | 0.00 (0.00) .34 | 0.00 (0.00) .34 | 0.00 (0.00) .34 |
|  | Correlation of Levels | 0.264 | 0.223 | 0.197 | 0.192 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.027 | 0.027 | 0.027 | 0.027 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -9,809 | -12,333 | -11,142 | -12,272 |
|  | AIC | 19,663 | 24,726 | 22,360 | 24,679 |
|  | BIC | 19,777 | 24,874 | 22,546 | 25,013 |

## ideas

Gender = *female*; Process (a) = *fev*; Process (b) = *ideas*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .09 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .74 | 0.00 (0.00) .98 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .09 | -0.07 (0.04) .10 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .74 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .13 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .53 |
| b | Level | 7.65 (0.03) <.01 | 7.50 (0.06) <.01 | 7.51 (0.05) <.01 | 7.56 (0.06) <.01 |
| b | Slope | 0.02 (0.01) .04 | 0.03 (0.02) .06 | 0.03 (0.02) .06 | 0.02 (0.02) .34 |
| b | Level \* age | 0.00 (0.00) .14 | 0.00 (0.00) .10 | 0.00 (0.00) .07 | 0.00 (0.00) .12 |
| b | Level \* education | --- | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Level \* height | --- | --- | 0.36 (0.23) .12 | 0.38 (0.23) .11 |
| b | Level \* smoking | --- | --- | --- | -0.03 (0.03) .31 |
| b | Level \* cardio | --- | --- | --- | -0.05 (0.06) .42 |
| b | Level \* diabetes | --- | --- | --- | -0.11 (0.06) .07 |
| b | Slope \* age | -0.00 (0.00) .45 | -0.00 (0.00) .41 | -0.00 (0.00) .54 | 0.00 (0.00) .66 |
| b | Slope \* education | --- | -0.00 (0.00) .31 | -0.00 (0.00) .26 | -0.00 (0.00) .37 |
| b | Slope \* height | --- | --- | 0.08 (0.09) .37 | 0.07 (0.09) .39 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.01) .12 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.02) .45 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.02) .45 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .51 | 0.00 (0.00) .52 | 0.00 (0.00) .53 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | -0.00 (0.00) .55 | 0.00 (0.00) .92 | 0.00 (0.00) .91 |
| b | Var (Level) | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Var (Slope) | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .09 |
| b | Var (Residual) | 0.21 (0.01) <.01 | 0.21 (0.01) <.01 | 0.20 (0.01) <.01 | 0.20 (0.01) <.01 |
| b | Covar (Level, Slope) | -0.01 (0.01) .10 | -0.01 (0.01) .11 | -0.01 (0.01) .10 | -0.01 (0.01) .11 |
| ab | Covar (Levels) | 0.03 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .65 | 0.00 (0.00) .65 | 0.00 (0.00) .59 | 0.00 (0.00) .58 |
| ab | Covar (Residuals) | -0.00 (0.00) .54 | -0.00 (0.00) .54 | -0.00 (0.00) .56 | -0.00 (0.00) .55 |
|  | Correlation of Levels | 0.227 | 0.201 | 0.188 | 0.184 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | -0.013 | -0.013 | -0.013 | -0.013 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -6,464 | -9,020 | -7,830 | -8,961 |
|  | AIC | 12,974 | 18,101 | 15,737 | 18,058 |
|  | BIC | 13,088 | 18,248 | 15,924 | 18,393 |

## line

Gender = *female*; Process (a) = *fev*; Process (b) = *line*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.62 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.61 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .21 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .04 | 0.00 (0.00) .05 | 0.00 (0.00) .08 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .74 | 0.00 (0.00) .99 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .68 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .16 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .47 |
| b | Level | 9.74 (0.14) <.01 | 7.75 (0.27) <.01 | 7.86 (0.27) <.01 | 8.16 (0.30) <.01 |
| b | Slope | 0.01 (0.04) .68 | 0.00 (0.08) .99 | -0.01 (0.07) .93 | -0.04 (0.08) .64 |
| b | Level \* age | -0.02 (0.01) .16 | -0.01 (0.01) .30 | -0.01 (0.01) .38 | -0.01 (0.01) .26 |
| b | Level \* education | --- | 0.27 (0.03) <.01 | 0.25 (0.03) <.01 | 0.24 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.82 (1.26) .02 | 3.07 (1.28) .02 |
| b | Level \* smoking | --- | --- | --- | -0.28 (0.16) .09 |
| b | Level \* cardio | --- | --- | --- | 0.11 (0.32) .72 |
| b | Level \* diabetes | --- | --- | --- | -0.74 (0.29) .01 |
| b | Slope \* age | -0.00 (0.00) .63 | -0.00 (0.00) .58 | 0.00 (0.00) .98 | 0.00 (0.00) .98 |
| b | Slope \* education | --- | 0.00 (0.01) .82 | 0.00 (0.01) .92 | 0.00 (0.01) .80 |
| b | Slope \* height | --- | --- | 0.35 (0.35) .33 | 0.29 (0.36) .43 |
| b | Slope \* smoking | --- | --- | --- | 0.07 (0.05) .17 |
| b | Slope \* cardio | --- | --- | --- | -0.15 (0.09) .07 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.09) .50 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .51 | 0.00 (0.00) .54 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .52 | -0.00 (0.00) .56 | 0.00 (0.00) .96 | 0.00 (0.00) .94 |
| b | Var (Level) | 5.23 (0.38) <.01 | 4.57 (0.34) <.01 | 4.39 (0.34) <.01 | 4.45 (0.34) <.01 |
| b | Var (Slope) | 0.01 (0.03) .66 | 0.01 (0.03) .66 | 0.00 (0.03) .91 | 0.01 (0.03) .74 |
| b | Var (Residual) | 3.85 (0.16) <.01 | 3.85 (0.16) <.01 | 3.85 (0.17) <.01 | 3.85 (0.16) <.01 |
| b | Covar (Level, Slope) | 0.07 (0.08) .39 | 0.07 (0.08) .40 | 0.10 (0.08) .20 | 0.08 (0.08) .35 |
| ab | Covar (Levels) | 0.18 (0.04) <.01 | 0.13 (0.04) <.01 | 0.10 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .94 | 0.00 (0.00) .98 | 0.00 (0.00) .99 | 0.00 (0.00) .96 |
| ab | Covar (Residuals) | -0.01 (0.01) .08 | -0.01 (0.01) .08 | -0.01 (0.01) .08 | -0.01 (0.01) .08 |
|  | Correlation of Levels | 0.22 | 0.18 | 0.14 | 0.15 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | -0.04 | -0.04 | -0.04 | -0.04 |
|  | N | 1,010 | 1,010 | 951 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 29 | 68 |
|  | LL | -11,765 | -14,282 | -8,069 | -14,221 |
|  | AIC | 23,576 | 28,625 | 16,196 | 28,578 |
|  | BIC | 23,689 | 28,772 | 16,337 | 28,913 |

## logic\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *logic\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .24 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .39 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .06 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .80 | 0.00 (0.00) .93 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .09 | -0.07 (0.04) .10 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .68 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .12 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .53 |
| b | Level | 11.01 (0.19) <.01 | 8.25 (0.32) <.01 | 8.33 (0.32) <.01 | 8.49 (0.37) <.01 |
| b | Slope | 0.45 (0.05) <.01 | 0.25 (0.11) .02 | 0.26 (0.11) .02 | 0.27 (0.12) .03 |
| b | Level \* age | -0.12 (0.02) <.01 | -0.11 (0.02) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | --- | 0.37 (0.04) <.01 | 0.35 (0.04) <.01 | 0.34 (0.04) <.01 |
| b | Level \* height | --- | --- | 5.51 (1.54) <.01 | 5.51 (1.54) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.06 (0.22) .80 |
| b | Level \* cardio | --- | --- | --- | -0.29 (0.51) .57 |
| b | Level \* diabetes | --- | --- | --- | -0.39 (0.36) .28 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | 0.03 (0.01) .04 | 0.02 (0.01) .05 | 0.03 (0.01) .04 |
| b | Slope \* height | --- | --- | 0.29 (0.56) .60 | 0.28 (0.56) .61 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.07) .22 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.15) .88 |
| b | Slope \* diabetes | --- | --- | --- | 0.11 (0.12) .36 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .47 | -0.00 (0.00) .51 | 0.00 (0.00) .87 | 0.00 (0.00) .87 |
| b | Var (Level) | 12.27 (0.69) <.01 | 11.02 (0.67) <.01 | 10.85 (0.66) <.01 | 10.82 (0.66) <.01 |
| b | Var (Slope) | 0.27 (0.06) <.01 | 0.27 (0.06) <.01 | 0.27 (0.06) <.01 | 0.26 (0.06) <.01 |
| b | Var (Residual) | 5.86 (0.22) <.01 | 5.84 (0.22) <.01 | 5.84 (0.22) <.01 | 5.85 (0.22) <.01 |
| b | Covar (Level, Slope) | 0.20 (0.16) .21 | 0.11 (0.15) .47 | 0.10 (0.15) .50 | 0.11 (0.15) .46 |
| ab | Covar (Levels) | 0.15 (0.06) <.01 | 0.08 (0.05) .12 | 0.04 (0.05) .44 | 0.03 (0.05) .51 |
| ab | Covar (Slopes) | -0.01 (0.00) .23 | -0.01 (0.00) .22 | -0.01 (0.00) .23 | -0.01 (0.00) .22 |
| ab | Covar (Residuals) | -0.01 (0.01) .64 | -0.01 (0.01) .62 | -0.01 (0.01) .60 | -0.01 (0.01) .61 |
|  | Correlation of Levels | 0.121 | 0.071 | 0.035 | 0.030 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.015 | -0.015 | -0.018 | -0.018 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -12,906 | -15,421 | -14,228 | -15,361 |
|  | AIC | 25,858 | 30,901 | 28,532 | 30,858 |
|  | BIC | 25,971 | 31,049 | 28,719 | 31,192 |

## logic\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *logic\_im*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | ae | aeh | aehplus |
| a | Level | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | -0.03 (0.04) .39 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | 0.00 (0.00) .74 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | 0.00 (0.00) .70 |
| a | Slope \* cardio | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | -0.01 (0.01) .52 |
| b | Level | 9.92 (0.32) <.01 | 9.98 (0.32) <.01 | 10.20 (0.37) <.01 |
| b | Slope | 0.29 (0.10) <.01 | 0.29 (0.10) <.01 | 0.26 (0.12) .03 |
| b | Level \* age | -0.10 (0.02) <.01 | -0.09 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | 0.36 (0.04) <.01 | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 |
| b | Level \* height | --- | 4.30 (1.43) <.01 | 4.36 (1.42) <.01 |
| b | Level \* smoking | --- | --- | -0.20 (0.22) .35 |
| b | Level \* cardio | --- | --- | -0.35 (0.50) .48 |
| b | Level \* diabetes | --- | --- | -0.27 (0.36) .45 |
| b | Slope \* age | -0.01 (0.00) .03 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Slope \* education | 0.01 (0.01) .48 | 0.01 (0.01) .53 | 0.01 (0.01) .39 |
| b | Slope \* height | --- | 0.28 (0.51) .58 | 0.24 (0.52) .64 |
| b | Slope \* smoking | --- | --- | -0.04 (0.07) .49 |
| b | Slope \* cardio | --- | --- | 0.07 (0.14) .63 |
| b | Slope \* diabetes | --- | --- | 0.20 (0.12) .10 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .49 | 0.00 (0.00) .50 | 0.00 (0.00) .51 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | 0.00 (0.00) .87 | 0.00 (0.00) .88 |
| b | Var (Level) | 9.93 (0.63) <.01 | 9.83 (0.63) <.01 | 9.80 (0.63) <.01 |
| b | Var (Slope) | 0.22 (0.06) <.01 | 0.22 (0.06) <.01 | 0.22 (0.06) <.01 |
| b | Var (Residual) | 5.84 (0.21) <.01 | 5.84 (0.21) <.01 | 5.84 (0.21) <.01 |
| b | Covar (Level, Slope) | -0.19 (0.15) .21 | -0.20 (0.15) .19 | -0.19 (0.15) .21 |
| ab | Covar (Levels) | 0.10 (0.05) .05 | 0.06 (0.05) .19 | 0.05 (0.05) .26 |
| ab | Covar (Slopes) | -0.00 (0.00) .55 | -0.00 (0.00) .52 | -0.00 (0.00) .51 |
| ab | Covar (Residuals) | -0.01 (0.01) .59 | -0.01 (0.01) .58 | -0.01 (0.01) .60 |
|  | Correlation of Levels | 0.091 | 0.061 | 0.052 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.015 | -0.015 | -0.015 |
|  | N | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 30 | 38 | 68 |
|  | LL | -15,349 | -14,158 | -15,290 |
|  | AIC | 30,759 | 28,393 | 30,716 |
|  | BIC | 30,906 | 28,580 | 31,051 |

## matrices

Gender = *female*; Process (a) = *fev*; Process (b) = *matrices*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.61 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .39 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .73 | 0.00 (0.00) .99 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .10 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .66 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .52 |
| b | Level | 12.14 (0.14) <.01 | 9.57 (0.24) <.01 | 9.63 (0.24) <.01 | 9.75 (0.26) <.01 |
| b | Slope | 0.02 (0.04) .57 | 0.03 (0.08) .69 | 0.03 (0.08) .70 | 0.03 (0.09) .71 |
| b | Level \* age | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.34 (0.02) <.01 | 0.33 (0.02) <.01 | 0.32 (0.02) <.01 |
| b | Level \* height | --- | --- | 4.12 (1.16) <.01 | 4.10 (1.16) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.00 (0.14) .98 |
| b | Level \* cardio | --- | --- | --- | -0.39 (0.28) .16 |
| b | Level \* diabetes | --- | --- | --- | -0.33 (0.26) .19 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .86 | -0.00 (0.01) .77 | -0.00 (0.01) .79 |
| b | Slope \* height | --- | --- | 0.36 (0.36) .31 | 0.37 (0.36) .31 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.04) .83 |
| b | Slope \* cardio | --- | --- | --- | -0.01 (0.11) .94 |
| b | Slope \* diabetes | --- | --- | --- | 0.01 (0.08) .90 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .50 | 0.00 (0.00) .49 | 0.00 (0.00) .50 | 0.00 (0.00) .51 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | -0.00 (0.00) .53 | 0.00 (0.00) .90 | 0.00 (0.00) .90 |
| b | Var (Level) | 4.32 (0.32) <.01 | 3.19 (0.29) <.01 | 3.10 (0.29) <.01 | 3.08 (0.28) <.01 |
| b | Var (Slope) | 0.02 (0.03) .49 | 0.02 (0.03) .50 | 0.02 (0.03) .50 | 0.02 (0.03) .50 |
| b | Var (Residual) | 3.34 (0.20) <.01 | 3.34 (0.20) <.01 | 3.34 (0.20) <.01 | 3.34 (0.20) <.01 |
| b | Covar (Level, Slope) | -0.04 (0.08) .64 | -0.03 (0.08) .74 | -0.03 (0.08) .66 | -0.04 (0.08) .65 |
| ab | Covar (Levels) | 0.22 (0.03) <.01 | 0.15 (0.03) <.01 | 0.12 (0.03) <.01 | 0.12 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .39 | 0.00 (0.00) .41 | 0.00 (0.00) .40 | 0.00 (0.00) .40 |
| ab | Covar (Residuals) | -0.01 (0.01) .12 | -0.01 (0.01) .11 | -0.01 (0.01) .12 | -0.01 (0.01) .11 |
|  | Correlation of Levels | 0.293 | 0.244 | 0.202 | 0.202 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | -0.043 | -0.047 | -0.043 | -0.047 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,944 | -13,408 | -12,215 | -13,347 |
|  | AIC | 21,934 | 26,877 | 24,505 | 26,830 |
|  | BIC | 22,047 | 27,024 | 24,692 | 27,164 |

## mmse

Gender = *female*; Process (a) = *fev*; Process (b) = *mmse*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.63 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .41 |
| a | Slope \* age | 0.00 (0.00) .04 | 0.00 (0.00) .04 | 0.00 (0.00) .09 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .72 | 0.00 (0.00) .98 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .74 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .15 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .51 |
| b | Level | 28.77 (0.07) <.01 | 27.57 (0.15) <.01 | 27.59 (0.15) <.01 | 27.66 (0.16) <.01 |
| b | Slope | -0.03 (0.02) .30 | 0.07 (0.07) .26 | 0.07 (0.06) .25 | 0.05 (0.07) .49 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.16 (0.02) <.01 | 0.15 (0.02) <.01 | 0.15 (0.02) <.01 |
| b | Level \* height | --- | --- | 1.53 (0.63) .01 | 1.53 (0.63) .01 |
| b | Level \* smoking | --- | --- | --- | -0.09 (0.09) .32 |
| b | Level \* cardio | --- | --- | --- | -0.12 (0.17) .46 |
| b | Level \* diabetes | --- | --- | --- | -0.06 (0.17) .74 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.01 (0.01) .06 | -0.01 (0.01) .06 | -0.01 (0.01) .07 |
| b | Slope \* height | --- | --- | 0.03 (0.26) .92 | 0.02 (0.26) .94 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .56 |
| b | Slope \* cardio | --- | --- | --- | 0.06 (0.07) .34 |
| b | Slope \* diabetes | --- | --- | --- | 0.04 (0.07) .60 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .54 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .49 | -0.00 (0.00) .54 | 0.00 (0.00) .92 | 0.00 (0.00) .92 |
| b | Var (Level) | 1.22 (0.16) <.01 | 0.99 (0.14) <.01 | 0.97 (0.14) <.01 | 0.97 (0.14) <.01 |
| b | Var (Slope) | 0.08 (0.04) .04 | 0.07 (0.04) .05 | 0.07 (0.04) .05 | 0.07 (0.04) .05 |
| b | Var (Residual) | 1.64 (0.08) <.01 | 1.64 (0.08) <.01 | 1.64 (0.08) <.01 | 1.64 (0.08) <.01 |
| b | Covar (Level, Slope) | -0.01 (0.05) .83 | 0.01 (0.05) .84 | 0.01 (0.05) .85 | 0.01 (0.05) .84 |
| ab | Covar (Levels) | 0.06 (0.02) <.01 | 0.04 (0.02) .10 | 0.02 (0.02) .28 | 0.02 (0.02) .36 |
| ab | Covar (Slopes) | -0.00 (0.00) .73 | -0.00 (0.00) .70 | -0.00 (0.00) .66 | -0.00 (0.00) .64 |
| ab | Covar (Residuals) | 0.00 (0.00) .83 | 0.00 (0.00) .81 | 0.00 (0.00) .79 | 0.00 (0.00) .73 |
|  | Correlation of Levels | 0.1604 | 0.0993 | 0.0636 | 0.0523 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.0047 | 0.0048 | 0.0047 | 0.0095 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,314 | -12,824 | -11,634 | -12,767 |
|  | AIC | 20,674 | 25,707 | 23,343 | 25,670 |
|  | BIC | 20,787 | 25,855 | 23,530 | 26,004 |

## nart

Gender = *female*; Process (a) = *fev*; Process (b) = *nart*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .37 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .80 | 0.00 (0.00) .92 | 0.00 (0.00) .91 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .65 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .16 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .51 |
| b | Level | 7.50 (0.12) <.01 | 4.85 (0.20) <.01 | 4.90 (0.20) <.01 | 5.04 (0.22) <.01 |
| b | Slope | 0.03 (0.02) .10 | 0.04 (0.04) .38 | 0.04 (0.04) .39 | 0.04 (0.04) .38 |
| b | Level \* age | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.36 (0.02) <.01 | 0.34 (0.02) <.01 | 0.33 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.57 (0.88) <.01 | 3.56 (0.87) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.09 (0.12) .45 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.28) .73 |
| b | Level \* diabetes | --- | --- | --- | -0.65 (0.23) <.01 |
| b | Slope \* age | -0.00 (0.00) .29 | -0.00 (0.00) .27 | -0.00 (0.00) .30 | -0.00 (0.00) .33 |
| b | Slope \* education | --- | 0.00 (0.00) .93 | 0.00 (0.00) .93 | -0.00 (0.00) .89 |
| b | Slope \* height | --- | --- | 0.02 (0.16) .92 | 0.03 (0.16) .86 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.02) .86 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.05) .55 |
| b | Slope \* diabetes | --- | --- | --- | -0.02 (0.05) .64 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .51 | 0.00 (0.00) .52 | 0.00 (0.00) .53 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | -0.00 (0.00) .51 | 0.00 (0.00) .88 | 0.00 (0.00) .89 |
| b | Var (Level) | 4.77 (0.28) <.01 | 3.56 (0.21) <.01 | 3.49 (0.20) <.01 | 3.44 (0.20) <.01 |
| b | Var (Slope) | 0.02 (0.01) .06 | 0.02 (0.01) .06 | 0.02 (0.01) .06 | 0.02 (0.01) .06 |
| b | Var (Residual) | 0.71 (0.05) <.01 | 0.71 (0.05) <.01 | 0.71 (0.05) <.01 | 0.71 (0.05) <.01 |
| b | Covar (Level, Slope) | -0.04 (0.04) .26 | -0.04 (0.04) .22 | -0.04 (0.03) .21 | -0.04 (0.03) .21 |
| ab | Covar (Levels) | 0.20 (0.03) <.01 | 0.13 (0.03) <.01 | 0.10 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .66 | 0.00 (0.00) .71 | 0.00 (0.00) .66 | 0.00 (0.00) .73 |
| ab | Covar (Residuals) | 0.00 (0.00) .98 | 0.00 (0.00) .98 | 0.00 (0.00) .99 | 0.00 (0.00) .98 |
|  | Correlation of Levels | 0.25 | 0.2 | 0.16 | 0.16 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.00 | 0.0 | 0.00 | 0.00 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -9,554 | -11,992 | -10,801 | -11,928 |
|  | AIC | 19,154 | 24,044 | 21,678 | 23,991 |
|  | BIC | 19,267 | 24,192 | 21,864 | 24,326 |

## num\_comp

Gender = *female*; Process (a) = *fev*; Process (b) = *num\_comp*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.04 (0.04) .36 |
| a | Slope \* age | 0.00 (0.00) .04 | 0.00 (0.00) .05 | 0.00 (0.00) .09 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .76 | 0.00 (0.00) .96 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .69 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .13 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .53 |
| b | Level | 26.47 (0.36) <.01 | 21.89 (0.68) <.01 | 22.08 (0.67) <.01 | 23.14 (0.77) <.01 |
| b | Slope | 0.16 (0.08) .03 | 0.29 (0.15) .05 | 0.29 (0.15) .05 | 0.28 (0.16) .09 |
| b | Level \* age | -0.20 (0.03) <.01 | -0.19 (0.03) <.01 | -0.16 (0.03) <.01 | -0.18 (0.03) <.01 |
| b | Level \* education | --- | 0.61 (0.08) <.01 | 0.56 (0.08) <.01 | 0.52 (0.08) <.01 |
| b | Level \* height | --- | --- | 13.68 (2.92) <.01 | 13.80 (2.93) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.69 (0.41) .10 |
| b | Level \* cardio | --- | --- | --- | -0.71 (0.84) .40 |
| b | Level \* diabetes | --- | --- | --- | -2.16 (0.75) <.01 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | -0.02 (0.02) .34 | -0.02 (0.02) .35 | -0.01 (0.02) .44 |
| b | Slope \* height | --- | --- | -0.10 (0.72) .89 | -0.10 (0.72) .89 |
| b | Slope \* smoking | --- | --- | --- | -0.09 (0.10) .37 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.18) .84 |
| b | Slope \* diabetes | --- | --- | --- | 0.20 (0.21) .34 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .49 | 0.00 (0.00) .50 | 0.00 (0.00) .50 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | -0.00 (0.00) .54 | 0.00 (0.00) .92 | 0.00 (0.00) .92 |
| b | Var (Level) | 38.77 (2.37) <.01 | 35.21 (2.24) <.01 | 34.17 (2.21) <.01 | 33.58 (2.14) <.01 |
| b | Var (Slope) | 0.36 (0.15) .02 | 0.36 (0.15) .02 | 0.36 (0.15) .02 | 0.36 (0.15) .02 |
| b | Var (Residual) | 15.00 (0.80) <.01 | 14.99 (0.80) <.01 | 15.00 (0.80) <.01 | 14.99 (0.80) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.44) .99 | 0.09 (0.43) .83 | 0.10 (0.43) .81 | 0.13 (0.42) .75 |
| ab | Covar (Levels) | 0.54 (0.09) <.01 | 0.43 (0.09) <.01 | 0.31 (0.08) <.01 | 0.28 (0.08) <.01 |
| ab | Covar (Slopes) | -0.00 (0.01) .48 | -0.00 (0.01) .45 | -0.00 (0.01) .47 | -0.00 (0.01) .47 |
| ab | Covar (Residuals) | 0.00 (0.02) .99 | 0.00 (0.02) .99 | 0.00 (0.02) .99 | 0.00 (0.02) .96 |
|  | Correlation of Levels | 0.24 | 0.2 | 0.16 | 0.1474 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.00 | 0.0 | 0.00 | 0.0016 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -14,378 | -16,908 | -15,715 | -16,843 |
|  | AIC | 28,801 | 33,876 | 31,506 | 33,822 |
|  | BIC | 28,914 | 34,024 | 31,693 | 34,156 |

## symbol

Gender = *female*; Process (a) = *fev*; Process (b) = *symbol*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.63 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .24 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .04 | 0.00 (0.00) .05 | 0.00 (0.00) .09 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .74 | 0.00 (0.00) .98 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .10 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .68 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .13 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .49 |
| b | Level | 9.74 (0.14) <.01 | 7.75 (0.27) <.01 | 7.79 (0.27) <.01 | 35.46 (1.05) <.01 |
| b | Slope | 0.01 (0.04) .68 | 0.00 (0.08) .99 | 0.00 (0.07) .97 | 0.50 (0.22) .02 |
| b | Level \* age | -0.02 (0.01) .16 | -0.01 (0.01) .30 | -0.01 (0.01) .56 | -0.37 (0.04) <.01 |
| b | Level \* education | --- | 0.27 (0.03) <.01 | 0.26 (0.03) <.01 | 1.01 (0.10) <.01 |
| b | Level \* height | --- | --- | 2.97 (1.29) .02 | 14.85 (3.91) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.78 (0.56) .16 |
| b | Level \* cardio | --- | --- | --- | -1.38 (1.19) .25 |
| b | Level \* diabetes | --- | --- | --- | -3.06 (1.01) <.01 |
| b | Slope \* age | -0.00 (0.00) .63 | -0.00 (0.00) .58 | -0.00 (0.00) .74 | -0.06 (0.01) <.01 |
| b | Slope \* education | --- | 0.00 (0.01) .82 | 0.00 (0.01) .92 | -0.04 (0.02) .07 |
| b | Slope \* height | --- | --- | 0.31 (0.36) .39 | 2.15 (1.08) .05 |
| b | Slope \* smoking | --- | --- | --- | -0.16 (0.14) .26 |
| b | Slope \* cardio | --- | --- | --- | 0.13 (0.25) .61 |
| b | Slope \* diabetes | --- | --- | --- | -0.28 (0.27) .30 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .51 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .52 | -0.00 (0.00) .56 | 0.00 (0.00) .94 | 0.00 (0.00) .90 |
| b | Var (Level) | 5.23 (0.38) <.01 | 4.57 (0.34) <.01 | 4.52 (0.34) <.01 | 65.47 (4.58) <.01 |
| b | Var (Slope) | 0.01 (0.03) .66 | 0.01 (0.03) .66 | 0.01 (0.03) .66 | 0.98 (0.31) <.01 |
| b | Var (Residual) | 3.85 (0.16) <.01 | 3.85 (0.16) <.01 | 3.85 (0.16) <.01 | 23.68 (1.34) <.01 |
| b | Covar (Level, Slope) | 0.07 (0.08) .39 | 0.07 (0.08) .40 | 0.07 (0.08) .42 | 1.70 (0.83) .04 |
| ab | Covar (Levels) | 0.18 (0.04) <.01 | 0.13 (0.04) <.01 | 0.11 (0.04) <.01 | 0.48 (0.11) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .94 | 0.00 (0.00) .98 | 0.00 (0.00) .98 | -0.00 (0.01) .53 |
| ab | Covar (Residuals) | -0.01 (0.01) .08 | -0.01 (0.01) .08 | -0.01 (0.01) .07 | 0.01 (0.03) .69 |
|  | Correlation of Levels | 0.22 | 0.18 | 0.15 | 0.179 |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf |
|  | Correlation of Residuals | -0.04 | -0.04 | -0.04 | 0.014 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -11,765 | -14,282 | -13,093 | -17,753 |
|  | AIC | 23,576 | 28,625 | 26,261 | 35,642 |
|  | BIC | 23,689 | 28,772 | 26,448 | 35,977 |

## word\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .40 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .77 | 0.00 (0.00) .94 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .08 | -0.07 (0.04) .09 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .69 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .14 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .49 |
| b | Level | 6.40 (0.10) <.01 | 5.28 (0.18) <.01 | 5.32 (0.18) <.01 | 5.57 (0.20) <.01 |
| b | Slope | 0.13 (0.03) <.01 | 0.12 (0.05) .03 | 0.12 (0.05) .03 | 0.12 (0.06) .03 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.14 (0.02) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.73 (0.87) <.01 | 2.75 (0.86) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.34 (0.12) <.01 |
| b | Level \* cardio | --- | --- | --- | -0.46 (0.28) .10 |
| b | Level \* diabetes | --- | --- | --- | -0.09 (0.19) .63 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | 0.00 (0.01) .71 | 0.00 (0.01) .74 | 0.00 (0.01) .77 |
| b | Slope \* height | --- | --- | 0.08 (0.28) .77 | 0.10 (0.28) .74 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.04) .80 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.07) .79 |
| b | Slope \* diabetes | --- | --- | --- | -0.02 (0.05) .66 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .54 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .50 | -0.00 (0.00) .55 | 0.00 (0.00) .93 | 0.00 (0.00) .94 |
| b | Var (Level) | 3.02 (0.21) <.01 | 2.82 (0.20) <.01 | 2.77 (0.19) <.01 | 2.72 (0.19) <.01 |
| b | Var (Slope) | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 |
| b | Var (Residual) | 1.75 (0.08) <.01 | 1.75 (0.08) <.01 | 1.75 (0.08) <.01 | 1.75 (0.08) <.01 |
| b | Covar (Level, Slope) | 0.01 (0.04) .88 | 0.00 (0.04) .92 | 0.00 (0.04) .93 | 0.00 (0.04) .92 |
| ab | Covar (Levels) | 0.09 (0.03) <.01 | 0.06 (0.03) .02 | 0.04 (0.03) .10 | 0.03 (0.02) .22 |
| ab | Covar (Slopes) | -0.00 (0.00) .78 | -0.00 (0.00) .74 | -0.00 (0.00) .73 | -0.00 (0.00) .70 |
| ab | Covar (Residuals) | 0.00 (0.01) .89 | 0.00 (0.01) .92 | 0.00 (0.01) .98 | 0.00 (0.01) .94 |
|  | Correlation of Levels | 0.1468 | 0.1074 | 0.075 | 0.055 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.0046 | 0.0046 | 0.000 | 0.000 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -10,674 | -13,210 | -12,019 | -13,147 |
|  | AIC | 21,393 | 26,480 | 24,113 | 26,429 |
|  | BIC | 21,507 | 26,627 | 24,300 | 26,763 |

## word\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .23 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .37 |
| a | Slope \* age | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .07 |
| a | Slope \* education | --- | 0.00 (0.00) .76 | 0.00 (0.00) .96 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | -0.07 (0.04) .10 | -0.07 (0.04) .11 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .74 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .11 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .51 |
| b | Level | 19.23 (0.19) <.01 | 16.41 (0.35) <.01 | 16.47 (0.35) <.01 | 16.83 (0.39) <.01 |
| b | Slope | 0.37 (0.05) <.01 | 0.40 (0.11) <.01 | 0.40 (0.11) <.01 | 0.40 (0.12) <.01 |
| b | Level \* age | -0.13 (0.02) <.01 | -0.12 (0.02) <.01 | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 |
| b | Level \* education | --- | 0.38 (0.04) <.01 | 0.36 (0.04) <.01 | 0.36 (0.04) <.01 |
| b | Level \* height | --- | --- | 5.04 (1.64) <.01 | 5.11 (1.62) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.61 (0.22) .01 |
| b | Level \* cardio | --- | --- | --- | -0.66 (0.51) .19 |
| b | Level \* diabetes | --- | --- | --- | 0.12 (0.42) .77 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .74 | -0.00 (0.01) .75 | -0.00 (0.01) .81 |
| b | Slope \* height | --- | --- | -0.02 (0.52) .97 | -0.03 (0.52) .95 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.08) .60 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.15) .89 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.13) .57 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .48 | 0.00 (0.00) .48 | 0.00 (0.00) .48 | 0.00 (0.00) .49 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .53 | -0.00 (0.00) .57 | 0.00 (0.00) .92 | 0.00 (0.00) .92 |
| b | Var (Level) | 11.54 (0.73) <.01 | 10.19 (0.69) <.01 | 10.06 (0.69) <.01 | 9.89 (0.68) <.01 |
| b | Var (Slope) | 0.37 (0.08) <.01 | 0.37 (0.08) <.01 | 0.37 (0.08) <.01 | 0.36 (0.08) <.01 |
| b | Var (Residual) | 5.84 (0.20) <.01 | 5.84 (0.20) <.01 | 5.84 (0.20) <.01 | 5.85 (0.20) <.01 |
| b | Covar (Level, Slope) | -0.09 (0.18) .63 | -0.07 (0.18) .68 | -0.07 (0.18) .67 | -0.08 (0.17) .65 |
| ab | Covar (Levels) | 0.26 (0.05) <.01 | 0.18 (0.05) <.01 | 0.14 (0.05) <.01 | 0.13 (0.05) <.01 |
| ab | Covar (Slopes) | -0.01 (0.01) .13 | -0.01 (0.01) .12 | -0.01 (0.01) .12 | -0.01 (0.01) .11 |
| ab | Covar (Residuals) | 0.02 (0.01) .22 | 0.02 (0.01) .23 | 0.02 (0.01) .24 | 0.02 (0.01) .23 |
|  | Correlation of Levels | 0.208 | 0.161 | 0.137 | 0.122 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.045 | 0.044 | 0.044 | 0.044 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -12,878 | -15,399 | -14,209 | -15,337 |
|  | AIC | 25,803 | 30,857 | 28,493 | 30,811 |
|  | BIC | 25,916 | 31,005 | 28,680 | 31,145 |

## word\_rec

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_rec*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 1.74 (0.02) <.01 | 1.59 (0.03) <.01 | 1.61 (0.03) <.01 | 1.68 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.03 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.62 (0.22) <.01 | 1.64 (0.22) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.09 (0.02) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.06 (0.05) .22 |
| a | Level \* diabetes | --- | --- | --- | -0.03 (0.04) .41 |
| a | Slope \* age | 0.00 (0.00) .06 | 0.00 (0.00) .06 | 0.00 (0.00) .10 | 0.00 (0.00) .08 |
| a | Slope \* education | --- | 0.00 (0.00) .61 | 0.00 (0.00) .92 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.08 (0.04) .07 | -0.07 (0.04) .08 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.00) .61 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .32 |
| a | Slope \* diabetes | --- | --- | --- | -0.01 (0.01) .55 |
| b | Level | 9.81 (0.03) <.01 | 9.70 (0.07) <.01 | 9.71 (0.07) <.01 | 9.75 (0.09) <.01 |
| b | Slope | 0.01 (0.01) .09 | 0.01 (0.02) .76 | 0.01 (0.02) .72 | 0.01 (0.03) .80 |
| b | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Level \* education | --- | 0.01 (0.01) .07 | 0.01 (0.01) .15 | 0.01 (0.01) .19 |
| b | Level \* height | --- | --- | 0.59 (0.44) .18 | 0.59 (0.44) .18 |
| b | Level \* smoking | --- | --- | --- | -0.06 (0.05) .20 |
| b | Level \* cardio | --- | --- | --- | -0.19 (0.16) .25 |
| b | Level \* diabetes | --- | --- | --- | 0.02 (0.10) .85 |
| b | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .07 | -0.00 (0.00) .08 |
| b | Slope \* education | --- | 0.00 (0.00) .73 | 0.00 (0.00) .88 | 0.00 (0.00) .88 |
| b | Slope \* height | --- | --- | 0.16 (0.12) .19 | 0.16 (0.12) .19 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.02) .92 |
| b | Slope \* cardio | --- | --- | --- | 0.03 (0.02) .30 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.02) .89 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .43 | 0.00 (0.00) .44 | 0.00 (0.00) .44 | 0.00 (0.00) .45 |
| a | Var (Residual) | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 | 0.03 (0.00) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .27 | -0.00 (0.00) .32 | -0.00 (0.00) .61 | -0.00 (0.00) .63 |
| b | Var (Level) | 0.56 (0.15) <.01 | 0.56 (0.15) <.01 | 0.56 (0.15) <.01 | 0.56 (0.15) <.01 |
| b | Var (Slope) | 0.00 (0.01) .70 | 0.00 (0.01) .70 | 0.00 (0.01) .71 | 0.00 (0.01) .72 |
| b | Var (Residual) | 0.33 (0.06) <.01 | 0.33 (0.06) <.01 | 0.33 (0.06) <.01 | 0.33 (0.06) <.01 |
| b | Covar (Level, Slope) | 0.01 (0.03) .68 | 0.01 (0.03) .68 | 0.01 (0.03) .69 | 0.01 (0.03) .68 |
| ab | Covar (Levels) | 0.02 (0.02) .29 | 0.01 (0.02) .40 | 0.01 (0.01) .54 | 0.01 (0.01) .66 |
| ab | Covar (Slopes) | 0.00 (0.00) .90 | 0.00 (0.00) .90 | 0.00 (0.00) .90 | 0.00 (0.00) .93 |
| ab | Covar (Residuals) | 0.00 (0.00) .93 | 0.00 (0.00) .95 | 0.00 (0.00) .97 | 0.00 (0.00) .96 |
|  | Correlation of Levels | 0.062 | 0.052 | 0.036 | 0.028 |
|  | Correlation of Slopes | 0.000 | 0.000 | 0.000 | 0.000 |
|  | Correlation of Residuals | 0.000 | 0.000 | 0.000 | 0.000 |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -7,711 | -10,271 | -9,081 | -10,214 |
|  | AIC | 15,468 | 20,602 | 18,239 | 20,564 |
|  | BIC | 15,581 | 20,750 | 18,426 | 20,898 |

## Summary

Study = *MAP*; Gender = *female*; Process (a) = *fev*

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | bnt | 0.16 | 0.11 | 0.05 | 0.05 |
| Correlation of Levels | bstory\_de | 0.07 | 0.03 | 0.02 | 0.02 |
| Correlation of Levels | bstory\_im | 0.12 | 0.09 | 0.08 | 0.08 |
| Correlation of Levels | categories | 0.31 | 0.27 | 0.24 | 0.22 |
| Correlation of Levels | digit\_b | 0.24 | 0.20 | 0.16 | 0.15 |
| Correlation of Levels | digit\_f | 0.21 | 0.17 | 0.13 | 0.13 |
| Correlation of Levels | digit\_o | 0.26 | 0.22 | 0.20 | 0.19 |
| Correlation of Levels | ideas | 0.23 | 0.20 | 0.19 | 0.18 |
| Correlation of Levels | line | 0.22 | 0.18 | 0.14 | 0.15 |
| Correlation of Levels | logic\_de | 0.12 | 0.07 | 0.04 | 0.03 |
| Correlation of Levels | logic\_im | . | 0.09 | 0.06 | 0.05 |
| Correlation of Levels | matrices | 0.29 | 0.24 | 0.20 | 0.20 |
| Correlation of Levels | mmse | 0.16 | 0.10 | 0.06 | 0.05 |
| Correlation of Levels | nart | 0.25 | 0.20 | 0.16 | 0.16 |
| Correlation of Levels | num\_comp | 0.24 | 0.20 | 0.16 | 0.15 |
| Correlation of Levels | symbol | 0.22 | 0.18 | 0.15 | 0.18 |
| Correlation of Levels | word\_de | 0.15 | 0.11 | 0.08 | 0.06 |
| Correlation of Levels | word\_im | 0.21 | 0.16 | 0.14 | 0.12 |
| Correlation of Levels | word\_rec | 0.06 | 0.05 | 0.04 | 0.03 |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | bnt | Inf | Inf | NaN | NaN |
| Correlation of Slopes | bstory\_de | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | bstory\_im | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | categories | Inf | NaN | NaN | NaN |
| Correlation of Slopes | digit\_b | 0.50 | 0.50 | Inf | 0.51 |
| Correlation of Slopes | digit\_f | NaN | NaN | NaN | NaN |
| Correlation of Slopes | digit\_o | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | ideas | NaN | NaN | NaN | NaN |
| Correlation of Slopes | line | NaN | NaN | NaN | NaN |
| Correlation of Slopes | logic\_de | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | logic\_im | . | -Inf | -Inf | -Inf |
| Correlation of Slopes | matrices | Inf | Inf | Inf | Inf |
| Correlation of Slopes | mmse | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | nart | NaN | NaN | NaN | NaN |
| Correlation of Slopes | num\_comp | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | symbol | NaN | NaN | NaN | -Inf |
| Correlation of Slopes | word\_de | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | word\_im | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | word\_rec | 0.00 | 0.00 | 0.00 | 0.00 |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | bnt | -0.02 | -0.02 | -0.02 | -0.02 |
| Correlation of Residuals | bstory\_de | -0.06 | -0.06 | -0.06 | -0.06 |
| Correlation of Residuals | bstory\_im | -0.04 | -0.04 | -0.04 | -0.04 |
| Correlation of Residuals | categories | -0.03 | -0.03 | -0.04 | -0.04 |
| Correlation of Residuals | digit\_b | -0.04 | -0.05 | -0.05 | -0.04 |
| Correlation of Residuals | digit\_f | 0.03 | 0.03 | 0.03 | 0.03 |
| Correlation of Residuals | digit\_o | 0.03 | 0.03 | 0.03 | 0.03 |
| Correlation of Residuals | ideas | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | line | -0.04 | -0.04 | -0.04 | -0.04 |
| Correlation of Residuals | logic\_de | -0.02 | -0.02 | -0.02 | -0.02 |
| Correlation of Residuals | logic\_im | . | -0.02 | -0.02 | -0.02 |
| Correlation of Residuals | matrices | -0.04 | -0.05 | -0.04 | -0.05 |
| Correlation of Residuals | mmse | 0.00 | 0.00 | 0.00 | 0.01 |
| Correlation of Residuals | nart | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Residuals | num\_comp | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Residuals | symbol | -0.04 | -0.04 | -0.04 | 0.01 |
| Correlation of Residuals | word\_de | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Residuals | word\_im | 0.05 | 0.04 | 0.04 | 0.04 |
| Correlation of Residuals | word\_rec | 0.00 | 0.00 | 0.00 | 0.00 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | bnt | 0.00 | 0.04 | 0.29 | 0.32 |
| Covariance of Levels | bstory\_de | 0.23 | 0.66 | 0.70 | 0.74 |
| Covariance of Levels | bstory\_im | 0.02 | 0.10 | 0.15 | 0.13 |
| Covariance of Levels | categories | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_b | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_f | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_o | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | ideas | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | line | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | logic\_de | 0.00 | 0.12 | 0.44 | 0.51 |
| Covariance of Levels | logic\_im | . | 0.05 | 0.19 | 0.26 |
| Covariance of Levels | matrices | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | mmse | 0.00 | 0.10 | 0.28 | 0.36 |
| Covariance of Levels | nart | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | num\_comp | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | symbol | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | word\_de | 0.00 | 0.02 | 0.10 | 0.22 |
| Covariance of Levels | word\_im | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | word\_rec | 0.29 | 0.40 | 0.54 | 0.66 |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | bnt | 0.62 | 0.66 | 0.75 | 0.72 |
| Covariance of Slopes | bstory\_de | 0.40 | 0.39 | 0.38 | 0.42 |
| Covariance of Slopes | bstory\_im | 0.43 | 0.42 | 0.42 | 0.40 |
| Covariance of Slopes | categories | 0.93 | 0.96 | 0.96 | 0.99 |
| Covariance of Slopes | digit\_b | 0.10 | 0.10 | 0.04 | 0.10 |
| Covariance of Slopes | digit\_f | 0.88 | 0.91 | 0.94 | 0.99 |
| Covariance of Slopes | digit\_o | 0.34 | 0.33 | 0.30 | 0.31 |
| Covariance of Slopes | ideas | 0.65 | 0.65 | 0.59 | 0.58 |
| Covariance of Slopes | line | 0.94 | 0.98 | 1.00 | 0.96 |
| Covariance of Slopes | logic\_de | 0.23 | 0.22 | 0.23 | 0.22 |
| Covariance of Slopes | logic\_im | . | 0.55 | 0.52 | 0.51 |
| Covariance of Slopes | matrices | 0.39 | 0.41 | 0.40 | 0.40 |
| Covariance of Slopes | mmse | 0.73 | 0.70 | 0.66 | 0.64 |
| Covariance of Slopes | nart | 0.66 | 0.71 | 0.66 | 0.73 |
| Covariance of Slopes | num\_comp | 0.48 | 0.45 | 0.47 | 0.47 |
| Covariance of Slopes | symbol | 0.94 | 0.98 | 0.98 | 0.53 |
| Covariance of Slopes | word\_de | 0.78 | 0.74 | 0.73 | 0.70 |
| Covariance of Slopes | word\_im | 0.13 | 0.12 | 0.12 | 0.11 |
| Covariance of Slopes | word\_rec | 0.90 | 0.90 | 0.90 | 0.93 |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | bnt | 0.60 | 0.58 | 0.60 | 0.61 |
| Covariance of Residuals | bstory\_de | 0.08 | 0.07 | 0.08 | 0.08 |
| Covariance of Residuals | bstory\_im | 0.11 | 0.10 | 0.11 | 0.12 |
| Covariance of Residuals | categories | 0.22 | 0.22 | 0.20 | 0.20 |
| Covariance of Residuals | digit\_b | 0.09 | 0.09 | 0.05 | 0.11 |
| Covariance of Residuals | digit\_f | 0.21 | 0.22 | 0.23 | 0.22 |
| Covariance of Residuals | digit\_o | 0.33 | 0.34 | 0.34 | 0.34 |
| Covariance of Residuals | ideas | 0.54 | 0.54 | 0.56 | 0.55 |
| Covariance of Residuals | line | 0.08 | 0.08 | 0.08 | 0.08 |
| Covariance of Residuals | logic\_de | 0.64 | 0.62 | 0.60 | 0.61 |
| Covariance of Residuals | logic\_im | . | 0.59 | 0.58 | 0.60 |
| Covariance of Residuals | matrices | 0.12 | 0.11 | 0.12 | 0.11 |
| Covariance of Residuals | mmse | 0.83 | 0.81 | 0.79 | 0.73 |
| Covariance of Residuals | nart | 0.98 | 0.98 | 0.99 | 0.98 |
| Covariance of Residuals | num\_comp | 0.99 | 1.00 | 1.00 | 0.96 |
| Covariance of Residuals | symbol | 0.08 | 0.08 | 0.07 | 0.69 |
| Covariance of Residuals | word\_de | 0.89 | 0.92 | 0.98 | 0.94 |
| Covariance of Residuals | word\_im | 0.22 | 0.23 | 0.24 | 0.23 |
| Covariance of Residuals | word\_rec | 0.93 | 0.95 | 0.97 | 0.96 |

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *bnt*, *bstory\_de*, *bstory\_im*, *categories*, *digit\_b*, *digit\_f*, *digit\_o*, *ideas*, *line*, *logic\_de*, *logic\_im*, *matrices*, *mmse*, *nart*, *num\_comp*, *symbol*, *word\_de*, *word\_im*, *word\_rec*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | matrices | mmse | nart | num\_comp | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| a | Level | 2.41 (0.11) <.01 | 2.40 (0.11) <.01 | 2.41 (0.11) <.01 | 2.41 (0.11) <.01 | 2.41 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.41 (0.11) <.01 | 2.41 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.41 (0.11) <.01 | 2.41 (0.11) <.01 | 2.41 (0.11) <.01 | 2.40 (0.11) <.01 | 2.40 (0.11) <.01 | 2.41(0.00) |
| a | Slope | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08(0.00) |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03(0.00) |
| a | Level \* education | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .03 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .03 | 0.02 (0.01) .04 | 0.02(0.00) |
| a | Level \* height | 1.70 (0.45) <.01 | 1.70 (0.45) <.01 | 1.70 (0.45) <.01 | 1.67 (0.45) <.01 | 1.70 (0.45) <.01 | 1.69 (0.45) <.01 | 1.71 (0.45) <.01 | 1.72 (0.45) <.01 | 1.68 (0.45) <.01 | 1.70 (0.45) <.01 | 1.71 (0.45) <.01 | 1.74 (0.45) <.01 | 1.70 (0.45) <.01 | 1.69 (0.45) <.01 | 1.68 (0.45) <.01 | 1.67 (0.45) <.01 | 1.69 (0.45) <.01 | 1.67 (0.45) <.01 | 1.72 (0.45) <.01 | 1.70(0.02) |
| a | Level \* smoking | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.06) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22 (0.07) <.01 | -0.22(0.00) |
| a | Level \* cardio | -0.09 (0.09) .32 | -0.09 (0.09) .32 | -0.09 (0.09) .32 | -0.10 (0.09) .28 | -0.09 (0.09) .30 | -0.09 (0.09) .32 | -0.09 (0.09) .32 | -0.09 (0.09) .32 | -0.09 (0.09) .30 | -0.09 (0.09) .30 | -0.10 (0.09) .30 | -0.09 (0.09) .33 | -0.09 (0.09) .32 | -0.09 (0.09) .33 | -0.10 (0.09) .30 | -0.10 (0.09) .29 | -0.09 (0.09) .31 | -0.09 (0.09) .32 | -0.09 (0.09) .31 | -0.09(0.00) |
| a | Level \* diabetes | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.23 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.23 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24 (0.08) <.01 | -0.23 (0.08) <.01 | -0.24 (0.08) <.01 | -0.24(0.00) |
| a | Slope \* age | 0.00 (0.00) .69 | 0.00 (0.00) .86 | 0.00 (0.00) .87 | 0.00 (0.00) .77 | 0.00 (0.00) .77 | 0.00 (0.00) .79 | 0.00 (0.00) .78 | 0.00 (0.00) .67 | 0.00 (0.00) .76 | 0.00 (0.00) .85 | 0.00 (0.00) .78 | 0.00 (0.00) .87 | -0.00 (0.00) .67 | 0.00 (0.00) .80 | 0.00 (0.00) .80 | 0.00 (0.00) .78 | 0.00 (0.00) .80 | 0.00 (0.00) .83 | 0.00 (0.00) .87 | -0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .92 | 0.00 (0.00) .97 | 0.00 (0.00) .98 | 0.00 (0.00) .92 | 0.00 (0.00) .99 | 0.00 (0.00) .89 | 0.00 (0.00) .98 | 0.00 (0.00) .86 | 0.00 (0.00) .92 | 0.00 (0.00) .99 | 0.00 (0.00) .96 | 0.00 (0.00) .97 | 0.00 (0.00) .90 | 0.00 (0.00) .96 | 0.00 (0.00) .97 | 0.00 (0.00) .95 | 0.00 (0.00) .99 | 0.00 (0.00) .92 | 0.00 (0.00) .94 | 0.00(0.00) |
| a | Slope \* height | 0.10 (0.12) .42 | 0.10 (0.13) .43 | 0.10 (0.12) .43 | 0.09 (0.13) .48 | 0.10 (0.13) .45 | 0.10 (0.12) .42 | 0.10 (0.12) .42 | 0.10 (0.12) .43 | 0.10 (0.12) .43 | 0.10 (0.12) .40 | 0.10 (0.12) .42 | 0.09 (0.13) .46 | 0.10 (0.12) .40 | 0.09 (0.13) .48 | 0.10 (0.12) .42 | 0.09 (0.13) .46 | 0.10 (0.12) .43 | 0.10 (0.12) .43 | 0.10 (0.12) .43 | 0.10(0.00) |
| a | Slope \* smoking | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) <.01 | 0.04(0.00) |
| a | Slope \* cardio | -0.02 (0.02) .29 | -0.02 (0.02) .18 | -0.02 (0.02) .17 | -0.02 (0.02) .20 | -0.02 (0.02) .19 | -0.02 (0.02) .17 | -0.02 (0.02) .17 | -0.02 (0.02) .20 | -0.02 (0.02) .16 | -0.02 (0.02) .15 | -0.02 (0.02) .17 | -0.02 (0.02) .17 | -0.02 (0.02) .20 | -0.02 (0.02) .17 | -0.02 (0.02) .18 | -0.02 (0.02) .19 | -0.02 (0.02) .20 | -0.02 (0.02) .17 | -0.02 (0.02) .17 | -0.02(0.00) |
| a | Slope \* diabetes | 0.04 (0.02) .04 | 0.04 (0.02) .04 | 0.04 (0.02) .05 | 0.03 (0.02) .07 | 0.04 (0.02) .05 | 0.03 (0.02) .07 | 0.04 (0.02) .06 | 0.04 (0.02) .04 | 0.03 (0.02) .06 | 0.04 (0.02) .05 | 0.04 (0.02) .06 | 0.03 (0.02) .06 | 0.04 (0.02) .05 | 0.04 (0.02) .04 | 0.04 (0.02) .05 | 0.03 (0.02) .07 | 0.04 (0.02) .06 | 0.03 (0.02) .07 | 0.04 (0.02) .05 | 0.04(0.00) |
| b | Level | 13.75 (0.29) <.01 | 8.94 (0.34) <.01 | 9.44 (0.28) <.01 | 31.34 (1.33) <.01 | 5.04 (0.31) <.01 | 7.24 (0.29) <.01 | 6.85 (0.25) <.01 | 7.78 (0.09) <.01 | 10.35 (0.51) <.01 | 7.95 (0.74) <.01 | 9.53 (0.72) <.01 | 10.94 (0.46) <.01 | 27.30 (0.30) <.01 | 4.88 (0.40) <.01 | 20.31 (1.17) <.01 | 35.95 (1.71) <.01 | 4.99 (0.33) <.01 | 15.36 (0.62) <.01 | 9.61 (0.18) <.01 | --- |
| b | Slope | 0.06 (0.05) .24 | -0.08 (0.12) .49 | -0.07 (0.10) .51 | 0.38 (0.35) .29 | 0.04 (0.10) .68 | 0.00 (0.09) .95 | -0.10 (0.08) .21 | -0.04 (0.05) .43 | -0.13 (0.15) .38 | 0.22 (0.24) .35 | 0.14 (0.21) .52 | 0.05 (0.14) .74 | 0.01 (0.13) .92 | 0.07 (0.08) .35 | 0.29 (0.31) .35 | -0.07 (0.42) .86 | 0.07 (0.11) .52 | 0.27 (0.20) .18 | 0.09 (0.06) .14 | --- |
| b | Level \* age | -0.03 (0.01) .07 | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.32 (0.06) <.01 | -0.04 (0.02) <.01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.01 (0.01) .20 | -0.02 (0.02) .29 | -0.14 (0.03) <.01 | -0.14 (0.03) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 | 0.00 (0.02) .78 | -0.15 (0.06) .01 | -0.45 (0.08) <.01 | -0.11 (0.01) <.01 | -0.16 (0.03) <.01 | -0.04 (0.01) <.01 | --- |
| b | Level \* education | 0.06 (0.02) <.01 | 0.10 (0.03) <.01 | 0.07 (0.03) .01 | 0.51 (0.12) <.01 | 0.18 (0.03) <.01 | 0.19 (0.02) <.01 | 0.10 (0.02) <.01 | 0.01 (0.01) .11 | 0.20 (0.04) <.01 | 0.24 (0.06) <.01 | 0.24 (0.06) <.01 | 0.24 (0.04) <.01 | 0.14 (0.03) <.01 | 0.34 (0.03) <.01 | 0.54 (0.10) <.01 | 0.78 (0.16) <.01 | 0.13 (0.03) <.01 | 0.30 (0.05) <.01 | 0.02 (0.02) .17 | --- |
| b | Level \* height | 2.48 (0.78) <.01 | 0.77 (1.48) .60 | 1.74 (1.19) .14 | 13.61 (6.23) .03 | -0.71 (1.22) .56 | -1.23 (1.48) .41 | 2.33 (1.03) .02 | 0.58 (0.42) .16 | 4.12 (2.42) .09 | 2.94 (3.06) .34 | 5.23 (2.97) .08 | 7.32 (2.23) <.01 | 3.17 (1.33) .02 | 2.12 (1.53) .16 | 18.13 (5.17) <.01 | 25.49 (6.92) <.01 | 0.37 (1.38) .79 | 0.69 (2.32) .77 | 1.10 (0.83) .18 | --- |
| b | Level \* smoking | 0.06 (0.13) .65 | -0.00 (0.20) .99 | 0.13 (0.16) .43 | -0.78 (0.76) .31 | 0.12 (0.17) .51 | 0.32 (0.17) .06 | 0.08 (0.13) .57 | -0.04 (0.06) .46 | -0.65 (0.28) .02 | -0.21 (0.38) .59 | 0.09 (0.38) .82 | -0.20 (0.26) .45 | 0.16 (0.19) .39 | 0.19 (0.19) .32 | 0.40 (0.70) .57 | -0.29 (0.94) .76 | -0.26 (0.18) .16 | -0.29 (0.30) .33 | -0.19 (0.11) .09 | --- |
| b | Level \* cardio | 0.01 (0.19) .95 | 0.06 (0.26) .82 | 0.08 (0.24) .72 | -0.21 (1.09) .84 | 0.16 (0.24) .51 | 0.20 (0.25) .43 | -0.06 (0.20) .77 | 0.04 (0.07) .52 | -0.20 (0.41) .62 | 0.64 (0.53) .23 | 0.46 (0.53) .38 | 0.35 (0.38) .36 | 0.17 (0.29) .56 | -0.20 (0.31) .52 | -0.34 (1.00) .74 | -0.76 (1.23) .54 | 0.06 (0.28) .84 | 0.53 (0.47) .26 | -0.06 (0.18) .75 | --- |
| b | Level \* diabetes | 0.02 (0.14) .85 | -0.17 (0.26) .52 | -0.03 (0.23) .90 | 0.22 (1.12) .85 | -0.02 (0.24) .92 | -0.38 (0.27) .16 | -0.12 (0.20) .52 | -0.07 (0.08) .40 | -0.16 (0.38) .68 | 0.89 (0.50) .07 | 0.48 (0.49) .32 | -0.09 (0.40) .82 | -0.13 (0.26) .61 | -0.16 (0.28) .58 | 1.95 (0.91) .03 | -0.01 (1.39) .99 | 0.30 (0.29) .30 | 0.73 (0.49) .14 | 0.20 (0.16) .23 | --- |
| b | Slope \* age | 0.00 (0.00) .05 | 0.01 (0.00) .03 | 0.01 (0.00) .01 | -0.03 (0.02) .07 | -0.00 (0.00) .70 | 0.00 (0.00) .80 | -0.00 (0.00) .89 | 0.00 (0.00) .08 | 0.01 (0.01) .41 | -0.00 (0.01) .60 | 0.01 (0.01) .32 | -0.00 (0.01) .52 | 0.00 (0.01) .53 | 0.00 (0.00) .99 | -0.03 (0.01) .02 | -0.07 (0.02) <.01 | 0.00 (0.00) .37 | 0.01 (0.01) .39 | 0.00 (0.00) .65 | --- |
| b | Slope \* education | -0.01 (0.00) .15 | -0.01 (0.01) .22 | -0.01 (0.01) .38 | -0.04 (0.03) .30 | 0.00 (0.01) .97 | -0.01 (0.01) .40 | 0.00 (0.01) .77 | -0.00 (0.00) .66 | 0.00 (0.01) .69 | 0.01 (0.02) .62 | -0.00 (0.02) .84 | -0.01 (0.01) .48 | -0.01 (0.01) .32 | -0.01 (0.01) .34 | -0.04 (0.03) .15 | 0.04 (0.04) .35 | -0.01 (0.01) .36 | -0.01 (0.02) .55 | -0.01 (0.01) .34 | --- |
| b | Slope \* height | -0.45 (0.18) .01 | 0.72 (0.53) .17 | -0.25 (0.47) .59 | 0.55 (1.61) .73 | 0.38 (0.42) .37 | 0.11 (0.47) .81 | 0.19 (0.37) .61 | -0.01 (0.16) .95 | 0.72 (0.67) .28 | 0.56 (0.96) .56 | -0.13 (0.92) .89 | 0.18 (0.74) .81 | -0.15 (0.67) .82 | -0.00 (0.29) .99 | -1.72 (1.41) .22 | -0.91 (1.89) .63 | 0.11 (0.49) .82 | -0.03 (0.81) .97 | -0.57 (0.28) .04 | --- |
| b | Slope \* smoking | -0.01 (0.02) .74 | -0.06 (0.07) .36 | -0.05 (0.06) .37 | 0.05 (0.22) .82 | -0.00 (0.05) .95 | 0.02 (0.05) .75 | 0.03 (0.04) .45 | 0.03 (0.02) .22 | 0.07 (0.08) .35 | 0.10 (0.12) .39 | 0.02 (0.12) .89 | 0.04 (0.07) .54 | -0.02 (0.07) .75 | 0.06 (0.03) .07 | 0.25 (0.16) .12 | -0.02 (0.21) .92 | 0.03 (0.06) .64 | -0.05 (0.11) .65 | 0.01 (0.03) .86 | --- |
| b | Slope \* cardio | -0.02 (0.04) .59 | 0.11 (0.09) .20 | -0.00 (0.09) .96 | 0.16 (0.34) .62 | -0.07 (0.08) .36 | -0.04 (0.08) .56 | 0.03 (0.07) .72 | 0.01 (0.02) .69 | 0.11 (0.14) .43 | 0.02 (0.19) .94 | -0.09 (0.18) .60 | 0.08 (0.15) .59 | -0.02 (0.10) .88 | -0.01 (0.06) .84 | -0.02 (0.22) .91 | 0.29 (0.31) .34 | 0.04 (0.07) .55 | -0.00 (0.16) .99 | 0.08 (0.05) .09 | --- |
| b | Slope \* diabetes | 0.03 (0.04) .37 | 0.11 (0.08) .21 | 0.03 (0.08) .74 | -0.52 (0.30) .08 | -0.04 (0.07) .63 | 0.10 (0.07) .15 | 0.03 (0.06) .65 | 0.02 (0.03) .47 | 0.04 (0.12) .72 | 0.02 (0.18) .90 | 0.07 (0.16) .68 | -0.02 (0.13) .85 | 0.13 (0.11) .23 | -0.07 (0.06) .26 | -0.37 (0.22) .10 | -0.55 (0.31) .08 | -0.05 (0.08) .51 | -0.11 (0.16) .48 | -0.06 (0.06) .32 | --- |
| a | Var (Level) | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27(0.00) |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .22 | 0.00 (0.00) .21 | 0.00 (0.00) .32 | 0.00 (0.00) .31 | 0.00 (0.00) .33 | 0.00 (0.00) .30 | 0.00 (0.00) .28 | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .27 | 0.00 (0.00) .30 | 0.00 (0.00) .27 | 0.00 (0.00) .26 | 0.00 (0.00) .31 | 0.00 (0.00) .30 | 0.00 (0.00) .31 | 0.00 (0.00) .28 | 0.00 (0.00) .24 | 0.00(0.00) |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05(0.00) |
| a | Covar (Level, Slope) | -0.01 (0.00) .14 | -0.01 (0.00) .11 | -0.01 (0.00) .12 | -0.01 (0.00) .17 | -0.01 (0.00) .15 | -0.00 (0.00) .18 | -0.01 (0.00) .15 | -0.01 (0.00) .14 | -0.01 (0.00) .15 | -0.01 (0.00) .14 | -0.01 (0.00) .13 | -0.01 (0.00) .14 | -0.01 (0.00) .15 | -0.01 (0.00) .13 | -0.01 (0.00) .15 | -0.01 (0.00) .16 | -0.01 (0.00) .15 | -0.01 (0.00) .15 | -0.01 (0.00) .12 | -0.01(0.00) |
| b | Var (Level) | 1.17 (0.53) .03 | 1.88 (0.47) <.01 | 1.26 (0.25) <.01 | 49.54 (5.14) <.01 | 2.15 (0.24) <.01 | 2.11 (0.25) <.01 | 1.07 (0.22) <.01 | 0.15 (0.14) .28 | 4.85 (0.59) <.01 | 10.68 (1.09) <.01 | 8.66 (0.98) <.01 | 3.37 (0.55) <.01 | 2.74 (1.49) .07 | 3.44 (0.36) <.01 | 36.28 (3.47) <.01 | 70.22 (7.77) <.01 | 2.36 (0.29) <.01 | 6.34 (0.89) <.01 | 0.96 (0.25) <.01 | --- |
| b | Var (Slope) | 0.01 (0.01) .51 | 0.01 (0.07) .88 | 0.03 (0.03) .43 | 0.35 (0.34) .30 | 0.04 (0.02) .12 | 0.01 (0.02) .51 | 0.01 (0.02) .78 | 0.02 (0.02) .33 | 0.06 (0.04) .22 | 0.33 (0.11) <.01 | 0.10 (0.09) .29 | 0.06 (0.05) .26 | 0.16 (0.10) .09 | 0.01 (0.01) .53 | 0.34 (0.26) .20 | 0.52 (0.43) .23 | 0.01 (0.02) .55 | 0.07 (0.07) .37 | 0.03 (0.02) .08 | --- |
| b | Var (Residual) | 0.39 (0.04) <.01 | 2.77 (0.24) <.01 | 2.08 (0.13) <.01 | 20.69 (1.32) <.01 | 1.57 (0.10) <.01 | 1.53 (0.10) <.01 | 1.30 (0.10) <.01 | 0.23 (0.06) <.01 | 3.44 (0.33) <.01 | 5.59 (0.37) <.01 | 6.42 (0.38) <.01 | 3.27 (0.35) <.01 | 1.93 (0.18) <.01 | 0.75 (0.10) <.01 | 14.11 (1.47) <.01 | 21.32 (1.67) <.01 | 1.74 (0.12) <.01 | 6.18 (0.34) <.01 | 0.46 (0.08) <.01 | --- |
| b | Covar (Level, Slope) | -0.04 (0.05) .43 | -0.00 (0.17) .97 | -0.06 (0.08) .42 | 0.70 (1.14) .54 | -0.01 (0.06) .84 | -0.01 (0.06) .91 | 0.01 (0.06) .92 | -0.05 (0.05) .34 | -0.22 (0.14) .11 | -0.36 (0.28) .20 | 0.10 (0.22) .64 | -0.17 (0.15) .26 | -0.44 (0.36) .22 | -0.12 (0.06) .07 | 0.22 (0.85) .80 | 1.85 (1.47) .21 | 0.03 (0.07) .71 | 0.17 (0.23) .45 | -0.11 (0.05) .04 | --- |
| ab | Covar (Levels) | 0.05 (0.04) .23 | 0.02 (0.07) .73 | 0.05 (0.06) .43 | 0.67 (0.28) .02 | 0.08 (0.06) .14 | 0.05 (0.05) .33 | -0.02 (0.04) .69 | -0.00 (0.02) .78 | 0.16 (0.08) .05 | 0.20 (0.12) .11 | 0.12 (0.12) .33 | 0.17 (0.08) .03 | 0.03 (0.06) .67 | 0.10 (0.06) .08 | 0.21 (0.21) .32 | 0.85 (0.32) .01 | 0.05 (0.07) .44 | 0.12 (0.10) .24 | 0.01 (0.04) .88 | --- |
| ab | Covar (Slopes) | -0.00 (0.00) .33 | 0.00 (0.00) .62 | 0.00 (0.00) .18 | 0.01 (0.01) .51 | -0.00 (0.00) .85 | 0.00 (0.00) .31 | 0.00 (0.00) .89 | -0.00 (0.00) .15 | 0.00 (0.00) .63 | -0.01 (0.01) .35 | -0.01 (0.01) .22 | 0.00 (0.00) .29 | -0.00 (0.01) .46 | -0.00 (0.00) .81 | -0.01 (0.01) .31 | -0.00 (0.02) .97 | 0.00 (0.00) .82 | -0.00 (0.01) .88 | -0.00 (0.00) .36 | --- |
| ab | Covar (Residuals) | -0.00 (0.01) .71 | -0.01 (0.02) .53 | -0.01 (0.01) .29 | 0.03 (0.05) .52 | -0.00 (0.01) .74 | -0.00 (0.01) .79 | -0.00 (0.01) .82 | 0.00 (0.01) .56 | 0.00 (0.02) .89 | -0.00 (0.02) .88 | 0.00 (0.02) .95 | -0.01 (0.02) .60 | 0.01 (0.01) .69 | -0.00 (0.01) .72 | -0.01 (0.04) .87 | 0.04 (0.04) .38 | 0.00 (0.01) .77 | 0.05 (0.02) .05 | 0.01 (0.01) .19 | --- |
|  | Correlation of Levels | 0.087 | 0.034 | 0.078 | 0.18 | 0.109 | 0.069 | -0.033 | -0.024 | 0.1422 | 0.1146 | 0.0757 | 0.175 | 0.031 | 0.098 | 0.0665 | 0.196 | 0.063 | 0.095 | 0.014 | 0.08(0.06) |
|  | Correlation of Slopes | -0.816 | 0.640 | 0.693 | 0.48 | -0.164 | 0.775 | 0.378 | -0.671 | 0.2697 | -0.3830 | -0.5657 | 0.645 | -0.390 | -0.236 | -0.7626 | -0.044 | 0.267 | -0.086 | -0.375 | -0.02(0.53) |
|  | Correlation of Residuals | -0.022 | -0.028 | -0.048 | 0.03 | -0.015 | -0.011 | -0.012 | 0.029 | 0.0075 | -0.0059 | 0.0037 | -0.023 | 0.020 | -0.016 | -0.0074 | 0.039 | 0.014 | 0.092 | 0.069 | 0.01(0.03) |
|  | N | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68.00(0.00) |
|  | LL | -4,187 | -5,163 | -4,979 | -6,544 | -4,936 | -4,911 | -4,726 | -3,663 | -5,352 | -5,746 | -5,764 | -5,072 | -5,050 | -4,625 | -6,292 | -6,574 | -4,985 | -5,699 | -4,249 | -5,185( 779) |
|  | AIC | 8,511 | 10,463 | 10,093 | 13,224 | 10,007 | 9,957 | 9,587 | 7,461 | 10,839 | 11,628 | 11,665 | 10,280 | 10,236 | 9,386 | 12,721 | 13,285 | 10,107 | 11,533 | 8,634 | 10,506(1,557) |
|  | BIC | 8,773 | 10,725 | 10,356 | 13,486 | 10,270 | 10,220 | 9,850 | 7,724 | 11,102 | 11,890 | 11,928 | 10,543 | 10,499 | 9,648 | 12,983 | 13,547 | 10,369 | 11,796 | 8,897 | 10,769(1,557) |

## bnt

Gender = *male*; Process (a) = *fev*; Process (b) = *bnt*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .24 | -0.00 (0.00) .23 | -0.00 (0.00) .23 | 0.00 (0.00) .69 |
| a | Slope \* education | --- | 0.00 (0.00) .80 | -0.00 (0.00) .52 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .25 | 0.10 (0.12) .42 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .29 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .04 |
| b | Level | 14.39 (0.14) <.01 | 13.79 (0.23) <.01 | 13.81 (0.23) <.01 | 13.75 (0.29) <.01 |
| b | Slope | -0.01 (0.02) .70 | 0.06 (0.04) .12 | 0.06 (0.04) .16 | 0.06 (0.05) .24 |
| b | Level \* age | -0.03 (0.01) .03 | -0.03 (0.01) .02 | -0.03 (0.01) .04 | -0.03 (0.01) .07 |
| b | Level \* education | --- | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.49 (0.78) <.01 | 2.48 (0.78) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.06 (0.13) .65 |
| b | Level \* cardio | --- | --- | --- | 0.01 (0.19) .95 |
| b | Level \* diabetes | --- | --- | --- | 0.02 (0.14) .85 |
| b | Slope \* age | 0.00 (0.00) .03 | 0.00 (0.00) .02 | 0.00 (0.00) .04 | 0.00 (0.00) .05 |
| b | Slope \* education | --- | -0.01 (0.00) .03 | -0.01 (0.00) .15 | -0.01 (0.00) .15 |
| b | Slope \* height | --- | --- | -0.45 (0.18) .01 | -0.45 (0.18) .01 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.02) .74 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.04) .59 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.04) .37 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00 (0.00) .17 | 0.00 (0.00) .31 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .14 |
| b | Var (Level) | 1.28 (0.56) .02 | 1.20 (0.53) .02 | 1.17 (0.53) .03 | 1.17 (0.53) .03 |
| b | Var (Slope) | 0.01 (0.01) .39 | 0.01 (0.01) .44 | 0.01 (0.01) .51 | 0.01 (0.01) .51 |
| b | Var (Residual) | 0.39 (0.04) <.01 | 0.39 (0.04) <.01 | 0.39 (0.04) <.01 | 0.39 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.06 (0.06) .32 | -0.05 (0.06) .37 | -0.04 (0.05) .44 | -0.04 (0.05) .43 |
| ab | Covar (Levels) | 0.10 (0.04) .01 | 0.07 (0.04) .09 | 0.04 (0.04) .25 | 0.05 (0.04) .23 |
| ab | Covar (Slopes) | -0.00 (0.00) .34 | -0.00 (0.00) .30 | -0.00 (0.00) .38 | -0.00 (0.00) .33 |
| ab | Covar (Residuals) | -0.00 (0.01) .68 | -0.00 (0.01) .68 | -0.00 (0.01) .68 | -0.00 (0.01) .71 |
|  | Correlation of Levels | 0.161 | 0.109 | 0.075 | 0.087 |
|  | Correlation of Slopes | -0.500 | -0.535 | -0.577 | -0.816 |
|  | Correlation of Residuals | -0.022 | -0.022 | -0.022 | -0.022 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,070 | -4,011 | -3,607 | -4,187 |
|  | AIC | 6,185 | 8,082 | 7,291 | 8,511 |
|  | BIC | 6,274 | 8,197 | 7,437 | 8,773 |

## bstory\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *bstory\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.02) .02 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .36 | -0.00 (0.00) .35 | -0.00 (0.00) .34 | 0.00 (0.00) .86 |
| a | Slope \* education | --- | -0.00 (0.00) .62 | -0.00 (0.00) .43 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .26 | 0.10 (0.13) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .18 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .04 |
| b | Level | 9.77 (0.16) <.01 | 8.88 (0.29) <.01 | 8.89 (0.29) <.01 | 8.94 (0.34) <.01 |
| b | Slope | -0.14 (0.06) .02 | -0.07 (0.09) .43 | -0.06 (0.09) .45 | -0.08 (0.12) .49 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 |
| b | Level \* education | --- | 0.11 (0.03) <.01 | 0.10 (0.03) <.01 | 0.10 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.82 (1.48) .58 | 0.77 (1.48) .60 |
| b | Level \* smoking | --- | --- | --- | -0.00 (0.20) .99 |
| b | Level \* cardio | --- | --- | --- | 0.06 (0.26) .82 |
| b | Level \* diabetes | --- | --- | --- | -0.17 (0.26) .52 |
| b | Slope \* age | 0.01 (0.00) .02 | 0.01 (0.00) .02 | 0.01 (0.00) .01 | 0.01 (0.00) .03 |
| b | Slope \* education | --- | -0.01 (0.01) .28 | -0.01 (0.01) .13 | -0.01 (0.01) .22 |
| b | Slope \* height | --- | --- | 0.65 (0.52) .21 | 0.72 (0.53) .17 |
| b | Slope \* smoking | --- | --- | --- | -0.06 (0.07) .36 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.09) .20 |
| b | Slope \* diabetes | --- | --- | --- | 0.11 (0.08) .21 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .12 | 0.00 (0.00) .12 | 0.00 (0.00) .12 | 0.00 (0.00) .22 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .10 | -0.01 (0.00) .04 | -0.01 (0.00) .11 |
| b | Var (Level) | 2.03 (0.47) <.01 | 1.88 (0.47) <.01 | 1.88 (0.46) <.01 | 1.88 (0.47) <.01 |
| b | Var (Slope) | 0.01 (0.07) .85 | 0.01 (0.07) .85 | 0.01 (0.07) .87 | 0.01 (0.07) .88 |
| b | Var (Residual) | 2.78 (0.24) <.01 | 2.78 (0.24) <.01 | 2.78 (0.24) <.01 | 2.77 (0.24) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.16) .97 | 0.00 (0.16) .98 | -0.00 (0.16) .99 | -0.00 (0.17) .97 |
| ab | Covar (Levels) | 0.10 (0.08) .23 | 0.04 (0.07) .62 | 0.02 (0.07) .73 | 0.02 (0.07) .73 |
| ab | Covar (Slopes) | 0.00 (0.00) .44 | 0.00 (0.00) .46 | 0.00 (0.00) .51 | 0.00 (0.00) .62 |
| ab | Covar (Residuals) | -0.01 (0.02) .47 | -0.01 (0.02) .47 | -0.01 (0.02) .46 | -0.01 (0.02) .53 |
|  | Correlation of Levels | 0.118 | 0.049 | 0.034 | 0.034 |
|  | Correlation of Slopes | 0.756 | 0.756 | 0.612 | 0.640 |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.034 | -0.028 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -4,046 | -4,987 | -4,584 | -5,163 |
|  | AIC | 8,138 | 10,033 | 9,244 | 10,463 |
|  | BIC | 8,227 | 10,149 | 9,391 | 10,725 |

## bstory\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *bstory\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .37 | -0.00 (0.00) .35 | -0.00 (0.00) .33 | 0.00 (0.00) .87 |
| a | Slope \* education | --- | -0.00 (0.00) .68 | -0.00 (0.00) .48 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .26 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .05 |
| b | Level | 10.16 (0.15) <.01 | 9.54 (0.25) <.01 | 9.55 (0.25) <.01 | 9.44 (0.28) <.01 |
| b | Slope | -0.17 (0.05) <.01 | -0.10 (0.08) .22 | -0.10 (0.08) .21 | -0.07 (0.10) .51 |
| b | Level \* age | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.08 (0.02) <.01 | 0.06 (0.03) .01 | 0.07 (0.03) .01 |
| b | Level \* height | --- | --- | 1.81 (1.19) .13 | 1.74 (1.19) .14 |
| b | Level \* smoking | --- | --- | --- | 0.13 (0.16) .43 |
| b | Level \* cardio | --- | --- | --- | 0.08 (0.24) .72 |
| b | Level \* diabetes | --- | --- | --- | -0.03 (0.23) .90 |
| b | Slope \* age | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) .01 |
| b | Slope \* education | --- | -0.01 (0.01) .26 | -0.01 (0.01) .39 | -0.01 (0.01) .38 |
| b | Slope \* height | --- | --- | -0.29 (0.45) .52 | -0.25 (0.47) .59 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.06) .37 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.09) .96 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.08) .74 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.30 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .12 | 0.00 (0.00) .12 | 0.00 (0.00) .13 | 0.00 (0.00) .21 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .10 | -0.01 (0.00) .04 | -0.01 (0.00) .12 |
| b | Var (Level) | 1.36 (0.25) <.01 | 1.27 (0.25) <.01 | 1.26 (0.25) <.01 | 1.26 (0.25) <.01 |
| b | Var (Slope) | 0.03 (0.03) .40 | 0.03 (0.03) .41 | 0.03 (0.03) .42 | 0.03 (0.03) .43 |
| b | Var (Residual) | 2.08 (0.13) <.01 | 2.08 (0.13) <.01 | 2.08 (0.13) <.01 | 2.08 (0.13) <.01 |
| b | Covar (Level, Slope) | -0.07 (0.08) .33 | -0.06 (0.08) .39 | -0.06 (0.08) .41 | -0.06 (0.08) .42 |
| ab | Covar (Levels) | 0.10 (0.07) .15 | 0.06 (0.06) .38 | 0.03 (0.06) .59 | 0.05 (0.06) .43 |
| ab | Covar (Slopes) | 0.01 (0.00) .12 | 0.01 (0.00) .13 | 0.01 (0.00) .15 | 0.00 (0.00) .18 |
| ab | Covar (Residuals) | -0.02 (0.01) .23 | -0.02 (0.01) .23 | -0.02 (0.01) .24 | -0.01 (0.01) .29 |
|  | Correlation of Levels | 0.144 | 0.089 | 0.054 | 0.078 |
|  | Correlation of Slopes | 0.816 | 0.832 | 0.832 | 0.693 |
|  | Correlation of Residuals | -0.055 | -0.055 | -0.055 | -0.048 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,857 | -4,800 | -4,398 | -4,979 |
|  | AIC | 7,760 | 9,660 | 8,872 | 10,093 |
|  | BIC | 7,849 | 9,776 | 9,019 | 10,356 |

## categories

Gender = *male*; Process (a) = *fev*; Process (b) = *categories*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.53 (0.44) <.01 | 1.67 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.06) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.10 (0.09) .28 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .29 | -0.00 (0.00) .28 | -0.00 (0.00) .27 | 0.00 (0.00) .77 |
| a | Slope \* education | --- | -0.00 (0.00) .73 | -0.00 (0.00) .54 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | 0.13 (0.13) .30 | 0.09 (0.13) .48 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .20 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .07 |
| b | Level | 35.60 (0.81) <.01 | 30.65 (1.15) <.01 | 30.78 (1.13) <.01 | 31.34 (1.33) <.01 |
| b | Slope | 0.05 (0.18) .80 | 0.27 (0.32) .41 | 0.27 (0.32) .40 | 0.38 (0.35) .29 |
| b | Level \* age | -0.33 (0.06) <.01 | -0.34 (0.06) <.01 | -0.32 (0.06) <.01 | -0.32 (0.06) <.01 |
| b | Level \* education | --- | 0.61 (0.11) <.01 | 0.52 (0.12) <.01 | 0.51 (0.12) <.01 |
| b | Level \* height | --- | --- | 13.31 (6.21) .03 | 13.61 (6.23) .03 |
| b | Level \* smoking | --- | --- | --- | -0.78 (0.76) .31 |
| b | Level \* cardio | --- | --- | --- | -0.21 (1.09) .84 |
| b | Level \* diabetes | --- | --- | --- | 0.22 (1.12) .85 |
| b | Slope \* age | -0.03 (0.02) .09 | -0.03 (0.02) .09 | -0.03 (0.02) .10 | -0.03 (0.02) .07 |
| b | Slope \* education | --- | -0.03 (0.03) .40 | -0.03 (0.03) .38 | -0.04 (0.03) .30 |
| b | Slope \* height | --- | --- | 0.43 (1.64) .79 | 0.55 (1.61) .73 |
| b | Slope \* smoking | --- | --- | --- | 0.05 (0.22) .82 |
| b | Slope \* cardio | --- | --- | --- | 0.16 (0.34) .62 |
| b | Slope \* diabetes | --- | --- | --- | -0.52 (0.30) .08 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .32 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .13 | -0.01 (0.00) .06 | -0.01 (0.00) .17 |
| b | Var (Level) | 55.88 (5.54) <.01 | 50.58 (5.26) <.01 | 49.69 (5.14) <.01 | 49.54 (5.14) <.01 |
| b | Var (Slope) | 0.43 (0.32) .19 | 0.41 (0.33) .22 | 0.40 (0.33) .23 | 0.35 (0.34) .30 |
| b | Var (Residual) | 20.66 (1.31) <.01 | 20.69 (1.32) <.01 | 20.68 (1.32) <.01 | 20.69 (1.32) <.01 |
| b | Covar (Level, Slope) | 0.47 (1.12) .67 | 0.73 (1.16) .53 | 0.71 (1.15) .54 | 0.70 (1.14) .54 |
| ab | Covar (Levels) | 1.16 (0.32) <.01 | 0.83 (0.30) .01 | 0.69 (0.29) .02 | 0.67 (0.28) .02 |
| ab | Covar (Slopes) | 0.01 (0.01) .61 | 0.01 (0.01) .65 | 0.00 (0.01) .75 | 0.01 (0.01) .51 |
| ab | Covar (Residuals) | 0.02 (0.05) .59 | 0.03 (0.05) .57 | 0.03 (0.05) .53 | 0.03 (0.05) .52 |
|  | Correlation of Levels | 0.272 | 0.210 | 0.181 | 0.18 |
|  | Correlation of Slopes | 0.240 | 0.211 | 0.176 | 0.48 |
|  | Correlation of Residuals | 0.025 | 0.026 | 0.029 | 0.03 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -5,428 | -6,367 | -5,965 | -6,544 |
|  | AIC | 10,903 | 12,794 | 12,006 | 13,224 |
|  | BIC | 10,992 | 12,910 | 12,153 | 13,486 |

## digit\_b

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_b*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .30 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .28 | -0.00 (0.00) .29 | -0.00 (0.00) .27 | 0.00 (0.00) .77 |
| a | Slope \* education | --- | -0.00 (0.00) .65 | -0.00 (0.00) .47 | 0.00 (0.00) .99 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .27 | 0.10 (0.13) .45 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .19 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .05 |
| b | Level | 6.59 (0.20) <.01 | 5.16 (0.27) <.01 | 5.15 (0.27) <.01 | 5.04 (0.31) <.01 |
| b | Slope | 0.03 (0.06) .56 | 0.01 (0.09) .92 | 0.01 (0.09) .89 | 0.04 (0.10) .68 |
| b | Level \* age | -0.04 (0.02) .02 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.02) <.01 |
| b | Level \* education | --- | 0.18 (0.03) <.01 | 0.18 (0.03) <.01 | 0.18 (0.03) <.01 |
| b | Level \* height | --- | --- | -0.69 (1.22) .57 | -0.71 (1.22) .56 |
| b | Level \* smoking | --- | --- | --- | 0.12 (0.17) .51 |
| b | Level \* cardio | --- | --- | --- | 0.16 (0.24) .51 |
| b | Level \* diabetes | --- | --- | --- | -0.02 (0.24) .92 |
| b | Slope \* age | -0.00 (0.00) .63 | -0.00 (0.00) .55 | -0.00 (0.00) .63 | -0.00 (0.00) .70 |
| b | Slope \* education | --- | 0.00 (0.01) .70 | 0.00 (0.01) .91 | 0.00 (0.01) .97 |
| b | Slope \* height | --- | --- | 0.39 (0.42) .35 | 0.38 (0.42) .37 |
| b | Slope \* smoking | --- | --- | --- | -0.00 (0.05) .95 |
| b | Slope \* cardio | --- | --- | --- | -0.07 (0.08) .36 |
| b | Slope \* diabetes | --- | --- | --- | -0.04 (0.07) .63 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .17 | 0.00 (0.00) .16 | 0.00 (0.00) .17 | 0.00 (0.00) .31 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .15 |
| b | Var (Level) | 2.58 (0.26) <.01 | 2.15 (0.24) <.01 | 2.15 (0.24) <.01 | 2.15 (0.24) <.01 |
| b | Var (Slope) | 0.03 (0.02) .15 | 0.04 (0.02) .13 | 0.04 (0.02) .13 | 0.04 (0.02) .12 |
| b | Var (Residual) | 1.58 (0.10) <.01 | 1.57 (0.10) <.01 | 1.57 (0.10) <.01 | 1.57 (0.10) <.01 |
| b | Covar (Level, Slope) | 0.00 (0.06) .96 | -0.01 (0.06) .88 | -0.01 (0.06) .86 | -0.01 (0.06) .84 |
| ab | Covar (Levels) | 0.15 (0.06) .02 | 0.06 (0.06) .33 | 0.06 (0.06) .29 | 0.08 (0.06) .14 |
| ab | Covar (Slopes) | -0.00 (0.00) .67 | -0.00 (0.00) .76 | -0.00 (0.00) .74 | -0.00 (0.00) .85 |
| ab | Covar (Residuals) | -0.00 (0.01) .81 | -0.00 (0.01) .80 | -0.00 (0.01) .74 | -0.00 (0.01) .74 |
|  | Correlation of Levels | 0.168 | 0.073 | 0.079 | 0.109 |
|  | Correlation of Slopes | -0.243 | -0.118 | -0.118 | -0.164 |
|  | Correlation of Residuals | -0.011 | -0.011 | -0.015 | -0.015 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,831 | -4,757 | -4,356 | -4,936 |
|  | AIC | 7,708 | 9,574 | 8,787 | 10,007 |
|  | BIC | 7,797 | 9,690 | 8,934 | 10,270 |

## digit\_f

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_f*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.56 (0.44) <.01 | 1.69 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.23 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .29 | -0.00 (0.00) .31 | -0.00 (0.00) .29 | 0.00 (0.00) .79 |
| a | Slope \* education | --- | -0.00 (0.00) .58 | -0.00 (0.00) .40 | 0.00 (0.00) .89 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .24 | 0.10 (0.12) .42 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .07 |
| b | Level | 8.90 (0.18) <.01 | 7.40 (0.25) <.01 | 7.39 (0.25) <.01 | 7.24 (0.29) <.01 |
| b | Slope | -0.02 (0.05) .63 | 0.05 (0.08) .53 | 0.05 (0.08) .53 | 0.00 (0.09) .95 |
| b | Level \* age | -0.04 (0.02) .01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.18 (0.02) <.01 | 0.19 (0.02) <.01 | 0.19 (0.02) <.01 |
| b | Level \* height | --- | --- | -1.12 (1.50) .45 | -1.23 (1.48) .41 |
| b | Level \* smoking | --- | --- | --- | 0.32 (0.17) .06 |
| b | Level \* cardio | --- | --- | --- | 0.20 (0.25) .43 |
| b | Level \* diabetes | --- | --- | --- | -0.38 (0.27) .16 |
| b | Slope \* age | 0.00 (0.00) .97 | 0.00 (0.00) .98 | 0.00 (0.00) .97 | 0.00 (0.00) .80 |
| b | Slope \* education | --- | -0.01 (0.01) .32 | -0.01 (0.01) .29 | -0.01 (0.01) .40 |
| b | Slope \* height | --- | --- | 0.15 (0.47) .74 | 0.11 (0.47) .81 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .75 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.08) .56 |
| b | Slope \* diabetes | --- | --- | --- | 0.10 (0.07) .15 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .19 | 0.00 (0.00) .18 | 0.00 (0.00) .19 | 0.00 (0.00) .33 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .16 | -0.01 (0.00) .16 | -0.01 (0.00) .07 | -0.00 (0.00) .18 |
| b | Var (Level) | 2.67 (0.28) <.01 | 2.19 (0.26) <.01 | 2.18 (0.25) <.01 | 2.11 (0.25) <.01 |
| b | Var (Slope) | 0.02 (0.02) .46 | 0.02 (0.02) .48 | 0.02 (0.02) .48 | 0.01 (0.02) .51 |
| b | Var (Residual) | 1.53 (0.10) <.01 | 1.53 (0.10) <.01 | 1.53 (0.10) <.01 | 1.53 (0.10) <.01 |
| b | Covar (Level, Slope) | -0.03 (0.07) .62 | -0.01 (0.06) .82 | -0.01 (0.06) .83 | -0.01 (0.06) .91 |
| ab | Covar (Levels) | 0.13 (0.06) .03 | 0.04 (0.06) .53 | 0.04 (0.06) .45 | 0.05 (0.05) .33 |
| ab | Covar (Slopes) | 0.00 (0.00) .14 | 0.00 (0.00) .13 | 0.00 (0.00) .15 | 0.00 (0.00) .31 |
| ab | Covar (Residuals) | -0.00 (0.01) .78 | -0.00 (0.01) .76 | -0.00 (0.01) .77 | -0.00 (0.01) .79 |
|  | Correlation of Levels | 0.140 | 0.043 | 0.052 | 0.069 |
|  | Correlation of Slopes | 0.857 | 0.884 | 0.884 | 0.775 |
|  | Correlation of Residuals | -0.011 | -0.015 | -0.015 | -0.011 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,809 | -4,735 | -4,333 | -4,911 |
|  | AIC | 7,664 | 9,530 | 8,743 | 9,957 |
|  | BIC | 7,753 | 9,645 | 8,890 | 10,220 |

## digit\_o

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_o*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.12 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.71 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .25 | -0.00 (0.00) .26 | -0.00 (0.00) .27 | 0.00 (0.00) .78 |
| a | Slope \* education | --- | -0.00 (0.00) .66 | -0.00 (0.00) .45 | 0.00 (0.00) .98 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .25 | 0.10 (0.12) .42 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .06 |
| b | Level | 7.82 (0.15) <.01 | 6.84 (0.22) <.01 | 6.86 (0.21) <.01 | 6.85 (0.25) <.01 |
| b | Slope | -0.05 (0.05) .29 | -0.06 (0.07) .37 | -0.06 (0.07) .38 | -0.10 (0.08) .21 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.12 (0.02) <.01 | 0.11 (0.02) <.01 | 0.10 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.34 (1.04) .02 | 2.33 (1.03) .02 |
| b | Level \* smoking | --- | --- | --- | 0.08 (0.13) .57 |
| b | Level \* cardio | --- | --- | --- | -0.06 (0.20) .77 |
| b | Level \* diabetes | --- | --- | --- | -0.12 (0.20) .52 |
| b | Slope \* age | -0.00 (0.00) .80 | -0.00 (0.00) .78 | -0.00 (0.00) .80 | -0.00 (0.00) .89 |
| b | Slope \* education | --- | 0.00 (0.01) .83 | 0.00 (0.01) .93 | 0.00 (0.01) .77 |
| b | Slope \* height | --- | --- | 0.21 (0.37) .57 | 0.19 (0.37) .61 |
| b | Slope \* smoking | --- | --- | --- | 0.03 (0.04) .45 |
| b | Slope \* cardio | --- | --- | --- | 0.03 (0.07) .72 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.06) .65 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .17 | 0.00 (0.00) .16 | 0.00 (0.00) .17 | 0.00 (0.00) .30 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .14 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .15 |
| b | Var (Level) | 1.31 (0.25) <.01 | 1.11 (0.22) <.01 | 1.08 (0.22) <.01 | 1.07 (0.22) <.01 |
| b | Var (Slope) | 0.01 (0.02) .70 | 0.01 (0.02) .73 | 0.01 (0.02) .75 | 0.01 (0.02) .78 |
| b | Var (Residual) | 1.30 (0.10) <.01 | 1.30 (0.10) <.01 | 1.30 (0.10) <.01 | 1.30 (0.10) <.01 |
| b | Covar (Level, Slope) | 0.01 (0.06) .87 | 0.01 (0.06) .90 | 0.01 (0.06) .92 | 0.01 (0.06) .92 |
| ab | Covar (Levels) | 0.07 (0.05) .18 | -0.00 (0.05) .97 | -0.02 (0.05) .62 | -0.02 (0.04) .69 |
| ab | Covar (Slopes) | 0.00 (0.00) .75 | 0.00 (0.00) .72 | 0.00 (0.00) .81 | 0.00 (0.00) .89 |
| ab | Covar (Residuals) | -0.00 (0.01) .75 | -0.00 (0.01) .75 | -0.00 (0.01) .77 | -0.00 (0.01) .82 |
|  | Correlation of Levels | 0.10 | -0.0034 | -0.041 | -0.033 |
|  | Correlation of Slopes | 0.24 | 0.5000 | 0.267 | 0.378 |
|  | Correlation of Residuals | -0.02 | -0.0202 | -0.016 | -0.012 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,621 | -4,550 | -4,145 | -4,726 |
|  | AIC | 7,289 | 9,160 | 8,367 | 9,587 |
|  | BIC | 7,377 | 9,276 | 8,514 | 9,850 |

## ideas

Gender = *male*; Process (a) = *fev*; Process (b) = *ideas*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.58 (0.44) <.01 | 1.72 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .24 | -0.00 (0.00) .23 | -0.00 (0.00) .23 | 0.00 (0.00) .67 |
| a | Slope \* education | --- | -0.00 (0.00) .77 | -0.00 (0.00) .54 | 0.00 (0.00) .86 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .25 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .20 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .04 |
| b | Level | 7.88 (0.05) <.01 | 7.72 (0.08) <.01 | 7.72 (0.08) <.01 | 7.78 (0.09) <.01 |
| b | Slope | -0.03 (0.02) .19 | 0.00 (0.03) .99 | -0.00 (0.03) .98 | -0.04 (0.05) .43 |
| b | Level \* age | -0.01 (0.01) .18 | -0.01 (0.01) .16 | -0.01 (0.01) .21 | -0.01 (0.01) .20 |
| b | Level \* education | --- | 0.02 (0.01) .04 | 0.02 (0.01) .07 | 0.01 (0.01) .11 |
| b | Level \* height | --- | --- | 0.56 (0.41) .17 | 0.58 (0.42) .16 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.06) .46 |
| b | Level \* cardio | --- | --- | --- | 0.04 (0.07) .52 |
| b | Level \* diabetes | --- | --- | --- | -0.07 (0.08) .40 |
| b | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .08 |
| b | Slope \* education | --- | -0.00 (0.00) .39 | -0.00 (0.00) .37 | -0.00 (0.00) .66 |
| b | Slope \* height | --- | --- | 0.00 (0.16) .99 | -0.01 (0.16) .95 |
| b | Slope \* smoking | --- | --- | --- | 0.03 (0.02) .22 |
| b | Slope \* cardio | --- | --- | --- | 0.01 (0.02) .69 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.03) .47 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .15 | 0.00 (0.00) .16 | 0.00 (0.00) .28 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .14 |
| b | Var (Level) | 0.16 (0.15) .28 | 0.16 (0.15) .28 | 0.15 (0.14) .28 | 0.15 (0.14) .28 |
| b | Var (Slope) | 0.02 (0.02) .33 | 0.02 (0.02) .33 | 0.02 (0.02) .33 | 0.02 (0.02) .33 |
| b | Var (Residual) | 0.23 (0.06) <.01 | 0.23 (0.06) <.01 | 0.23 (0.06) <.01 | 0.23 (0.06) <.01 |
| b | Covar (Level, Slope) | -0.05 (0.05) .34 | -0.05 (0.05) .34 | -0.05 (0.05) .34 | -0.05 (0.05) .34 |
| ab | Covar (Levels) | 0.02 (0.02) .33 | 0.01 (0.02) .72 | 0.00 (0.02) .96 | -0.00 (0.02) .78 |
| ab | Covar (Slopes) | -0.00 (0.00) .22 | -0.00 (0.00) .22 | -0.00 (0.00) .22 | -0.00 (0.00) .15 |
| ab | Covar (Residuals) | 0.00 (0.01) .50 | 0.00 (0.01) .52 | 0.00 (0.01) .54 | 0.00 (0.01) .56 |
|  | Correlation of Levels | 0.078 | 0.032 | 0.0047 | -0.024 |
|  | Correlation of Slopes | -0.309 | -0.309 | -0.3086 | -0.671 |
|  | Correlation of Residuals | 0.039 | 0.039 | 0.0290 | 0.029 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -2,542 | -3,487 | -3,084 | -3,663 |
|  | AIC | 5,130 | 7,034 | 6,245 | 7,461 |
|  | BIC | 5,219 | 7,149 | 6,391 | 7,724 |

## line

Gender = *male*; Process (a) = *fev*; Process (b) = *line*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.12 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.54 (0.44) <.01 | 1.68 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .30 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .23 | 0.00 (0.00) .76 |
| a | Slope \* education | --- | 0.00 (0.00) .78 | -0.00 (0.00) .62 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .23 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .16 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .06 |
| b | Level | 11.68 (0.28) <.01 | 9.70 (0.44) <.01 | 9.86 (0.44) <.01 | 10.35 (0.51) <.01 |
| b | Slope | 0.00 (0.07) .99 | -0.04 (0.12) .73 | 0.00 (0.12) .98 | -0.13 (0.15) .38 |
| b | Level \* age | -0.02 (0.02) .42 | -0.03 (0.02) .26 | -0.02 (0.02) .47 | -0.02 (0.02) .29 |
| b | Level \* education | --- | 0.24 (0.04) <.01 | 0.21 (0.04) <.01 | 0.20 (0.04) <.01 |
| b | Level \* height | --- | --- | 3.67 (2.34) .12 | 4.12 (2.42) .09 |
| b | Level \* smoking | --- | --- | --- | -0.65 (0.28) .02 |
| b | Level \* cardio | --- | --- | --- | -0.20 (0.41) .62 |
| b | Level \* diabetes | --- | --- | --- | -0.16 (0.38) .68 |
| b | Slope \* age | 0.00 (0.01) .45 | 0.00 (0.01) .47 | 0.00 (0.01) .55 | 0.01 (0.01) .41 |
| b | Slope \* education | --- | 0.00 (0.01) .64 | -0.00 (0.01) .95 | 0.00 (0.01) .69 |
| b | Slope \* height | --- | --- | 0.70 (0.62) .26 | 0.72 (0.67) .28 |
| b | Slope \* smoking | --- | --- | --- | 0.07 (0.08) .35 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.14) .43 |
| b | Slope \* diabetes | --- | --- | --- | 0.04 (0.12) .72 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .15 | 0.00 (0.00) .12 | 0.00 (0.00) .29 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .14 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .15 |
| b | Var (Level) | 5.91 (0.74) <.01 | 5.08 (0.62) <.01 | 4.80 (0.60) <.01 | 4.85 (0.59) <.01 |
| b | Var (Slope) | 0.06 (0.05) .16 | 0.06 (0.04) .17 | 0.05 (0.04) .21 | 0.06 (0.04) .22 |
| b | Var (Residual) | 3.44 (0.33) <.01 | 3.44 (0.33) <.01 | 3.35 (0.32) <.01 | 3.44 (0.33) <.01 |
| b | Covar (Level, Slope) | -0.22 (0.15) .13 | -0.23 (0.14) .10 | -0.24 (0.14) .07 | -0.22 (0.14) .11 |
| ab | Covar (Levels) | 0.38 (0.10) <.01 | 0.25 (0.09) .01 | 0.18 (0.09) .04 | 0.16 (0.08) .05 |
| ab | Covar (Slopes) | 0.00 (0.00) .50 | 0.00 (0.00) .47 | 0.00 (0.00) .64 | 0.00 (0.00) .63 |
| ab | Covar (Residuals) | 0.00 (0.02) .94 | 0.00 (0.02) .93 | 0.00 (0.02) .82 | 0.00 (0.02) .89 |
|  | Correlation of Levels | 0.2720 | 0.200 | 0.15 | 0.1422 |
|  | Correlation of Slopes | 0.2631 | 0.362 | 0.20 | 0.2697 |
|  | Correlation of Residuals | 0.0025 | 0.005 | 0.01 | 0.0075 |
|  | N | 351 | 351 | 327 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 29 | 68 |
|  | LL | -4,248 | -5,177 | -2,927 | -5,352 |
|  | AIC | 8,542 | 10,413 | 5,913 | 10,839 |
|  | BIC | 8,630 | 10,529 | 6,022 | 11,102 |

## logic\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *logic\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.57 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .30 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .30 | -0.00 (0.00) .30 | -0.00 (0.00) .29 | 0.00 (0.00) .85 |
| a | Slope \* education | --- | -0.00 (0.00) .66 | -0.00 (0.00) .46 | 0.00 (0.00) .99 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .23 | 0.10 (0.12) .40 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .15 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .05 |
| b | Level | 10.18 (0.39) <.01 | 8.15 (0.66) <.01 | 8.19 (0.65) <.01 | 7.95 (0.74) <.01 |
| b | Slope | 0.39 (0.11) <.01 | 0.32 (0.19) .08 | 0.33 (0.18) .08 | 0.22 (0.24) .35 |
| b | Level \* age | -0.14 (0.03) <.01 | -0.14 (0.03) <.01 | -0.14 (0.03) <.01 | -0.14 (0.03) <.01 |
| b | Level \* education | --- | 0.25 (0.06) <.01 | 0.23 (0.06) <.01 | 0.24 (0.06) <.01 |
| b | Level \* height | --- | --- | 2.86 (3.10) .36 | 2.94 (3.06) .34 |
| b | Level \* smoking | --- | --- | --- | -0.21 (0.38) .59 |
| b | Level \* cardio | --- | --- | --- | 0.64 (0.53) .23 |
| b | Level \* diabetes | --- | --- | --- | 0.89 (0.50) .07 |
| b | Slope \* age | -0.01 (0.01) .48 | -0.01 (0.01) .42 | -0.01 (0.01) .47 | -0.00 (0.01) .60 |
| b | Slope \* education | --- | 0.01 (0.02) .62 | 0.01 (0.02) .75 | 0.01 (0.02) .62 |
| b | Slope \* height | --- | --- | 0.61 (0.97) .53 | 0.56 (0.96) .56 |
| b | Slope \* smoking | --- | --- | --- | 0.10 (0.12) .39 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.19) .94 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.18) .90 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00 (0.00) .28 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .14 |
| b | Var (Level) | 11.79 (1.16) <.01 | 10.90 (1.08) <.01 | 10.86 (1.09) <.01 | 10.68 (1.09) <.01 |
| b | Var (Slope) | 0.34 (0.11) <.01 | 0.34 (0.11) <.01 | 0.34 (0.11) <.01 | 0.33 (0.11) <.01 |
| b | Var (Residual) | 5.58 (0.37) <.01 | 5.58 (0.37) <.01 | 5.59 (0.37) <.01 | 5.59 (0.37) <.01 |
| b | Covar (Level, Slope) | -0.32 (0.28) .26 | -0.35 (0.28) .21 | -0.35 (0.28) .21 | -0.36 (0.28) .20 |
| ab | Covar (Levels) | 0.33 (0.15) .03 | 0.20 (0.13) .14 | 0.16 (0.13) .21 | 0.20 (0.12) .11 |
| ab | Covar (Slopes) | -0.00 (0.01) .64 | -0.00 (0.01) .66 | -0.00 (0.01) .53 | -0.01 (0.01) .35 |
| ab | Covar (Residuals) | -0.01 (0.02) .78 | -0.01 (0.02) .81 | -0.00 (0.02) .84 | -0.00 (0.02) .88 |
|  | Correlation of Levels | 0.166 | 0.107 | 0.0905 | 0.1146 |
|  | Correlation of Slopes | -0.152 | -0.114 | -0.1926 | -0.3830 |
|  | Correlation of Residuals | -0.012 | -0.012 | -0.0099 | -0.0059 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -4,633 | -5,570 | -5,169 | -5,746 |
|  | AIC | 9,311 | 11,201 | 10,413 | 11,628 |
|  | BIC | 9,400 | 11,317 | 10,560 | 11,890 |

## logic\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *logic\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.12 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.58 (0.44) <.01 | 1.71 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.10 (0.09) .30 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .27 | -0.00 (0.00) .27 | -0.00 (0.00) .26 | 0.00 (0.00) .78 |
| a | Slope \* education | --- | -0.00 (0.00) .63 | -0.00 (0.00) .44 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .25 | 0.10 (0.12) .42 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .06 |
| b | Level | 11.95 (0.38) <.01 | 9.79 (0.62) <.01 | 9.84 (0.62) <.01 | 9.53 (0.72) <.01 |
| b | Slope | 0.11 (0.09) .21 | 0.16 (0.17) .33 | 0.16 (0.16) .33 | 0.14 (0.21) .52 |
| b | Level \* age | -0.14 (0.03) <.01 | -0.15 (0.03) <.01 | -0.14 (0.03) <.01 | -0.14 (0.03) <.01 |
| b | Level \* education | --- | 0.27 (0.06) <.01 | 0.23 (0.06) <.01 | 0.24 (0.06) <.01 |
| b | Level \* height | --- | --- | 5.20 (2.98) .08 | 5.23 (2.97) .08 |
| b | Level \* smoking | --- | --- | --- | 0.09 (0.38) .82 |
| b | Level \* cardio | --- | --- | --- | 0.46 (0.53) .38 |
| b | Level \* diabetes | --- | --- | --- | 0.48 (0.49) .32 |
| b | Slope \* age | 0.01 (0.01) .33 | 0.01 (0.01) .35 | 0.01 (0.01) .36 | 0.01 (0.01) .32 |
| b | Slope \* education | --- | -0.00 (0.02) .76 | -0.00 (0.02) .79 | -0.00 (0.02) .84 |
| b | Slope \* height | --- | --- | -0.06 (0.93) .94 | -0.13 (0.92) .89 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.12) .89 |
| b | Slope \* cardio | --- | --- | --- | -0.09 (0.18) .60 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.16) .68 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .27 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .13 |
| b | Var (Level) | 9.87 (1.08) <.01 | 8.87 (0.98) <.01 | 8.73 (0.98) <.01 | 8.66 (0.98) <.01 |
| b | Var (Slope) | 0.10 (0.10) .27 | 0.10 (0.10) .28 | 0.10 (0.10) .28 | 0.10 (0.09) .29 |
| b | Var (Residual) | 6.41 (0.38) <.01 | 6.42 (0.38) <.01 | 6.42 (0.38) <.01 | 6.42 (0.38) <.01 |
| b | Covar (Level, Slope) | 0.08 (0.24) .74 | 0.10 (0.22) .65 | 0.10 (0.23) .64 | 0.10 (0.22) .64 |
| ab | Covar (Levels) | 0.28 (0.14) .05 | 0.14 (0.13) .29 | 0.08 (0.13) .50 | 0.12 (0.12) .33 |
| ab | Covar (Slopes) | -0.01 (0.01) .37 | -0.01 (0.01) .37 | -0.01 (0.01) .34 | -0.01 (0.01) .22 |
| ab | Covar (Residuals) | 0.00 (0.02) .97 | 0.00 (0.02) .97 | 0.00 (0.02) .97 | 0.00 (0.02) .95 |
|  | Correlation of Levels | 0.1542 | 0.0824 | 0.0524 | 0.0757 |
|  | Correlation of Slopes | -0.4140 | -0.4180 | -0.4201 | -0.5657 |
|  | Correlation of Residuals | 0.0018 | 0.0018 | 0.0018 | 0.0037 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -4,651 | -5,588 | -5,185 | -5,764 |
|  | AIC | 9,348 | 11,236 | 10,447 | 11,665 |
|  | BIC | 9,437 | 11,352 | 10,594 | 11,928 |

## matrices

Gender = *male*; Process (a) = *fev*; Process (b) = *matrices*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.11 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.61 (0.44) <.01 | 1.74 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .33 |
| a | Level \* diabetes | --- | --- | --- | -0.23 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .32 | -0.00 (0.00) .33 | -0.00 (0.00) .32 | 0.00 (0.00) .87 |
| a | Slope \* education | --- | -0.00 (0.00) .65 | -0.00 (0.00) .44 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .28 | 0.09 (0.13) .46 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .06 |
| b | Level | 13.09 (0.28) <.01 | 10.70 (0.40) <.01 | 10.80 (0.38) <.01 | 10.94 (0.46) <.01 |
| b | Slope | 0.00 (0.08) .99 | 0.10 (0.13) .43 | 0.10 (0.13) .44 | 0.05 (0.14) .74 |
| b | Level \* age | -0.08 (0.02) <.01 | -0.09 (0.02) <.01 | -0.07 (0.02) <.01 | -0.08 (0.02) <.01 |
| b | Level \* education | --- | 0.30 (0.04) <.01 | 0.25 (0.04) <.01 | 0.24 (0.04) <.01 |
| b | Level \* height | --- | --- | 7.21 (2.25) <.01 | 7.32 (2.23) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.26) .45 |
| b | Level \* cardio | --- | --- | --- | 0.35 (0.38) .36 |
| b | Level \* diabetes | --- | --- | --- | -0.09 (0.40) .82 |
| b | Slope \* age | -0.00 (0.01) .50 | -0.00 (0.01) .55 | -0.00 (0.01) .54 | -0.00 (0.01) .52 |
| b | Slope \* education | --- | -0.01 (0.01) .34 | -0.01 (0.01) .39 | -0.01 (0.01) .48 |
| b | Slope \* height | --- | --- | 0.18 (0.72) .80 | 0.18 (0.74) .81 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.07) .54 |
| b | Slope \* cardio | --- | --- | --- | 0.08 (0.15) .59 |
| b | Slope \* diabetes | --- | --- | --- | -0.02 (0.13) .85 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00 (0.00) .17 | 0.00 (0.00) .30 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .14 |
| b | Var (Level) | 4.94 (0.71) <.01 | 3.70 (0.61) <.01 | 3.40 (0.55) <.01 | 3.37 (0.55) <.01 |
| b | Var (Slope) | 0.07 (0.06) .22 | 0.07 (0.06) .21 | 0.06 (0.05) .22 | 0.06 (0.05) .26 |
| b | Var (Residual) | 3.26 (0.36) <.01 | 3.26 (0.35) <.01 | 3.26 (0.35) <.01 | 3.27 (0.35) <.01 |
| b | Covar (Level, Slope) | -0.23 (0.18) .21 | -0.18 (0.16) .25 | -0.17 (0.15) .25 | -0.17 (0.15) .26 |
| ab | Covar (Levels) | 0.40 (0.09) <.01 | 0.24 (0.08) <.01 | 0.18 (0.08) .02 | 0.17 (0.08) .03 |
| ab | Covar (Slopes) | 0.00 (0.00) .36 | 0.00 (0.01) .36 | 0.00 (0.01) .39 | 0.00 (0.00) .29 |
| ab | Covar (Residuals) | -0.01 (0.02) .57 | -0.01 (0.02) .57 | -0.01 (0.02) .62 | -0.01 (0.02) .60 |
|  | Correlation of Levels | 0.316 | 0.229 | 0.179 | 0.175 |
|  | Correlation of Slopes | 0.426 | 0.426 | 0.439 | 0.645 |
|  | Correlation of Residuals | -0.026 | -0.026 | -0.023 | -0.023 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,983 | -4,902 | -4,493 | -5,072 |
|  | AIC | 8,011 | 9,864 | 9,062 | 10,280 |
|  | BIC | 8,100 | 9,980 | 9,209 | 10,543 |

## mmse

Gender = *male*; Process (a) = *fev*; Process (b) = *mmse*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | ae | aeh | aehplus |
| a | Level | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | 1.58 (0.44) <.01 | 1.70 (0.45) <.01 |
| a | Level \* smoking | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .23 | -0.00 (0.00) .22 | -0.00 (0.00) .67 |
| a | Slope \* education | 0.00 (0.00) .80 | -0.00 (0.00) .55 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | 0.15 (0.13) .24 | 0.10 (0.12) .40 |
| a | Slope \* smoking | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | -0.02 (0.02) .20 |
| a | Slope \* diabetes | --- | --- | 0.04 (0.02) .05 |
| b | Level | 27.38 (0.28) <.01 | 27.41 (0.28) <.01 | 27.30 (0.30) <.01 |
| b | Slope | 0.05 (0.11) .66 | 0.04 (0.10) .67 | 0.01 (0.13) .92 |
| b | Level \* age | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.08 (0.02) <.01 |
| b | Level \* education | 0.16 (0.03) <.01 | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 |
| b | Level \* height | --- | 3.22 (1.33) .02 | 3.17 (1.33) .02 |
| b | Level \* smoking | --- | --- | 0.16 (0.19) .39 |
| b | Level \* cardio | --- | --- | 0.17 (0.29) .56 |
| b | Level \* diabetes | --- | --- | -0.13 (0.26) .61 |
| b | Slope \* age | 0.00 (0.01) .48 | 0.00 (0.01) .53 | 0.00 (0.01) .53 |
| b | Slope \* education | -0.01 (0.01) .18 | -0.01 (0.01) .21 | -0.01 (0.01) .32 |
| b | Slope \* height | --- | -0.13 (0.68) .85 | -0.15 (0.67) .82 |
| b | Slope \* smoking | --- | --- | -0.02 (0.07) .75 |
| b | Slope \* cardio | --- | --- | -0.02 (0.10) .88 |
| b | Slope \* diabetes | --- | --- | 0.13 (0.11) .23 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .14 | 0.00 (0.00) .15 | 0.00 (0.00) .27 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .15 |
| b | Var (Level) | 2.82 (1.50) .06 | 2.76 (1.49) .06 | 2.74 (1.49) .07 |
| b | Var (Slope) | 0.17 (0.10) .07 | 0.17 (0.10) .08 | 0.16 (0.10) .09 |
| b | Var (Residual) | 1.93 (0.18) <.01 | 1.93 (0.18) <.01 | 1.93 (0.18) <.01 |
| b | Covar (Level, Slope) | -0.45 (0.36) .21 | -0.45 (0.35) .21 | -0.44 (0.36) .22 |
| ab | Covar (Levels) | 0.05 (0.06) .39 | 0.02 (0.06) .74 | 0.03 (0.06) .67 |
| ab | Covar (Slopes) | -0.00 (0.01) .58 | -0.00 (0.01) .56 | -0.00 (0.01) .46 |
| ab | Covar (Residuals) | 0.00 (0.01) .72 | 0.01 (0.01) .71 | 0.01 (0.01) .69 |
|  | Correlation of Levels | 0.057 | 0.022 | 0.031 |
|  | Correlation of Slopes | -0.216 | -0.218 | -0.390 |
|  | Correlation of Residuals | 0.017 | 0.020 | 0.020 |
|  | N | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 30 | 38 | 68 |
|  | LL | -4,874 | -4,471 | -5,050 |
|  | AIC | 9,808 | 9,017 | 10,236 |
|  | BIC | 9,924 | 9,164 | 10,499 |

## nart

Gender = *male*; Process (a) = *fev*; Process (b) = *nart*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .03 |
| a | Level \* height | --- | --- | 1.56 (0.44) <.01 | 1.69 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .33 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .29 | -0.00 (0.00) .29 | -0.00 (0.00) .28 | 0.00 (0.00) .80 |
| a | Slope \* education | --- | -0.00 (0.00) .73 | -0.00 (0.00) .53 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | 0.13 (0.13) .31 | 0.09 (0.13) .48 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .04 |
| b | Level | 7.76 (0.22) <.01 | 4.93 (0.32) <.01 | 4.95 (0.32) <.01 | 4.88 (0.40) <.01 |
| b | Slope | 0.04 (0.04) .26 | 0.10 (0.07) .18 | 0.10 (0.07) .18 | 0.07 (0.08) .35 |
| b | Level \* age | 0.01 (0.02) .72 | -0.00 (0.02) .90 | 0.00 (0.02) .90 | 0.00 (0.02) .78 |
| b | Level \* education | --- | 0.35 (0.03) <.01 | 0.34 (0.03) <.01 | 0.34 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.21 (1.53) .15 | 2.12 (1.53) .16 |
| b | Level \* smoking | --- | --- | --- | 0.19 (0.19) .32 |
| b | Level \* cardio | --- | --- | --- | -0.20 (0.31) .52 |
| b | Level \* diabetes | --- | --- | --- | -0.16 (0.28) .58 |
| b | Slope \* age | -0.00 (0.00) .81 | -0.00 (0.00) .82 | -0.00 (0.00) .81 | 0.00 (0.00) .99 |
| b | Slope \* education | --- | -0.01 (0.01) .32 | -0.01 (0.01) .34 | -0.01 (0.01) .34 |
| b | Slope \* height | --- | --- | 0.04 (0.28) .90 | -0.00 (0.29) .99 |
| b | Slope \* smoking | --- | --- | --- | 0.06 (0.03) .07 |
| b | Slope \* cardio | --- | --- | --- | -0.01 (0.06) .84 |
| b | Slope \* diabetes | --- | --- | --- | -0.07 (0.06) .26 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .15 | 0.00 (0.00) .14 | 0.00 (0.00) .15 | 0.00 (0.00) .26 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .11 | -0.01 (0.00) .04 | -0.01 (0.00) .13 |
| b | Var (Level) | 5.17 (0.54) <.01 | 3.46 (0.35) <.01 | 3.44 (0.36) <.01 | 3.44 (0.36) <.01 |
| b | Var (Slope) | 0.01 (0.01) .67 | 0.01 (0.01) .67 | 0.01 (0.01) .67 | 0.01 (0.01) .53 |
| b | Var (Residual) | 0.76 (0.10) <.01 | 0.76 (0.10) <.01 | 0.76 (0.10) <.01 | 0.75 (0.10) <.01 |
| b | Covar (Level, Slope) | -0.12 (0.08) .11 | -0.09 (0.06) .13 | -0.09 (0.06) .13 | -0.12 (0.06) .07 |
| ab | Covar (Levels) | 0.29 (0.07) <.01 | 0.11 (0.06) .06 | 0.09 (0.06) .12 | 0.10 (0.06) .08 |
| ab | Covar (Slopes) | -0.00 (0.00) .69 | -0.00 (0.00) .72 | -0.00 (0.00) .76 | -0.00 (0.00) .81 |
| ab | Covar (Residuals) | -0.00 (0.01) .88 | -0.00 (0.01) .88 | -0.00 (0.01) .86 | -0.00 (0.01) .72 |
|  | Correlation of Levels | 0.222 | 0.1057 | 0.086 | 0.098 |
|  | Correlation of Slopes | -0.289 | -0.2887 | -0.289 | -0.236 |
|  | Correlation of Residuals | -0.011 | -0.0053 | -0.011 | -0.016 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,559 | -4,450 | -4,049 | -4,625 |
|  | AIC | 7,164 | 8,959 | 8,173 | 9,386 |
|  | BIC | 7,253 | 9,075 | 8,320 | 9,648 |

## num\_comp

Gender = *male*; Process (a) = *fev*; Process (b) = *num\_comp*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.56 (0.44) <.01 | 1.68 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.10 (0.09) .30 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .28 | -0.00 (0.00) .28 | -0.00 (0.00) .28 | 0.00 (0.00) .80 |
| a | Slope \* education | --- | -0.00 (0.00) .71 | -0.00 (0.00) .48 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .25 | 0.10 (0.12) .42 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .18 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .05 |
| b | Level | 26.08 (0.69) <.01 | 21.08 (1.05) <.01 | 21.26 (1.01) <.01 | 20.31 (1.17) <.01 |
| b | Slope | -0.03 (0.15) .86 | 0.38 (0.27) .15 | 0.37 (0.27) .17 | 0.29 (0.31) .35 |
| b | Level \* age | -0.19 (0.06) <.01 | -0.20 (0.06) <.01 | -0.17 (0.06) <.01 | -0.15 (0.06) .01 |
| b | Level \* education | --- | 0.61 (0.10) <.01 | 0.50 (0.10) <.01 | 0.54 (0.10) <.01 |
| b | Level \* height | --- | --- | 18.18 (5.20) <.01 | 18.13 (5.17) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.40 (0.70) .57 |
| b | Level \* cardio | --- | --- | --- | -0.34 (1.00) .74 |
| b | Level \* diabetes | --- | --- | --- | 1.95 (0.91) .03 |
| b | Slope \* age | -0.03 (0.01) .01 | -0.03 (0.01) .01 | -0.03 (0.01) .01 | -0.03 (0.01) .02 |
| b | Slope \* education | --- | -0.05 (0.03) .08 | -0.04 (0.03) .15 | -0.04 (0.03) .15 |
| b | Slope \* height | --- | --- | -1.57 (1.44) .28 | -1.72 (1.41) .22 |
| b | Slope \* smoking | --- | --- | --- | 0.25 (0.16) .12 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.22) .91 |
| b | Slope \* diabetes | --- | --- | --- | -0.37 (0.22) .10 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00 (0.00) .17 | 0.00 (0.00) .31 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .14 | -0.01 (0.00) .14 | -0.01 (0.00) .05 | -0.01 (0.00) .15 |
| b | Var (Level) | 43.88 (3.92) <.01 | 38.72 (3.64) <.01 | 36.94 (3.46) <.01 | 36.28 (3.47) <.01 |
| b | Var (Slope) | 0.46 (0.28) .10 | 0.43 (0.27) .10 | 0.43 (0.27) .11 | 0.34 (0.26) .20 |
| b | Var (Residual) | 14.04 (1.47) <.01 | 14.02 (1.47) <.01 | 14.01 (1.45) <.01 | 14.11 (1.47) <.01 |
| b | Covar (Level, Slope) | -0.39 (0.97) .69 | -0.00 (0.85) .99 | 0.16 (0.87) .86 | 0.22 (0.85) .80 |
| ab | Covar (Levels) | 0.62 (0.24) .01 | 0.29 (0.23) .20 | 0.10 (0.22) .64 | 0.21 (0.21) .32 |
| ab | Covar (Slopes) | -0.01 (0.01) .34 | -0.01 (0.01) .32 | -0.01 (0.01) .33 | -0.01 (0.01) .31 |
| ab | Covar (Residuals) | -0.00 (0.04) .91 | -0.00 (0.04) .89 | -0.00 (0.04) .91 | -0.01 (0.04) .87 |
|  | Correlation of Levels | 0.1639 | 0.0831 | 0.031 | 0.0665 |
|  | Correlation of Slopes | -0.4286 | -0.4746 | -0.445 | -0.7626 |
|  | Correlation of Residuals | -0.0049 | -0.0062 | -0.005 | -0.0074 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -5,190 | -6,123 | -5,717 | -6,292 |
|  | AIC | 10,426 | 12,305 | 11,509 | 12,721 |
|  | BIC | 10,514 | 12,421 | 11,656 | 12,983 |

## symbol

Gender = *male*; Process (a) = *fev*; Process (b) = *symbol*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .01 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.54 (0.45) <.01 | 1.67 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.10 (0.09) .29 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .27 | 0.00 (0.00) .78 |
| a | Slope \* education | --- | 0.00 (0.00) .78 | -0.00 (0.00) .53 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .25 | 0.09 (0.13) .46 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .19 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .07 |
| b | Level | 11.68 (0.28) <.01 | 9.70 (0.44) <.01 | 9.74 (0.44) <.01 | 35.95 (1.71) <.01 |
| b | Slope | 0.00 (0.07) .99 | -0.04 (0.12) .73 | -0.04 (0.12) .76 | -0.07 (0.42) .86 |
| b | Level \* age | -0.02 (0.02) .42 | -0.03 (0.02) .26 | -0.02 (0.02) .42 | -0.45 (0.08) <.01 |
| b | Level \* education | --- | 0.24 (0.04) <.01 | 0.22 (0.04) <.01 | 0.78 (0.16) <.01 |
| b | Level \* height | --- | --- | 3.86 (2.41) .11 | 25.49 (6.92) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.29 (0.94) .76 |
| b | Level \* cardio | --- | --- | --- | -0.76 (1.23) .54 |
| b | Level \* diabetes | --- | --- | --- | -0.01 (1.39) .99 |
| b | Slope \* age | 0.00 (0.01) .45 | 0.00 (0.01) .47 | 0.00 (0.01) .43 | -0.07 (0.02) <.01 |
| b | Slope \* education | --- | 0.00 (0.01) .64 | 0.00 (0.01) .88 | 0.04 (0.04) .35 |
| b | Slope \* height | --- | --- | 0.71 (0.66) .28 | -0.91 (1.89) .63 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.21) .92 |
| b | Slope \* cardio | --- | --- | --- | 0.29 (0.31) .34 |
| b | Slope \* diabetes | --- | --- | --- | -0.55 (0.31) .08 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .16 | 0.00 (0.00) .15 | 0.00 (0.00) .16 | 0.00 (0.00) .30 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .14 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .16 |
| b | Var (Level) | 5.91 (0.74) <.01 | 5.08 (0.62) <.01 | 5.00 (0.60) <.01 | 70.22 (7.77) <.01 |
| b | Var (Slope) | 0.06 (0.05) .16 | 0.06 (0.04) .17 | 0.06 (0.04) .19 | 0.52 (0.43) .23 |
| b | Var (Residual) | 3.44 (0.33) <.01 | 3.44 (0.33) <.01 | 3.44 (0.33) <.01 | 21.32 (1.67) <.01 |
| b | Covar (Level, Slope) | -0.22 (0.15) .13 | -0.23 (0.14) .10 | -0.24 (0.14) .09 | 1.85 (1.47) .21 |
| ab | Covar (Levels) | 0.38 (0.10) <.01 | 0.25 (0.09) .01 | 0.21 (0.09) .02 | 0.85 (0.32) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .50 | 0.00 (0.00) .47 | 0.00 (0.00) .54 | -0.00 (0.02) .97 |
| ab | Covar (Residuals) | 0.00 (0.02) .94 | 0.00 (0.02) .93 | 0.00 (0.02) .96 | 0.04 (0.04) .38 |
|  | Correlation of Levels | 0.2720 | 0.200 | 0.1741 | 0.196 |
|  | Correlation of Slopes | 0.2631 | 0.362 | 0.2739 | -0.044 |
|  | Correlation of Residuals | 0.0025 | 0.005 | 0.0025 | 0.039 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -4,248 | -5,177 | -4,774 | -6,574 |
|  | AIC | 8,542 | 10,413 | 9,623 | 13,285 |
|  | BIC | 8,630 | 10,529 | 9,770 | 13,547 |

## word\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.13 (0.08) <.01 | 2.41 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .01 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.56 (0.44) <.01 | 1.69 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .31 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .31 | -0.00 (0.00) .30 | -0.00 (0.00) .29 | 0.00 (0.00) .80 |
| a | Slope \* education | --- | -0.00 (0.00) .65 | -0.00 (0.00) .46 | 0.00 (0.00) .99 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .26 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .20 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .06 |
| b | Level | 5.94 (0.18) <.01 | 4.89 (0.28) <.01 | 4.89 (0.28) <.01 | 4.99 (0.33) <.01 |
| b | Slope | 0.01 (0.05) .78 | 0.08 (0.08) .33 | 0.08 (0.08) .33 | 0.07 (0.11) .52 |
| b | Level \* age | -0.10 (0.01) <.01 | -0.11 (0.01) <.01 | -0.11 (0.01) <.01 | -0.11 (0.01) <.01 |
| b | Level \* education | --- | 0.13 (0.03) <.01 | 0.13 (0.03) <.01 | 0.13 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.27 (1.38) .84 | 0.37 (1.38) .79 |
| b | Level \* smoking | --- | --- | --- | -0.26 (0.18) .16 |
| b | Level \* cardio | --- | --- | --- | 0.06 (0.28) .84 |
| b | Level \* diabetes | --- | --- | --- | 0.30 (0.29) .30 |
| b | Slope \* age | 0.00 (0.00) .38 | 0.00 (0.00) .36 | 0.00 (0.00) .34 | 0.00 (0.00) .37 |
| b | Slope \* education | --- | -0.01 (0.01) .34 | -0.01 (0.01) .32 | -0.01 (0.01) .36 |
| b | Slope \* height | --- | --- | 0.11 (0.48) .82 | 0.11 (0.49) .82 |
| b | Slope \* smoking | --- | --- | --- | 0.03 (0.06) .64 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.07) .55 |
| b | Slope \* diabetes | --- | --- | --- | -0.05 (0.08) .51 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .31 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .15 |
| b | Var (Level) | 2.64 (0.31) <.01 | 2.40 (0.30) <.01 | 2.40 (0.30) <.01 | 2.36 (0.29) <.01 |
| b | Var (Slope) | 0.02 (0.02) .49 | 0.01 (0.02) .52 | 0.01 (0.02) .52 | 0.01 (0.02) .55 |
| b | Var (Residual) | 1.74 (0.12) <.01 | 1.74 (0.12) <.01 | 1.74 (0.12) <.01 | 1.74 (0.12) <.01 |
| b | Covar (Level, Slope) | 0.01 (0.08) .88 | 0.02 (0.07) .74 | 0.02 (0.07) .73 | 0.03 (0.07) .71 |
| ab | Covar (Levels) | 0.13 (0.07) .08 | 0.06 (0.07) .44 | 0.05 (0.07) .50 | 0.05 (0.07) .44 |
| ab | Covar (Slopes) | 0.00 (0.00) .76 | 0.00 (0.00) .78 | 0.00 (0.00) .77 | 0.00 (0.00) .82 |
| ab | Covar (Residuals) | 0.00 (0.01) .82 | 0.00 (0.01) .81 | 0.00 (0.01) .82 | 0.00 (0.01) .77 |
|  | Correlation of Levels | 0.14 | 0.064 | 0.056 | 0.063 |
|  | Correlation of Slopes | 0.18 | 0.183 | 0.183 | 0.267 |
|  | Correlation of Residuals | 0.01 | 0.010 | 0.010 | 0.014 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,869 | -4,807 | -4,406 | -4,985 |
|  | AIC | 7,784 | 9,675 | 8,889 | 10,107 |
|  | BIC | 7,872 | 9,790 | 9,036 | 10,369 |

## word\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.09) <.01 | 2.12 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .02 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .03 |
| a | Level \* height | --- | --- | 1.54 (0.44) <.01 | 1.67 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .32 |
| a | Level \* diabetes | --- | --- | --- | -0.23 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .32 | -0.00 (0.00) .31 | -0.00 (0.00) .30 | 0.00 (0.00) .83 |
| a | Slope \* education | --- | -0.00 (0.00) .60 | -0.00 (0.00) .42 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | 0.15 (0.13) .26 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) .01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .07 |
| b | Level | 17.89 (0.34) <.01 | 15.45 (0.54) <.01 | 15.45 (0.54) <.01 | 15.36 (0.62) <.01 |
| b | Slope | 0.11 (0.10) .25 | 0.19 (0.16) .23 | 0.19 (0.16) .23 | 0.27 (0.20) .18 |
| b | Level \* age | -0.15 (0.03) <.01 | -0.16 (0.02) <.01 | -0.16 (0.02) <.01 | -0.16 (0.03) <.01 |
| b | Level \* education | --- | 0.30 (0.05) <.01 | 0.30 (0.05) <.01 | 0.30 (0.05) <.01 |
| b | Level \* height | --- | --- | 0.56 (2.31) .81 | 0.69 (2.32) .77 |
| b | Level \* smoking | --- | --- | --- | -0.29 (0.30) .33 |
| b | Level \* cardio | --- | --- | --- | 0.53 (0.47) .26 |
| b | Level \* diabetes | --- | --- | --- | 0.73 (0.49) .14 |
| b | Slope \* age | 0.01 (0.01) .30 | 0.01 (0.01) .31 | 0.01 (0.01) .31 | 0.01 (0.01) .39 |
| b | Slope \* education | --- | -0.01 (0.01) .57 | -0.01 (0.02) .58 | -0.01 (0.02) .55 |
| b | Slope \* height | --- | --- | -0.01 (0.78) .99 | -0.03 (0.81) .97 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.11) .65 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.16) .99 |
| b | Slope \* diabetes | --- | --- | --- | -0.11 (0.16) .48 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .17 | 0.00 (0.00) .28 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .15 |
| b | Var (Level) | 7.61 (0.90) <.01 | 6.31 (0.86) <.01 | 6.32 (0.86) <.01 | 6.34 (0.89) <.01 |
| b | Var (Slope) | 0.02 (0.06) .75 | 0.02 (0.06) .79 | 0.02 (0.07) .77 | 0.07 (0.07) .37 |
| b | Var (Residual) | 6.26 (0.35) <.01 | 6.28 (0.35) <.01 | 6.27 (0.35) <.01 | 6.18 (0.34) <.01 |
| b | Covar (Level, Slope) | 0.24 (0.22) .28 | 0.28 (0.21) .20 | 0.27 (0.21) .21 | 0.17 (0.23) .45 |
| ab | Covar (Levels) | 0.29 (0.12) .02 | 0.12 (0.11) .28 | 0.10 (0.11) .35 | 0.12 (0.10) .24 |
| ab | Covar (Slopes) | -0.00 (0.01) .78 | -0.00 (0.01) .77 | -0.00 (0.01) .70 | -0.00 (0.01) .88 |
| ab | Covar (Residuals) | 0.05 (0.03) .06 | 0.05 (0.03) .05 | 0.05 (0.03) .05 | 0.05 (0.02) .05 |
|  | Correlation of Levels | 0.18 | 0.088 | 0.075 | 0.095 |
|  | Correlation of Slopes | -0.32 | -0.343 | -0.487 | -0.086 |
|  | Correlation of Residuals | 0.09 | 0.090 | 0.093 | 0.092 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -4,590 | -5,521 | -5,120 | -5,699 |
|  | AIC | 9,227 | 11,102 | 10,317 | 11,533 |
|  | BIC | 9,316 | 11,218 | 10,463 | 11,796 |

## word\_rec

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_rec*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 2.41 (0.06) <.01 | 2.10 (0.08) <.01 | 2.12 (0.08) <.01 | 2.40 (0.11) <.01 |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.02) .02 | -0.04 (0.02) .02 | -0.08 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .04 |
| a | Level \* height | --- | --- | 1.60 (0.44) <.01 | 1.72 (0.45) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.22 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.09 (0.09) .31 |
| a | Level \* diabetes | --- | --- | --- | -0.24 (0.08) <.01 |
| a | Slope \* age | -0.00 (0.00) .33 | -0.00 (0.00) .33 | -0.00 (0.00) .32 | 0.00 (0.00) .87 |
| a | Slope \* education | --- | -0.00 (0.00) .57 | -0.00 (0.00) .39 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | 0.14 (0.13) .26 | 0.10 (0.12) .43 |
| a | Slope \* smoking | --- | --- | --- | 0.04 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .17 |
| a | Slope \* diabetes | --- | --- | --- | 0.04 (0.02) .05 |
| b | Level | 9.77 (0.08) <.01 | 9.51 (0.14) <.01 | 9.52 (0.14) <.01 | 9.61 (0.18) <.01 |
| b | Slope | 0.02 (0.02) .53 | 0.09 (0.05) .06 | 0.09 (0.05) .08 | 0.09 (0.06) .14 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.03 (0.02) .06 | 0.02 (0.02) .14 | 0.02 (0.02) .17 |
| b | Level \* height | --- | --- | 1.03 (0.81) .20 | 1.10 (0.83) .18 |
| b | Level \* smoking | --- | --- | --- | -0.19 (0.11) .09 |
| b | Level \* cardio | --- | --- | --- | -0.06 (0.18) .75 |
| b | Level \* diabetes | --- | --- | --- | 0.20 (0.16) .23 |
| b | Slope \* age | 0.00 (0.00) .37 | 0.00 (0.00) .32 | 0.00 (0.00) .48 | 0.00 (0.00) .65 |
| b | Slope \* education | --- | -0.01 (0.01) .09 | -0.01 (0.01) .35 | -0.01 (0.01) .34 |
| b | Slope \* height | --- | --- | -0.61 (0.28) .03 | -0.57 (0.28) .04 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.03) .86 |
| b | Slope \* cardio | --- | --- | --- | 0.08 (0.05) .09 |
| b | Slope \* diabetes | --- | --- | --- | -0.06 (0.06) .32 |
| a | Var (Level) | 0.33 (0.03) <.01 | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .12 | 0.00 (0.00) .12 | 0.00 (0.00) .13 | 0.00 (0.00) .24 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .09 | -0.01 (0.00) .09 | -0.01 (0.00) .04 | -0.01 (0.00) .12 |
| b | Var (Level) | 0.99 (0.26) <.01 | 0.98 (0.25) <.01 | 0.97 (0.25) <.01 | 0.96 (0.25) <.01 |
| b | Var (Slope) | 0.04 (0.02) .08 | 0.03 (0.02) .10 | 0.03 (0.02) .10 | 0.03 (0.02) .08 |
| b | Var (Residual) | 0.46 (0.08) <.01 | 0.46 (0.08) <.01 | 0.46 (0.08) <.01 | 0.46 (0.08) <.01 |
| b | Covar (Level, Slope) | -0.12 (0.06) .05 | -0.11 (0.06) .05 | -0.11 (0.06) .05 | -0.11 (0.05) .04 |
| ab | Covar (Levels) | 0.03 (0.04) .46 | 0.01 (0.04) .78 | 0.01 (0.04) .88 | 0.01 (0.04) .88 |
| ab | Covar (Slopes) | -0.00 (0.00) .33 | -0.00 (0.00) .30 | -0.00 (0.00) .32 | -0.00 (0.00) .36 |
| ab | Covar (Residuals) | 0.01 (0.01) .24 | 0.01 (0.01) .23 | 0.01 (0.01) .22 | 0.01 (0.01) .19 |
|  | Correlation of Levels | 0.054 | 0.024 | 0.011 | 0.014 |
|  | Correlation of Slopes | -0.359 | -0.364 | -0.369 | -0.375 |
|  | Correlation of Residuals | 0.062 | 0.062 | 0.062 | 0.069 |
|  | N | 351 | 351 | 351 | 351 |
|  | occasions | 5 | 5 | 5 | 5 |
|  | parameters | 23 | 30 | 38 | 68 |
|  | LL | -3,129 | -4,075 | -3,672 | -4,249 |
|  | AIC | 6,304 | 8,210 | 7,421 | 8,634 |
|  | BIC | 6,392 | 8,326 | 7,568 | 8,897 |

## Summary

Study = *MAP*; Gender = *male*; Process (a) = *fev*

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | bnt | 0.16 | 0.11 | 0.08 | 0.09 |
| Correlation of Levels | bstory\_de | 0.12 | 0.05 | 0.03 | 0.03 |
| Correlation of Levels | bstory\_im | 0.14 | 0.09 | 0.05 | 0.08 |
| Correlation of Levels | categories | 0.27 | 0.21 | 0.18 | 0.18 |
| Correlation of Levels | digit\_b | 0.17 | 0.07 | 0.08 | 0.11 |
| Correlation of Levels | digit\_f | 0.14 | 0.04 | 0.05 | 0.07 |
| Correlation of Levels | digit\_o | 0.10 | -0.00 | -0.04 | -0.03 |
| Correlation of Levels | ideas | 0.08 | 0.03 | 0.00 | -0.02 |
| Correlation of Levels | line | 0.27 | 0.20 | 0.15 | 0.14 |
| Correlation of Levels | logic\_de | 0.17 | 0.11 | 0.09 | 0.11 |
| Correlation of Levels | logic\_im | 0.15 | 0.08 | 0.05 | 0.08 |
| Correlation of Levels | matrices | 0.32 | 0.23 | 0.18 | 0.17 |
| Correlation of Levels | mmse | . | 0.06 | 0.02 | 0.03 |
| Correlation of Levels | nart | 0.22 | 0.11 | 0.09 | 0.10 |
| Correlation of Levels | num\_comp | 0.16 | 0.08 | 0.03 | 0.07 |
| Correlation of Levels | symbol | 0.27 | 0.20 | 0.17 | 0.20 |
| Correlation of Levels | word\_de | 0.14 | 0.06 | 0.06 | 0.06 |
| Correlation of Levels | word\_im | 0.18 | 0.09 | 0.07 | 0.10 |
| Correlation of Levels | word\_rec | 0.05 | 0.02 | 0.01 | 0.01 |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | bnt | -0.50 | -0.53 | -0.58 | -0.82 |
| Correlation of Slopes | bstory\_de | 0.76 | 0.76 | 0.61 | 0.64 |
| Correlation of Slopes | bstory\_im | 0.82 | 0.83 | 0.83 | 0.69 |
| Correlation of Slopes | categories | 0.24 | 0.21 | 0.18 | 0.48 |
| Correlation of Slopes | digit\_b | -0.24 | -0.12 | -0.12 | -0.16 |
| Correlation of Slopes | digit\_f | 0.86 | 0.88 | 0.88 | 0.77 |
| Correlation of Slopes | digit\_o | 0.24 | 0.50 | 0.27 | 0.38 |
| Correlation of Slopes | ideas | -0.31 | -0.31 | -0.31 | -0.67 |
| Correlation of Slopes | line | 0.26 | 0.36 | 0.20 | 0.27 |
| Correlation of Slopes | logic\_de | -0.15 | -0.11 | -0.19 | -0.38 |
| Correlation of Slopes | logic\_im | -0.41 | -0.42 | -0.42 | -0.57 |
| Correlation of Slopes | matrices | 0.43 | 0.43 | 0.44 | 0.65 |
| Correlation of Slopes | mmse | . | -0.22 | -0.22 | -0.39 |
| Correlation of Slopes | nart | -0.29 | -0.29 | -0.29 | -0.24 |
| Correlation of Slopes | num\_comp | -0.43 | -0.47 | -0.44 | -0.76 |
| Correlation of Slopes | symbol | 0.26 | 0.36 | 0.27 | -0.04 |
| Correlation of Slopes | word\_de | 0.18 | 0.18 | 0.18 | 0.27 |
| Correlation of Slopes | word\_im | -0.32 | -0.34 | -0.49 | -0.09 |
| Correlation of Slopes | word\_rec | -0.36 | -0.36 | -0.37 | -0.38 |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | bnt | -0.02 | -0.02 | -0.02 | -0.02 |
| Correlation of Residuals | bstory\_de | -0.03 | -0.03 | -0.03 | -0.03 |
| Correlation of Residuals | bstory\_im | -0.05 | -0.05 | -0.05 | -0.05 |
| Correlation of Residuals | categories | 0.03 | 0.03 | 0.03 | 0.03 |
| Correlation of Residuals | digit\_b | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | digit\_f | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | digit\_o | -0.02 | -0.02 | -0.02 | -0.01 |
| Correlation of Residuals | ideas | 0.04 | 0.04 | 0.03 | 0.03 |
| Correlation of Residuals | line | 0.00 | 0.00 | 0.01 | 0.01 |
| Correlation of Residuals | logic\_de | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | logic\_im | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Residuals | matrices | -0.03 | -0.03 | -0.02 | -0.02 |
| Correlation of Residuals | mmse | . | 0.02 | 0.02 | 0.02 |
| Correlation of Residuals | nart | -0.01 | -0.01 | -0.01 | -0.02 |
| Correlation of Residuals | num\_comp | -0.00 | -0.01 | -0.00 | -0.01 |
| Correlation of Residuals | symbol | 0.00 | 0.00 | 0.00 | 0.04 |
| Correlation of Residuals | word\_de | 0.01 | 0.01 | 0.01 | 0.01 |
| Correlation of Residuals | word\_im | 0.09 | 0.09 | 0.09 | 0.09 |
| Correlation of Residuals | word\_rec | 0.06 | 0.06 | 0.06 | 0.07 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | bnt | 0.01 | 0.09 | 0.25 | 0.23 |
| Covariance of Levels | bstory\_de | 0.23 | 0.62 | 0.73 | 0.73 |
| Covariance of Levels | bstory\_im | 0.15 | 0.38 | 0.59 | 0.43 |
| Covariance of Levels | categories | 0.00 | 0.01 | 0.02 | 0.02 |
| Covariance of Levels | digit\_b | 0.02 | 0.33 | 0.29 | 0.14 |
| Covariance of Levels | digit\_f | 0.03 | 0.53 | 0.45 | 0.33 |
| Covariance of Levels | digit\_o | 0.18 | 0.97 | 0.62 | 0.69 |
| Covariance of Levels | ideas | 0.33 | 0.72 | 0.96 | 0.78 |
| Covariance of Levels | line | 0.00 | 0.01 | 0.04 | 0.05 |
| Covariance of Levels | logic\_de | 0.03 | 0.14 | 0.21 | 0.11 |
| Covariance of Levels | logic\_im | 0.05 | 0.29 | 0.50 | 0.33 |
| Covariance of Levels | matrices | 0.00 | 0.00 | 0.02 | 0.03 |
| Covariance of Levels | mmse | . | 0.39 | 0.74 | 0.67 |
| Covariance of Levels | nart | 0.00 | 0.06 | 0.12 | 0.08 |
| Covariance of Levels | num\_comp | 0.01 | 0.20 | 0.64 | 0.32 |
| Covariance of Levels | symbol | 0.00 | 0.01 | 0.02 | 0.01 |
| Covariance of Levels | word\_de | 0.08 | 0.44 | 0.50 | 0.44 |
| Covariance of Levels | word\_im | 0.02 | 0.28 | 0.35 | 0.24 |
| Covariance of Levels | word\_rec | 0.46 | 0.78 | 0.88 | 0.88 |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | bnt | 0.34 | 0.30 | 0.38 | 0.33 |
| Covariance of Slopes | bstory\_de | 0.44 | 0.46 | 0.51 | 0.62 |
| Covariance of Slopes | bstory\_im | 0.12 | 0.13 | 0.15 | 0.18 |
| Covariance of Slopes | categories | 0.61 | 0.65 | 0.75 | 0.51 |
| Covariance of Slopes | digit\_b | 0.67 | 0.76 | 0.74 | 0.85 |
| Covariance of Slopes | digit\_f | 0.14 | 0.13 | 0.15 | 0.31 |
| Covariance of Slopes | digit\_o | 0.75 | 0.72 | 0.81 | 0.89 |
| Covariance of Slopes | ideas | 0.22 | 0.22 | 0.22 | 0.15 |
| Covariance of Slopes | line | 0.50 | 0.47 | 0.64 | 0.63 |
| Covariance of Slopes | logic\_de | 0.64 | 0.66 | 0.53 | 0.35 |
| Covariance of Slopes | logic\_im | 0.37 | 0.37 | 0.34 | 0.22 |
| Covariance of Slopes | matrices | 0.36 | 0.36 | 0.39 | 0.29 |
| Covariance of Slopes | mmse | . | 0.58 | 0.56 | 0.46 |
| Covariance of Slopes | nart | 0.69 | 0.72 | 0.76 | 0.81 |
| Covariance of Slopes | num\_comp | 0.34 | 0.32 | 0.33 | 0.31 |
| Covariance of Slopes | symbol | 0.50 | 0.47 | 0.54 | 0.97 |
| Covariance of Slopes | word\_de | 0.76 | 0.78 | 0.77 | 0.82 |
| Covariance of Slopes | word\_im | 0.78 | 0.77 | 0.70 | 0.88 |
| Covariance of Slopes | word\_rec | 0.33 | 0.30 | 0.32 | 0.36 |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | bnt | 0.68 | 0.68 | 0.68 | 0.71 |
| Covariance of Residuals | bstory\_de | 0.47 | 0.47 | 0.46 | 0.53 |
| Covariance of Residuals | bstory\_im | 0.23 | 0.23 | 0.24 | 0.29 |
| Covariance of Residuals | categories | 0.59 | 0.57 | 0.53 | 0.52 |
| Covariance of Residuals | digit\_b | 0.81 | 0.80 | 0.74 | 0.74 |
| Covariance of Residuals | digit\_f | 0.78 | 0.76 | 0.77 | 0.79 |
| Covariance of Residuals | digit\_o | 0.75 | 0.75 | 0.77 | 0.82 |
| Covariance of Residuals | ideas | 0.50 | 0.52 | 0.54 | 0.56 |
| Covariance of Residuals | line | 0.94 | 0.93 | 0.82 | 0.89 |
| Covariance of Residuals | logic\_de | 0.78 | 0.81 | 0.84 | 0.88 |
| Covariance of Residuals | logic\_im | 0.97 | 0.97 | 0.97 | 0.95 |
| Covariance of Residuals | matrices | 0.57 | 0.57 | 0.62 | 0.60 |
| Covariance of Residuals | mmse | . | 0.72 | 0.71 | 0.69 |
| Covariance of Residuals | nart | 0.88 | 0.88 | 0.86 | 0.72 |
| Covariance of Residuals | num\_comp | 0.91 | 0.89 | 0.91 | 0.87 |
| Covariance of Residuals | symbol | 0.94 | 0.93 | 0.96 | 0.38 |
| Covariance of Residuals | word\_de | 0.82 | 0.81 | 0.82 | 0.77 |
| Covariance of Residuals | word\_im | 0.06 | 0.05 | 0.05 | 0.05 |
| Covariance of Residuals | word\_rec | 0.24 | 0.23 | 0.22 | 0.19 |

#Session Info

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
locale:  
[1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252  
[4] LC\_NUMERIC=C LC\_TIME=English\_United States.1252   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] knitr\_1.14 ggplot2\_2.1.0 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 testit\_0.5 colorspace\_1.2-7 R6\_2.2.0 stringr\_1.1.0   
 [7] highr\_0.6 plyr\_1.8.4 dplyr\_0.5.0 tools\_3.3.1 DT\_0.2 grid\_3.3.1   
[13] gtable\_0.2.0 DBI\_0.5-1 htmltools\_0.3.5 yaml\_2.1.13 lazyeval\_0.2.0 assertthat\_0.1   
[19] digest\_0.6.10 tibble\_1.2 formatR\_1.4 readr\_1.0.0 tidyr\_0.6.0 htmlwidgets\_0.7   
[25] rsconnect\_0.5 evaluate\_0.10 rmarkdown\_1.1 stringi\_1.1.2 scales\_0.4.0