MAP : Seed report

Date: 2016-10-10

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

# Available models

Study **MAP** contains the following outcome pairs: 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 | --,p= ---- |
|  | 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 | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.03(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 | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .09 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .85 | 0.00(0.00), .89 | 0.00(0.00), .90 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .64 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .48 | -0.01(NA) |
| b | Level | 14.14(0.06), <.01 | 13.31(0.14), <.01 | 13.35(0.14), <.01 | 13.47(0.16), <.01 | 13.57(0.39) |
| b | Slope | 0.04(0.01), <.01 | 0.11(0.04), <.01 | 0.11(0.04), <.01 | 0.09(0.04), .02 | 0.09(0.03) |
| b | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00) |
| b | Level \* education | --- | 0.11(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.02), <.01 | 0.10(0.01) |
| b | Level \* height | --- | --- | 2.68(0.67), <.01 | 2.70(0.67), <.01 | 2.69(0.01) |
| b | Level \* smoking | --- | --- | --- | -0.01(0.08), .90 | -0.01(NA) |
| b | Level \* cardio | --- | --- | --- | -0.12(0.22), .59 | -0.12(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.37(0.17), .03 | -0.37(NA) |
| b | Slope \* age | -0.00(0.00), .24 | -0.00(0.00), .20 | -0.00(0.00), .11 | -0.00(0.00), .15 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.00), .02 | -0.01(0.00), .04 | -0.01(0.00), .06 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.29(0.15), .06 | -0.29(0.15), .06 | -0.29(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.00(0.02), .94 | -0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.03(0.05), .60 | 0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.04(0.05), .37 | 0.04(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .53 | 0.00(0.00), .54 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .51 | -0.00(0.00), .54 | 0.00(0.00), .92 | 0.00(0.00), .92 | -0.00(0.00) |
| b | Var (Level) | 1.38(0.22), <.01 | 1.26(0.21), <.01 | 1.23(0.20), <.01 | 1.21(0.19), <.01 | 1.27(0.08) |
| b | Var (Slope) | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| b | Var (Residual) | 0.46(0.02), <.01 | 0.46(0.02), <.01 | 0.46(0.02), <.01 | 0.46(0.02), <.01 | 0.46(0.00) |
| b | Covar (Level, Slope) | -0.11(0.03), <.01 | -0.10(0.03), <.01 | -0.10(0.03), <.01 | -0.10(0.03), <.01 | -0.10(0.01) |
| ab | Covar (Levels) | 0.07(0.02), <.01 | 0.04(0.02), .04 | 0.02(0.02), .29 | 0.02(0.02), .32 | 0.04(0.02) |
| ab | Covar (Slopes) | 0.00(0.00), .62 | 0.00(0.00), .66 | 0.00(0.00), .75 | 0.00(0.00), .72 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.00), .60 | -0.00(0.00), .58 | -0.00(0.00), .60 | -0.00(0.00), .61 | -0.00(0.00) |
|  | Correlation of Levels | 0.156 | 0.108 | 0.051 | 0.047 | 0.09(0.05) |
|  | Correlation of Slopes | Inf | Inf | NaN | NaN | Inf(NaN) |
|  | Correlation of Residuals | -0.018 | -0.018 | -0.018 | -0.018 | -0.02(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -8,532 | -11,062 | -9,866 | -10,996 | -1.011378e+04(1,189) |
|  | AIC | 17,110 | 22,183 | 19,808 | 22,127 | 2.030706e+04(2,402) |
|  | BIC | 17,223 | 22,331 | 19,995 | 22,462 | 2.050254e+04(2,463) |

## bstory\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .24 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .11 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .73 | 0.00(0.00), .98 | 0.00(0.00), .99 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .08 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .74 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .50 | -0.01(NA) |
| b | Level | 9.63(0.08), <.01 | 8.92(0.14), <.01 | 8.93(0.14), <.01 | 8.98(0.16), <.01 | 9.11(0.34) |
| b | Slope | 0.02(0.03), .45 | 0.05(0.06), .41 | 0.05(0.06), .38 | 0.06(0.06), .31 | 0.05(0.02) |
| b | Level \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.00) |
| b | Level \* education | --- | 0.09(0.02), <.01 | 0.09(0.02), <.01 | 0.09(0.02), <.01 | 0.09(0.00) |
| b | Level \* height | --- | --- | 0.43(0.68), .53 | 0.41(0.68), .54 | 0.42(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.00(0.10), .98 | 0.00(NA) |
| b | Level \* cardio | --- | --- | --- | -0.26(0.22), .22 | -0.26(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.11(0.16), .49 | -0.11(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | -0.00(0.01), .65 | -0.00(0.01), .55 | -0.00(0.01), .60 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.31(0.31), .32 | 0.31(0.31), .30 | 0.31(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.07(0.04), .10 | -0.07(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.12(0.09), .17 | 0.12(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.06(0.07), .40 | 0.06(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .51 | 0.00(0.00), .51 | 0.00(0.00), .53 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .49 | -0.00(0.00), .54 | 0.00(0.00), .92 | 0.00(0.00), .92 | -0.00(0.00) |
| b | Var (Level) | 1.22(0.15), <.01 | 1.14(0.15), <.01 | 1.14(0.15), <.01 | 1.13(0.15), <.01 | 1.16(0.04) |
| b | Var (Slope) | 0.09(0.03), <.01 | 0.09(0.03), <.01 | 0.08(0.03), <.01 | 0.08(0.03), <.01 | 0.08(0.00) |
| b | Var (Residual) | 2.32(0.12), <.01 | 2.32(0.12), <.01 | 2.32(0.12), <.01 | 2.33(0.12), <.01 | 2.32(0.00) |
| b | Covar (Level, Slope) | 0.10(0.06), .08 | 0.10(0.06), .07 | 0.10(0.06), .07 | 0.10(0.05), .05 | 0.10(0.00) |
| ab | Covar (Levels) | 0.03(0.02), .23 | 0.01(0.02), .66 | 0.01(0.02), .70 | 0.01(0.02), .74 | 0.01(0.01) |
| ab | Covar (Slopes) | -0.00(0.00), .40 | -0.00(0.00), .39 | -0.00(0.00), .38 | -0.00(0.00), .42 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .08 | -0.01(0.01), .07 | -0.01(0.01), .08 | -0.01(0.01), .08 | -0.01(0.00) |
|  | Correlation of Levels | 0.070 | 0.026 | 0.022 | 0.020 | 0.03(0.02) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | -0.056 | -0.056 | -0.056 | -0.056 | -0.06(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,875 | -13,421 | -12,232 | -13,364 | -1.247295e+04(1,198) |
|  | AIC | 21,795 | 26,901 | 24,541 | 26,864 | 2.502539e+04(2,420) |
|  | BIC | 21,908 | 27,049 | 24,728 | 27,198 | 2.522087e+04(2,481) |

## bstory\_im

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .38 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .06 | 0.00(0.00), .12 | 0.00(0.00), .09 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .74 | 0.00(0.00), .96 | 0.00(0.00), .95 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .08 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .69 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .55 | -0.01(NA) |
| b | Level | 9.99(0.07), <.01 | 9.41(0.14), <.01 | 9.42(0.14), <.01 | 9.37(0.16), <.01 | 9.55(0.29) |
| b | Slope | -0.01(0.03), .79 | -0.06(0.06), .26 | -0.06(0.06), .27 | -0.03(0.06), .59 | -0.04(0.03) |
| b | Level \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.00) |
| b | Level \* education | --- | 0.08(0.02), <.01 | 0.07(0.02), <.01 | 0.08(0.02), <.01 | 0.08(0.00) |
| b | Level \* height | --- | --- | 0.86(0.70), .22 | 0.84(0.71), .24 | 0.85(0.02) |
| b | Level \* smoking | --- | --- | --- | 0.03(0.10), .74 | 0.03(NA) |
| b | Level \* cardio | --- | --- | --- | -0.13(0.20), .51 | -0.13(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.13(0.15), .39 | 0.13(NA) |
| b | Slope \* age | -0.00(0.00), .08 | -0.00(0.00), .07 | -0.00(0.00), .12 | -0.00(0.00), .10 | -0.00(0.00) |
| b | Slope \* education | --- | 0.01(0.01), .24 | 0.01(0.01), .30 | 0.01(0.01), .34 | 0.01(0.00) |
| b | Slope \* height | --- | --- | 0.24(0.26), .36 | 0.24(0.26), .36 | 0.24(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.05(0.04), .22 | -0.05(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.03(0.08), .70 | -0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.00(0.05), .98 | -0.00(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .52 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .48 | -0.00(0.00), .52 | 0.00(0.00), .91 | 0.00(0.00), .93 | -0.00(0.00) |
| b | Var (Level) | 1.12(0.12), <.01 | 1.07(0.12), <.01 | 1.06(0.11), <.01 | 1.06(0.11), <.01 | 1.08(0.03) |
| b | Var (Slope) | 0.05(0.02), .01 | 0.05(0.02), .01 | 0.05(0.02), .01 | 0.05(0.02), .01 | 0.05(0.00) |
| b | Var (Residual) | 1.98(0.07), <.01 | 1.98(0.07), <.01 | 1.98(0.07), <.01 | 1.98(0.07), <.01 | 1.98(0.00) |
| b | Covar (Level, Slope) | -0.04(0.04), .35 | -0.04(0.04), .30 | -0.04(0.04), .31 | -0.04(0.04), .32 | -0.04(0.00) |
| ab | Covar (Levels) | 0.05(0.02), .02 | 0.03(0.02), .10 | 0.03(0.02), .15 | 0.03(0.02), .13 | 0.03(0.01) |
| ab | Covar (Slopes) | -0.00(0.00), .43 | -0.00(0.00), .42 | -0.00(0.00), .42 | -0.00(0.00), .40 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .11 | -0.01(0.01), .10 | -0.01(0.01), .11 | -0.01(0.01), .12 | -0.01(0.00) |
|  | Correlation of Levels | 0.123 | 0.093 | 0.081 | 0.082 | 0.09(0.02) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | -0.043 | -0.043 | -0.043 | -0.039 | -0.04(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,514 | -13,057 | -11,867 | -13,000 | -1.210956e+04(1,196) |
|  | AIC | 21,075 | 26,174 | 23,811 | 26,135 | 2.429863e+04(2,417) |
|  | BIC | 21,188 | 26,321 | 23,998 | 26,470 | 2.449411e+04(2,478) |

## categories

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.03(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 | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .76 | 0.00(0.00), .96 | 0.00(0.00), .96 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .08 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .77 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .14 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .51 | -0.01(NA) |
| b | Level | 37.98(0.43), <.01 | 31.61(0.69), <.01 | 31.79(0.69), <.01 | 32.91(0.76), <.01 | 33.57(2.99) |
| b | Slope | -0.00(0.10), .99 | -0.02(0.20), .91 | -0.02(0.20), .91 | -0.05(0.21), .80 | -0.02(0.02) |
| b | Level \* age | -0.29(0.04), <.01 | -0.27(0.03), <.01 | -0.25(0.03), <.01 | -0.26(0.03), <.01 | -0.27(0.02) |
| b | Level \* education | --- | 0.85(0.08), <.01 | 0.81(0.08), <.01 | 0.78(0.08), <.01 | 0.82(0.04) |
| b | Level \* height | --- | --- | 12.61(3.55), <.01 | 12.72(3.54), <.01 | 12.67(0.08) |
| b | Level \* smoking | --- | --- | --- | -1.50(0.46), <.01 | -1.50(NA) |
| b | Level \* cardio | --- | --- | --- | -1.50(0.78), .05 | -1.50(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.64(0.78), .41 | -0.64(NA) |
| b | Slope \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.00) |
| b | Slope \* education | --- | 0.00(0.02), .90 | 0.00(0.03), .93 | 0.00(0.03), .94 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.29(0.98), .76 | 0.30(0.98), .76 | 0.30(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.13(0.13), .34 | 0.13(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.22(0.27), .42 | -0.22(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.09(0.24), .70 | -0.09(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .51 | 0.00(0.00), .52 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .53 | -0.00(0.00), .57 | 0.00(0.00), .96 | 0.00(0.00), .95 | -0.00(0.00) |
| b | Var (Level) | 53.00(3.49), <.01 | 46.19(3.22), <.01 | 45.34(3.16), <.01 | 44.42(3.11), <.01 | 47.24(3.91) |
| b | Var (Slope) | 1.18(0.27), <.01 | 1.18(0.27), <.01 | 1.18(0.27), <.01 | 1.17(0.27), <.01 | 1.18(0.00) |
| b | Var (Residual) | 21.49(0.79), <.01 | 21.48(0.79), <.01 | 21.49(0.79), <.01 | 21.49(0.79), <.01 | 21.49(0.00) |
| b | Covar (Level, Slope) | -0.12(0.71), .86 | -0.15(0.65), .82 | -0.17(0.65), .79 | -0.15(0.64), .81 | -0.15(0.02) |
| ab | Covar (Levels) | 0.81(0.11), <.01 | 0.65(0.11), <.01 | 0.54(0.10), <.01 | 0.49(0.10), <.01 | 0.62(0.14) |
| ab | Covar (Slopes) | 0.00(0.01), .93 | 0.00(0.01), .96 | 0.00(0.01), .96 | 0.00(0.01), .99 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.03(0.02), .22 | -0.03(0.02), .22 | -0.03(0.02), .20 | -0.03(0.02), .20 | -0.03(0.00) |
|  | Correlation of Levels | 0.309 | 0.269 | 0.239 | 0.221 | 0.26(0.04) |
|  | Correlation of Slopes | Inf | NaN | NaN | NaN | Inf(NA) |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.035 | -0.035 | -0.03(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -15,315 | -17,829 | -16,639 | -17,768 | -1.688758e+04(1,183) |
|  | AIC | 30,675 | 35,718 | 33,354 | 35,672 | 3.385465e+04(2,390) |
|  | BIC | 30,789 | 35,865 | 33,540 | 36,006 | 3.405013e+04(2,451) |

## digit\_b

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.61(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .42 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .11 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .69 | 0.00(0.00), .98 | 0.00(0.00), .99 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .07 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .66 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .17 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .46 | -0.01(NA) |
| b | Level | 6.35(0.10), <.01 | 5.11(0.16), <.01 | 5.16(0.16), <.01 | 5.19(0.18), <.01 | 5.45(0.60) |
| b | Slope | -0.04(0.02), .16 | 0.00(0.05), .99 | -0.00(0.05), .98 | -0.01(0.05), .90 | -0.01(0.02) |
| b | Level \* age | -0.01(0.01), .39 | -0.00(0.01), .61 | 0.00(0.01), .86 | 0.00(0.01), .66 | -0.00(0.00) |
| b | Level \* education | --- | 0.17(0.02), <.01 | 0.15(0.02), <.01 | 0.15(0.02), <.01 | 0.16(0.01) |
| b | Level \* height | --- | --- | 3.23(0.82), <.01 | 3.16(0.82), <.01 | 3.19(0.05) |
| b | Level \* smoking | --- | --- | --- | 0.00(0.11), .98 | 0.00(NA) |
| b | Level \* cardio | --- | --- | --- | -0.61(0.18), <.01 | -0.61(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.04(0.20), .85 | 0.04(NA) |
| b | Slope \* age | 0.00(0.00), .58 | 0.00(0.00), .65 | 0.00(0.00), .57 | 0.00(0.00), .78 | 0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.00), .35 | -0.00(0.00), .33 | -0.00(0.00), .33 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.09(0.24), .70 | 0.12(0.24), .63 | 0.11(0.02) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.03), .93 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.21(0.07), <.01 | 0.21(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.03(0.07), .65 | -0.03(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .40 | 0.00(0.00), .40 | 0.00(0.00), .50 | 0.00(0.00), .41 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .30 | -0.00(0.00), .34 | 0.00(0.00), .87 | -0.00(0.00), .65 | -0.00(0.00) |
| b | Var (Level) | 2.62(0.17), <.01 | 2.38(0.16), <.01 | 2.31(0.16), <.01 | 2.30(0.16), <.01 | 2.40(0.15) |
| b | Var (Slope) | 0.04(0.01), .02 | 0.04(0.01), .02 | 0.03(0.01), .03 | 0.03(0.01), .02 | 0.03(0.00) |
| b | Var (Residual) | 1.60(0.06), <.01 | 1.60(0.06), <.01 | 1.61(0.06), <.01 | 1.60(0.06), <.01 | 1.60(0.00) |
| b | Covar (Level, Slope) | -0.10(0.04), .01 | -0.09(0.04), .02 | -0.09(0.04), .02 | -0.08(0.04), .02 | -0.09(0.01) |
| ab | Covar (Levels) | 0.14(0.03), <.01 | 0.11(0.03), <.01 | 0.08(0.02), <.01 | 0.08(0.02), <.01 | 0.10(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .10 | 0.00(0.00), .10 | 0.00(0.00), .04 | 0.00(0.00), .10 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .09 | -0.01(0.01), .09 | -0.01(0.01), .05 | -0.01(0.01), .11 | -0.01(0.00) |
|  | Correlation of Levels | 0.240 | 0.200 | 0.161 | 0.152 | 0.19(0.04) |
|  | Correlation of Slopes | 0.500 | 0.500 | Inf | 0.514 | Inf(NaN) |
|  | Correlation of Residuals | -0.044 | -0.049 | -0.053 | -0.044 | -0.05(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,460 | -12,987 | -11,793 | -12,922 | -1.204060e+04(1,188) |
|  | AIC | 20,966 | 26,034 | 23,662 | 25,980 | 2.416070e+04(2,399) |
|  | BIC | 21,079 | 26,182 | 23,849 | 26,315 | 2.435618e+04(2,460) |

## digit\_f

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.61(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .75 | 0.00(0.00), .97 | 0.00(0.00), .97 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .09 | -0.07(0.04), .11 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .68 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .14 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .48 | -0.01(NA) |
| b | Level | 8.36(0.09), <.01 | 7.25(0.17), <.01 | 7.29(0.17), <.01 | 7.28(0.20), <.01 | 7.55(0.54) |
| b | Slope | -0.01(0.02), .62 | 0.03(0.05), .57 | 0.03(0.05), .61 | 0.04(0.06), .46 | 0.02(0.02) |
| b | Level \* age | -0.00(0.01), .62 | -0.00(0.01), .89 | 0.00(0.01), .56 | 0.00(0.01), .55 | 0.00(0.00) |
| b | Level \* education | --- | 0.15(0.02), <.01 | 0.14(0.02), <.01 | 0.14(0.02), <.01 | 0.14(0.01) |
| b | Level \* height | --- | --- | 3.13(0.81), <.01 | 3.13(0.82), <.01 | 3.13(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.00(0.11), .97 | 0.00(NA) |
| b | Level \* cardio | --- | --- | --- | 0.03(0.22), .90 | 0.03(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.04(0.19), .84 | 0.04(NA) |
| b | Slope \* age | 0.00(0.00), .87 | -0.00(0.00), .79 | -0.00(0.00), .68 | -0.00(0.00), .71 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .36 | -0.00(0.01), .44 | -0.00(0.01), .41 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.21(0.25), .42 | -0.21(0.26), .42 | -0.21(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.01(0.03), .75 | -0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.10(0.06), .11 | -0.10(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.01(0.06), .79 | -0.01(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .53 | 0.00(0.00), .53 | 0.00(0.00), .55 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .56 | -0.00(0.00), .61 | 0.00(0.00), .98 | 0.00(0.00), .99 | -0.00(0.00) |
| b | Var (Level) | 2.43(0.15), <.01 | 2.23(0.14), <.01 | 2.18(0.14), <.01 | 2.18(0.14), <.01 | 2.26(0.12) |
| b | Var (Slope) | 0.02(0.01), .16 | 0.02(0.01), .15 | 0.02(0.01), .16 | 0.02(0.01), .19 | 0.02(0.00) |
| b | Var (Residual) | 1.60(0.05), <.01 | 1.59(0.05), <.01 | 1.59(0.05), <.01 | 1.60(0.05), <.01 | 1.60(0.00) |
| b | Covar (Level, Slope) | -0.02(0.03), .57 | -0.01(0.03), .72 | -0.01(0.03), .81 | -0.01(0.03), .86 | -0.01(0.01) |
| ab | Covar (Levels) | 0.12(0.02), <.01 | 0.09(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.08(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .88 | 0.00(0.00), .91 | 0.00(0.00), .94 | 0.00(0.00), .99 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.01), .21 | 0.01(0.01), .22 | 0.01(0.01), .23 | 0.01(0.01), .22 | 0.01(0.00) |
|  | Correlation of Levels | 0.208 | 0.168 | 0.126 | 0.129 | 0.16(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.034 | 0.034 | 0.034 | 0.034 | 0.03(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,436 | -12,971 | -11,779 | -12,912 | -1.202428e+04(1,192) |
|  | AIC | 20,919 | 26,001 | 23,633 | 25,959 | 2.412806e+04(2,409) |
|  | BIC | 21,032 | 26,149 | 23,820 | 26,294 | 2.432354e+04(2,470) |

## digit\_o

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.61(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .39 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .75 | 0.00(0.00), .96 | 0.00(0.00), .97 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .74 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .16 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .51 | -0.01(NA) |
| b | Level | 7.33(0.07), <.01 | 6.39(0.14), <.01 | 6.42(0.14), <.01 | 6.50(0.16), <.01 | 6.66(0.45) |
| b | Slope | 0.02(0.02), .46 | 0.06(0.04), .18 | 0.06(0.04), .17 | 0.07(0.05), .16 | 0.05(0.02) |
| b | Level \* age | -0.01(0.01), .20 | -0.01(0.01), .34 | -0.00(0.01), .62 | -0.00(0.01), .52 | -0.01(0.00) |
| b | Level \* education | --- | 0.13(0.02), <.01 | 0.12(0.02), <.01 | 0.12(0.02), <.01 | 0.12(0.01) |
| b | Level \* height | --- | --- | 1.66(0.58), <.01 | 1.68(0.59), <.01 | 1.67(0.01) |
| b | Level \* smoking | --- | --- | --- | -0.06(0.08), .45 | -0.06(NA) |
| b | Level \* cardio | --- | --- | --- | -0.11(0.15), .48 | -0.11(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.14(0.15), .37 | -0.14(NA) |
| b | Slope \* age | -0.00(0.00), .08 | -0.00(0.00), .06 | -0.00(0.00), .11 | -0.00(0.00), .14 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.00), .25 | -0.01(0.00), .21 | -0.01(0.00), .26 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.22(0.21), .31 | 0.21(0.21), .33 | 0.21(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.04(0.03), .23 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.07(0.06), .26 | -0.07(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.06(0.04), .18 | 0.06(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .51 | 0.00(0.00), .51 | 0.00(0.00), .53 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .51 | -0.00(0.00), .55 | 0.00(0.00), .92 | 0.00(0.00), .94 | -0.00(0.00) |
| b | Var (Level) | 1.22(0.12), <.01 | 1.08(0.11), <.01 | 1.06(0.11), <.01 | 1.05(0.11), <.01 | 1.10(0.08) |
| b | Var (Slope) | 0.02(0.01), .08 | 0.02(0.01), .08 | 0.02(0.01), .08 | 0.02(0.01), .10 | 0.02(0.00) |
| b | Var (Residual) | 1.31(0.06), <.01 | 1.31(0.06), <.01 | 1.31(0.06), <.01 | 1.31(0.06), <.01 | 1.31(0.00) |
| b | Covar (Level, Slope) | -0.08(0.03), .02 | -0.07(0.03), .03 | -0.07(0.03), .02 | -0.07(0.03), .02 | -0.07(0.00) |
| ab | Covar (Levels) | 0.10(0.02), <.01 | 0.08(0.02), <.01 | 0.07(0.02), <.01 | 0.06(0.02), <.01 | 0.08(0.02) |
| ab | Covar (Slopes) | -0.00(0.00), .34 | -0.00(0.00), .33 | -0.00(0.00), .30 | -0.00(0.00), .31 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.00), .33 | 0.00(0.00), .34 | 0.00(0.00), .34 | 0.00(0.00), .34 | 0.00(0.00) |
|  | Correlation of Levels | 0.264 | 0.223 | 0.197 | 0.192 | 0.22(0.03) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | 0.027 | 0.027 | 0.027 | 0.027 | 0.03(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -9,809 | -12,333 | -11,142 | -12,272 | -1.138882e+04(1,187) |
|  | AIC | 19,663 | 24,726 | 22,360 | 24,679 | 2.285714e+04(2,399) |
|  | BIC | 19,777 | 24,874 | 22,546 | 25,013 | 2.305262e+04(2,460) |

## ideas

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.03(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 | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .42 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .09 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .74 | 0.00(0.00), .98 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .09 | -0.07(0.04), .10 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .74 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .13 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .53 | -0.01(NA) |
| b | Level | 7.65(0.03), <.01 | 7.50(0.06), <.01 | 7.51(0.05), <.01 | 7.56(0.06), <.01 | 7.56(0.07) |
| b | Slope | 0.02(0.01), .04 | 0.03(0.02), .06 | 0.03(0.02), .06 | 0.02(0.02), .34 | 0.03(0.01) |
| b | Level \* age | 0.00(0.00), .14 | 0.00(0.00), .10 | 0.00(0.00), .07 | 0.00(0.00), .12 | 0.00(0.00) |
| b | Level \* education | --- | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00) |
| b | Level \* height | --- | --- | 0.36(0.23), .12 | 0.38(0.23), .11 | 0.37(0.01) |
| b | Level \* smoking | --- | --- | --- | -0.03(0.03), .31 | -0.03(NA) |
| b | Level \* cardio | --- | --- | --- | -0.05(0.06), .42 | -0.05(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.11(0.06), .07 | -0.11(NA) |
| b | Slope \* age | -0.00(0.00), .45 | -0.00(0.00), .41 | -0.00(0.00), .54 | 0.00(0.00), .66 | -0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.00), .31 | -0.00(0.00), .26 | -0.00(0.00), .37 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.08(0.09), .37 | 0.07(0.09), .39 | 0.07(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.02(0.01), .12 | 0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.02(0.02), .45 | 0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.02(0.02), .45 | 0.02(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .51 | 0.00(0.00), .51 | 0.00(0.00), .52 | 0.00(0.00), .53 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | -0.00(0.00), .55 | 0.00(0.00), .92 | 0.00(0.00), .91 | -0.00(0.00) |
| b | Var (Level) | 0.13(0.02), <.01 | 0.12(0.02), <.01 | 0.12(0.02), <.01 | 0.12(0.02), <.01 | 0.12(0.00) |
| b | Var (Slope) | 0.00(0.00), .08 | 0.00(0.00), .08 | 0.00(0.00), .08 | 0.00(0.00), .09 | 0.00(0.00) |
| b | Var (Residual) | 0.21(0.01), <.01 | 0.21(0.01), <.01 | 0.20(0.01), <.01 | 0.20(0.01), <.01 | 0.21(0.00) |
| b | Covar (Level, Slope) | -0.01(0.01), .10 | -0.01(0.01), .11 | -0.01(0.01), .10 | -0.01(0.01), .11 | -0.01(0.00) |
| ab | Covar (Levels) | 0.03(0.01), <.01 | 0.02(0.01), <.01 | 0.02(0.01), <.01 | 0.02(0.01), <.01 | 0.02(0.00) |
| ab | Covar (Slopes) | 0.00(0.00), .65 | 0.00(0.00), .65 | 0.00(0.00), .59 | 0.00(0.00), .58 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.00), .54 | -0.00(0.00), .54 | -0.00(0.00), .56 | -0.00(0.00), .55 | -0.00(0.00) |
|  | Correlation of Levels | 0.227 | 0.201 | 0.188 | 0.184 | 0.20(0.02) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | -0.013 | -0.013 | -0.013 | -0.013 | -0.01(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -6,464 | -9,020 | -7,830 | -8,961 | -8,069(1,202) |
|  | AIC | 12,974 | 18,101 | 15,737 | 18,058 | 16,218(2,428) |
|  | BIC | 13,088 | 18,248 | 15,924 | 18,393 | 16,413(2,489) |

## line

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.62(0.03), <.01 | 1.68(0.04), <.01 | 1.66(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.61(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.02) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .21 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .04 | 0.00(0.00), .05 | 0.00(0.00), .08 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .74 | 0.00(0.00), .99 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .68 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .16 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .47 | -0.01(NA) |
| b | Level | 9.74(0.14), <.01 | 7.75(0.27), <.01 | 7.86(0.27), <.01 | 8.16(0.30), <.01 | 8.38(0.92) |
| b | Slope | 0.01(0.04), .68 | 0.00(0.08), .99 | -0.01(0.07), .93 | -0.04(0.08), .64 | -0.01(0.02) |
| b | Level \* age | -0.02(0.01), .16 | -0.01(0.01), .30 | -0.01(0.01), .38 | -0.01(0.01), .26 | -0.01(0.00) |
| b | Level \* education | --- | 0.27(0.03), <.01 | 0.25(0.03), <.01 | 0.24(0.03), <.01 | 0.25(0.01) |
| b | Level \* height | --- | --- | 2.82(1.26), .02 | 3.07(1.28), .02 | 2.94(0.17) |
| b | Level \* smoking | --- | --- | --- | -0.28(0.16), .09 | -0.28(NA) |
| b | Level \* cardio | --- | --- | --- | 0.11(0.32), .72 | 0.11(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.74(0.29), .01 | -0.74(NA) |
| b | Slope \* age | -0.00(0.00), .63 | -0.00(0.00), .58 | 0.00(0.00), .98 | 0.00(0.00), .98 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.01), .82 | 0.00(0.01), .92 | 0.00(0.01), .80 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.35(0.35), .33 | 0.29(0.36), .43 | 0.32(0.04) |
| b | Slope \* smoking | --- | --- | --- | 0.07(0.05), .17 | 0.07(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.15(0.09), .07 | -0.15(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.06(0.09), .50 | 0.06(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .51 | 0.00(0.00), .54 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .52 | -0.00(0.00), .56 | 0.00(0.00), .96 | 0.00(0.00), .94 | -0.00(0.00) |
| b | Var (Level) | 5.23(0.38), <.01 | 4.57(0.34), <.01 | 4.39(0.34), <.01 | 4.45(0.34), <.01 | 4.66(0.39) |
| b | Var (Slope) | 0.01(0.03), .66 | 0.01(0.03), .66 | 0.00(0.03), .91 | 0.01(0.03), .74 | 0.01(0.00) |
| b | Var (Residual) | 3.85(0.16), <.01 | 3.85(0.16), <.01 | 3.85(0.17), <.01 | 3.85(0.16), <.01 | 3.85(0.00) |
| b | Covar (Level, Slope) | 0.07(0.08), .39 | 0.07(0.08), .40 | 0.10(0.08), .20 | 0.08(0.08), .35 | 0.08(0.01) |
| ab | Covar (Levels) | 0.18(0.04), <.01 | 0.13(0.04), <.01 | 0.10(0.03), <.01 | 0.10(0.03), <.01 | 0.13(0.04) |
| ab | Covar (Slopes) | 0.00(0.00), .94 | 0.00(0.00), .98 | 0.00(0.00), .99 | 0.00(0.00), .96 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .08 | -0.01(0.01), .08 | -0.01(0.01), .08 | -0.01(0.01), .08 | -0.01(0.00) |
|  | Correlation of Levels | 0.22 | 0.18 | 0.14 | 0.15 | 0.17(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | -0.04 | -0.04 | -0.04 | -0.04 | -0.04(0.00) |
|  | N | 1,010 | 1,010 | 951 | 1,010 | 995.25(29.50) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 29 | 68 | 37.50(20.57) |
|  | LL | -11,765 | -14,282 | -8,069 | -14,221 | -1.208447e+04(2,922) |
|  | AIC | 23,576 | 28,625 | 16,196 | 28,578 | 2.424394e+04(5,865) |
|  | BIC | 23,689 | 28,772 | 16,337 | 28,913 | 2.442792e+04(5,916) |

## logic\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.66(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .24 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .39 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .06 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .80 | 0.00(0.00), .93 | 0.00(0.00), .92 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .09 | -0.07(0.04), .10 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .68 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .12 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .53 | -0.01(NA) |
| b | Level | 11.01(0.19), <.01 | 8.25(0.32), <.01 | 8.33(0.32), <.01 | 8.49(0.37), <.01 | 9.02(1.33) |
| b | Slope | 0.45(0.05), <.01 | 0.25(0.11), .02 | 0.26(0.11), .02 | 0.27(0.12), .03 | 0.31(0.09) |
| b | Level \* age | -0.12(0.02), <.01 | -0.11(0.02), <.01 | -0.10(0.02), <.01 | -0.10(0.02), <.01 | -0.11(0.01) |
| b | Level \* education | --- | 0.37(0.04), <.01 | 0.35(0.04), <.01 | 0.34(0.04), <.01 | 0.35(0.01) |
| b | Level \* height | --- | --- | 5.51(1.54), <.01 | 5.51(1.54), <.01 | 5.51(0.00) |
| b | Level \* smoking | --- | --- | --- | -0.06(0.22), .80 | -0.06(NA) |
| b | Level \* cardio | --- | --- | --- | -0.29(0.51), .57 | -0.29(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.39(0.36), .28 | -0.39(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | 0.03(0.01), .04 | 0.02(0.01), .05 | 0.03(0.01), .04 | 0.03(0.00) |
| b | Slope \* height | --- | --- | 0.29(0.56), .60 | 0.28(0.56), .61 | 0.29(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.08(0.07), .22 | -0.08(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.02(0.15), .88 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.11(0.12), .36 | 0.11(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .52 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .47 | -0.00(0.00), .51 | 0.00(0.00), .87 | 0.00(0.00), .87 | -0.00(0.00) |
| b | Var (Level) | 12.27(0.69), <.01 | 11.02(0.67), <.01 | 10.85(0.66), <.01 | 10.82(0.66), <.01 | 11.24(0.69) |
| b | Var (Slope) | 0.27(0.06), <.01 | 0.27(0.06), <.01 | 0.27(0.06), <.01 | 0.26(0.06), <.01 | 0.27(0.00) |
| b | Var (Residual) | 5.86(0.22), <.01 | 5.84(0.22), <.01 | 5.84(0.22), <.01 | 5.85(0.22), <.01 | 5.85(0.01) |
| b | Covar (Level, Slope) | 0.20(0.16), .21 | 0.11(0.15), .47 | 0.10(0.15), .50 | 0.11(0.15), .46 | 0.13(0.04) |
| ab | Covar (Levels) | 0.15(0.06), <.01 | 0.08(0.05), .12 | 0.04(0.05), .44 | 0.03(0.05), .51 | 0.08(0.06) |
| ab | Covar (Slopes) | -0.01(0.00), .23 | -0.01(0.00), .22 | -0.01(0.00), .23 | -0.01(0.00), .22 | -0.01(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .64 | -0.01(0.01), .62 | -0.01(0.01), .60 | -0.01(0.01), .61 | -0.01(0.00) |
|  | Correlation of Levels | 0.121 | 0.071 | 0.035 | 0.030 | 0.06(0.04) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | -0.015 | -0.015 | -0.018 | -0.018 | -0.02(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -12,906 | -15,421 | -14,228 | -15,361 | -1.447892e+04(1,183) |
|  | AIC | 25,858 | 30,901 | 28,532 | 30,858 | 2.903735e+04(2,391) |
|  | BIC | 25,971 | 31,049 | 28,719 | 31,192 | 2.923283e+04(2,452) |

## logic\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.63(0.05) |
| a | Slope | -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) |
| a | Level \* education | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | -0.03(0.04), .39 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | 0.00(0.00), .74 | 0.00(0.00), .96 | 0.00(0.00), .97 | 0.00(0.00) |
| a | Slope \* height | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | 0.00(0.00), .70 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | -0.01(0.01), .52 | -0.01(NA) |
| b | Level | 9.92(0.32), <.01 | 9.98(0.32), <.01 | 10.20(0.37), <.01 | 10.03(0.14) |
| b | Slope | 0.29(0.10), <.01 | 0.29(0.10), <.01 | 0.26(0.12), .03 | 0.28(0.02) |
| b | Level \* age | -0.10(0.02), <.01 | -0.09(0.02), <.01 | -0.10(0.02), <.01 | -0.10(0.00) |
| b | Level \* education | 0.36(0.04), <.01 | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.34(0.01) |
| b | Level \* height | --- | 4.30(1.43), <.01 | 4.36(1.42), <.01 | 4.33(0.04) |
| b | Level \* smoking | --- | --- | -0.20(0.22), .35 | -0.20(NA) |
| b | Level \* cardio | --- | --- | -0.35(0.50), .48 | -0.35(NA) |
| b | Level \* diabetes | --- | --- | -0.27(0.36), .45 | -0.27(NA) |
| b | Slope \* age | -0.01(0.00), .03 | -0.01(0.00), .05 | -0.01(0.00), .07 | -0.01(0.00) |
| b | Slope \* education | 0.01(0.01), .48 | 0.01(0.01), .53 | 0.01(0.01), .39 | 0.01(0.00) |
| b | Slope \* height | --- | 0.28(0.51), .58 | 0.24(0.52), .64 | 0.26(0.03) |
| b | Slope \* smoking | --- | --- | -0.04(0.07), .49 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | 0.07(0.14), .63 | 0.07(NA) |
| b | Slope \* diabetes | --- | --- | 0.20(0.12), .10 | 0.20(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .49 | 0.00(0.00), .50 | 0.00(0.00), .51 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | 0.00(0.00), .87 | 0.00(0.00), .88 | -0.00(0.00) |
| b | Var (Level) | 9.93(0.63), <.01 | 9.83(0.63), <.01 | 9.80(0.63), <.01 | 9.85(0.07) |
| b | Var (Slope) | 0.22(0.06), <.01 | 0.22(0.06), <.01 | 0.22(0.06), <.01 | 0.22(0.00) |
| b | Var (Residual) | 5.84(0.21), <.01 | 5.84(0.21), <.01 | 5.84(0.21), <.01 | 5.84(0.00) |
| b | Covar (Level, Slope) | -0.19(0.15), .21 | -0.20(0.15), .19 | -0.19(0.15), .21 | -0.19(0.01) |
| ab | Covar (Levels) | 0.10(0.05), .05 | 0.06(0.05), .19 | 0.05(0.05), .26 | 0.07(0.03) |
| ab | Covar (Slopes) | -0.00(0.00), .55 | -0.00(0.00), .52 | -0.00(0.00), .51 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .59 | -0.01(0.01), .58 | -0.01(0.01), .60 | -0.01(0.00) |
|  | Correlation of Levels | 0.091 | 0.061 | 0.052 | 0.07(0.02) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | -0.015 | -0.015 | -0.015 | -0.02(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 30 | 38 | 68 | 45.33(20.03) |
|  | LL | -15,349 | -14,158 | -15,290 | -1.493258e+04( 671) |
|  | AIC | 30,759 | 28,393 | 30,716 | 2.995583e+04(1,354) |
|  | BIC | 30,906 | 28,580 | 31,051 | 3.017877e+04(1,387) |

## matrices

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.61(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .39 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .73 | 0.00(0.00), .99 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .10 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .66 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .52 | -0.01(NA) |
| b | Level | 12.14(0.14), <.01 | 9.57(0.24), <.01 | 9.63(0.24), <.01 | 9.75(0.26), <.01 | 10.27(1.25) |
| b | Slope | 0.02(0.04), .57 | 0.03(0.08), .69 | 0.03(0.08), .70 | 0.03(0.09), .71 | 0.03(0.01) |
| b | Level \* age | -0.06(0.01), <.01 | -0.05(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.05(0.01) |
| b | Level \* education | --- | 0.34(0.02), <.01 | 0.33(0.02), <.01 | 0.32(0.02), <.01 | 0.33(0.01) |
| b | Level \* height | --- | --- | 4.12(1.16), <.01 | 4.10(1.16), <.01 | 4.11(0.02) |
| b | Level \* smoking | --- | --- | --- | -0.00(0.14), .98 | -0.00(NA) |
| b | Level \* cardio | --- | --- | --- | -0.39(0.28), .16 | -0.39(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.33(0.26), .19 | -0.33(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | -0.00(0.01), .86 | -0.00(0.01), .77 | -0.00(0.01), .79 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.36(0.36), .31 | 0.37(0.36), .31 | 0.37(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.01(0.04), .83 | -0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.01(0.11), .94 | -0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.01(0.08), .90 | 0.01(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .50 | 0.00(0.00), .49 | 0.00(0.00), .50 | 0.00(0.00), .51 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | -0.00(0.00), .53 | 0.00(0.00), .90 | 0.00(0.00), .90 | -0.00(0.00) |
| b | Var (Level) | 4.32(0.32), <.01 | 3.19(0.29), <.01 | 3.10(0.29), <.01 | 3.08(0.28), <.01 | 3.43(0.60) |
| b | Var (Slope) | 0.02(0.03), .49 | 0.02(0.03), .50 | 0.02(0.03), .50 | 0.02(0.03), .50 | 0.02(0.00) |
| b | Var (Residual) | 3.34(0.20), <.01 | 3.34(0.20), <.01 | 3.34(0.20), <.01 | 3.34(0.20), <.01 | 3.34(0.00) |
| b | Covar (Level, Slope) | -0.04(0.08), .64 | -0.03(0.08), .74 | -0.03(0.08), .66 | -0.04(0.08), .65 | -0.03(0.01) |
| ab | Covar (Levels) | 0.22(0.03), <.01 | 0.15(0.03), <.01 | 0.12(0.03), <.01 | 0.12(0.03), <.01 | 0.15(0.05) |
| ab | Covar (Slopes) | 0.00(0.00), .39 | 0.00(0.00), .41 | 0.00(0.00), .40 | 0.00(0.00), .40 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .12 | -0.01(0.01), .11 | -0.01(0.01), .12 | -0.01(0.01), .11 | -0.01(0.00) |
|  | Correlation of Levels | 0.293 | 0.244 | 0.202 | 0.202 | 0.24(0.04) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | -0.043 | -0.047 | -0.043 | -0.047 | -0.04(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,944 | -13,408 | -12,215 | -13,347 | -1.247839e+04(1,161) |
|  | AIC | 21,934 | 26,877 | 24,505 | 26,830 | 2.503629e+04(2,346) |
|  | BIC | 22,047 | 27,024 | 24,692 | 27,164 | 2.523177e+04(2,407) |

## mmse

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.03(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 | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.63(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .41 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .04 | 0.00(0.00), .04 | 0.00(0.00), .09 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .72 | 0.00(0.00), .98 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .08 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .74 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .15 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .51 | -0.01(NA) |
| b | Level | 28.77(0.07), <.01 | 27.57(0.15), <.01 | 27.59(0.15), <.01 | 27.66(0.16), <.01 | 27.90(0.58) |
| b | Slope | -0.03(0.02), .30 | 0.07(0.07), .26 | 0.07(0.06), .25 | 0.05(0.07), .49 | 0.04(0.05) |
| b | Level \* age | -0.05(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| b | Level \* education | --- | 0.16(0.02), <.01 | 0.15(0.02), <.01 | 0.15(0.02), <.01 | 0.16(0.00) |
| b | Level \* height | --- | --- | 1.53(0.63), .01 | 1.53(0.63), .01 | 1.53(0.00) |
| b | Level \* smoking | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| b | Level \* cardio | --- | --- | --- | -0.12(0.17), .46 | -0.12(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.06(0.17), .74 | -0.06(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .06 | -0.01(0.01), .06 | -0.01(0.01), .07 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.03(0.26), .92 | 0.02(0.26), .94 | 0.02(0.01) |
| b | Slope \* smoking | --- | --- | --- | 0.02(0.04), .56 | 0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.06(0.07), .34 | 0.06(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.04(0.07), .60 | 0.04(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .51 | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .54 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .49 | -0.00(0.00), .54 | 0.00(0.00), .92 | 0.00(0.00), .92 | -0.00(0.00) |
| b | Var (Level) | 1.22(0.16), <.01 | 0.99(0.14), <.01 | 0.97(0.14), <.01 | 0.97(0.14), <.01 | 1.04(0.12) |
| b | Var (Slope) | 0.08(0.04), .04 | 0.07(0.04), .05 | 0.07(0.04), .05 | 0.07(0.04), .05 | 0.08(0.00) |
| b | Var (Residual) | 1.64(0.08), <.01 | 1.64(0.08), <.01 | 1.64(0.08), <.01 | 1.64(0.08), <.01 | 1.64(0.00) |
| b | Covar (Level, Slope) | -0.01(0.05), .83 | 0.01(0.05), .84 | 0.01(0.05), .85 | 0.01(0.05), .84 | 0.00(0.01) |
| ab | Covar (Levels) | 0.06(0.02), <.01 | 0.04(0.02), .10 | 0.02(0.02), .28 | 0.02(0.02), .36 | 0.03(0.02) |
| ab | Covar (Slopes) | -0.00(0.00), .73 | -0.00(0.00), .70 | -0.00(0.00), .66 | -0.00(0.00), .64 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.00), .83 | 0.00(0.00), .81 | 0.00(0.00), .79 | 0.00(0.00), .73 | 0.00(0.00) |
|  | Correlation of Levels | 0.1604 | 0.0993 | 0.0636 | 0.0523 | 0.09(0.05) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | 0.0047 | 0.0048 | 0.0047 | 0.0095 | 0.01(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,314 | -12,824 | -11,634 | -12,767 | -1.188460e+04(1,182) |
|  | AIC | 20,674 | 25,707 | 23,343 | 25,670 | 2.384870e+04(2,388) |
|  | BIC | 20,787 | 25,855 | 23,530 | 26,004 | 2.404417e+04(2,449) |

## nart

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.66(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .37 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .80 | 0.00(0.00), .92 | 0.00(0.00), .91 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .07 | -0.07(0.04), .08 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .65 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .16 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .51 | -0.01(NA) |
| b | Level | 7.50(0.12), <.01 | 4.85(0.20), <.01 | 4.90(0.20), <.01 | 5.04(0.22), <.01 | 5.57(1.29) |
| b | Slope | 0.03(0.02), .10 | 0.04(0.04), .38 | 0.04(0.04), .39 | 0.04(0.04), .38 | 0.04(0.00) |
| b | Level \* age | 0.04(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.01) |
| b | Level \* education | --- | 0.36(0.02), <.01 | 0.34(0.02), <.01 | 0.33(0.02), <.01 | 0.34(0.01) |
| b | Level \* height | --- | --- | 3.57(0.88), <.01 | 3.56(0.87), <.01 | 3.56(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.09(0.12), .45 | 0.09(NA) |
| b | Level \* cardio | --- | --- | --- | -0.10(0.28), .73 | -0.10(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.65(0.23), <.01 | -0.65(NA) |
| b | Slope \* age | -0.00(0.00), .29 | -0.00(0.00), .27 | -0.00(0.00), .30 | -0.00(0.00), .33 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.00), .93 | 0.00(0.00), .93 | -0.00(0.00), .89 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.02(0.16), .92 | 0.03(0.16), .86 | 0.02(0.01) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.02), .86 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.03(0.05), .55 | -0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.02(0.05), .64 | -0.02(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .51 | 0.00(0.00), .52 | 0.00(0.00), .53 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | -0.00(0.00), .51 | 0.00(0.00), .88 | 0.00(0.00), .89 | -0.00(0.00) |
| b | Var (Level) | 4.77(0.28), <.01 | 3.56(0.21), <.01 | 3.49(0.20), <.01 | 3.44(0.20), <.01 | 3.81(0.64) |
| b | Var (Slope) | 0.02(0.01), .06 | 0.02(0.01), .06 | 0.02(0.01), .06 | 0.02(0.01), .06 | 0.02(0.00) |
| b | Var (Residual) | 0.71(0.05), <.01 | 0.71(0.05), <.01 | 0.71(0.05), <.01 | 0.71(0.05), <.01 | 0.71(0.00) |
| b | Covar (Level, Slope) | -0.04(0.04), .26 | -0.04(0.04), .22 | -0.04(0.03), .21 | -0.04(0.03), .21 | -0.04(0.00) |
| ab | Covar (Levels) | 0.20(0.03), <.01 | 0.13(0.03), <.01 | 0.10(0.03), <.01 | 0.10(0.03), <.01 | 0.13(0.05) |
| ab | Covar (Slopes) | 0.00(0.00), .66 | 0.00(0.00), .71 | 0.00(0.00), .66 | 0.00(0.00), .73 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.00), .98 | 0.00(0.00), .98 | 0.00(0.00), .99 | 0.00(0.00), .98 | 0.00(0.00) |
|  | Correlation of Levels | 0.25 | 0.2 | 0.16 | 0.16 | 0.19(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.00 | 0.0 | 0.00 | 0.00 | 0.00(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -9,554 | -11,992 | -10,801 | -11,928 | -1.106866e+04(1,148) |
|  | AIC | 19,154 | 24,044 | 21,678 | 23,991 | 2.221681e+04(2,321) |
|  | BIC | 19,267 | 24,192 | 21,864 | 24,326 | 2.241229e+04(2,382) |

## num\_comp

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.04(0.04), .36 | -0.04(NA) |
| a | Slope \* age | 0.00(0.00), .04 | 0.00(0.00), .05 | 0.00(0.00), .09 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .76 | 0.00(0.00), .96 | 0.00(0.00), .95 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .69 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .13 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .53 | -0.01(NA) |
| b | Level | 26.47(0.36), <.01 | 21.89(0.68), <.01 | 22.08(0.67), <.01 | 23.14(0.77), <.01 | 23.40(2.12) |
| b | Slope | 0.16(0.08), .03 | 0.29(0.15), .05 | 0.29(0.15), .05 | 0.28(0.16), .09 | 0.26(0.06) |
| b | Level \* age | -0.20(0.03), <.01 | -0.19(0.03), <.01 | -0.16(0.03), <.01 | -0.18(0.03), <.01 | -0.18(0.01) |
| b | Level \* education | --- | 0.61(0.08), <.01 | 0.56(0.08), <.01 | 0.52(0.08), <.01 | 0.57(0.05) |
| b | Level \* height | --- | --- | 13.68(2.92), <.01 | 13.80(2.93), <.01 | 13.74(0.09) |
| b | Level \* smoking | --- | --- | --- | -0.69(0.41), .10 | -0.69(NA) |
| b | Level \* cardio | --- | --- | --- | -0.71(0.84), .40 | -0.71(NA) |
| b | Level \* diabetes | --- | --- | --- | -2.16(0.75), <.01 | -2.16(NA) |
| b | Slope \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.00) |
| b | Slope \* education | --- | -0.02(0.02), .34 | -0.02(0.02), .35 | -0.01(0.02), .44 | -0.02(0.00) |
| b | Slope \* height | --- | --- | -0.10(0.72), .89 | -0.10(0.72), .89 | -0.10(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.09(0.10), .37 | -0.09(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.04(0.18), .84 | 0.04(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.20(0.21), .34 | 0.20(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .49 | 0.00(0.00), .50 | 0.00(0.00), .50 | 0.00(0.00), .52 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | -0.00(0.00), .54 | 0.00(0.00), .92 | 0.00(0.00), .92 | -0.00(0.00) |
| b | Var (Level) | 38.77(2.37), <.01 | 35.21(2.24), <.01 | 34.17(2.21), <.01 | 33.58(2.14), <.01 | 35.43(2.32) |
| b | Var (Slope) | 0.36(0.15), .02 | 0.36(0.15), .02 | 0.36(0.15), .02 | 0.36(0.15), .02 | 0.36(0.00) |
| b | Var (Residual) | 15.00(0.80), <.01 | 14.99(0.80), <.01 | 15.00(0.80), <.01 | 14.99(0.80), <.01 | 14.99(0.00) |
| b | Covar (Level, Slope) | -0.00(0.44), .99 | 0.09(0.43), .83 | 0.10(0.43), .81 | 0.13(0.42), .75 | 0.08(0.06) |
| ab | Covar (Levels) | 0.54(0.09), <.01 | 0.43(0.09), <.01 | 0.31(0.08), <.01 | 0.28(0.08), <.01 | 0.39(0.12) |
| ab | Covar (Slopes) | -0.00(0.01), .48 | -0.00(0.01), .45 | -0.00(0.01), .47 | -0.00(0.01), .47 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.02), .99 | 0.00(0.02), .99 | 0.00(0.02), .99 | 0.00(0.02), .96 | 0.00(0.00) |
|  | Correlation of Levels | 0.24 | 0.2 | 0.16 | 0.1474 | 0.19(0.04) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | 0.00 | 0.0 | 0.00 | 0.0016 | 0.00(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -14,378 | -16,908 | -15,715 | -16,843 | -1.596091e+04(1,189) |
|  | AIC | 28,801 | 33,876 | 31,506 | 33,822 | 3.200132e+04(2,402) |
|  | BIC | 28,914 | 34,024 | 31,693 | 34,156 | 3.219680e+04(2,463) |

## symbol

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.63(0.22), <.01 | 1.62(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .24 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .04 | 0.00(0.00), .05 | 0.00(0.00), .09 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .74 | 0.00(0.00), .98 | 0.00(0.00), .96 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .10 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .68 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .13 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .49 | -0.01(NA) |
| b | Level | 9.74(0.14), <.01 | 7.75(0.27), <.01 | 7.79(0.27), <.01 | 35.46(1.05), <.01 | 15.19(13.55) |
| b | Slope | 0.01(0.04), .68 | 0.00(0.08), .99 | 0.00(0.07), .97 | 0.50(0.22), .02 | 0.13(0.25) |
| b | Level \* age | -0.02(0.01), .16 | -0.01(0.01), .30 | -0.01(0.01), .56 | -0.37(0.04), <.01 | -0.10(0.18) |
| b | Level \* education | --- | 0.27(0.03), <.01 | 0.26(0.03), <.01 | 1.01(0.10), <.01 | 0.51(0.44) |
| b | Level \* height | --- | --- | 2.97(1.29), .02 | 14.85(3.91), <.01 | 8.91(8.40) |
| b | Level \* smoking | --- | --- | --- | -0.78(0.56), .16 | -0.78(NA) |
| b | Level \* cardio | --- | --- | --- | -1.38(1.19), .25 | -1.38(NA) |
| b | Level \* diabetes | --- | --- | --- | -3.06(1.01), <.01 | -3.06(NA) |
| b | Slope \* age | -0.00(0.00), .63 | -0.00(0.00), .58 | -0.00(0.00), .74 | -0.06(0.01), <.01 | -0.01(0.03) |
| b | Slope \* education | --- | 0.00(0.01), .82 | 0.00(0.01), .92 | -0.04(0.02), .07 | -0.01(0.03) |
| b | Slope \* height | --- | --- | 0.31(0.36), .39 | 2.15(1.08), .05 | 1.23(1.30) |
| b | Slope \* smoking | --- | --- | --- | -0.16(0.14), .26 | -0.16(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.13(0.25), .61 | 0.13(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.28(0.27), .30 | -0.28(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .51 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .52 | -0.00(0.00), .56 | 0.00(0.00), .94 | 0.00(0.00), .90 | -0.00(0.00) |
| b | Var (Level) | 5.23(0.38), <.01 | 4.57(0.34), <.01 | 4.52(0.34), <.01 | 65.47(4.58), <.01 | 19.95(30.35) |
| b | Var (Slope) | 0.01(0.03), .66 | 0.01(0.03), .66 | 0.01(0.03), .66 | 0.98(0.31), <.01 | 0.26(0.48) |
| b | Var (Residual) | 3.85(0.16), <.01 | 3.85(0.16), <.01 | 3.85(0.16), <.01 | 23.68(1.34), <.01 | 8.81(9.92) |
| b | Covar (Level, Slope) | 0.07(0.08), .39 | 0.07(0.08), .40 | 0.07(0.08), .42 | 1.70(0.83), .04 | 0.48(0.81) |
| ab | Covar (Levels) | 0.18(0.04), <.01 | 0.13(0.04), <.01 | 0.11(0.04), <.01 | 0.48(0.11), <.01 | 0.23(0.17) |
| ab | Covar (Slopes) | 0.00(0.00), .94 | 0.00(0.00), .98 | 0.00(0.00), .98 | -0.00(0.01), .53 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.01), .08 | -0.01(0.01), .08 | -0.01(0.01), .07 | 0.01(0.03), .69 | -0.01(0.01) |
|  | Correlation of Levels | 0.22 | 0.18 | 0.15 | 0.179 | 0.18(0.03) |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf | -Inf(NA) |
|  | Correlation of Residuals | -0.04 | -0.04 | -0.04 | 0.014 | -0.03(0.03) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -11,765 | -14,282 | -13,093 | -17,753 | -1.422333e+04(2,568) |
|  | AIC | 23,576 | 28,625 | 26,261 | 35,642 | 2.852615e+04(5,173) |
|  | BIC | 23,689 | 28,772 | 26,448 | 35,977 | 2.872163e+04(5,264) |

## word\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .40 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .77 | 0.00(0.00), .94 | 0.00(0.00), .94 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .08 | -0.07(0.04), .09 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .69 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .14 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .49 | -0.01(NA) |
| b | Level | 6.40(0.10), <.01 | 5.28(0.18), <.01 | 5.32(0.18), <.01 | 5.57(0.20), <.01 | 5.64(0.52) |
| b | Slope | 0.13(0.03), <.01 | 0.12(0.05), .03 | 0.12(0.05), .03 | 0.12(0.06), .03 | 0.12(0.01) |
| b | Level \* age | -0.07(0.01), <.01 | -0.07(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.00) |
| b | Level \* education | --- | 0.15(0.02), <.01 | 0.14(0.02), <.01 | 0.14(0.02), <.01 | 0.14(0.01) |
| b | Level \* height | --- | --- | 2.73(0.87), <.01 | 2.75(0.86), <.01 | 2.74(0.02) |
| b | Level \* smoking | --- | --- | --- | -0.34(0.12), <.01 | -0.34(NA) |
| b | Level \* cardio | --- | --- | --- | -0.46(0.28), .10 | -0.46(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.09(0.19), .63 | -0.09(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | 0.00(0.01), .71 | 0.00(0.01), .74 | 0.00(0.01), .77 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.08(0.28), .77 | 0.10(0.28), .74 | 0.09(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.01(0.04), .80 | -0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.02(0.07), .79 | 0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.02(0.05), .66 | -0.02(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .52 | 0.00(0.00), .54 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .50 | -0.00(0.00), .55 | 0.00(0.00), .93 | 0.00(0.00), .94 | -0.00(0.00) |
| b | Var (Level) | 3.02(0.21), <.01 | 2.82(0.20), <.01 | 2.77(0.19), <.01 | 2.72(0.19), <.01 | 2.83(0.13) |
| b | Var (Slope) | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.00) |
| b | Var (Residual) | 1.75(0.08), <.01 | 1.75(0.08), <.01 | 1.75(0.08), <.01 | 1.75(0.08), <.01 | 1.75(0.00) |
| b | Covar (Level, Slope) | 0.01(0.04), .88 | 0.00(0.04), .92 | 0.00(0.04), .93 | 0.00(0.04), .92 | 0.00(0.00) |
| ab | Covar (Levels) | 0.09(0.03), <.01 | 0.06(0.03), .02 | 0.04(0.03), .10 | 0.03(0.02), .22 | 0.06(0.03) |
| ab | Covar (Slopes) | -0.00(0.00), .78 | -0.00(0.00), .74 | -0.00(0.00), .73 | -0.00(0.00), .70 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.01), .89 | 0.00(0.01), .92 | 0.00(0.01), .98 | 0.00(0.01), .94 | 0.00(0.00) |
|  | Correlation of Levels | 0.1468 | 0.1074 | 0.075 | 0.055 | 0.10(0.04) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | 0.0046 | 0.0046 | 0.000 | 0.000 | 0.00(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -10,674 | -13,210 | -12,019 | -13,147 | -1.226220e+04(1,192) |
|  | AIC | 21,393 | 26,480 | 24,113 | 26,429 | 2.460389e+04(2,408) |
|  | BIC | 21,507 | 26,627 | 24,300 | 26,763 | 2.479937e+04(2,469) |

## word\_im

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .23 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .37 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .07 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .76 | 0.00(0.00), .96 | 0.00(0.00), .96 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.07(0.04), .10 | -0.07(0.04), .11 | -0.07(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .74 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .11 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .51 | -0.01(NA) |
| b | Level | 19.23(0.19), <.01 | 16.41(0.35), <.01 | 16.47(0.35), <.01 | 16.83(0.39), <.01 | 17.23(1.35) |
| b | Slope | 0.37(0.05), <.01 | 0.40(0.11), <.01 | 0.40(0.11), <.01 | 0.40(0.12), <.01 | 0.39(0.02) |
| b | Level \* age | -0.13(0.02), <.01 | -0.12(0.02), <.01 | -0.11(0.02), <.01 | -0.11(0.02), <.01 | -0.12(0.01) |
| b | Level \* education | --- | 0.38(0.04), <.01 | 0.36(0.04), <.01 | 0.36(0.04), <.01 | 0.37(0.01) |
| b | Level \* height | --- | --- | 5.04(1.64), <.01 | 5.11(1.62), <.01 | 5.08(0.05) |
| b | Level \* smoking | --- | --- | --- | -0.61(0.22), .01 | -0.61(NA) |
| b | Level \* cardio | --- | --- | --- | -0.66(0.51), .19 | -0.66(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.12(0.42), .77 | 0.12(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | -0.00(0.01), .74 | -0.00(0.01), .75 | -0.00(0.01), .81 | -0.00(0.00) |
| b | Slope \* height | --- | --- | -0.02(0.52), .97 | -0.03(0.52), .95 | -0.02(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.04(0.08), .60 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.02(0.15), .89 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.07(0.13), .57 | 0.07(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .48 | 0.00(0.00), .48 | 0.00(0.00), .48 | 0.00(0.00), .49 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .53 | -0.00(0.00), .57 | 0.00(0.00), .92 | 0.00(0.00), .92 | -0.00(0.00) |
| b | Var (Level) | 11.54(0.73), <.01 | 10.19(0.69), <.01 | 10.06(0.69), <.01 | 9.89(0.68), <.01 | 10.42(0.76) |
| b | Var (Slope) | 0.37(0.08), <.01 | 0.37(0.08), <.01 | 0.37(0.08), <.01 | 0.36(0.08), <.01 | 0.37(0.00) |
| b | Var (Residual) | 5.84(0.20), <.01 | 5.84(0.20), <.01 | 5.84(0.20), <.01 | 5.85(0.20), <.01 | 5.84(0.00) |
| b | Covar (Level, Slope) | -0.09(0.18), .63 | -0.07(0.18), .68 | -0.07(0.18), .67 | -0.08(0.17), .65 | -0.08(0.01) |
| ab | Covar (Levels) | 0.26(0.05), <.01 | 0.18(0.05), <.01 | 0.14(0.05), <.01 | 0.13(0.05), <.01 | 0.18(0.06) |
| ab | Covar (Slopes) | -0.01(0.01), .13 | -0.01(0.01), .12 | -0.01(0.01), .12 | -0.01(0.01), .11 | -0.01(0.00) |
| ab | Covar (Residuals) | 0.02(0.01), .22 | 0.02(0.01), .23 | 0.02(0.01), .24 | 0.02(0.01), .23 | 0.02(0.00) |
|  | Correlation of Levels | 0.208 | 0.161 | 0.137 | 0.122 | 0.16(0.04) |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf | -Inf(NaN) |
|  | Correlation of Residuals | 0.045 | 0.044 | 0.044 | 0.044 | 0.04(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -12,878 | -15,399 | -14,209 | -15,337 | -1.445572e+04(1,185) |
|  | AIC | 25,803 | 30,857 | 28,493 | 30,811 | 2.899094e+04(2,395) |
|  | BIC | 25,916 | 31,005 | 28,680 | 31,145 | 2.918642e+04(2,456) |

## word\_rec

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.74(0.02), <.01 | 1.59(0.03), <.01 | 1.61(0.03), <.01 | 1.68(0.04), <.01 | 1.65(0.07) |
| a | Slope | -0.04(0.00), <.01 | -0.03(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) |
| a | Level \* education | --- | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| a | Level \* height | --- | --- | 1.62(0.22), <.01 | 1.64(0.22), <.01 | 1.63(0.01) |
| a | Level \* smoking | --- | --- | --- | -0.09(0.02), <.01 | -0.09(NA) |
| a | Level \* cardio | --- | --- | --- | -0.06(0.05), .22 | -0.06(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.03(0.04), .41 | -0.03(NA) |
| a | Slope \* age | 0.00(0.00), .06 | 0.00(0.00), .06 | 0.00(0.00), .10 | 0.00(0.00), .08 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .61 | 0.00(0.00), .92 | 0.00(0.00), .94 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.08(0.04), .07 | -0.07(0.04), .08 | -0.08(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.00), .61 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.01(0.01), .32 | -0.01(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .55 | -0.01(NA) |
| b | Level | 9.81(0.03), <.01 | 9.70(0.07), <.01 | 9.71(0.07), <.01 | 9.75(0.09), <.01 | 9.74(0.05) |
| b | Slope | 0.01(0.01), .09 | 0.01(0.02), .76 | 0.01(0.02), .72 | 0.01(0.03), .80 | 0.01(0.00) |
| b | Level \* age | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.02(0.00) |
| b | Level \* education | --- | 0.01(0.01), .07 | 0.01(0.01), .15 | 0.01(0.01), .19 | 0.01(0.00) |
| b | Level \* height | --- | --- | 0.59(0.44), .18 | 0.59(0.44), .18 | 0.59(0.00) |
| b | Level \* smoking | --- | --- | --- | -0.06(0.05), .20 | -0.06(NA) |
| b | Level \* cardio | --- | --- | --- | -0.19(0.16), .25 | -0.19(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.02(0.10), .85 | 0.02(NA) |
| b | Slope \* age | -0.00(0.00), .05 | -0.00(0.00), .05 | -0.00(0.00), .07 | -0.00(0.00), .08 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.00), .73 | 0.00(0.00), .88 | 0.00(0.00), .88 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.16(0.12), .19 | 0.16(0.12), .19 | 0.16(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.02), .92 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.03(0.02), .30 | 0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.00(0.02), .89 | -0.00(NA) |
| a | Var (Level) | 0.13(0.01), <.01 | 0.13(0.01), <.01 | 0.11(0.01), <.01 | 0.11(0.01), <.01 | 0.12(0.01) |
| a | Var (Slope) | 0.00(0.00), .43 | 0.00(0.00), .44 | 0.00(0.00), .44 | 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) |
| a | Covar (Level, Slope) | -0.00(0.00), .27 | -0.00(0.00), .32 | -0.00(0.00), .61 | -0.00(0.00), .63 | -0.00(0.00) |
| b | Var (Level) | 0.56(0.15), <.01 | 0.56(0.15), <.01 | 0.56(0.15), <.01 | 0.56(0.15), <.01 | 0.56(0.00) |
| b | Var (Slope) | 0.00(0.01), .70 | 0.00(0.01), .70 | 0.00(0.01), .71 | 0.00(0.01), .72 | 0.00(0.00) |
| b | Var (Residual) | 0.33(0.06), <.01 | 0.33(0.06), <.01 | 0.33(0.06), <.01 | 0.33(0.06), <.01 | 0.33(0.00) |
| b | Covar (Level, Slope) | 0.01(0.03), .68 | 0.01(0.03), .68 | 0.01(0.03), .69 | 0.01(0.03), .68 | 0.01(0.00) |
| ab | Covar (Levels) | 0.02(0.02), .29 | 0.01(0.02), .40 | 0.01(0.01), .54 | 0.01(0.01), .66 | 0.01(0.00) |
| ab | Covar (Slopes) | 0.00(0.00), .90 | 0.00(0.00), .90 | 0.00(0.00), .90 | 0.00(0.00), .93 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.00), .93 | 0.00(0.00), .95 | 0.00(0.00), .97 | 0.00(0.00), .96 | 0.00(0.00) |
|  | Correlation of Levels | 0.062 | 0.052 | 0.036 | 0.028 | 0.04(0.02) |
|  | Correlation of Slopes | 0.000 | 0.000 | 0.000 | 0.000 | 0.00(0.00) |
|  | Correlation of Residuals | 0.000 | 0.000 | 0.000 | 0.000 | 0.00(0.00) |
|  | N | 1,010 | 1,010 | 1,010 | 1,010 | 1010.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -7,711 | -10,271 | -9,081 | -10,214 | -9,319(1,204) |
|  | AIC | 15,468 | 20,602 | 18,239 | 20,564 | 18,718(2,432) |
|  | BIC | 15,581 | 20,750 | 18,426 | 20,898 | 18,914(2,494) |

## Summary

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 |

# 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 | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.70(0.45), <.01 | 1.63(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .24 | -0.00(0.00), .23 | -0.00(0.00), .23 | 0.00(0.00), .69 | -0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .80 | -0.00(0.00), .52 | 0.00(0.00), .92 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .25 | 0.10(0.12), .42 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .29 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .04 | 0.04(NA) |
| b | Level | 14.39(0.14), <.01 | 13.79(0.23), <.01 | 13.81(0.23), <.01 | 13.75(0.29), <.01 | 13.94(0.31) |
| b | Slope | -0.01(0.02), .70 | 0.06(0.04), .12 | 0.06(0.04), .16 | 0.06(0.05), .24 | 0.04(0.03) |
| b | Level \* age | -0.03(0.01), .03 | -0.03(0.01), .02 | -0.03(0.01), .04 | -0.03(0.01), .07 | -0.03(0.00) |
| b | Level \* education | --- | 0.07(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.01) |
| b | Level \* height | --- | --- | 2.49(0.78), <.01 | 2.48(0.78), <.01 | 2.48(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.06(0.13), .65 | 0.06(NA) |
| b | Level \* cardio | --- | --- | --- | 0.01(0.19), .95 | 0.01(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.02(0.14), .85 | 0.02(NA) |
| b | Slope \* age | 0.00(0.00), .03 | 0.00(0.00), .02 | 0.00(0.00), .04 | 0.00(0.00), .05 | 0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.00), .03 | -0.01(0.00), .15 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.45(0.18), .01 | -0.45(0.18), .01 | -0.45(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.01(0.02), .74 | -0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.02(0.04), .59 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.03(0.04), .37 | 0.03(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .16 | 0.00(0.00), .17 | 0.00(0.00), .31 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .12 | -0.01(0.00), .12 | -0.01(0.00), .05 | -0.01(0.00), .14 | -0.01(0.00) |
| b | Var (Level) | 1.28(0.56), .02 | 1.20(0.53), .02 | 1.17(0.53), .03 | 1.17(0.53), .03 | 1.21(0.05) |
| b | Var (Slope) | 0.01(0.01), .39 | 0.01(0.01), .44 | 0.01(0.01), .51 | 0.01(0.01), .51 | 0.01(0.00) |
| b | Var (Residual) | 0.39(0.04), <.01 | 0.39(0.04), <.01 | 0.39(0.04), <.01 | 0.39(0.04), <.01 | 0.39(0.00) |
| b | Covar (Level, Slope) | -0.06(0.06), .32 | -0.05(0.06), .37 | -0.04(0.05), .44 | -0.04(0.05), .43 | -0.05(0.01) |
| ab | Covar (Levels) | 0.10(0.04), .01 | 0.07(0.04), .09 | 0.04(0.04), .25 | 0.05(0.04), .23 | 0.07(0.03) |
| ab | Covar (Slopes) | -0.00(0.00), .34 | -0.00(0.00), .30 | -0.00(0.00), .38 | -0.00(0.00), .33 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .68 | -0.00(0.01), .68 | -0.00(0.01), .68 | -0.00(0.01), .71 | -0.00(0.00) |
|  | Correlation of Levels | 0.161 | 0.109 | 0.075 | 0.087 | 0.11(0.04) |
|  | Correlation of Slopes | -0.500 | -0.535 | -0.577 | -0.816 | -0.61(0.14) |
|  | Correlation of Residuals | -0.022 | -0.022 | -0.022 | -0.022 | -0.02(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,070 | -4,011 | -3,607 | -4,187 | -3,719( 496) |
|  | AIC | 6,185 | 8,082 | 7,291 | 8,511 | 7,517(1,022) |
|  | BIC | 6,274 | 8,197 | 7,437 | 8,773 | 7,671(1,080) |

## bstory\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.04(0.01), <.01 | -0.04(0.02), .02 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.70(0.45), <.01 | 1.64(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .36 | -0.00(0.00), .35 | -0.00(0.00), .34 | 0.00(0.00), .86 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .62 | -0.00(0.00), .43 | 0.00(0.00), .97 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .26 | 0.10(0.13), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .18 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .04 | 0.04(NA) |
| b | Level | 9.77(0.16), <.01 | 8.88(0.29), <.01 | 8.89(0.29), <.01 | 8.94(0.34), <.01 | 9.12(0.43) |
| b | Slope | -0.14(0.06), .02 | -0.07(0.09), .43 | -0.06(0.09), .45 | -0.08(0.12), .49 | -0.09(0.04) |
| b | Level \* age | -0.07(0.01), <.01 | -0.07(0.01), <.01 | -0.07(0.01), <.01 | -0.07(0.01), <.01 | -0.07(0.00) |
| b | Level \* education | --- | 0.11(0.03), <.01 | 0.10(0.03), <.01 | 0.10(0.03), <.01 | 0.10(0.00) |
| b | Level \* height | --- | --- | 0.82(1.48), .58 | 0.77(1.48), .60 | 0.79(0.03) |
| b | Level \* smoking | --- | --- | --- | -0.00(0.20), .99 | -0.00(NA) |
| b | Level \* cardio | --- | --- | --- | 0.06(0.26), .82 | 0.06(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.17(0.26), .52 | -0.17(NA) |
| b | Slope \* age | 0.01(0.00), .02 | 0.01(0.00), .02 | 0.01(0.00), .01 | 0.01(0.00), .03 | 0.01(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .28 | -0.01(0.01), .13 | -0.01(0.01), .22 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.65(0.52), .21 | 0.72(0.53), .17 | 0.69(0.05) |
| b | Slope \* smoking | --- | --- | --- | -0.06(0.07), .36 | -0.06(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.11(0.09), .20 | 0.11(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.11(0.08), .21 | 0.11(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00), .22 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .10 | -0.01(0.00), .10 | -0.01(0.00), .04 | -0.01(0.00), .11 | -0.01(0.00) |
| b | Var (Level) | 2.03(0.47), <.01 | 1.88(0.47), <.01 | 1.88(0.46), <.01 | 1.88(0.47), <.01 | 1.92(0.07) |
| b | Var (Slope) | 0.01(0.07), .85 | 0.01(0.07), .85 | 0.01(0.07), .87 | 0.01(0.07), .88 | 0.01(0.00) |
| b | Var (Residual) | 2.78(0.24), <.01 | 2.78(0.24), <.01 | 2.78(0.24), <.01 | 2.77(0.24), <.01 | 2.78(0.00) |
| b | Covar (Level, Slope) | -0.00(0.16), .97 | 0.00(0.16), .98 | -0.00(0.16), .99 | -0.00(0.17), .97 | -0.00(0.00) |
| ab | Covar (Levels) | 0.10(0.08), .23 | 0.04(0.07), .62 | 0.02(0.07), .73 | 0.02(0.07), .73 | 0.05(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .44 | 0.00(0.00), .46 | 0.00(0.00), .51 | 0.00(0.00), .62 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.02), .47 | -0.01(0.02), .47 | -0.01(0.02), .46 | -0.01(0.02), .53 | -0.01(0.00) |
|  | Correlation of Levels | 0.118 | 0.049 | 0.034 | 0.034 | 0.06(0.04) |
|  | Correlation of Slopes | 0.756 | 0.756 | 0.612 | 0.640 | 0.69(0.08) |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.034 | -0.028 | -0.03(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -4,046 | -4,987 | -4,584 | -5,163 | -4,695( 496) |
|  | AIC | 8,138 | 10,033 | 9,244 | 10,463 | 9,470(1,021) |
|  | BIC | 8,227 | 10,149 | 9,391 | 10,725 | 9,623(1,079) |

## bstory\_im

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.70(0.45), <.01 | 1.63(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .37 | -0.00(0.00), .35 | -0.00(0.00), .33 | 0.00(0.00), .87 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .68 | -0.00(0.00), .48 | 0.00(0.00), .98 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .26 | 0.10(0.12), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 10.16(0.15), <.01 | 9.54(0.25), <.01 | 9.55(0.25), <.01 | 9.44(0.28), <.01 | 9.67(0.33) |
| b | Slope | -0.17(0.05), <.01 | -0.10(0.08), .22 | -0.10(0.08), .21 | -0.07(0.10), .51 | -0.11(0.04) |
| b | Level \* age | -0.06(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.00) |
| b | Level \* education | --- | 0.08(0.02), <.01 | 0.06(0.03), .01 | 0.07(0.03), .01 | 0.07(0.01) |
| b | Level \* height | --- | --- | 1.81(1.19), .13 | 1.74(1.19), .14 | 1.77(0.05) |
| b | Level \* smoking | --- | --- | --- | 0.13(0.16), .43 | 0.13(NA) |
| b | Level \* cardio | --- | --- | --- | 0.08(0.24), .72 | 0.08(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.03(0.23), .90 | -0.03(NA) |
| b | Slope \* age | 0.01(0.00), <.01 | 0.01(0.00), <.01 | 0.01(0.00), .01 | 0.01(0.00), .01 | 0.01(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .26 | -0.01(0.01), .39 | -0.01(0.01), .38 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.29(0.45), .52 | -0.25(0.47), .59 | -0.27(0.03) |
| b | Slope \* smoking | --- | --- | --- | -0.05(0.06), .37 | -0.05(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.00(0.09), .96 | -0.00(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.03(0.08), .74 | 0.03(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.30(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00), .13 | 0.00(0.00), .21 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .10 | -0.01(0.00), .10 | -0.01(0.00), .04 | -0.01(0.00), .12 | -0.01(0.00) |
| b | Var (Level) | 1.36(0.25), <.01 | 1.27(0.25), <.01 | 1.26(0.25), <.01 | 1.26(0.25), <.01 | 1.29(0.05) |
| b | Var (Slope) | 0.03(0.03), .40 | 0.03(0.03), .41 | 0.03(0.03), .42 | 0.03(0.03), .43 | 0.03(0.00) |
| b | Var (Residual) | 2.08(0.13), <.01 | 2.08(0.13), <.01 | 2.08(0.13), <.01 | 2.08(0.13), <.01 | 2.08(0.00) |
| b | Covar (Level, Slope) | -0.07(0.08), .33 | -0.06(0.08), .39 | -0.06(0.08), .41 | -0.06(0.08), .42 | -0.07(0.01) |
| ab | Covar (Levels) | 0.10(0.07), .15 | 0.06(0.06), .38 | 0.03(0.06), .59 | 0.05(0.06), .43 | 0.06(0.03) |
| ab | Covar (Slopes) | 0.01(0.00), .12 | 0.01(0.00), .13 | 0.01(0.00), .15 | 0.00(0.00), .18 | 0.01(0.00) |
| ab | Covar (Residuals) | -0.02(0.01), .23 | -0.02(0.01), .23 | -0.02(0.01), .24 | -0.01(0.01), .29 | -0.02(0.00) |
|  | Correlation of Levels | 0.144 | 0.089 | 0.054 | 0.078 | 0.09(0.04) |
|  | Correlation of Slopes | 0.816 | 0.832 | 0.832 | 0.693 | 0.79(0.07) |
|  | Correlation of Residuals | -0.055 | -0.055 | -0.055 | -0.048 | -0.05(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,857 | -4,800 | -4,398 | -4,979 | -4,509( 498) |
|  | AIC | 7,760 | 9,660 | 8,872 | 10,093 | 9,097(1,024) |
|  | BIC | 7,849 | 9,776 | 9,019 | 10,356 | 9,250(1,083) |

## categories

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.53(0.44), <.01 | 1.67(0.45), <.01 | 1.60(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.06), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.10(0.09), .28 | -0.10(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .29 | -0.00(0.00), .28 | -0.00(0.00), .27 | 0.00(0.00), .77 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .73 | -0.00(0.00), .54 | 0.00(0.00), .92 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.13(0.13), .30 | 0.09(0.13), .48 | 0.11(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .20 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .07 | 0.03(NA) |
| b | Level | 35.60(0.81), <.01 | 30.65(1.15), <.01 | 30.78(1.13), <.01 | 31.34(1.33), <.01 | 32.09(2.36) |
| b | Slope | 0.05(0.18), .80 | 0.27(0.32), .41 | 0.27(0.32), .40 | 0.38(0.35), .29 | 0.24(0.14) |
| b | Level \* age | -0.33(0.06), <.01 | -0.34(0.06), <.01 | -0.32(0.06), <.01 | -0.32(0.06), <.01 | -0.33(0.01) |
| b | Level \* education | --- | 0.61(0.11), <.01 | 0.52(0.12), <.01 | 0.51(0.12), <.01 | 0.55(0.05) |
| b | Level \* height | --- | --- | 13.31(6.21), .03 | 13.61(6.23), .03 | 13.46(0.21) |
| b | Level \* smoking | --- | --- | --- | -0.78(0.76), .31 | -0.78(NA) |
| b | Level \* cardio | --- | --- | --- | -0.21(1.09), .84 | -0.21(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.22(1.12), .85 | 0.22(NA) |
| b | Slope \* age | -0.03(0.02), .09 | -0.03(0.02), .09 | -0.03(0.02), .10 | -0.03(0.02), .07 | -0.03(0.00) |
| b | Slope \* education | --- | -0.03(0.03), .40 | -0.03(0.03), .38 | -0.04(0.03), .30 | -0.03(0.00) |
| b | Slope \* height | --- | --- | 0.43(1.64), .79 | 0.55(1.61), .73 | 0.49(0.08) |
| b | Slope \* smoking | --- | --- | --- | 0.05(0.22), .82 | 0.05(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.16(0.34), .62 | 0.16(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.52(0.30), .08 | -0.52(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .32 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .13 | -0.01(0.00), .13 | -0.01(0.00), .06 | -0.01(0.00), .17 | -0.01(0.00) |
| b | Var (Level) | 55.88(5.54), <.01 | 50.58(5.26), <.01 | 49.69(5.14), <.01 | 49.54(5.14), <.01 | 51.42(3.00) |
| b | Var (Slope) | 0.43(0.32), .19 | 0.41(0.33), .22 | 0.40(0.33), .23 | 0.35(0.34), .30 | 0.40(0.03) |
| b | Var (Residual) | 20.66(1.31), <.01 | 20.69(1.32), <.01 | 20.68(1.32), <.01 | 20.69(1.32), <.01 | 20.68(0.01) |
| b | Covar (Level, Slope) | 0.47(1.12), .67 | 0.73(1.16), .53 | 0.71(1.15), .54 | 0.70(1.14), .54 | 0.65(0.12) |
| ab | Covar (Levels) | 1.16(0.32), <.01 | 0.83(0.30), .01 | 0.69(0.29), .02 | 0.67(0.28), .02 | 0.84(0.23) |
| ab | Covar (Slopes) | 0.01(0.01), .61 | 0.01(0.01), .65 | 0.00(0.01), .75 | 0.01(0.01), .51 | 0.01(0.00) |
| ab | Covar (Residuals) | 0.02(0.05), .59 | 0.03(0.05), .57 | 0.03(0.05), .53 | 0.03(0.05), .52 | 0.03(0.00) |
|  | Correlation of Levels | 0.272 | 0.210 | 0.181 | 0.18 | 0.21(0.04) |
|  | Correlation of Slopes | 0.240 | 0.211 | 0.176 | 0.48 | 0.28(0.14) |
|  | Correlation of Residuals | 0.025 | 0.026 | 0.029 | 0.03 | 0.03(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -5,428 | -6,367 | -5,965 | -6,544 | -6,076( 495) |
|  | AIC | 10,903 | 12,794 | 12,006 | 13,224 | 12,232(1,019) |
|  | BIC | 10,992 | 12,910 | 12,153 | 13,486 | 12,385(1,078) |

## digit\_b

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.70(0.45), <.01 | 1.63(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .30 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .28 | -0.00(0.00), .29 | -0.00(0.00), .27 | 0.00(0.00), .77 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .65 | -0.00(0.00), .47 | 0.00(0.00), .99 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .27 | 0.10(0.13), .45 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .19 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 6.59(0.20), <.01 | 5.16(0.27), <.01 | 5.15(0.27), <.01 | 5.04(0.31), <.01 | 5.48(0.74) |
| b | Slope | 0.03(0.06), .56 | 0.01(0.09), .92 | 0.01(0.09), .89 | 0.04(0.10), .68 | 0.02(0.02) |
| b | Level \* age | -0.04(0.02), .02 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.02), <.01 | -0.04(0.00) |
| b | Level \* education | --- | 0.18(0.03), <.01 | 0.18(0.03), <.01 | 0.18(0.03), <.01 | 0.18(0.00) |
| b | Level \* height | --- | --- | -0.69(1.22), .57 | -0.71(1.22), .56 | -0.70(0.02) |
| b | Level \* smoking | --- | --- | --- | 0.12(0.17), .51 | 0.12(NA) |
| b | Level \* cardio | --- | --- | --- | 0.16(0.24), .51 | 0.16(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.02(0.24), .92 | -0.02(NA) |
| b | Slope \* age | -0.00(0.00), .63 | -0.00(0.00), .55 | -0.00(0.00), .63 | -0.00(0.00), .70 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.01), .70 | 0.00(0.01), .91 | 0.00(0.01), .97 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.39(0.42), .35 | 0.38(0.42), .37 | 0.39(0.01) |
| b | Slope \* smoking | --- | --- | --- | -0.00(0.05), .95 | -0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.07(0.08), .36 | -0.07(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.04(0.07), .63 | -0.04(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .17 | 0.00(0.00), .16 | 0.00(0.00), .17 | 0.00(0.00), .31 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .12 | -0.01(0.00), .13 | -0.01(0.00), .05 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 2.58(0.26), <.01 | 2.15(0.24), <.01 | 2.15(0.24), <.01 | 2.15(0.24), <.01 | 2.26(0.21) |
| b | Var (Slope) | 0.03(0.02), .15 | 0.04(0.02), .13 | 0.04(0.02), .13 | 0.04(0.02), .12 | 0.04(0.00) |
| b | Var (Residual) | 1.58(0.10), <.01 | 1.57(0.10), <.01 | 1.57(0.10), <.01 | 1.57(0.10), <.01 | 1.57(0.00) |
| b | Covar (Level, Slope) | 0.00(0.06), .96 | -0.01(0.06), .88 | -0.01(0.06), .86 | -0.01(0.06), .84 | -0.01(0.01) |
| ab | Covar (Levels) | 0.15(0.06), .02 | 0.06(0.06), .33 | 0.06(0.06), .29 | 0.08(0.06), .14 | 0.09(0.04) |
| ab | Covar (Slopes) | -0.00(0.00), .67 | -0.00(0.00), .76 | -0.00(0.00), .74 | -0.00(0.00), .85 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .81 | -0.00(0.01), .80 | -0.00(0.01), .74 | -0.00(0.01), .74 | -0.00(0.00) |
|  | Correlation of Levels | 0.168 | 0.073 | 0.079 | 0.109 | 0.11(0.04) |
|  | Correlation of Slopes | -0.243 | -0.118 | -0.118 | -0.164 | -0.16(0.06) |
|  | Correlation of Residuals | -0.011 | -0.011 | -0.015 | -0.015 | -0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,831 | -4,757 | -4,356 | -4,936 | -4,470( 490) |
|  | AIC | 7,708 | 9,574 | 8,787 | 10,007 | 9,019(1,009) |
|  | BIC | 7,797 | 9,690 | 8,934 | 10,270 | 9,173(1,068) |

## digit\_f

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.56(0.44), <.01 | 1.69(0.45), <.01 | 1.62(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.23(0.08), <.01 | -0.23(NA) |
| a | Slope \* age | -0.00(0.00), .29 | -0.00(0.00), .31 | -0.00(0.00), .29 | 0.00(0.00), .79 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .58 | -0.00(0.00), .40 | 0.00(0.00), .89 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .24 | 0.10(0.12), .42 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .07 | 0.03(NA) |
| b | Level | 8.90(0.18), <.01 | 7.40(0.25), <.01 | 7.39(0.25), <.01 | 7.24(0.29), <.01 | 7.73(0.78) |
| b | Slope | -0.02(0.05), .63 | 0.05(0.08), .53 | 0.05(0.08), .53 | 0.00(0.09), .95 | 0.02(0.04) |
| b | Level \* age | -0.04(0.02), .01 | -0.04(0.01), <.01 | -0.05(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| b | Level \* education | --- | 0.18(0.02), <.01 | 0.19(0.02), <.01 | 0.19(0.02), <.01 | 0.19(0.00) |
| b | Level \* height | --- | --- | -1.12(1.50), .45 | -1.23(1.48), .41 | -1.18(0.08) |
| b | Level \* smoking | --- | --- | --- | 0.32(0.17), .06 | 0.32(NA) |
| b | Level \* cardio | --- | --- | --- | 0.20(0.25), .43 | 0.20(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.38(0.27), .16 | -0.38(NA) |
| b | Slope \* age | 0.00(0.00), .97 | 0.00(0.00), .98 | 0.00(0.00), .97 | 0.00(0.00), .80 | 0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .32 | -0.01(0.01), .29 | -0.01(0.01), .40 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.15(0.47), .74 | 0.11(0.47), .81 | 0.13(0.03) |
| b | Slope \* smoking | --- | --- | --- | 0.02(0.05), .75 | 0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.04(0.08), .56 | -0.04(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.10(0.07), .15 | 0.10(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .19 | 0.00(0.00), .18 | 0.00(0.00), .19 | 0.00(0.00), .33 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .16 | -0.01(0.00), .16 | -0.01(0.00), .07 | -0.00(0.00), .18 | -0.01(0.00) |
| b | Var (Level) | 2.67(0.28), <.01 | 2.19(0.26), <.01 | 2.18(0.25), <.01 | 2.11(0.25), <.01 | 2.29(0.26) |
| b | Var (Slope) | 0.02(0.02), .46 | 0.02(0.02), .48 | 0.02(0.02), .48 | 0.01(0.02), .51 | 0.02(0.00) |
| b | Var (Residual) | 1.53(0.10), <.01 | 1.53(0.10), <.01 | 1.53(0.10), <.01 | 1.53(0.10), <.01 | 1.53(0.00) |
| b | Covar (Level, Slope) | -0.03(0.07), .62 | -0.01(0.06), .82 | -0.01(0.06), .83 | -0.01(0.06), .91 | -0.02(0.01) |
| ab | Covar (Levels) | 0.13(0.06), .03 | 0.04(0.06), .53 | 0.04(0.06), .45 | 0.05(0.05), .33 | 0.06(0.04) |
| ab | Covar (Slopes) | 0.00(0.00), .14 | 0.00(0.00), .13 | 0.00(0.00), .15 | 0.00(0.00), .31 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .78 | -0.00(0.01), .76 | -0.00(0.01), .77 | -0.00(0.01), .79 | -0.00(0.00) |
|  | Correlation of Levels | 0.140 | 0.043 | 0.052 | 0.069 | 0.08(0.04) |
|  | Correlation of Slopes | 0.857 | 0.884 | 0.884 | 0.775 | 0.85(0.05) |
|  | Correlation of Residuals | -0.011 | -0.015 | -0.015 | -0.011 | -0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,809 | -4,735 | -4,333 | -4,911 | -4,447( 489) |
|  | AIC | 7,664 | 9,530 | 8,743 | 9,957 | 8,973(1,007) |
|  | BIC | 7,753 | 9,645 | 8,890 | 10,220 | 9,127(1,066) |

## digit\_o

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.12(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.04(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.71(0.45), <.01 | 1.64(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .25 | -0.00(0.00), .26 | -0.00(0.00), .27 | 0.00(0.00), .78 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .66 | -0.00(0.00), .45 | 0.00(0.00), .98 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .25 | 0.10(0.12), .42 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .06 | 0.04(NA) |
| b | Level | 7.82(0.15), <.01 | 6.84(0.22), <.01 | 6.86(0.21), <.01 | 6.85(0.25), <.01 | 7.09(0.48) |
| b | Slope | -0.05(0.05), .29 | -0.06(0.07), .37 | -0.06(0.07), .38 | -0.10(0.08), .21 | -0.07(0.02) |
| b | Level \* age | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.00) |
| b | Level \* education | --- | 0.12(0.02), <.01 | 0.11(0.02), <.01 | 0.10(0.02), <.01 | 0.11(0.01) |
| b | Level \* height | --- | --- | 2.34(1.04), .02 | 2.33(1.03), .02 | 2.33(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.08(0.13), .57 | 0.08(NA) |
| b | Level \* cardio | --- | --- | --- | -0.06(0.20), .77 | -0.06(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.12(0.20), .52 | -0.12(NA) |
| b | Slope \* age | -0.00(0.00), .80 | -0.00(0.00), .78 | -0.00(0.00), .80 | -0.00(0.00), .89 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.01), .83 | 0.00(0.01), .93 | 0.00(0.01), .77 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.21(0.37), .57 | 0.19(0.37), .61 | 0.20(0.01) |
| b | Slope \* smoking | --- | --- | --- | 0.03(0.04), .45 | 0.03(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.03(0.07), .72 | 0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.03(0.06), .65 | 0.03(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .17 | 0.00(0.00), .16 | 0.00(0.00), .17 | 0.00(0.00), .30 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .14 | -0.01(0.00), .14 | -0.01(0.00), .06 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 1.31(0.25), <.01 | 1.11(0.22), <.01 | 1.08(0.22), <.01 | 1.07(0.22), <.01 | 1.14(0.11) |
| b | Var (Slope) | 0.01(0.02), .70 | 0.01(0.02), .73 | 0.01(0.02), .75 | 0.01(0.02), .78 | 0.01(0.00) |
| b | Var (Residual) | 1.30(0.10), <.01 | 1.30(0.10), <.01 | 1.30(0.10), <.01 | 1.30(0.10), <.01 | 1.30(0.00) |
| b | Covar (Level, Slope) | 0.01(0.06), .87 | 0.01(0.06), .90 | 0.01(0.06), .92 | 0.01(0.06), .92 | 0.01(0.00) |
| ab | Covar (Levels) | 0.07(0.05), .18 | -0.00(0.05), .97 | -0.02(0.05), .62 | -0.02(0.04), .69 | 0.01(0.04) |
| ab | Covar (Slopes) | 0.00(0.00), .75 | 0.00(0.00), .72 | 0.00(0.00), .81 | 0.00(0.00), .89 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .75 | -0.00(0.01), .75 | -0.00(0.01), .77 | -0.00(0.01), .82 | -0.00(0.00) |
|  | Correlation of Levels | 0.10 | -0.0034 | -0.041 | -0.033 | 0.01(0.07) |
|  | Correlation of Slopes | 0.24 | 0.5000 | 0.267 | 0.378 | 0.35(0.12) |
|  | Correlation of Residuals | -0.02 | -0.0202 | -0.016 | -0.012 | -0.02(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,621 | -4,550 | -4,145 | -4,726 | -4,261( 491) |
|  | AIC | 7,289 | 9,160 | 8,367 | 9,587 | 8,601(1,010) |
|  | BIC | 7,377 | 9,276 | 8,514 | 9,850 | 8,754(1,069) |

## ideas

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.04(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.58(0.44), <.01 | 1.72(0.45), <.01 | 1.65(0.10) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .24 | -0.00(0.00), .23 | -0.00(0.00), .23 | 0.00(0.00), .67 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .77 | -0.00(0.00), .54 | 0.00(0.00), .86 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .25 | 0.10(0.12), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .20 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .04 | 0.04(NA) |
| b | Level | 7.88(0.05), <.01 | 7.72(0.08), <.01 | 7.72(0.08), <.01 | 7.78(0.09), <.01 | 7.78(0.07) |
| b | Slope | -0.03(0.02), .19 | 0.00(0.03), .99 | -0.00(0.03), .98 | -0.04(0.05), .43 | -0.02(0.02) |
| b | Level \* age | -0.01(0.01), .18 | -0.01(0.01), .16 | -0.01(0.01), .21 | -0.01(0.01), .20 | -0.01(0.00) |
| b | Level \* education | --- | 0.02(0.01), .04 | 0.02(0.01), .07 | 0.01(0.01), .11 | 0.02(0.00) |
| b | Level \* height | --- | --- | 0.56(0.41), .17 | 0.58(0.42), .16 | 0.57(0.01) |
| b | Level \* smoking | --- | --- | --- | -0.04(0.06), .46 | -0.04(NA) |
| b | Level \* cardio | --- | --- | --- | 0.04(0.07), .52 | 0.04(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.07(0.08), .40 | -0.07(NA) |
| b | Slope \* age | 0.00(0.00), .07 | 0.00(0.00), .08 | 0.00(0.00), .08 | 0.00(0.00), .08 | 0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.00), .39 | -0.00(0.00), .37 | -0.00(0.00), .66 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.16), .99 | -0.01(0.16), .95 | -0.00(0.01) |
| b | Slope \* smoking | --- | --- | --- | 0.03(0.02), .22 | 0.03(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.01(0.02), .69 | 0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.02(0.03), .47 | 0.02(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .15 | 0.00(0.00), .16 | 0.00(0.00), .28 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .12 | -0.01(0.00), .12 | -0.01(0.00), .05 | -0.01(0.00), .14 | -0.01(0.00) |
| b | Var (Level) | 0.16(0.15), .28 | 0.16(0.15), .28 | 0.15(0.14), .28 | 0.15(0.14), .28 | 0.16(0.00) |
| b | Var (Slope) | 0.02(0.02), .33 | 0.02(0.02), .33 | 0.02(0.02), .33 | 0.02(0.02), .33 | 0.02(0.00) |
| b | Var (Residual) | 0.23(0.06), <.01 | 0.23(0.06), <.01 | 0.23(0.06), <.01 | 0.23(0.06), <.01 | 0.23(0.00) |
| b | Covar (Level, Slope) | -0.05(0.05), .34 | -0.05(0.05), .34 | -0.05(0.05), .34 | -0.05(0.05), .34 | -0.05(0.00) |
| ab | Covar (Levels) | 0.02(0.02), .33 | 0.01(0.02), .72 | 0.00(0.02), .96 | -0.00(0.02), .78 | 0.01(0.01) |
| ab | Covar (Slopes) | -0.00(0.00), .22 | -0.00(0.00), .22 | -0.00(0.00), .22 | -0.00(0.00), .15 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.01), .50 | 0.00(0.01), .52 | 0.00(0.01), .54 | 0.00(0.01), .56 | 0.00(0.00) |
|  | Correlation of Levels | 0.078 | 0.032 | 0.0047 | -0.024 | 0.02(0.04) |
|  | Correlation of Slopes | -0.309 | -0.309 | -0.3086 | -0.671 | -0.40(0.18) |
|  | Correlation of Residuals | 0.039 | 0.039 | 0.0290 | 0.029 | 0.03(0.01) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -2,542 | -3,487 | -3,084 | -3,663 | -3,194( 497) |
|  | AIC | 5,130 | 7,034 | 6,245 | 7,461 | 6,467(1,024) |
|  | BIC | 5,219 | 7,149 | 6,391 | 7,724 | 6,621(1,082) |

## line

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.12(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.54(0.44), <.01 | 1.68(0.45), <.01 | 1.61(0.10) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .30 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .26 | -0.00(0.00), .27 | -0.00(0.00), .23 | 0.00(0.00), .76 | -0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .78 | -0.00(0.00), .62 | 0.00(0.00), .92 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .23 | 0.10(0.12), .43 | 0.13(0.04) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .16 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .06 | 0.03(NA) |
| b | Level | 11.68(0.28), <.01 | 9.70(0.44), <.01 | 9.86(0.44), <.01 | 10.35(0.51), <.01 | 10.40(0.90) |
| b | Slope | 0.00(0.07), .99 | -0.04(0.12), .73 | 0.00(0.12), .98 | -0.13(0.15), .38 | -0.04(0.06) |
| b | Level \* age | -0.02(0.02), .42 | -0.03(0.02), .26 | -0.02(0.02), .47 | -0.02(0.02), .29 | -0.02(0.00) |
| b | Level \* education | --- | 0.24(0.04), <.01 | 0.21(0.04), <.01 | 0.20(0.04), <.01 | 0.22(0.02) |
| b | Level \* height | --- | --- | 3.67(2.34), .12 | 4.12(2.42), .09 | 3.89(0.32) |
| b | Level \* smoking | --- | --- | --- | -0.65(0.28), .02 | -0.65(NA) |
| b | Level \* cardio | --- | --- | --- | -0.20(0.41), .62 | -0.20(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.16(0.38), .68 | -0.16(NA) |
| b | Slope \* age | 0.00(0.01), .45 | 0.00(0.01), .47 | 0.00(0.01), .55 | 0.01(0.01), .41 | 0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.01), .64 | -0.00(0.01), .95 | 0.00(0.01), .69 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.70(0.62), .26 | 0.72(0.67), .28 | 0.71(0.01) |
| b | Slope \* smoking | --- | --- | --- | 0.07(0.08), .35 | 0.07(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.11(0.14), .43 | 0.11(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.04(0.12), .72 | 0.04(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .15 | 0.00(0.00), .12 | 0.00(0.00), .29 | 0.00(0.00) |
| a | Var (Residual) | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.04(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), .13 | -0.01(0.00), .05 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 5.91(0.74), <.01 | 5.08(0.62), <.01 | 4.80(0.60), <.01 | 4.85(0.59), <.01 | 5.16(0.51) |
| b | Var (Slope) | 0.06(0.05), .16 | 0.06(0.04), .17 | 0.05(0.04), .21 | 0.06(0.04), .22 | 0.06(0.01) |
| b | Var (Residual) | 3.44(0.33), <.01 | 3.44(0.33), <.01 | 3.35(0.32), <.01 | 3.44(0.33), <.01 | 3.42(0.05) |
| b | Covar (Level, Slope) | -0.22(0.15), .13 | -0.23(0.14), .10 | -0.24(0.14), .07 | -0.22(0.14), .11 | -0.23(0.01) |
| ab | Covar (Levels) | 0.38(0.10), <.01 | 0.25(0.09), .01 | 0.18(0.09), .04 | 0.16(0.08), .05 | 0.24(0.10) |
| ab | Covar (Slopes) | 0.00(0.00), .50 | 0.00(0.00), .47 | 0.00(0.00), .64 | 0.00(0.00), .63 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.02), .94 | 0.00(0.02), .93 | 0.00(0.02), .82 | 0.00(0.02), .89 | 0.00(0.00) |
|  | Correlation of Levels | 0.2720 | 0.200 | 0.15 | 0.1422 | 0.19(0.06) |
|  | Correlation of Slopes | 0.2631 | 0.362 | 0.20 | 0.2697 | 0.27(0.07) |
|  | Correlation of Residuals | 0.0025 | 0.005 | 0.01 | 0.0075 | 0.01(0.00) |
|  | N | 351 | 351 | 327 | 351 | 345.00(12.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 29 | 68 | 37.50(20.57) |
|  | LL | -4,248 | -5,177 | -2,927 | -5,352 | -4,426(1,110) |
|  | AIC | 8,542 | 10,413 | 5,913 | 10,839 | 8,927(2,244) |
|  | BIC | 8,630 | 10,529 | 6,022 | 11,102 | 9,071(2,290) |

## logic\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.57(0.44), <.01 | 1.70(0.45), <.01 | 1.64(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .30 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .30 | -0.00(0.00), .30 | -0.00(0.00), .29 | 0.00(0.00), .85 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .66 | -0.00(0.00), .46 | 0.00(0.00), .99 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .23 | 0.10(0.12), .40 | 0.13(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .15 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 10.18(0.39), <.01 | 8.15(0.66), <.01 | 8.19(0.65), <.01 | 7.95(0.74), <.01 | 8.62(1.05) |
| b | Slope | 0.39(0.11), <.01 | 0.32(0.19), .08 | 0.33(0.18), .08 | 0.22(0.24), .35 | 0.32(0.07) |
| b | Level \* age | -0.14(0.03), <.01 | -0.14(0.03), <.01 | -0.14(0.03), <.01 | -0.14(0.03), <.01 | -0.14(0.00) |
| b | Level \* education | --- | 0.25(0.06), <.01 | 0.23(0.06), <.01 | 0.24(0.06), <.01 | 0.24(0.01) |
| b | Level \* height | --- | --- | 2.86(3.10), .36 | 2.94(3.06), .34 | 2.90(0.06) |
| b | Level \* smoking | --- | --- | --- | -0.21(0.38), .59 | -0.21(NA) |
| b | Level \* cardio | --- | --- | --- | 0.64(0.53), .23 | 0.64(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.89(0.50), .07 | 0.89(NA) |
| b | Slope \* age | -0.01(0.01), .48 | -0.01(0.01), .42 | -0.01(0.01), .47 | -0.00(0.01), .60 | -0.01(0.00) |
| b | Slope \* education | --- | 0.01(0.02), .62 | 0.01(0.02), .75 | 0.01(0.02), .62 | 0.01(0.00) |
| b | Slope \* height | --- | --- | 0.61(0.97), .53 | 0.56(0.96), .56 | 0.59(0.03) |
| b | Slope \* smoking | --- | --- | --- | 0.10(0.12), .39 | 0.10(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.02(0.19), .94 | 0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.02(0.18), .90 | 0.02(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .16 | 0.00(0.00), .16 | 0.00(0.00), .28 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .12 | -0.01(0.00), .12 | -0.01(0.00), .05 | -0.01(0.00), .14 | -0.01(0.00) |
| b | Var (Level) | 11.79(1.16), <.01 | 10.90(1.08), <.01 | 10.86(1.09), <.01 | 10.68(1.09), <.01 | 11.06(0.50) |
| b | Var (Slope) | 0.34(0.11), <.01 | 0.34(0.11), <.01 | 0.34(0.11), <.01 | 0.33(0.11), <.01 | 0.34(0.01) |
| b | Var (Residual) | 5.58(0.37), <.01 | 5.58(0.37), <.01 | 5.59(0.37), <.01 | 5.59(0.37), <.01 | 5.58(0.00) |
| b | Covar (Level, Slope) | -0.32(0.28), .26 | -0.35(0.28), .21 | -0.35(0.28), .21 | -0.36(0.28), .20 | -0.34(0.02) |
| ab | Covar (Levels) | 0.33(0.15), .03 | 0.20(0.13), .14 | 0.16(0.13), .21 | 0.20(0.12), .11 | 0.22(0.07) |
| ab | Covar (Slopes) | -0.00(0.01), .64 | -0.00(0.01), .66 | -0.00(0.01), .53 | -0.01(0.01), .35 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.02), .78 | -0.01(0.02), .81 | -0.00(0.02), .84 | -0.00(0.02), .88 | -0.00(0.00) |
|  | Correlation of Levels | 0.166 | 0.107 | 0.0905 | 0.1146 | 0.12(0.03) |
|  | Correlation of Slopes | -0.152 | -0.114 | -0.1926 | -0.3830 | -0.21(0.12) |
|  | Correlation of Residuals | -0.012 | -0.012 | -0.0099 | -0.0059 | -0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -4,633 | -5,570 | -5,169 | -5,746 | -5,279( 494) |
|  | AIC | 9,311 | 11,201 | 10,413 | 11,628 | 10,638(1,018) |
|  | BIC | 9,400 | 11,317 | 10,560 | 11,890 | 10,792(1,076) |

## logic\_im

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.12(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.58(0.44), <.01 | 1.71(0.45), <.01 | 1.65(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.10(0.09), .30 | -0.10(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .27 | -0.00(0.00), .27 | -0.00(0.00), .26 | 0.00(0.00), .78 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .63 | -0.00(0.00), .44 | 0.00(0.00), .96 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .25 | 0.10(0.12), .42 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .06 | 0.04(NA) |
| b | Level | 11.95(0.38), <.01 | 9.79(0.62), <.01 | 9.84(0.62), <.01 | 9.53(0.72), <.01 | 10.27(1.12) |
| b | Slope | 0.11(0.09), .21 | 0.16(0.17), .33 | 0.16(0.16), .33 | 0.14(0.21), .52 | 0.14(0.02) |
| b | Level \* age | -0.14(0.03), <.01 | -0.15(0.03), <.01 | -0.14(0.03), <.01 | -0.14(0.03), <.01 | -0.15(0.00) |
| b | Level \* education | --- | 0.27(0.06), <.01 | 0.23(0.06), <.01 | 0.24(0.06), <.01 | 0.25(0.02) |
| b | Level \* height | --- | --- | 5.20(2.98), .08 | 5.23(2.97), .08 | 5.22(0.02) |
| b | Level \* smoking | --- | --- | --- | 0.09(0.38), .82 | 0.09(NA) |
| b | Level \* cardio | --- | --- | --- | 0.46(0.53), .38 | 0.46(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.48(0.49), .32 | 0.48(NA) |
| b | Slope \* age | 0.01(0.01), .33 | 0.01(0.01), .35 | 0.01(0.01), .36 | 0.01(0.01), .32 | 0.01(0.00) |
| b | Slope \* education | --- | -0.00(0.02), .76 | -0.00(0.02), .79 | -0.00(0.02), .84 | -0.00(0.00) |
| b | Slope \* height | --- | --- | -0.06(0.93), .94 | -0.13(0.92), .89 | -0.10(0.05) |
| b | Slope \* smoking | --- | --- | --- | 0.02(0.12), .89 | 0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.09(0.18), .60 | -0.09(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.07(0.16), .68 | 0.07(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .15 | 0.00(0.00), .15 | 0.00(0.00), .15 | 0.00(0.00), .27 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .12 | -0.01(0.00), .12 | -0.01(0.00), .05 | -0.01(0.00), .13 | -0.01(0.00) |
| b | Var (Level) | 9.87(1.08), <.01 | 8.87(0.98), <.01 | 8.73(0.98), <.01 | 8.66(0.98), <.01 | 9.03(0.57) |
| b | Var (Slope) | 0.10(0.10), .27 | 0.10(0.10), .28 | 0.10(0.10), .28 | 0.10(0.09), .29 | 0.10(0.00) |
| b | Var (Residual) | 6.41(0.38), <.01 | 6.42(0.38), <.01 | 6.42(0.38), <.01 | 6.42(0.38), <.01 | 6.42(0.00) |
| b | Covar (Level, Slope) | 0.08(0.24), .74 | 0.10(0.22), .65 | 0.10(0.23), .64 | 0.10(0.22), .64 | 0.10(0.01) |
| ab | Covar (Levels) | 0.28(0.14), .05 | 0.14(0.13), .29 | 0.08(0.13), .50 | 0.12(0.12), .33 | 0.15(0.09) |
| ab | Covar (Slopes) | -0.01(0.01), .37 | -0.01(0.01), .37 | -0.01(0.01), .34 | -0.01(0.01), .22 | -0.01(0.00) |
| ab | Covar (Residuals) | 0.00(0.02), .97 | 0.00(0.02), .97 | 0.00(0.02), .97 | 0.00(0.02), .95 | 0.00(0.00) |
|  | Correlation of Levels | 0.1542 | 0.0824 | 0.0524 | 0.0757 | 0.09(0.04) |
|  | Correlation of Slopes | -0.4140 | -0.4180 | -0.4201 | -0.5657 | -0.45(0.07) |
|  | Correlation of Residuals | 0.0018 | 0.0018 | 0.0018 | 0.0037 | 0.00(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -4,651 | -5,588 | -5,185 | -5,764 | -5,297( 494) |
|  | AIC | 9,348 | 11,236 | 10,447 | 11,665 | 10,674(1,018) |
|  | BIC | 9,437 | 11,352 | 10,594 | 11,928 | 10,827(1,076) |

## matrices

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.11(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.61(0.44), <.01 | 1.74(0.45), <.01 | 1.67(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .33 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.23(0.08), <.01 | -0.23(NA) |
| a | Slope \* age | -0.00(0.00), .32 | -0.00(0.00), .33 | -0.00(0.00), .32 | 0.00(0.00), .87 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .65 | -0.00(0.00), .44 | 0.00(0.00), .97 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .28 | 0.09(0.13), .46 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .06 | 0.03(NA) |
| b | Level | 13.09(0.28), <.01 | 10.70(0.40), <.01 | 10.80(0.38), <.01 | 10.94(0.46), <.01 | 11.38(1.14) |
| b | Slope | 0.00(0.08), .99 | 0.10(0.13), .43 | 0.10(0.13), .44 | 0.05(0.14), .74 | 0.06(0.05) |
| b | Level \* age | -0.08(0.02), <.01 | -0.09(0.02), <.01 | -0.07(0.02), <.01 | -0.08(0.02), <.01 | -0.08(0.01) |
| b | Level \* education | --- | 0.30(0.04), <.01 | 0.25(0.04), <.01 | 0.24(0.04), <.01 | 0.26(0.03) |
| b | Level \* height | --- | --- | 7.21(2.25), <.01 | 7.32(2.23), <.01 | 7.27(0.07) |
| b | Level \* smoking | --- | --- | --- | -0.20(0.26), .45 | -0.20(NA) |
| b | Level \* cardio | --- | --- | --- | 0.35(0.38), .36 | 0.35(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.09(0.40), .82 | -0.09(NA) |
| b | Slope \* age | -0.00(0.01), .50 | -0.00(0.01), .55 | -0.00(0.01), .54 | -0.00(0.01), .52 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .34 | -0.01(0.01), .39 | -0.01(0.01), .48 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.18(0.72), .80 | 0.18(0.74), .81 | 0.18(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.04(0.07), .54 | 0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.08(0.15), .59 | 0.08(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.02(0.13), .85 | -0.02(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .16 | 0.00(0.00), .17 | 0.00(0.00), .30 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .13 | -0.01(0.00), .13 | -0.01(0.00), .05 | -0.01(0.00), .14 | -0.01(0.00) |
| b | Var (Level) | 4.94(0.71), <.01 | 3.70(0.61), <.01 | 3.40(0.55), <.01 | 3.37(0.55), <.01 | 3.85(0.74) |
| b | Var (Slope) | 0.07(0.06), .22 | 0.07(0.06), .21 | 0.06(0.05), .22 | 0.06(0.05), .26 | 0.07(0.00) |
| b | Var (Residual) | 3.26(0.36), <.01 | 3.26(0.35), <.01 | 3.26(0.35), <.01 | 3.27(0.35), <.01 | 3.26(0.00) |
| b | Covar (Level, Slope) | -0.23(0.18), .21 | -0.18(0.16), .25 | -0.17(0.15), .25 | -0.17(0.15), .26 | -0.19(0.03) |
| ab | Covar (Levels) | 0.40(0.09), <.01 | 0.24(0.08), <.01 | 0.18(0.08), .02 | 0.17(0.08), .03 | 0.25(0.11) |
| ab | Covar (Slopes) | 0.00(0.00), .36 | 0.00(0.01), .36 | 0.00(0.01), .39 | 0.00(0.00), .29 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.01(0.02), .57 | -0.01(0.02), .57 | -0.01(0.02), .62 | -0.01(0.02), .60 | -0.01(0.00) |
|  | Correlation of Levels | 0.316 | 0.229 | 0.179 | 0.175 | 0.22(0.07) |
|  | Correlation of Slopes | 0.426 | 0.426 | 0.439 | 0.645 | 0.48(0.11) |
|  | Correlation of Residuals | -0.026 | -0.026 | -0.023 | -0.023 | -0.02(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,983 | -4,902 | -4,493 | -5,072 | -4,612( 485) |
|  | AIC | 8,011 | 9,864 | 9,062 | 10,280 | 9,304(1,000) |
|  | BIC | 8,100 | 9,980 | 9,209 | 10,543 | 9,458(1,058) |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.21(0.17) |
| a | Slope | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.06(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | 1.58(0.44), <.01 | 1.70(0.45), <.01 | 1.64(0.09) |
| a | Level \* smoking | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .23 | -0.00(0.00), .22 | -0.00(0.00), .67 | -0.00(0.00) |
| a | Slope \* education | 0.00(0.00), .80 | -0.00(0.00), .55 | 0.00(0.00), .90 | -0.00(0.00) |
| a | Slope \* height | --- | 0.15(0.13), .24 | 0.10(0.12), .40 | 0.13(0.03) |
| a | Slope \* smoking | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | -0.02(0.02), .20 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 27.38(0.28), <.01 | 27.41(0.28), <.01 | 27.30(0.30), <.01 | 27.36(0.05) |
| b | Slope | 0.05(0.11), .66 | 0.04(0.10), .67 | 0.01(0.13), .92 | 0.03(0.02) |
| b | Level \* age | -0.09(0.02), <.01 | -0.09(0.02), <.01 | -0.08(0.02), <.01 | -0.09(0.00) |
| b | Level \* education | 0.16(0.03), <.01 | 0.14(0.03), <.01 | 0.14(0.03), <.01 | 0.15(0.01) |
| b | Level \* height | --- | 3.22(1.33), .02 | 3.17(1.33), .02 | 3.19(0.04) |
| b | Level \* smoking | --- | --- | 0.16(0.19), .39 | 0.16(NA) |
| b | Level \* cardio | --- | --- | 0.17(0.29), .56 | 0.17(NA) |
| b | Level \* diabetes | --- | --- | -0.13(0.26), .61 | -0.13(NA) |
| b | Slope \* age | 0.00(0.01), .48 | 0.00(0.01), .53 | 0.00(0.01), .53 | 0.00(0.00) |
| b | Slope \* education | -0.01(0.01), .18 | -0.01(0.01), .21 | -0.01(0.01), .32 | -0.01(0.00) |
| b | Slope \* height | --- | -0.13(0.68), .85 | -0.15(0.67), .82 | -0.14(0.02) |
| b | Slope \* smoking | --- | --- | -0.02(0.07), .75 | -0.02(NA) |
| b | Slope \* cardio | --- | --- | -0.02(0.10), .88 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | 0.13(0.11), .23 | 0.13(NA) |
| a | Var (Level) | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.29(0.02) |
| a | Var (Slope) | 0.00(0.00), .14 | 0.00(0.00), .15 | 0.00(0.00), .27 | 0.00(0.00) |
| a | Var (Residual) | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .13 | -0.01(0.00), .05 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 2.82(1.50), .06 | 2.76(1.49), .06 | 2.74(1.49), .07 | 2.77(0.04) |
| b | Var (Slope) | 0.17(0.10), .07 | 0.17(0.10), .08 | 0.16(0.10), .09 | 0.17(0.00) |
| b | Var (Residual) | 1.93(0.18), <.01 | 1.93(0.18), <.01 | 1.93(0.18), <.01 | 1.93(0.00) |
| b | Covar (Level, Slope) | -0.45(0.36), .21 | -0.45(0.35), .21 | -0.44(0.36), .22 | -0.44(0.01) |
| ab | Covar (Levels) | 0.05(0.06), .39 | 0.02(0.06), .74 | 0.03(0.06), .67 | 0.03(0.02) |
| ab | Covar (Slopes) | -0.00(0.01), .58 | -0.00(0.01), .56 | -0.00(0.01), .46 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.01), .72 | 0.01(0.01), .71 | 0.01(0.01), .69 | 0.01(0.00) |
|  | Correlation of Levels | 0.057 | 0.022 | 0.031 | 0.04(0.02) |
|  | Correlation of Slopes | -0.216 | -0.218 | -0.390 | -0.27(0.10) |
|  | Correlation of Residuals | 0.017 | 0.020 | 0.020 | 0.02(0.00) |
|  | N | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 30 | 38 | 68 | 45.33(20.03) |
|  | LL | -4,874 | -4,471 | -5,050 | -4,798(297) |
|  | AIC | 9,808 | 9,017 | 10,236 | 9,687(618) |
|  | BIC | 9,924 | 9,164 | 10,499 | 9,862(669) |

## nart

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .03 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.56(0.44), <.01 | 1.69(0.45), <.01 | 1.62(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .33 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .29 | -0.00(0.00), .29 | -0.00(0.00), .28 | 0.00(0.00), .80 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .73 | -0.00(0.00), .53 | 0.00(0.00), .96 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.13(0.13), .31 | 0.09(0.13), .48 | 0.11(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .04 | 0.04(NA) |
| b | Level | 7.76(0.22), <.01 | 4.93(0.32), <.01 | 4.95(0.32), <.01 | 4.88(0.40), <.01 | 5.63(1.42) |
| b | Slope | 0.04(0.04), .26 | 0.10(0.07), .18 | 0.10(0.07), .18 | 0.07(0.08), .35 | 0.08(0.03) |
| b | Level \* age | 0.01(0.02), .72 | -0.00(0.02), .90 | 0.00(0.02), .90 | 0.00(0.02), .78 | 0.00(0.00) |
| b | Level \* education | --- | 0.35(0.03), <.01 | 0.34(0.03), <.01 | 0.34(0.03), <.01 | 0.34(0.01) |
| b | Level \* height | --- | --- | 2.21(1.53), .15 | 2.12(1.53), .16 | 2.17(0.06) |
| b | Level \* smoking | --- | --- | --- | 0.19(0.19), .32 | 0.19(NA) |
| b | Level \* cardio | --- | --- | --- | -0.20(0.31), .52 | -0.20(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.16(0.28), .58 | -0.16(NA) |
| b | Slope \* age | -0.00(0.00), .81 | -0.00(0.00), .82 | -0.00(0.00), .81 | 0.00(0.00), .99 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .32 | -0.01(0.01), .34 | -0.01(0.01), .34 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.04(0.28), .90 | -0.00(0.29), .99 | 0.02(0.03) |
| b | Slope \* smoking | --- | --- | --- | 0.06(0.03), .07 | 0.06(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.01(0.06), .84 | -0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.07(0.06), .26 | -0.07(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .15 | 0.00(0.00), .14 | 0.00(0.00), .15 | 0.00(0.00), .26 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .11 | -0.01(0.00), .11 | -0.01(0.00), .04 | -0.01(0.00), .13 | -0.01(0.00) |
| b | Var (Level) | 5.17(0.54), <.01 | 3.46(0.35), <.01 | 3.44(0.36), <.01 | 3.44(0.36), <.01 | 3.88(0.86) |
| b | Var (Slope) | 0.01(0.01), .67 | 0.01(0.01), .67 | 0.01(0.01), .67 | 0.01(0.01), .53 | 0.01(0.00) |
| b | Var (Residual) | 0.76(0.10), <.01 | 0.76(0.10), <.01 | 0.76(0.10), <.01 | 0.75(0.10), <.01 | 0.76(0.00) |
| b | Covar (Level, Slope) | -0.12(0.08), .11 | -0.09(0.06), .13 | -0.09(0.06), .13 | -0.12(0.06), .07 | -0.11(0.02) |
| ab | Covar (Levels) | 0.29(0.07), <.01 | 0.11(0.06), .06 | 0.09(0.06), .12 | 0.10(0.06), .08 | 0.14(0.10) |
| ab | Covar (Slopes) | -0.00(0.00), .69 | -0.00(0.00), .72 | -0.00(0.00), .76 | -0.00(0.00), .81 | -0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .88 | -0.00(0.01), .88 | -0.00(0.01), .86 | -0.00(0.01), .72 | -0.00(0.00) |
|  | Correlation of Levels | 0.222 | 0.1057 | 0.086 | 0.098 | 0.13(0.06) |
|  | Correlation of Slopes | -0.289 | -0.2887 | -0.289 | -0.236 | -0.28(0.03) |
|  | Correlation of Residuals | -0.011 | -0.0053 | -0.011 | -0.016 | -0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,559 | -4,450 | -4,049 | -4,625 | -4,171( 474) |
|  | AIC | 7,164 | 8,959 | 8,173 | 9,386 | 8,421( 977) |
|  | BIC | 7,253 | 9,075 | 8,320 | 9,648 | 8,574(1,035) |

## num\_comp

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.56(0.44), <.01 | 1.68(0.45), <.01 | 1.62(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.10(0.09), .30 | -0.10(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .28 | -0.00(0.00), .28 | -0.00(0.00), .28 | 0.00(0.00), .80 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .71 | -0.00(0.00), .48 | 0.00(0.00), .97 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .25 | 0.10(0.12), .42 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .18 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 26.08(0.69), <.01 | 21.08(1.05), <.01 | 21.26(1.01), <.01 | 20.31(1.17), <.01 | 22.18(2.63) |
| b | Slope | -0.03(0.15), .86 | 0.38(0.27), .15 | 0.37(0.27), .17 | 0.29(0.31), .35 | 0.25(0.19) |
| b | Level \* age | -0.19(0.06), <.01 | -0.20(0.06), <.01 | -0.17(0.06), <.01 | -0.15(0.06), .01 | -0.18(0.02) |
| b | Level \* education | --- | 0.61(0.10), <.01 | 0.50(0.10), <.01 | 0.54(0.10), <.01 | 0.55(0.06) |
| b | Level \* height | --- | --- | 18.18(5.20), <.01 | 18.13(5.17), <.01 | 18.16(0.04) |
| b | Level \* smoking | --- | --- | --- | 0.40(0.70), .57 | 0.40(NA) |
| b | Level \* cardio | --- | --- | --- | -0.34(1.00), .74 | -0.34(NA) |
| b | Level \* diabetes | --- | --- | --- | 1.95(0.91), .03 | 1.95(NA) |
| b | Slope \* age | -0.03(0.01), .01 | -0.03(0.01), .01 | -0.03(0.01), .01 | -0.03(0.01), .02 | -0.03(0.00) |
| b | Slope \* education | --- | -0.05(0.03), .08 | -0.04(0.03), .15 | -0.04(0.03), .15 | -0.04(0.00) |
| b | Slope \* height | --- | --- | -1.57(1.44), .28 | -1.72(1.41), .22 | -1.65(0.11) |
| b | Slope \* smoking | --- | --- | --- | 0.25(0.16), .12 | 0.25(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.02(0.22), .91 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.37(0.22), .10 | -0.37(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .16 | 0.00(0.00), .17 | 0.00(0.00), .31 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .14 | -0.01(0.00), .14 | -0.01(0.00), .05 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 43.88(3.92), <.01 | 38.72(3.64), <.01 | 36.94(3.46), <.01 | 36.28(3.47), <.01 | 38.95(3.44) |
| b | Var (Slope) | 0.46(0.28), .10 | 0.43(0.27), .10 | 0.43(0.27), .11 | 0.34(0.26), .20 | 0.41(0.05) |
| b | Var (Residual) | 14.04(1.47), <.01 | 14.02(1.47), <.01 | 14.01(1.45), <.01 | 14.11(1.47), <.01 | 14.05(0.05) |
| b | Covar (Level, Slope) | -0.39(0.97), .69 | -0.00(0.85), .99 | 0.16(0.87), .86 | 0.22(0.85), .80 | -0.00(0.28) |
| ab | Covar (Levels) | 0.62(0.24), .01 | 0.29(0.23), .20 | 0.10(0.22), .64 | 0.21(0.21), .32 | 0.30(0.22) |
| ab | Covar (Slopes) | -0.01(0.01), .34 | -0.01(0.01), .32 | -0.01(0.01), .33 | -0.01(0.01), .31 | -0.01(0.00) |
| ab | Covar (Residuals) | -0.00(0.04), .91 | -0.00(0.04), .89 | -0.00(0.04), .91 | -0.01(0.04), .87 | -0.00(0.00) |
|  | Correlation of Levels | 0.1639 | 0.0831 | 0.031 | 0.0665 | 0.09(0.06) |
|  | Correlation of Slopes | -0.4286 | -0.4746 | -0.445 | -0.7626 | -0.53(0.16) |
|  | Correlation of Residuals | -0.0049 | -0.0062 | -0.005 | -0.0074 | -0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -5,190 | -6,123 | -5,717 | -6,292 | -5,830( 491) |
|  | AIC | 10,426 | 12,305 | 11,509 | 12,721 | 11,740(1,010) |
|  | BIC | 10,514 | 12,421 | 11,656 | 12,983 | 11,894(1,068) |

## symbol

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .01 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.54(0.45), <.01 | 1.67(0.45), <.01 | 1.60(0.10) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.10(0.09), .29 | -0.10(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .26 | -0.00(0.00), .27 | -0.00(0.00), .27 | 0.00(0.00), .78 | -0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .78 | -0.00(0.00), .53 | 0.00(0.00), .95 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .25 | 0.09(0.13), .46 | 0.12(0.04) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .19 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .07 | 0.03(NA) |
| b | Level | 11.68(0.28), <.01 | 9.70(0.44), <.01 | 9.74(0.44), <.01 | 35.95(1.71), <.01 | 16.77(12.82) |
| b | Slope | 0.00(0.07), .99 | -0.04(0.12), .73 | -0.04(0.12), .76 | -0.07(0.42), .86 | -0.04(0.03) |
| b | Level \* age | -0.02(0.02), .42 | -0.03(0.02), .26 | -0.02(0.02), .42 | -0.45(0.08), <.01 | -0.13(0.21) |
| b | Level \* education | --- | 0.24(0.04), <.01 | 0.22(0.04), <.01 | 0.78(0.16), <.01 | 0.41(0.32) |
| b | Level \* height | --- | --- | 3.86(2.41), .11 | 25.49(6.92), <.01 | 14.67(15.30) |
| b | Level \* smoking | --- | --- | --- | -0.29(0.94), .76 | -0.29(NA) |
| b | Level \* cardio | --- | --- | --- | -0.76(1.23), .54 | -0.76(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.01(1.39), .99 | -0.01(NA) |
| b | Slope \* age | 0.00(0.01), .45 | 0.00(0.01), .47 | 0.00(0.01), .43 | -0.07(0.02), <.01 | -0.01(0.04) |
| b | Slope \* education | --- | 0.00(0.01), .64 | 0.00(0.01), .88 | 0.04(0.04), .35 | 0.01(0.02) |
| b | Slope \* height | --- | --- | 0.71(0.66), .28 | -0.91(1.89), .63 | -0.10(1.14) |
| b | Slope \* smoking | --- | --- | --- | -0.02(0.21), .92 | -0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.29(0.31), .34 | 0.29(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.55(0.31), .08 | -0.55(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .16 | 0.00(0.00), .15 | 0.00(0.00), .16 | 0.00(0.00), .30 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .14 | -0.01(0.00), .13 | -0.01(0.00), .05 | -0.01(0.00), .16 | -0.01(0.00) |
| b | Var (Level) | 5.91(0.74), <.01 | 5.08(0.62), <.01 | 5.00(0.60), <.01 | 70.22(7.77), <.01 | 21.55(32.45) |
| b | Var (Slope) | 0.06(0.05), .16 | 0.06(0.04), .17 | 0.06(0.04), .19 | 0.52(0.43), .23 | 0.18(0.23) |
| b | Var (Residual) | 3.44(0.33), <.01 | 3.44(0.33), <.01 | 3.44(0.33), <.01 | 21.32(1.67), <.01 | 7.91(8.94) |
| b | Covar (Level, Slope) | -0.22(0.15), .13 | -0.23(0.14), .10 | -0.24(0.14), .09 | 1.85(1.47), .21 | 0.29(1.04) |
| ab | Covar (Levels) | 0.38(0.10), <.01 | 0.25(0.09), .01 | 0.21(0.09), .02 | 0.85(0.32), .01 | 0.42(0.30) |
| ab | Covar (Slopes) | 0.00(0.00), .50 | 0.00(0.00), .47 | 0.00(0.00), .54 | -0.00(0.02), .97 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.02), .94 | 0.00(0.02), .93 | 0.00(0.02), .96 | 0.04(0.04), .38 | 0.01(0.02) |
|  | Correlation of Levels | 0.2720 | 0.200 | 0.1741 | 0.196 | 0.21(0.04) |
|  | Correlation of Slopes | 0.2631 | 0.362 | 0.2739 | -0.044 | 0.21(0.18) |
|  | Correlation of Residuals | 0.0025 | 0.005 | 0.0025 | 0.039 | 0.01(0.02) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -4,248 | -5,177 | -4,774 | -6,574 | -5,193( 996) |
|  | AIC | 8,542 | 10,413 | 9,623 | 13,285 | 10,466(2,030) |
|  | BIC | 8,630 | 10,529 | 9,770 | 13,547 | 10,619(2,102) |

## word\_de

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.13(0.08), <.01 | 2.41(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .01 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.56(0.44), <.01 | 1.69(0.45), <.01 | 1.63(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .31 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .31 | -0.00(0.00), .30 | -0.00(0.00), .29 | 0.00(0.00), .80 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .65 | -0.00(0.00), .46 | 0.00(0.00), .99 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .26 | 0.10(0.12), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .20 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .06 | 0.04(NA) |
| b | Level | 5.94(0.18), <.01 | 4.89(0.28), <.01 | 4.89(0.28), <.01 | 4.99(0.33), <.01 | 5.18(0.51) |
| b | Slope | 0.01(0.05), .78 | 0.08(0.08), .33 | 0.08(0.08), .33 | 0.07(0.11), .52 | 0.06(0.03) |
| b | Level \* age | -0.10(0.01), <.01 | -0.11(0.01), <.01 | -0.11(0.01), <.01 | -0.11(0.01), <.01 | -0.11(0.00) |
| b | Level \* education | --- | 0.13(0.03), <.01 | 0.13(0.03), <.01 | 0.13(0.03), <.01 | 0.13(0.00) |
| b | Level \* height | --- | --- | 0.27(1.38), .84 | 0.37(1.38), .79 | 0.32(0.07) |
| b | Level \* smoking | --- | --- | --- | -0.26(0.18), .16 | -0.26(NA) |
| b | Level \* cardio | --- | --- | --- | 0.06(0.28), .84 | 0.06(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.30(0.29), .30 | 0.30(NA) |
| b | Slope \* age | 0.00(0.00), .38 | 0.00(0.00), .36 | 0.00(0.00), .34 | 0.00(0.00), .37 | 0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .34 | -0.01(0.01), .32 | -0.01(0.01), .36 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.11(0.48), .82 | 0.11(0.49), .82 | 0.11(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.03(0.06), .64 | 0.03(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.04(0.07), .55 | 0.04(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.05(0.08), .51 | -0.05(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .31 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .13 | -0.01(0.00), .13 | -0.01(0.00), .05 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 2.64(0.31), <.01 | 2.40(0.30), <.01 | 2.40(0.30), <.01 | 2.36(0.29), <.01 | 2.45(0.13) |
| b | Var (Slope) | 0.02(0.02), .49 | 0.01(0.02), .52 | 0.01(0.02), .52 | 0.01(0.02), .55 | 0.01(0.00) |
| b | Var (Residual) | 1.74(0.12), <.01 | 1.74(0.12), <.01 | 1.74(0.12), <.01 | 1.74(0.12), <.01 | 1.74(0.00) |
| b | Covar (Level, Slope) | 0.01(0.08), .88 | 0.02(0.07), .74 | 0.02(0.07), .73 | 0.03(0.07), .71 | 0.02(0.01) |
| ab | Covar (Levels) | 0.13(0.07), .08 | 0.06(0.07), .44 | 0.05(0.07), .50 | 0.05(0.07), .44 | 0.07(0.04) |
| ab | Covar (Slopes) | 0.00(0.00), .76 | 0.00(0.00), .78 | 0.00(0.00), .77 | 0.00(0.00), .82 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.01), .82 | 0.00(0.01), .81 | 0.00(0.01), .82 | 0.00(0.01), .77 | 0.00(0.00) |
|  | Correlation of Levels | 0.14 | 0.064 | 0.056 | 0.063 | 0.08(0.04) |
|  | Correlation of Slopes | 0.18 | 0.183 | 0.183 | 0.267 | 0.20(0.04) |
|  | Correlation of Residuals | 0.01 | 0.010 | 0.010 | 0.014 | 0.01(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,869 | -4,807 | -4,406 | -4,985 | -4,517( 495) |
|  | AIC | 7,784 | 9,675 | 8,889 | 10,107 | 9,113(1,020) |
|  | BIC | 7,872 | 9,790 | 9,036 | 10,369 | 9,267(1,078) |

## word\_im

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.09), <.01 | 2.12(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .02 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .03 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.54(0.44), <.01 | 1.67(0.45), <.01 | 1.61(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .32 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.23(0.08), <.01 | -0.23(NA) |
| a | Slope \* age | -0.00(0.00), .32 | -0.00(0.00), .31 | -0.00(0.00), .30 | 0.00(0.00), .83 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .60 | -0.00(0.00), .42 | 0.00(0.00), .92 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.15(0.13), .26 | 0.10(0.12), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), .01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.03(0.02), .07 | 0.03(NA) |
| b | Level | 17.89(0.34), <.01 | 15.45(0.54), <.01 | 15.45(0.54), <.01 | 15.36(0.62), <.01 | 16.04(1.24) |
| b | Slope | 0.11(0.10), .25 | 0.19(0.16), .23 | 0.19(0.16), .23 | 0.27(0.20), .18 | 0.19(0.06) |
| b | Level \* age | -0.15(0.03), <.01 | -0.16(0.02), <.01 | -0.16(0.02), <.01 | -0.16(0.03), <.01 | -0.16(0.00) |
| b | Level \* education | --- | 0.30(0.05), <.01 | 0.30(0.05), <.01 | 0.30(0.05), <.01 | 0.30(0.00) |
| b | Level \* height | --- | --- | 0.56(2.31), .81 | 0.69(2.32), .77 | 0.62(0.09) |
| b | Level \* smoking | --- | --- | --- | -0.29(0.30), .33 | -0.29(NA) |
| b | Level \* cardio | --- | --- | --- | 0.53(0.47), .26 | 0.53(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.73(0.49), .14 | 0.73(NA) |
| b | Slope \* age | 0.01(0.01), .30 | 0.01(0.01), .31 | 0.01(0.01), .31 | 0.01(0.01), .39 | 0.01(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .57 | -0.01(0.02), .58 | -0.01(0.02), .55 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.01(0.78), .99 | -0.03(0.81), .97 | -0.02(0.02) |
| b | Slope \* smoking | --- | --- | --- | -0.05(0.11), .65 | -0.05(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.00(0.16), .99 | -0.00(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.11(0.16), .48 | -0.11(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .17 | 0.00(0.00), .28 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .13 | -0.01(0.00), .14 | -0.01(0.00), .06 | -0.01(0.00), .15 | -0.01(0.00) |
| b | Var (Level) | 7.61(0.90), <.01 | 6.31(0.86), <.01 | 6.32(0.86), <.01 | 6.34(0.89), <.01 | 6.65(0.64) |
| b | Var (Slope) | 0.02(0.06), .75 | 0.02(0.06), .79 | 0.02(0.07), .77 | 0.07(0.07), .37 | 0.03(0.02) |
| b | Var (Residual) | 6.26(0.35), <.01 | 6.28(0.35), <.01 | 6.27(0.35), <.01 | 6.18(0.34), <.01 | 6.25(0.05) |
| b | Covar (Level, Slope) | 0.24(0.22), .28 | 0.28(0.21), .20 | 0.27(0.21), .21 | 0.17(0.23), .45 | 0.24(0.05) |
| ab | Covar (Levels) | 0.29(0.12), .02 | 0.12(0.11), .28 | 0.10(0.11), .35 | 0.12(0.10), .24 | 0.16(0.09) |
| ab | Covar (Slopes) | -0.00(0.01), .78 | -0.00(0.01), .77 | -0.00(0.01), .70 | -0.00(0.01), .88 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.05(0.03), .06 | 0.05(0.03), .05 | 0.05(0.03), .05 | 0.05(0.02), .05 | 0.05(0.00) |
|  | Correlation of Levels | 0.18 | 0.088 | 0.075 | 0.095 | 0.11(0.05) |
|  | Correlation of Slopes | -0.32 | -0.343 | -0.487 | -0.086 | -0.31(0.17) |
|  | Correlation of Residuals | 0.09 | 0.090 | 0.093 | 0.092 | 0.09(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -4,590 | -5,521 | -5,120 | -5,699 | -5,233( 492) |
|  | AIC | 9,227 | 11,102 | 10,317 | 11,533 | 10,545(1,013) |
|  | BIC | 9,316 | 11,218 | 10,463 | 11,796 | 10,698(1,071) |

## word\_rec

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.41(0.06), <.01 | 2.10(0.08), <.01 | 2.12(0.08), <.01 | 2.40(0.11), <.01 | 2.26(0.17) |
| a | Slope | -0.05(0.01), <.01 | -0.04(0.02), .02 | -0.04(0.02), .02 | -0.08(0.02), <.01 | -0.05(0.02) |
| a | Level \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.01), <.01 | 0.03(0.01), <.01 | 0.02(0.01), .04 | 0.03(0.01) |
| a | Level \* height | --- | --- | 1.60(0.44), <.01 | 1.72(0.45), <.01 | 1.66(0.09) |
| a | Level \* smoking | --- | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| a | Level \* cardio | --- | --- | --- | -0.09(0.09), .31 | -0.09(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.24(0.08), <.01 | -0.24(NA) |
| a | Slope \* age | -0.00(0.00), .33 | -0.00(0.00), .33 | -0.00(0.00), .32 | 0.00(0.00), .87 | -0.00(0.00) |
| a | Slope \* education | --- | -0.00(0.00), .57 | -0.00(0.00), .39 | 0.00(0.00), .94 | -0.00(0.00) |
| a | Slope \* height | --- | --- | 0.14(0.13), .26 | 0.10(0.12), .43 | 0.12(0.03) |
| a | Slope \* smoking | --- | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.02(0.02), .17 | -0.02(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.04(0.02), .05 | 0.04(NA) |
| b | Level | 9.77(0.08), <.01 | 9.51(0.14), <.01 | 9.52(0.14), <.01 | 9.61(0.18), <.01 | 9.60(0.12) |
| b | Slope | 0.02(0.02), .53 | 0.09(0.05), .06 | 0.09(0.05), .08 | 0.09(0.06), .14 | 0.07(0.04) |
| b | Level \* age | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| b | Level \* education | --- | 0.03(0.02), .06 | 0.02(0.02), .14 | 0.02(0.02), .17 | 0.03(0.00) |
| b | Level \* height | --- | --- | 1.03(0.81), .20 | 1.10(0.83), .18 | 1.07(0.05) |
| b | Level \* smoking | --- | --- | --- | -0.19(0.11), .09 | -0.19(NA) |
| b | Level \* cardio | --- | --- | --- | -0.06(0.18), .75 | -0.06(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.20(0.16), .23 | 0.20(NA) |
| b | Slope \* age | 0.00(0.00), .37 | 0.00(0.00), .32 | 0.00(0.00), .48 | 0.00(0.00), .65 | 0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .09 | -0.01(0.01), .35 | -0.01(0.01), .34 | -0.01(0.00) |
| b | Slope \* height | --- | --- | -0.61(0.28), .03 | -0.57(0.28), .04 | -0.59(0.02) |
| b | Slope \* smoking | --- | --- | --- | 0.01(0.03), .86 | 0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.08(0.05), .09 | 0.08(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.06(0.06), .32 | -0.06(NA) |
| a | Var (Level) | 0.33(0.03), <.01 | 0.31(0.03), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.30(0.02) |
| a | Var (Slope) | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00), .13 | 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(0.00) |
| a | Covar (Level, Slope) | -0.01(0.00), .09 | -0.01(0.00), .09 | -0.01(0.00), .04 | -0.01(0.00), .12 | -0.01(0.00) |
| b | Var (Level) | 0.99(0.26), <.01 | 0.98(0.25), <.01 | 0.97(0.25), <.01 | 0.96(0.25), <.01 | 0.98(0.02) |
| b | Var (Slope) | 0.04(0.02), .08 | 0.03(0.02), .10 | 0.03(0.02), .10 | 0.03(0.02), .08 | 0.03(0.00) |
| b | Var (Residual) | 0.46(0.08), <.01 | 0.46(0.08), <.01 | 0.46(0.08), <.01 | 0.46(0.08), <.01 | 0.46(0.00) |
| b | Covar (Level, Slope) | -0.12(0.06), .05 | -0.11(0.06), .05 | -0.11(0.06), .05 | -0.11(0.05), .04 | -0.11(0.00) |
| ab | Covar (Levels) | 0.03(0.04), .46 | 0.01(0.04), .78 | 0.01(0.04), .88 | 0.01(0.04), .88 | 0.01(0.01) |
| ab | Covar (Slopes) | -0.00(0.00), .33 | -0.00(0.00), .30 | -0.00(0.00), .32 | -0.00(0.00), .36 | -0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.01), .24 | 0.01(0.01), .23 | 0.01(0.01), .22 | 0.01(0.01), .19 | 0.01(0.00) |
|  | Correlation of Levels | 0.054 | 0.024 | 0.011 | 0.014 | 0.03(0.02) |
|  | Correlation of Slopes | -0.359 | -0.364 | -0.369 | -0.375 | -0.37(0.01) |
|  | Correlation of Residuals | 0.062 | 0.062 | 0.062 | 0.069 | 0.06(0.00) |
|  | N | 351 | 351 | 351 | 351 | 351.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 23 | 30 | 38 | 68 | 39.75(19.81) |
|  | LL | -3,129 | -4,075 | -3,672 | -4,249 | -3,781( 498) |
|  | AIC | 6,304 | 8,210 | 7,421 | 8,634 | 7,642(1,024) |
|  | BIC | 6,392 | 8,326 | 7,568 | 8,897 | 7,796(1,082) |

## Summary

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 |

#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] ggplot2\_2.1.0 knitr\_1.14 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 testit\_0.5 colorspace\_1.2-6 R6\_2.1.3 highr\_0.6   
 [7] plyr\_1.8.4 stringr\_1.1.0 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 readr\_1.0.0 formatR\_1.4 tidyr\_0.6.0 htmlwidgets\_0.7   
[25] rsconnect\_0.4.3 evaluate\_0.9 rmarkdown\_1.0 stringi\_1.1.1 scales\_0.4.0