SATSA : Seed Report

Date: 2016-10-10

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

# Available models

Study **SATSA** contains the following outcome pairs: NULL

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| fev | analogies | 10 |
| fev | block | 8 |
| fev | digit\_b | 10 |
| fev | digit\_f | 10 |
| fev | fig\_id | 6 |
| fev | fig\_mem | 10 |
| fev | information | 10 |
| fev | mmse | 10 |
| fev | rotate | 10 |
| fev | symbol | 8 |
| fev | synonyms | 10 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| satsa | female | 0 | fev | analogies | 1 |
| satsa | female | 0 | fev | block | 1 |
| satsa | female | 0 | fev | digit\_b | 1 |
| satsa | female | 0 | fev | digit\_f | 1 |
| satsa | female | 0 | fev | fig\_mem | 1 |
| satsa | female | 0 | fev | information | 1 |
| satsa | female | 0 | fev | mmse | 1 |
| satsa | female | 0 | fev | rotate | 1 |
| satsa | female | 0 | fev | symbol | 1 |
| satsa | female | 0 | fev | synonyms | 1 |
| satsa | female | a | fev | analogies | 1 |
| satsa | female | a | fev | block | 1 |
| satsa | female | a | fev | digit\_b | 1 |
| satsa | female | a | fev | digit\_f | 1 |
| satsa | female | a | fev | fig\_id | 1 |
| satsa | female | a | fev | fig\_mem | 1 |
| satsa | female | a | fev | information | 1 |
| satsa | female | a | fev | mmse | 1 |
| satsa | female | a | fev | rotate | 1 |
| satsa | female | a | fev | symbol | 1 |
| satsa | female | a | fev | synonyms | 1 |
| satsa | female | ae | fev | analogies | 1 |
| satsa | female | ae | fev | block | 1 |
| satsa | female | ae | fev | digit\_b | 1 |
| satsa | female | ae | fev | digit\_f | 1 |
| satsa | female | ae | fev | fig\_id | 1 |
| satsa | female | ae | fev | fig\_mem | 1 |
| satsa | female | ae | fev | information | 1 |
| satsa | female | ae | fev | mmse | 1 |
| satsa | female | ae | fev | rotate | 1 |
| satsa | female | ae | fev | symbol | 1 |
| satsa | female | ae | fev | synonyms | 1 |
| satsa | female | aeh | fev | analogies | 1 |
| satsa | female | aeh | fev | block | 1 |
| satsa | female | aeh | fev | digit\_b | 1 |
| satsa | female | aeh | fev | digit\_f | 1 |
| satsa | female | aeh | fev | fig\_id | 1 |
| satsa | female | aeh | fev | fig\_mem | 1 |
| satsa | female | aeh | fev | information | 1 |
| satsa | female | aeh | fev | mmse | 1 |
| satsa | female | aeh | fev | rotate | 1 |
| satsa | female | aeh | fev | symbol | 1 |
| satsa | female | aeh | fev | synonyms | 1 |
| satsa | female | aehplus | fev | analogies | 1 |
| satsa | female | aehplus | fev | digit\_b | 1 |
| satsa | female | aehplus | fev | digit\_f | 1 |
| satsa | female | aehplus | fev | fig\_mem | 1 |
| satsa | female | aehplus | fev | information | 1 |
| satsa | female | aehplus | fev | mmse | 1 |
| satsa | female | aehplus | fev | rotate | 1 |
| satsa | female | aehplus | fev | synonyms | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| satsa | male | 0 | fev | analogies | 1 |
| satsa | male | 0 | fev | block | 1 |
| satsa | male | 0 | fev | digit\_b | 1 |
| satsa | male | 0 | fev | digit\_f | 1 |
| satsa | male | 0 | fev | fig\_mem | 1 |
| satsa | male | 0 | fev | information | 1 |
| satsa | male | 0 | fev | mmse | 1 |
| satsa | male | 0 | fev | rotate | 1 |
| satsa | male | 0 | fev | symbol | 1 |
| satsa | male | 0 | fev | synonyms | 1 |
| satsa | male | a | fev | analogies | 1 |
| satsa | male | a | fev | block | 1 |
| satsa | male | a | fev | digit\_b | 1 |
| satsa | male | a | fev | digit\_f | 1 |
| satsa | male | a | fev | fig\_id | 1 |
| satsa | male | a | fev | fig\_mem | 1 |
| satsa | male | a | fev | information | 1 |
| satsa | male | a | fev | mmse | 1 |
| satsa | male | a | fev | rotate | 1 |
| satsa | male | a | fev | symbol | 1 |
| satsa | male | a | fev | synonyms | 1 |
| satsa | male | ae | fev | analogies | 1 |
| satsa | male | ae | fev | block | 1 |
| satsa | male | ae | fev | digit\_b | 1 |
| satsa | male | ae | fev | digit\_f | 1 |
| satsa | male | ae | fev | fig\_id | 1 |
| satsa | male | ae | fev | fig\_mem | 1 |
| satsa | male | ae | fev | information | 1 |
| satsa | male | ae | fev | mmse | 1 |
| satsa | male | ae | fev | rotate | 1 |
| satsa | male | ae | fev | symbol | 1 |
| satsa | male | ae | fev | synonyms | 1 |
| satsa | male | aeh | fev | analogies | 1 |
| satsa | male | aeh | fev | block | 1 |
| satsa | male | aeh | fev | digit\_b | 1 |
| satsa | male | aeh | fev | digit\_f | 1 |
| satsa | male | aeh | fev | fig\_id | 1 |
| satsa | male | aeh | fev | fig\_mem | 1 |
| satsa | male | aeh | fev | information | 1 |
| satsa | male | aeh | fev | mmse | 1 |
| satsa | male | aeh | fev | rotate | 1 |
| satsa | male | aeh | fev | symbol | 1 |
| satsa | male | aeh | fev | synonyms | 1 |
| satsa | male | aehplus | fev | analogies | 1 |
| satsa | male | aehplus | fev | digit\_b | 1 |
| satsa | male | aehplus | fev | digit\_f | 1 |
| satsa | male | aehplus | fev | fig\_mem | 1 |
| satsa | male | aehplus | fev | information | 1 |
| satsa | male | aehplus | fev | mmse | 1 |
| satsa | male | aehplus | fev | rotate | 1 |
| satsa | male | aehplus | fev | synonyms | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *analogies*, *block*, *digit\_b*, *digit\_f*, *fig\_id*, *fig\_mem*, *information*, *mmse*, *rotate*, *symbol*, *synonyms*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | digit\_b | digit\_f | fig\_mem | information | mmse | rotate | synonyms | mean(sd) |
| a | Level | 1.80(0.03), <.01 | 1.80(0.04), <.01 | 1.80(0.03), <.01 | 1.80(0.03), <.01 | 1.80(0.04), <.01 | 1.80(0.04), <.01 | 1.80(0.04), <.01 | 1.80(0.04), <.01 | 1.80(0.00) |
| a | Slope | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.03(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) |
| a | Level \* education | 0.04(0.03), .18 | 0.04(0.03), .23 | 0.04(0.03), .20 | 0.04(0.03), .19 | 0.04(0.03), .18 | 0.04(0.03), .18 | 0.04(0.03), .16 | 0.04(0.03), .18 | 0.04(0.00) |
| a | Level \* height | 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 \* smoking | -0.06(0.04), .20 | -0.05(0.04), .23 | -0.06(0.04), .21 | -0.06(0.04), .20 | -0.06(0.04), .20 | -0.06(0.04), .20 | -0.05(0.04), .22 | -0.05(0.04), .23 | -0.06(0.00) |
| a | Level \* cardio | -0.12(0.06), .04 | -0.12(0.06), .05 | -0.12(0.06), .05 | -0.12(0.06), .05 | -0.12(0.06), .05 | -0.11(0.06), .07 | -0.12(0.06), .05 | -0.12(0.06), .04 | -0.12(0.00) |
| a | Level \* diabetes | -0.11(0.17), .52 | -0.11(0.10), .26 | -0.09(0.13), .46 | -0.11(0.11), .29 | -0.12(0.10), .26 | -0.12(0.11), .29 | -0.11(0.12), .35 | -0.12(0.11), .27 | -0.11(0.01) |
| a | Slope \* age | 0.00(0.00), .13 | 0.00(0.00), .15 | 0.00(0.00), .14 | 0.00(0.00), .12 | 0.00(0.00), .18 | 0.00(0.00), .50 | 0.00(0.00), .12 | 0.00(0.00), .13 | 0.00(0.00) |
| a | Slope \* education | 0.00(0.00), .99 | 0.00(0.00), .92 | 0.00(0.00), .95 | 0.00(0.00), .97 | 0.00(0.00), .96 | 0.00(0.00), .91 | 0.00(0.00), .94 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | 0.00(0.00), .59 | 0.00(0.00), .47 | 0.00(0.00), .56 | 0.00(0.00), .60 | 0.00(0.00), .50 | 0.00(0.00), .58 | 0.00(0.00), .40 | 0.00(0.00), .62 | 0.00(0.00) |
| a | Slope \* smoking | -0.00(0.00), .52 | -0.00(0.00), .45 | -0.00(0.00), .50 | -0.00(0.00), .52 | -0.00(0.00), .57 | -0.00(0.00), .65 | -0.00(0.00), .47 | -0.00(0.00), .47 | -0.00(0.00) |
| a | Slope \* cardio | -0.00(0.01), .87 | -0.00(0.01), .82 | -0.00(0.01), .88 | -0.00(0.01), .84 | -0.00(0.01), .91 | -0.00(0.01), .84 | -0.00(0.01), .88 | -0.00(0.01), .91 | -0.00(0.00) |
| a | Slope \* diabetes | -0.01(0.04), .86 | -0.00(0.01), .67 | -0.01(0.02), .79 | -0.01(0.01), .69 | -0.00(0.01), .77 | -0.00(0.01), .86 | -0.01(0.02), .72 | -0.00(0.01), .74 | -0.00(0.00) |
| b | Level | 13.14(0.30), <.01 | 3.67(0.10), <.01 | 5.55(0.10), <.01 | 20.45(0.34), <.01 | 27.86(0.57), <.01 | 28.06(0.14), <.01 | 41.53(1.57), <.01 | 17.71(0.34), <.01 | --- |
| b | Slope | -0.12(0.03), <.01 | -0.04(0.01), <.01 | -0.03(0.01), <.01 | -0.18(0.03), <.01 | -0.28(0.05), <.01 | -0.29(0.03), <.01 | -0.96(0.11), <.01 | -0.12(0.02), <.01 | --- |
| b | Level \* age | -0.12(0.02), <.01 | -0.01(0.01), .15 | -0.01(0.01), .12 | -0.08(0.03), <.01 | -0.04(0.05), .38 | -0.03(0.01), .01 | -0.66(0.11), <.01 | -0.04(0.03), .19 | --- |
| b | Level \* education | 1.76(0.24), <.01 | 0.51(0.11), <.01 | 0.32(0.09), <.01 | 1.25(0.33), <.01 | 4.01(0.78), <.01 | 0.32(0.18), .08 | 0.90(1.21), .46 | 2.69(0.47), <.01 | --- |
| b | Level \* height | 0.03(0.03), .31 | 0.01(0.01), .37 | 0.00(0.01), .78 | 0.01(0.04), .71 | 0.01(0.07), .84 | -0.01(0.02), .57 | 0.20(0.16), .23 | 0.04(0.05), .41 | --- |
| b | Level \* smoking | 0.54(0.40), .18 | 0.26(0.17), .12 | 0.04(0.13), .79 | 0.53(0.48), .28 | 1.07(1.00), .28 | -0.06(0.27), .82 | 0.87(1.92), .65 | 1.09(0.61), .07 | --- |
| b | Level \* cardio | -0.56(0.64), .38 | 0.02(0.21), .92 | -0.28(0.23), .22 | 0.55(0.64), .39 | -2.04(1.14), .07 | -0.11(0.26), .67 | 1.93(2.68), .47 | -1.58(0.85), .06 | --- |
| b | Level \* diabetes | -0.86(0.94), .36 | 0.12(0.38), .76 | -0.26(0.41), .53 | -0.97(1.49), .52 | 0.37(1.77), .83 | -0.52(0.52), .32 | -8.58(10.32), .41 | -2.17(1.07), .04 | --- |
| b | Slope \* age | -0.00(0.00), .02 | -0.00(0.00), .04 | -0.00(0.00), .17 | -0.01(0.00), <.01 | -0.02(0.00), <.01 | -0.01(0.00), <.01 | -0.04(0.01), <.01 | -0.01(0.00), <.01 | --- |
| b | Slope \* education | 0.02(0.02), .39 | -0.01(0.01), .27 | 0.00(0.00), .95 | -0.00(0.02), .94 | -0.03(0.05), .56 | 0.01(0.03), .76 | 0.19(0.07), .01 | 0.00(0.03), .92 | --- |
| b | Slope \* height | -0.00(0.00), .83 | 0.00(0.00), .37 | 0.00(0.00), .09 | -0.00(0.00), .74 | 0.00(0.00), .54 | 0.00(0.00), .56 | -0.02(0.01), .12 | 0.00(0.00), .67 | --- |
| b | Slope \* smoking | 0.00(0.03), .90 | 0.00(0.01), .68 | 0.00(0.01), .71 | -0.07(0.04), .05 | 0.04(0.06), .52 | 0.04(0.04), .33 | -0.13(0.12), .28 | -0.01(0.03), .81 | --- |
| b | Slope \* cardio | 0.07(0.06), .22 | 0.02(0.02), .28 | 0.03(0.01), .06 | 0.00(0.05), .93 | 0.08(0.09), .36 | 0.01(0.05), .76 | 0.07(0.28), .79 | 0.06(0.05), .24 | --- |
| b | Slope \* diabetes | 0.05(0.26), .83 | -0.01(0.03), .76 | 0.02(0.07), .74 | -0.15(0.15), .33 | -0.16(0.18), .36 | 0.12(0.12), .30 | -0.80(0.95), .40 | 0.13(0.17), .46 | --- |
| a | Var (Level) | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.00) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | -0.00(0.00), .21 | -0.00(0.00), .21 | -0.00(0.00), .21 | -0.00(0.00), .19 | -0.00(0.00), .15 | -0.00(0.00), .26 | -0.00(0.00), .18 | -0.00(0.00), .19 | -0.00(0.00) |
| b | Var (Level) | 6.42(0.82), <.01 | 0.74(0.10), <.01 | 0.70(0.10), <.01 | 11.07(1.25), <.01 | 45.66(4.25), <.01 | 0.78(0.23), <.01 | 178.32(21.48), <.01 | 18.46(1.74), <.01 | --- |
| b | Var (Slope) | 0.01(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00), .74 | 0.02(0.00), <.01 | 0.10(0.02), <.01 | 0.04(0.00), <.01 | 0.00(0.08), .97 | 0.01(0.00), .01 | --- |
| b | Var (Residual) | 5.15(0.26), <.01 | 1.04(0.04), <.01 | 0.61(0.03), <.01 | 6.91(0.34), <.01 | 11.47(0.49), <.01 | 3.13(0.08), <.01 | 113.65(5.60), <.01 | 4.44(0.24), <.01 | --- |
| b | Covar (Level, Slope) | -0.06(0.05), .22 | -0.01(0.01), .16 | -0.00(0.00), .61 | -0.14(0.08), .06 | -0.65(0.23), <.01 | 0.06(0.02), <.01 | 0.51(1.04), .63 | -0.05(0.07), .45 | --- |
| ab | Covar (Levels) | 0.19(0.07), .01 | 0.08(0.03), <.01 | 0.02(0.02), .41 | 0.10(0.08), .26 | 0.06(0.14), .66 | -0.02(0.05), .68 | 1.12(0.35), <.01 | 0.22(0.09), .02 | --- |
| ab | Covar (Slopes) | 0.00(0.00), .36 | 0.00(0.00), .19 | 0.00(0.00), .91 | 0.00(0.00), .29 | 0.00(0.00), .05 | 0.00(0.00), .10 | 0.00(0.00), .98 | 0.00(0.00), .20 | --- |
| ab | Covar (Residuals) | 0.01(0.02), .66 | -0.01(0.01), .59 | 0.01(0.01), .07 | 0.04(0.03), .20 | 0.09(0.03), .01 | 0.06(0.02), <.01 | 0.03(0.10), .78 | 0.04(0.02), .09 | --- |
|  | Correlation of Levels | 0.258 | 0.331 | 0.081 | 0.097 | 0.032 | -0.073 | 0.29 | 0.179 | 0.15(0.14) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | Inf | Inf | NaN | NaN | Inf(NaN) |
|  | Correlation of Residuals | 0.018 | -0.029 | 0.069 | 0.057 | 0.106 | 0.147 | 0.01 | 0.078 | 0.06(0.06) |
|  | N | 408 | 409 | 409 | 410 | 411 | 412 | 408 | 410 | 409.62(1.41) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -3,831 | -2,839 | -2,494 | -4,197 | -5,035 | -3,783 | -5,712 | -4,125 | -4,002(1,052) |
|  | AIC | 7,744 | 5,760 | 5,070 | 8,475 | 10,151 | 7,648 | 11,505 | 8,333 | 8,086(2,104) |
|  | BIC | 7,909 | 5,925 | 5,234 | 8,640 | 10,316 | 7,813 | 11,670 | 8,498 | 8,251(2,104) |

## analogies

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.02), <.01 | 1.75(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.03), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .08 | 0.03(0.03), .27 | 0.04(0.03), .18 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.06(0.04), .20 | -0.06(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .04 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.11(0.17), .52 | -0.11(NA) |
| a | Slope \* age | 0.00(0.00), .28 | 0.00(0.00), .16 | 0.00(0.00), .14 | 0.00(0.00), .13 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .86 | 0.00(0.00), .90 | 0.00(0.00), .99 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .61 | 0.00(0.00), .59 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .52 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .87 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.04), .86 | -0.01(NA) |
| b | Level | 13.73(0.23), <.01 | 13.03(0.23), <.01 | 13.05(0.24), <.01 | 13.14(0.30), <.01 | 13.24(0.33) |
| b | Slope | -0.10(0.02), <.01 | -0.10(0.02), <.01 | -0.10(0.02), <.01 | -0.12(0.03), <.01 | -0.10(0.01) |
| b | Level \* age | -0.16(0.02), <.01 | -0.12(0.02), <.01 | -0.12(0.02), <.01 | -0.12(0.02), <.01 | -0.13(0.02) |
| b | Level \* education | --- | 1.92(0.21), <.01 | 1.90(0.21), <.01 | 1.76(0.24), <.01 | 1.86(0.09) |
| b | Level \* height | --- | --- | 0.02(0.03), .55 | 0.03(0.03), .31 | 0.02(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.54(0.40), .18 | 0.54(NA) |
| b | Level \* cardio | --- | --- | --- | -0.56(0.64), .38 | -0.56(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.86(0.94), .36 | -0.86(NA) |
| b | Slope \* age | -0.00(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), .01 | -0.00(0.00), .02 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.02), .80 | 0.00(0.02), .90 | 0.02(0.02), .39 | 0.01(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .56 | -0.00(0.00), .83 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.03), .90 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.07(0.06), .22 | 0.07(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.05(0.26), .83 | 0.05(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .47 | -0.00(0.00), .32 | -0.00(0.00), .25 | -0.00(0.00), .21 | -0.00(0.00) |
| b | Var (Level) | 7.88(0.82), <.01 | 6.16(0.69), <.01 | 6.17(0.71), <.01 | 6.42(0.82), <.01 | 6.66(0.82) |
| b | Var (Slope) | 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 | Var (Residual) | 5.11(0.22), <.01 | 5.13(0.23), <.01 | 5.13(0.23), <.01 | 5.15(0.26), <.01 | 5.13(0.02) |
| b | Covar (Level, Slope) | -0.03(0.05), .50 | -0.05(0.04), .26 | -0.06(0.05), .22 | -0.06(0.05), .22 | -0.05(0.01) |
| ab | Covar (Levels) | 0.26(0.07), <.01 | 0.21(0.07), <.01 | 0.19(0.07), <.01 | 0.19(0.07), .01 | 0.21(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .28 | 0.00(0.00), .48 | 0.00(0.00), .42 | 0.00(0.00), .36 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.00(0.02), .95 | 0.01(0.02), .62 | 0.01(0.02), .61 | 0.01(0.02), .66 | 0.01(0.00) |
|  | Correlation of Levels | 0.2904 | 0.267 | 0.252 | 0.258 | 0.27(0.02) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.0019 | 0.019 | 0.019 | 0.018 | 0.01(0.01) |
|  | N | 507 | 485 | 476 | 408 | 469.00(42.70) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -4,725 | -4,496 | -4,408 | -3,831 | -4,365(380) |
|  | AIC | 9,492 | 9,042 | 8,875 | 7,744 | 8,788(743) |
|  | BIC | 9,581 | 9,147 | 8,996 | 7,909 | 8,908(711) |

## block

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.02), <.01 | 1.76(0.01) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.05(0.03), .09 | 0.03(0.03), .27 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.01(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .46 | 0.00(0.00), .27 | 0.00(0.00), .23 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .81 | 0.00(0.00), .87 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .55 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 17.24(0.40), <.01 | 16.25(0.41), <.01 | 16.25(0.42), <.01 | 16.58(0.57) |
| b | Slope | -0.37(0.03), <.01 | -0.37(0.03), <.01 | -0.37(0.03), <.01 | -0.37(0.00) |
| b | Level \* age | -0.37(0.04), <.01 | -0.32(0.04), <.01 | -0.31(0.04), <.01 | -0.33(0.04) |
| b | Level \* education | --- | 2.40(0.43), <.01 | 2.38(0.45), <.01 | 2.39(0.01) |
| b | Level \* height | --- | --- | 0.07(0.06), .24 | 0.07(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | 0.01(0.03), .73 | 0.01(0.03), .77 | 0.01(0.00) |
| b | Slope \* height | --- | --- | -0.00(0.00), .47 | -0.00(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .40 | -0.00(0.00), .28 | -0.00(0.00), .20 | -0.00(0.00) |
| b | Var (Level) | 40.07(3.59), <.01 | 35.72(3.24), <.01 | 36.04(3.30), <.01 | 37.27(2.42) |
| b | Var (Slope) | 0.03(0.01), <.01 | 0.03(0.01), <.01 | 0.03(0.01), <.01 | 0.03(0.00) |
| b | Var (Residual) | 10.96(0.26), <.01 | 11.03(0.26), <.01 | 11.03(0.27), <.01 | 11.01(0.04) |
| b | Covar (Level, Slope) | -0.35(0.13), .01 | -0.36(0.13), <.01 | -0.35(0.13), .01 | -0.35(0.00) |
| ab | Covar (Levels) | 0.51(0.14), <.01 | 0.43(0.14), <.01 | 0.39(0.13), <.01 | 0.44(0.06) |
| ab | Covar (Slopes) | 0.00(0.00), .14 | 0.00(0.00), .23 | 0.00(0.00), .24 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.06(0.03), .03 | 0.06(0.03), .02 | 0.05(0.03), .04 | 0.06(0.00) |
|  | Correlation of Levels | 0.25 | 0.226 | 0.22 | 0.23(0.02) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.07 | 0.076 | 0.07 | 0.07(0.00) |
|  | N | 512 | 490 | 477 | 493.00(17.69) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 27.00(2.00) |
|  | LL | -8,020 | -7,190 | -5,539 | -6,916(1,263) |
|  | AIC | 16,089 | 14,434 | 11,136 | 13,886(2,522) |
|  | BIC | 16,195 | 14,547 | 11,256 | 14,000(2,515) |

## digit\_b

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.04), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .10 | 0.03(0.03), .30 | 0.04(0.03), .23 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.05(0.04), .23 | -0.05(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .05 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.11(0.10), .26 | -0.11(NA) |
| a | Slope \* age | 0.00(0.00), .32 | 0.00(0.00), .18 | 0.00(0.00), .15 | 0.00(0.00), .15 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .80 | 0.00(0.00), .85 | 0.00(0.00), .92 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .48 | 0.00(0.00), .47 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .45 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .82 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.00(0.01), .67 | -0.00(NA) |
| b | Level | 3.94(0.07), <.01 | 3.77(0.07), <.01 | 3.77(0.07), <.01 | 3.67(0.10), <.01 | 3.78(0.11) |
| b | 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 | Level \* age | -0.03(0.01), <.01 | -0.02(0.01), .01 | -0.01(0.01), .03 | -0.01(0.01), .15 | -0.02(0.01) |
| b | Level \* education | --- | 0.49(0.09), <.01 | 0.46(0.09), <.01 | 0.51(0.11), <.01 | 0.49(0.02) |
| b | Level \* height | --- | --- | 0.01(0.01), .42 | 0.01(0.01), .37 | 0.01(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.26(0.17), .12 | 0.26(NA) |
| b | Level \* cardio | --- | --- | --- | 0.02(0.21), .92 | 0.02(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.12(0.38), .76 | 0.12(NA) |
| b | Slope \* age | -0.00(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), .02 | -0.00(0.00), .04 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.01), .17 | -0.01(0.01), .19 | -0.01(0.01), .27 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .28 | 0.00(0.00), .37 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.01), .68 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.02(0.02), .28 | 0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.01(0.03), .76 | -0.01(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .45 | -0.00(0.00), .31 | -0.00(0.00), .23 | -0.00(0.00), .21 | -0.00(0.00) |
| b | Var (Level) | 0.92(0.10), <.01 | 0.76(0.09), <.01 | 0.73(0.09), <.01 | 0.74(0.10), <.01 | 0.79(0.09) |
| b | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00), .01 | 0.00(0.00) |
| b | Var (Residual) | 1.02(0.03), <.01 | 1.04(0.03), <.01 | 1.04(0.04), <.01 | 1.04(0.04), <.01 | 1.04(0.01) |
| b | Covar (Level, Slope) | -0.01(0.01), .05 | -0.01(0.01), .12 | -0.01(0.01), .19 | -0.01(0.01), .16 | -0.01(0.00) |
| ab | Covar (Levels) | 0.07(0.02), <.01 | 0.07(0.02), <.01 | 0.07(0.02), <.01 | 0.08(0.03), <.01 | 0.07(0.01) |
| ab | Covar (Slopes) | 0.00(0.00), .03 | 0.00(0.00), .04 | 0.00(0.00), .04 | 0.00(0.00), .19 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .63 | -0.00(0.01), .64 | -0.00(0.01), .69 | -0.01(0.01), .59 | -0.01(0.00) |
|  | Correlation of Levels | 0.243 | 0.236 | 0.269 | 0.331 | 0.27(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | -0.021 | -0.021 | -0.017 | -0.029 | -0.02(0.00) |
|  | N | 512 | 490 | 478 | 409 | 472.25(44.46) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -5,668 | -4,918 | -3,295 | -2,839 | -4,180(1,334) |
|  | AIC | 11,387 | 9,890 | 6,649 | 5,760 | 8,421(2,657) |
|  | BIC | 11,493 | 10,003 | 6,770 | 5,925 | 8,548(2,635) |

## digit\_f

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.02), <.01 | 1.80(0.03), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.04(0.03), .11 | 0.03(0.03), .31 | 0.04(0.03), .20 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.06(0.04), .21 | -0.06(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .05 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.09(0.13), .46 | -0.09(NA) |
| a | Slope \* age | 0.00(0.00), .30 | 0.00(0.00), .16 | 0.00(0.00), .14 | 0.00(0.00), .14 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .77 | 0.00(0.00), .83 | 0.00(0.00), .95 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .57 | 0.00(0.00), .56 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .50 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .88 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.02), .79 | -0.01(NA) |
| b | Level | 5.62(0.07), <.01 | 5.53(0.07), <.01 | 5.52(0.07), <.01 | 5.55(0.10), <.01 | 5.55(0.05) |
| b | Slope | -0.02(0.00), <.01 | -0.02(0.01), <.01 | -0.02(0.01), <.01 | -0.03(0.01), <.01 | -0.02(0.00) |
| b | Level \* age | -0.02(0.01), <.01 | -0.02(0.01), <.01 | -0.02(0.01), .01 | -0.01(0.01), .12 | -0.02(0.00) |
| b | Level \* education | --- | 0.27(0.07), <.01 | 0.26(0.07), <.01 | 0.32(0.09), <.01 | 0.28(0.03) |
| b | Level \* height | --- | --- | 0.00(0.01), .96 | 0.00(0.01), .78 | 0.00(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.04(0.13), .79 | 0.04(NA) |
| b | Level \* cardio | --- | --- | --- | -0.28(0.23), .22 | -0.28(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.26(0.41), .53 | -0.26(NA) |
| b | Slope \* age | -0.00(0.00), .02 | -0.00(0.00), .05 | -0.00(0.00), .19 | -0.00(0.00), .17 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.00), .63 | 0.00(0.00), .93 | 0.00(0.00), .95 | 0.00(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .01 | 0.00(0.00), .09 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.00(0.01), .71 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.03(0.01), .06 | 0.03(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.02(0.07), .74 | 0.02(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .48 | -0.00(0.00), .32 | -0.00(0.00), .24 | -0.00(0.00), .21 | -0.00(0.00) |
| b | Var (Level) | 0.73(0.09), <.01 | 0.70(0.09), <.01 | 0.69(0.08), <.01 | 0.70(0.10), <.01 | 0.70(0.02) |
| b | Var (Slope) | 0.00(0.00), .63 | 0.00(0.00), .63 | 0.00(0.00), .68 | 0.00(0.00), .74 | 0.00(0.00) |
| b | Var (Residual) | 0.62(0.03), <.01 | 0.61(0.03), <.01 | 0.61(0.03), <.01 | 0.61(0.03), <.01 | 0.61(0.01) |
| b | Covar (Level, Slope) | 0.00(0.00), .98 | -0.00(0.00), .78 | -0.00(0.00), .71 | -0.00(0.00), .61 | -0.00(0.00) |
| ab | Covar (Levels) | 0.03(0.02), .16 | 0.02(0.02), .29 | 0.02(0.02), .25 | 0.02(0.02), .41 | 0.02(0.00) |
| ab | Covar (Slopes) | 0.00(0.00), .51 | 0.00(0.00), .57 | 0.00(0.00), .59 | 0.00(0.00), .91 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.01), .18 | 0.01(0.01), .08 | 0.01(0.01), .08 | 0.01(0.01), .07 | 0.01(0.00) |
|  | Correlation of Levels | 0.099 | 0.075 | 0.089 | 0.081 | 0.09(0.01) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.043 | 0.055 | 0.061 | 0.069 | 0.06(0.01) |
|  | N | 512 | 490 | 478 | 409 | 472.25(44.46) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -5,261 | -4,512 | -2,890 | -2,494 | -3,789(1,313) |
|  | AIC | 10,572 | 9,078 | 5,837 | 5,070 | 7,639(2,615) |
|  | BIC | 10,678 | 9,191 | 5,958 | 5,234 | 7,765(2,594) |

## fig\_id

Gender = *female*; Process (a) = *fev*; Process (b) = *fig\_id*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 1.78(0.02), <.01 | 1.76(0.03), <.01 | 1.75(0.03), <.01 | 1.76(0.01) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.05(0.03), .10 | 0.03(0.03), .30 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.01(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .36 | 0.00(0.00), .19 | 0.00(0.00), .16 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .78 | 0.00(0.00), .84 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .49 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 27.99(0.40), <.01 | 27.65(0.44), <.01 | 27.64(0.45), <.01 | 27.76(0.20) |
| b | Slope | -0.53(0.04), <.01 | -0.56(0.04), <.01 | -0.56(0.04), <.01 | -0.55(0.02) |
| b | Level \* age | -0.49(0.04), <.01 | -0.48(0.04), <.01 | -0.47(0.04), <.01 | -0.48(0.01) |
| b | Level \* education | --- | 0.76(0.54), .16 | 0.71(0.55), .20 | 0.74(0.03) |
| b | Level \* height | --- | --- | 0.04(0.06), .52 | 0.04(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00) |
| b | Slope \* education | --- | 0.07(0.03), .04 | 0.06(0.04), .06 | 0.07(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .62 | 0.00(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .43 | -0.00(0.00), .27 | -0.00(0.00), .20 | -0.00(0.00) |
| b | Var (Level) | 36.51(3.48), <.01 | 36.44(3.50), <.01 | 36.75(3.61), <.01 | 36.56(0.16) |
| b | Var (Slope) | 0.11(0.02), <.01 | 0.10(0.02), <.01 | 0.10(0.02), <.01 | 0.10(0.00) |
| b | Var (Residual) | 18.06(0.76), <.01 | 17.82(0.76), <.01 | 17.86(0.77), <.01 | 17.91(0.13) |
| b | Covar (Level, Slope) | -0.52(0.21), .01 | -0.56(0.21), .01 | -0.57(0.22), .01 | -0.55(0.03) |
| ab | Covar (Levels) | 0.26(0.13), .04 | 0.24(0.13), .05 | 0.21(0.12), .06 | 0.24(0.02) |
| ab | Covar (Slopes) | 0.00(0.00), .21 | 0.00(0.00), .19 | 0.00(0.00), .19 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.04(0.03), .26 | -0.04(0.03), .19 | -0.04(0.03), .24 | -0.04(0.00) |
|  | Correlation of Levels | 0.133 | 0.125 | 0.118 | 0.13(0.01) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | -0.036 | -0.042 | -0.039 | -0.04(0.00) |
|  | N | 509 | 487 | 478 | 491.33(15.95) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 25.00(4.00) |
|  | LL | -6,194 | -5,946 | -5,836 | -5,992(183) |
|  | AIC | 12,430 | 11,941 | 11,731 | 12,034(359) |
|  | BIC | 12,519 | 12,046 | 11,852 | 12,139(343) |

## fig\_mem

Gender = *female*; Process (a) = *fev*; Process (b) = *fig\_mem*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.02), <.01 | 1.80(0.03), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .10 | 0.03(0.03), .30 | 0.04(0.03), .19 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.06(0.04), .20 | -0.06(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .05 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.11(0.11), .29 | -0.11(NA) |
| a | Slope \* age | 0.00(0.00), .33 | 0.00(0.00), .16 | 0.00(0.00), .14 | 0.00(0.00), .12 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .80 | 0.00(0.00), .85 | 0.00(0.00), .97 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .58 | 0.00(0.00), .60 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .52 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .84 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.01), .69 | -0.01(NA) |
| b | Level | 20.80(0.24), <.01 | 20.35(0.26), <.01 | 20.41(0.26), <.01 | 20.45(0.34), <.01 | 20.50(0.20) |
| b | Slope | -0.20(0.02), <.01 | -0.19(0.02), <.01 | -0.18(0.02), <.01 | -0.18(0.03), <.01 | -0.19(0.01) |
| b | Level \* age | -0.14(0.02), <.01 | -0.11(0.02), <.01 | -0.11(0.02), <.01 | -0.08(0.03), <.01 | -0.11(0.02) |
| b | Level \* education | --- | 1.24(0.29), <.01 | 1.30(0.30), <.01 | 1.25(0.33), <.01 | 1.26(0.03) |
| b | Level \* height | --- | --- | -0.01(0.04), .72 | 0.01(0.04), .71 | 0.00(0.02) |
| b | Level \* smoking | --- | --- | --- | 0.53(0.48), .28 | 0.53(NA) |
| b | Level \* cardio | --- | --- | --- | 0.55(0.64), .39 | 0.55(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.97(1.49), .52 | -0.97(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(0.02), .71 | -0.01(0.02), .60 | -0.00(0.02), .94 | -0.01(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .97 | -0.00(0.00), .74 | -0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.07(0.04), .05 | -0.07(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.00(0.05), .93 | 0.00(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.15(0.15), .33 | -0.15(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .46 | -0.00(0.00), .31 | -0.00(0.00), .23 | -0.00(0.00), .19 | -0.00(0.00) |
| b | Var (Level) | 12.43(1.22), <.01 | 11.79(1.16), <.01 | 11.60(1.16), <.01 | 11.07(1.25), <.01 | 11.72(0.56) |
| b | Var (Slope) | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00) |
| b | Var (Residual) | 6.89(0.31), <.01 | 6.88(0.31), <.01 | 6.92(0.32), <.01 | 6.91(0.34), <.01 | 6.90(0.02) |
| b | Covar (Level, Slope) | -0.13(0.07), .06 | -0.14(0.07), .05 | -0.14(0.07), .05 | -0.14(0.08), .06 | -0.14(0.01) |
| ab | Covar (Levels) | 0.15(0.08), .06 | 0.12(0.08), .13 | 0.14(0.07), .07 | 0.10(0.08), .26 | 0.13(0.02) |
| ab | Covar (Slopes) | 0.00(0.00), .20 | 0.00(0.00), .31 | 0.00(0.00), .31 | 0.00(0.00), .29 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.05(0.02), .05 | 0.04(0.02), .09 | 0.04(0.02), .11 | 0.04(0.03), .20 | 0.04(0.00) |
|  | Correlation of Levels | 0.137 | 0.113 | 0.135 | 0.097 | 0.12(0.02) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.076 | 0.067 | 0.064 | 0.057 | 0.07(0.01) |
|  | N | 512 | 490 | 478 | 410 | 472.50(43.98) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -7,305 | -6,506 | -4,855 | -4,197 | -5,716(1,438) |
|  | AIC | 14,661 | 13,066 | 9,768 | 8,475 | 11,492(2,863) |
|  | BIC | 14,767 | 13,179 | 9,888 | 8,640 | 11,619(2,841) |

## information

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.04), <.01 | 1.77(0.02) |
| a | Slope | -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 \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .10 | 0.03(0.03), .29 | 0.04(0.03), .18 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.06(0.04), .20 | -0.06(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .05 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.12(0.10), .26 | -0.12(NA) |
| a | Slope \* age | 0.00(0.00), .49 | 0.00(0.00), .27 | 0.00(0.00), .21 | 0.00(0.00), .18 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .77 | 0.00(0.00), .84 | 0.00(0.00), .96 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .46 | 0.00(0.00), .50 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .57 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .91 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.00(0.01), .77 | -0.00(NA) |
| b | Level | 29.03(0.48), <.01 | 27.59(0.44), <.01 | 27.70(0.43), <.01 | 27.86(0.57), <.01 | 28.05(0.66) |
| b | Slope | -0.31(0.03), <.01 | -0.30(0.04), <.01 | -0.29(0.04), <.01 | -0.28(0.05), <.01 | -0.30(0.01) |
| b | Level \* age | -0.14(0.04), <.01 | -0.05(0.04), .20 | -0.04(0.04), .30 | -0.04(0.05), .38 | -0.07(0.05) |
| b | Level \* education | --- | 4.15(0.65), <.01 | 4.26(0.66), <.01 | 4.01(0.78), <.01 | 4.14(0.13) |
| b | Level \* height | --- | --- | 0.01(0.06), .86 | 0.01(0.07), .84 | 0.01(0.00) |
| b | Level \* smoking | --- | --- | --- | 1.07(1.00), .28 | 1.07(NA) |
| b | Level \* cardio | --- | --- | --- | -2.04(1.14), .07 | -2.04(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.37(1.77), .83 | 0.37(NA) |
| b | Slope \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| b | Slope \* education | --- | -0.03(0.04), .39 | -0.04(0.04), .31 | -0.03(0.05), .56 | -0.03(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .41 | 0.00(0.00), .54 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.04(0.06), .52 | 0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.08(0.09), .36 | 0.08(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.16(0.18), .36 | -0.16(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .38 | -0.00(0.00), .27 | -0.00(0.00), .18 | -0.00(0.00), .15 | -0.00(0.00) |
| b | Var (Level) | 57.33(4.67), <.01 | 47.01(3.75), <.01 | 45.04(3.68), <.01 | 45.66(4.25), <.01 | 48.76(5.77) |
| b | Var (Slope) | 0.11(0.01), <.01 | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.10(0.02), <.01 | 0.10(0.00) |
| b | Var (Residual) | 10.94(0.41), <.01 | 10.98(0.41), <.01 | 11.06(0.43), <.01 | 11.47(0.49), <.01 | 11.11(0.24) |
| b | Covar (Level, Slope) | -0.58(0.22), .01 | -0.51(0.21), .01 | -0.48(0.20), .02 | -0.65(0.23), <.01 | -0.56(0.08) |
| ab | Covar (Levels) | 0.26(0.15), .09 | 0.18(0.14), .20 | 0.11(0.13), .37 | 0.06(0.14), .66 | 0.16(0.09) |
| ab | Covar (Slopes) | 0.00(0.00), .02 | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00), .05 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.09(0.03), <.01 | 0.08(0.03), <.01 | 0.08(0.03), <.01 | 0.09(0.03), .01 | 0.09(0.00) |
|  | Correlation of Levels | 0.11 | 0.081 | 0.057 | 0.032 | 0.07(0.03) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.11 | 0.108 | 0.110 | 0.106 | 0.11(0.00) |
|  | N | 512 | 490 | 479 | 411 | 473.00(43.55) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -8,370 | -7,497 | -5,837 | -5,035 | -6,685(1,521) |
|  | AIC | 16,790 | 15,047 | 11,733 | 10,151 | 13,430(3,030) |
|  | BIC | 16,896 | 15,161 | 11,854 | 10,316 | 13,557(3,007) |

## mmse

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.02), <.01 | 1.76(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.04), <.01 | 1.77(0.02) |
| a | Slope | -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 \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .09 | 0.03(0.03), .27 | 0.04(0.03), .18 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.06(0.04), .20 | -0.06(NA) |
| a | Level \* cardio | --- | --- | --- | -0.11(0.06), .07 | -0.11(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.12(0.11), .29 | -0.12(NA) |
| a | Slope \* age | 0.00(0.00), .83 | 0.00(0.00), .56 | 0.00(0.00), .49 | 0.00(0.00), .50 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .81 | 0.00(0.00), .86 | 0.00(0.00), .91 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .59 | 0.00(0.00), .58 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .65 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .84 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.00(0.01), .86 | -0.00(NA) |
| b | Level | 28.10(0.10), <.01 | 27.94(0.10), <.01 | 27.97(0.10), <.01 | 28.06(0.14), <.01 | 28.02(0.08) |
| b | Slope | -0.27(0.02), <.01 | -0.27(0.02), <.01 | -0.27(0.02), <.01 | -0.29(0.03), <.01 | -0.27(0.01) |
| b | Level \* age | -0.04(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 | --- | 0.38(0.14), .01 | 0.41(0.14), <.01 | 0.32(0.18), .08 | 0.37(0.04) |
| b | Level \* height | --- | --- | -0.02(0.02), .31 | -0.01(0.02), .57 | -0.01(0.00) |
| b | Level \* smoking | --- | --- | --- | -0.06(0.27), .82 | -0.06(NA) |
| b | Level \* cardio | --- | --- | --- | -0.11(0.26), .67 | -0.11(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.52(0.52), .32 | -0.52(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(0.02), .98 | -0.00(0.02), .93 | 0.01(0.03), .76 | 0.00(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .73 | 0.00(0.00), .56 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.04(0.04), .33 | 0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.01(0.05), .76 | 0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.12(0.12), .30 | 0.12(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .59 | 0.00(0.00), .40 | -0.00(0.00), .30 | -0.00(0.00), .26 | -0.00(0.00) |
| b | Var (Level) | 0.75(0.19), <.01 | 0.74(0.19), <.01 | 0.73(0.19), <.01 | 0.78(0.23), <.01 | 0.75(0.02) |
| b | Var (Slope) | 0.05(0.00), <.01 | 0.04(0.00), <.01 | 0.04(0.00), <.01 | 0.04(0.00), <.01 | 0.04(0.00) |
| b | Var (Residual) | 3.13(0.07), <.01 | 3.07(0.07), <.01 | 3.08(0.07), <.01 | 3.13(0.08), <.01 | 3.10(0.03) |
| b | Covar (Level, Slope) | 0.05(0.02), <.01 | 0.05(0.02), <.01 | 0.05(0.02), <.01 | 0.06(0.02), <.01 | 0.05(0.00) |
| ab | Covar (Levels) | -0.02(0.04), .61 | -0.02(0.04), .55 | -0.02(0.04), .66 | -0.02(0.05), .68 | -0.02(0.00) |
| ab | Covar (Slopes) | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00), .14 | 0.00(0.00), .10 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.06(0.02), <.01 | 0.05(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.02), <.01 | 0.06(0.00) |
|  | Correlation of Levels | -0.077 | -0.087 | -0.067 | -0.073 | -0.08(0.01) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.151 | 0.130 | 0.134 | 0.147 | 0.14(0.01) |
|  | N | 511 | 489 | 480 | 412 | 473.00(42.70) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -4,689 | -4,479 | -4,397 | -3,783 | -4,337(389) |
|  | AIC | 9,420 | 9,007 | 8,852 | 7,648 | 8,732(761) |
|  | BIC | 9,509 | 9,112 | 8,973 | 7,813 | 8,852(729) |

## rotate

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.78(0.03), <.01 | 1.75(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.04), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .09 | 0.03(0.03), .27 | 0.04(0.03), .16 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.05(0.04), .22 | -0.05(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .05 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.11(0.12), .35 | -0.11(NA) |
| a | Slope \* age | 0.00(0.00), .28 | 0.00(0.00), .15 | 0.00(0.00), .12 | 0.00(0.00), .12 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .82 | 0.00(0.00), .88 | 0.00(0.00), .94 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .50 | 0.00(0.00), .40 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .47 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .88 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.01(0.02), .72 | -0.01(NA) |
| b | Level | 42.65(1.12), <.01 | 41.83(1.24), <.01 | 41.78(1.25), <.01 | 41.53(1.57), <.01 | 41.95(0.49) |
| b | Slope | -1.00(0.10), <.01 | -1.07(0.11), <.01 | -1.04(0.11), <.01 | -0.96(0.11), <.01 | -1.02(0.05) |
| b | Level \* age | -0.74(0.09), <.01 | -0.70(0.10), <.01 | -0.68(0.10), <.01 | -0.66(0.11), <.01 | -0.70(0.04) |
| b | Level \* education | --- | 1.81(1.04), .08 | 1.54(1.06), .15 | 0.90(1.21), .46 | 1.42(0.47) |
| b | Level \* height | --- | --- | 0.17(0.15), .24 | 0.20(0.16), .23 | 0.18(0.02) |
| b | Level \* smoking | --- | --- | --- | 0.87(1.92), .65 | 0.87(NA) |
| b | Level \* cardio | --- | --- | --- | 1.93(2.68), .47 | 1.93(NA) |
| b | Level \* diabetes | --- | --- | --- | -8.58(10.32), .41 | -8.58(NA) |
| b | Slope \* age | -0.04(0.01), <.01 | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.04(0.01), <.01 | -0.03(0.00) |
| b | Slope \* education | --- | 0.15(0.07), .03 | 0.15(0.07), .02 | 0.19(0.07), .01 | 0.16(0.02) |
| b | Slope \* height | --- | --- | -0.01(0.01), .23 | -0.02(0.01), .12 | -0.01(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.13(0.12), .28 | -0.13(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.07(0.28), .79 | 0.07(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.80(0.95), .40 | -0.80(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .49 | -0.00(0.00), .31 | -0.00(0.00), .23 | -0.00(0.00), .18 | -0.00(0.00) |
| b | Var (Level) | 192.91(20.96), <.01 | 190.55(20.97), <.01 | 192.07(21.49), <.01 | 178.32(21.48), <.01 | 188.46(6.83) |
| b | Var (Slope) | 0.10(0.08), .21 | 0.06(0.08), .39 | 0.06(0.08), .42 | 0.00(0.08), .97 | 0.06(0.04) |
| b | Var (Residual) | 114.11(4.93), <.01 | 114.80(5.04), <.01 | 115.20(5.14), <.01 | 113.65(5.60), <.01 | 114.44(0.69) |
| b | Covar (Level, Slope) | 0.19(0.97), .84 | 0.15(0.97), .88 | 0.10(0.99), .92 | 0.51(1.04), .63 | 0.24(0.19) |
| ab | Covar (Levels) | 0.87(0.31), <.01 | 0.86(0.32), .01 | 0.89(0.31), <.01 | 1.12(0.35), <.01 | 0.94(0.12) |
| ab | Covar (Slopes) | 0.00(0.00), .27 | 0.00(0.00), .36 | 0.00(0.00), .34 | 0.00(0.00), .98 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.03(0.09), .71 | 0.02(0.09), .84 | 0.02(0.09), .85 | 0.03(0.10), .78 | 0.02(0.01) |
|  | Correlation of Levels | 0.197 | 0.1950 | 0.2155 | 0.29 | 0.22(0.04) |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN | Inf(NaN) |
|  | Correlation of Residuals | 0.013 | 0.0072 | 0.0068 | 0.01 | 0.01(0.00) |
|  | N | 512 | 490 | 476 | 408 | 471.50(44.85) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -9,126 | -8,284 | -6,610 | -5,712 | -7,433(1,552) |
|  | AIC | 18,301 | 16,622 | 13,278 | 11,505 | 14,927(3,092) |
|  | BIC | 18,407 | 16,735 | 13,399 | 11,670 | 15,053(3,069) |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 1.78(0.02), <.01 | 1.76(0.02), <.01 | 1.75(0.02), <.01 | 1.76(0.01) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.05(0.02), .06 | 0.03(0.02), .23 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.01(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .34 | 0.00(0.00), .17 | 0.00(0.00), .13 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .76 | 0.00(0.00), .83 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .57 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 35.42(0.55), <.01 | 33.81(0.59), <.01 | 33.86(0.59), <.01 | 34.36(0.91) |
| b | Slope | -0.85(0.04), <.01 | -0.86(0.04), <.01 | -0.86(0.04), <.01 | -0.86(0.00) |
| b | Level \* age | -0.83(0.05), <.01 | -0.76(0.05), <.01 | -0.73(0.05), <.01 | -0.77(0.05) |
| b | Level \* education | --- | 4.04(0.70), <.01 | 3.94(0.70), <.01 | 3.99(0.07) |
| b | Level \* height | --- | --- | 0.10(0.08), .23 | 0.10(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00) |
| b | Slope \* education | --- | 0.01(0.04), .82 | 0.00(0.04), .92 | 0.01(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .50 | 0.00(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .55 | -0.00(0.00), .39 | -0.00(0.00), .34 | -0.00(0.00) |
| b | Var (Level) | 80.96(7.12), <.01 | 73.12(6.76), <.01 | 72.69(6.82), <.01 | 75.59(4.65) |
| b | Var (Slope) | 0.10(0.03), <.01 | 0.09(0.03), <.01 | 0.09(0.03), <.01 | 0.09(0.00) |
| b | Var (Residual) | 27.47(2.33), <.01 | 27.62(2.43), <.01 | 27.52(2.44), <.01 | 27.54(0.08) |
| b | Covar (Level, Slope) | -0.38(0.33), .25 | -0.56(0.32), .08 | -0.59(0.33), .07 | -0.51(0.11) |
| ab | Covar (Levels) | 0.42(0.21), .04 | 0.32(0.20), .11 | 0.24(0.20), .21 | 0.33(0.09) |
| ab | Covar (Slopes) | 0.00(0.00), .95 | 0.00(0.00), .79 | 0.00(0.00), .84 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.04(0.04), .34 | 0.05(0.04), .21 | 0.05(0.04), .27 | 0.05(0.01) |
|  | Correlation of Levels | 0.147 | 0.117 | 0.096 | 0.12(0.03) |
|  | Correlation of Slopes | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.032 | 0.043 | 0.039 | 0.04(0.01) |
|  | N | 508 | 486 | 477 | 490.33(15.95) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 25.00(4.00) |
|  | LL | -6,503 | -6,229 | -6,116 | -6,283(199) |
|  | AIC | 13,048 | 12,507 | 12,289 | 12,615(391) |
|  | BIC | 13,137 | 12,612 | 12,410 | 12,720(375) |

## synonyms

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 1.77(0.02), <.01 | 1.75(0.03), <.01 | 1.75(0.03), <.01 | 1.80(0.04), <.01 | 1.77(0.02) |
| a | Slope | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.03(0.00) |
| a | Level \* age | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| a | Level \* education | --- | 0.05(0.03), .09 | 0.03(0.03), .28 | 0.04(0.03), .18 | 0.04(0.01) |
| a | Level \* height | --- | --- | 0.01(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.05(0.04), .23 | -0.05(NA) |
| a | Level \* cardio | --- | --- | --- | -0.12(0.06), .04 | -0.12(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.12(0.11), .27 | -0.12(NA) |
| a | Slope \* age | 0.00(0.00), .27 | 0.00(0.00), .15 | 0.00(0.00), .14 | 0.00(0.00), .13 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .81 | 0.00(0.00), .87 | 0.00(0.00), .98 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .60 | 0.00(0.00), .62 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | -0.00(0.00), .47 | -0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | -0.00(0.01), .91 | -0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | -0.00(0.01), .74 | -0.00(NA) |
| b | Level | 18.36(0.29), <.01 | 17.32(0.28), <.01 | 17.41(0.28), <.01 | 17.71(0.34), <.01 | 17.70(0.47) |
| b | Slope | -0.11(0.02), <.01 | -0.11(0.02), <.01 | -0.11(0.02), <.01 | -0.12(0.02), <.01 | -0.11(0.01) |
| b | Level \* age | -0.12(0.03), <.01 | -0.06(0.03), .01 | -0.06(0.03), .04 | -0.04(0.03), .19 | -0.07(0.04) |
| b | Level \* education | --- | 2.90(0.40), <.01 | 2.93(0.41), <.01 | 2.69(0.47), <.01 | 2.84(0.13) |
| b | Level \* height | --- | --- | 0.01(0.04), .78 | 0.04(0.05), .41 | 0.02(0.02) |
| b | Level \* smoking | --- | --- | --- | 1.09(0.61), .07 | 1.09(NA) |
| b | Level \* cardio | --- | --- | --- | -1.58(0.85), .06 | -1.58(NA) |
| b | Level \* diabetes | --- | --- | --- | -2.17(1.07), .04 | -2.17(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(0.02), .80 | -0.01(0.02), .78 | 0.00(0.03), .92 | -0.00(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .34 | 0.00(0.00), .67 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.01(0.03), .81 | -0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.06(0.05), .24 | 0.06(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.13(0.17), .46 | 0.13(NA) |
| a | Var (Level) | 0.10(0.01), <.01 | 0.10(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.10(0.01) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.06(0.00), <.01 | 0.05(0.00), <.01 | 0.05(0.00), <.01 | 0.06(0.00), <.01 | 0.06(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .44 | -0.00(0.00), .29 | -0.00(0.00), .23 | -0.00(0.00), .19 | -0.00(0.00) |
| b | Var (Level) | 24.71(2.11), <.01 | 20.23(1.80), <.01 | 19.96(1.80), <.01 | 18.46(1.74), <.01 | 20.84(2.69) |
| b | Var (Slope) | 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 | Var (Residual) | 4.52(0.21), <.01 | 4.47(0.21), <.01 | 4.48(0.22), <.01 | 4.44(0.24), <.01 | 4.48(0.03) |
| b | Covar (Level, Slope) | -0.04(0.07), .56 | -0.06(0.07), .41 | -0.05(0.07), .47 | -0.05(0.07), .45 | -0.05(0.00) |
| ab | Covar (Levels) | 0.36(0.11), <.01 | 0.30(0.09), <.01 | 0.26(0.09), <.01 | 0.22(0.09), .02 | 0.29(0.06) |
| ab | Covar (Slopes) | 0.00(0.00), .30 | 0.00(0.00), .31 | 0.00(0.00), .26 | 0.00(0.00), .20 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.04(0.02), .05 | 0.04(0.02), .04 | 0.04(0.02), .05 | 0.04(0.02), .09 | 0.04(0.00) |
|  | Correlation of Levels | 0.228 | 0.209 | 0.191 | 0.179 | 0.20(0.02) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.072 | 0.079 | 0.079 | 0.078 | 0.08(0.00) |
|  | N | 509 | 487 | 478 | 410 | 471.00(42.70) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -5,134 | -4,887 | -4,791 | -4,125 | -4,735(431) |
|  | AIC | 10,311 | 9,825 | 9,641 | 8,333 | 9,527(845) |
|  | BIC | 10,400 | 9,930 | 9,762 | 8,498 | 9,647(813) |

## Summary

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | . | 0.29 | 0.27 | 0.25 | 0.26 |
| Correlation of Levels | block | . | 0.25 | 0.23 | 0.22 | . |
| Correlation of Levels | digit\_b | . | 0.24 | 0.24 | 0.27 | 0.33 |
| Correlation of Levels | digit\_f | . | 0.10 | 0.07 | 0.09 | 0.08 |
| Correlation of Levels | fig\_id | . | 0.13 | 0.12 | 0.12 | . |
| Correlation of Levels | fig\_mem | . | 0.14 | 0.11 | 0.13 | 0.10 |
| Correlation of Levels | information | . | 0.11 | 0.08 | 0.06 | 0.03 |
| Correlation of Levels | mmse | . | -0.08 | -0.09 | -0.07 | -0.07 |
| Correlation of Levels | rotate | . | 0.20 | 0.20 | 0.22 | 0.29 |
| Correlation of Levels | symbol | . | 0.15 | 0.12 | 0.10 | . |
| Correlation of Levels | synonyms | . | 0.23 | 0.21 | 0.19 | 0.18 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | block | . | Inf | Inf | Inf | . |
| Correlation of Slopes | digit\_b | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | digit\_f | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | fig\_id | . | Inf | Inf | Inf | . |
| Correlation of Slopes | fig\_mem | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | information | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | mmse | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | rotate | . | Inf | Inf | Inf | NaN |
| Correlation of Slopes | symbol | . | NaN | NaN | NaN | . |
| Correlation of Slopes | synonyms | . | NaN | NaN | NaN | NaN |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.00 | 0.00 | 0.02 | 0.02 | 0.02 |
| Correlation of Residuals | block | 0.07 | 0.07 | 0.08 | 0.07 | . |
| Correlation of Residuals | digit\_b | -0.03 | -0.02 | -0.02 | -0.02 | -0.03 |
| Correlation of Residuals | digit\_f | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 |
| Correlation of Residuals | fig\_id | . | -0.04 | -0.04 | -0.04 | . |
| Correlation of Residuals | fig\_mem | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 |
| Correlation of Residuals | information | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| Correlation of Residuals | mmse | 0.15 | 0.15 | 0.13 | 0.13 | 0.15 |
| Correlation of Residuals | rotate | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Correlation of Residuals | symbol | 0.03 | 0.03 | 0.04 | 0.04 | . |
| Correlation of Residuals | synonyms | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 |

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *analogies*, *block*, *digit\_b*, *digit\_f*, *fig\_id*, *fig\_mem*, *information*, *mmse*, *rotate*, *symbol*, *synonyms*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | digit\_b | digit\_f | fig\_mem | information | mmse | rotate | synonyms | mean(sd) |
| a | Level | 2.55(0.07), <.01 | 2.55(0.07), <.01 | 2.55(0.07), <.01 | 2.56(0.07), <.01 | 2.55(0.07), <.01 | 2.55(0.08), <.01 | 2.56(0.07), <.01 | 2.55(0.07), <.01 | 2.55(0.00) |
| a | Slope | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.00) |
| a | Level \* age | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | 0.04(0.04), .35 | 0.04(0.04), .35 | 0.04(0.04), .36 | 0.04(0.04), .41 | 0.04(0.04), .34 | 0.04(0.04), .37 | 0.04(0.04), .37 | 0.04(0.04), .36 | 0.04(0.00) |
| a | Level \* height | 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 \* smoking | -0.11(0.08), .17 | -0.11(0.08), .18 | -0.11(0.08), .18 | -0.12(0.08), .16 | -0.11(0.08), .17 | -0.11(0.08), .16 | -0.12(0.08), .17 | -0.11(0.08), .17 | -0.11(0.00) |
| a | Level \* cardio | -0.27(0.12), .03 | -0.27(0.12), .02 | -0.27(0.12), .03 | -0.28(0.12), .02 | -0.27(0.12), .03 | -0.27(0.12), .03 | -0.27(0.12), .03 | -0.27(0.13), .03 | -0.27(0.00) |
| a | Level \* diabetes | -0.46(0.46), .32 | -0.45(0.25), .07 | -0.46(0.25), .06 | -0.44(0.38), .24 | -0.48(0.24), .05 | -0.46(0.23), .04 | -0.45(0.28), .11 | -0.47(0.24), .06 | -0.46(0.01) |
| a | Slope \* age | 0.00(0.00), .41 | 0.00(0.00), .40 | 0.00(0.00), .39 | 0.00(0.00), .42 | 0.00(0.00), .46 | 0.00(0.00), .58 | 0.00(0.00), .45 | 0.00(0.00), .42 | 0.00(0.00) |
| a | Slope \* education | 0.00(0.00), .94 | 0.00(0.00), .89 | 0.00(0.00), .91 | 0.00(0.00), .85 | 0.00(0.00), .95 | 0.00(0.00), .89 | 0.00(0.00), .93 | 0.00(0.00), .93 | 0.00(0.00) |
| a | Slope \* height | 0.00(0.00), .70 | 0.00(0.00), .70 | 0.00(0.00), .71 | 0.00(0.00), .78 | 0.00(0.00), .71 | 0.00(0.00), .67 | 0.00(0.00), .71 | 0.00(0.00), .71 | 0.00(0.00) |
| a | Slope \* smoking | 0.00(0.01), .99 | 0.00(0.01), .99 | 0.00(0.01), .93 | 0.00(0.01), .93 | 0.00(0.01), .98 | 0.00(0.01), .95 | 0.00(0.01), .93 | 0.00(0.01), .97 | 0.00(0.00) |
| a | Slope \* cardio | 0.00(0.01), .58 | 0.00(0.01), .55 | 0.00(0.01), .57 | 0.00(0.01), .46 | 0.00(0.01), .58 | 0.00(0.01), .62 | 0.00(0.01), .57 | 0.00(0.01), .53 | 0.00(0.00) |
| a | Slope \* diabetes | 0.02(0.15), .91 | 0.02(0.04), .63 | 0.02(0.04), .68 | 0.01(0.06), .79 | 0.02(0.05), .69 | 0.02(0.04), .64 | 0.02(0.06), .78 | 0.02(0.04), .67 | 0.02(0.00) |
| b | Level | 13.20(0.48), <.01 | 3.85(0.17), <.01 | 5.36(0.13), <.01 | 18.49(0.52), <.01 | 30.66(0.81), <.01 | 27.13(0.24), <.01 | 49.54(2.65), <.01 | 15.90(0.56), <.01 | --- |
| b | Slope | -0.14(0.04), <.01 | -0.05(0.01), <.01 | -0.02(0.01), .06 | -0.16(0.04), <.01 | -0.17(0.06), <.01 | -0.14(0.03), <.01 | -1.57(0.20), <.01 | -0.08(0.04), .04 | --- |
| b | Level \* age | -0.17(0.03), <.01 | -0.02(0.01), .05 | -0.01(0.01), .18 | -0.17(0.04), <.01 | -0.15(0.06), .02 | -0.07(0.02), <.01 | -1.01(0.16), <.01 | -0.10(0.04), .02 | --- |
| b | Level \* education | 1.57(0.23), <.01 | 0.32(0.08), <.01 | 0.24(0.07), <.01 | 1.04(0.31), <.01 | 2.61(0.59), <.01 | 0.28(0.19), .14 | 4.03(1.18), <.01 | 2.36(0.36), <.01 | --- |
| b | Level \* height | 0.10(0.04), .01 | 0.04(0.01), <.01 | 0.05(0.01), <.01 | 0.00(0.04), .99 | 0.09(0.07), .21 | 0.06(0.03), .04 | 0.09(0.17), .62 | 0.15(0.06), .01 | --- |
| b | Level \* smoking | -0.01(0.47), .99 | 0.03(0.16), .87 | 0.00(0.14), .99 | 0.21(0.58), .72 | 0.86(0.86), .32 | 0.67(0.30), .03 | -2.28(2.46), .35 | 1.21(0.62), .05 | --- |
| b | Level \* cardio | -0.24(0.68), .73 | -0.22(0.21), .30 | -0.07(0.22), .76 | 0.05(0.83), .96 | -2.65(1.13), .02 | -0.44(0.31), .16 | 0.40(3.36), .91 | -2.06(0.91), .02 | --- |
| b | Level \* diabetes | -1.32(3.56), .71 | -0.23(0.84), .78 | -0.73(0.54), .18 | -1.74(4.05), .67 | 1.55(2.67), .56 | 0.14(0.93), .88 | -4.82(16.86), .78 | -0.90(2.52), .72 | --- |
| b | Slope \* age | -0.00(0.00), .10 | -0.00(0.00), .02 | -0.00(0.00), .26 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.00(0.00), .02 | -0.06(0.01), <.01 | -0.01(0.00), .01 | --- |
| b | Slope \* education | 0.01(0.02), .51 | -0.01(0.01), .07 | -0.00(0.01), .54 | 0.00(0.02), .97 | -0.02(0.03), .49 | 0.01(0.02), .57 | 0.05(0.09), .61 | -0.03(0.01), .03 | --- |
| b | Slope \* height | 0.00(0.00), .52 | 0.00(0.00), .99 | -0.00(0.00), .45 | 0.00(0.00), .21 | 0.00(0.00), .42 | 0.00(0.00), .95 | 0.03(0.01), .03 | -0.00(0.00), .78 | --- |
| b | Slope \* smoking | 0.01(0.03), .65 | 0.01(0.01), .37 | 0.01(0.01), .56 | -0.04(0.04), .31 | 0.02(0.05), .67 | -0.03(0.04), .36 | 0.12(0.17), .46 | -0.02(0.03), .59 | --- |
| b | Slope \* cardio | 0.02(0.05), .63 | -0.01(0.02), .66 | -0.01(0.02), .48 | -0.08(0.08), .32 | 0.01(0.06), .86 | 0.01(0.04), .87 | 0.00(0.25), .99 | 0.04(0.05), .45 | --- |
| b | Slope \* diabetes | -0.13(0.75), .86 | 0.02(0.10), .81 | 0.03(0.10), .78 | 0.09(0.58), .87 | 0.05(0.35), .88 | 0.07(0.14), .59 | -0.18(1.13), .87 | 0.10(0.41), .81 | --- |
| a | Var (Level) | 0.27(0.03), <.01 | 0.27(0.04), <.01 | 0.27(0.04), <.01 | 0.27(0.03), <.01 | 0.27(0.03), <.01 | 0.27(0.03), <.01 | 0.27(0.04), <.01 | 0.27(0.03), <.01 | 0.27(0.00) |
| a | Var (Slope) | 0.00(0.00), .02 | 0.00(0.00), .01 | 0.00(0.00), .02 | 0.00(0.00), .02 | 0.00(0.00), .02 | 0.00(0.00), .02 | 0.00(0.00), .01 | 0.00(0.00), .01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .44 | 0.00(0.00), .42 | 0.00(0.00), .45 | 0.00(0.00), .39 | 0.00(0.00), .41 | 0.00(0.00), .51 | 0.00(0.00), .45 | 0.00(0.00), .44 | 0.00(0.00) |
| b | Var (Level) | 6.82(1.07), <.01 | 0.68(0.11), <.01 | 0.64(0.11), <.01 | 11.70(1.81), <.01 | 39.66(4.39), <.01 | 1.85(0.25), <.01 | 228.54(30.50), <.01 | 20.51(2.53), <.01 | --- |
| b | Var (Slope) | 0.00(0.00), .43 | 0.00(0.00), .55 | 0.00(0.00), .68 | 0.01(0.01), .15 | 0.04(0.01), <.01 | 0.01(0.00), <.01 | 0.25(0.13), .05 | 0.01(0.00), .10 | --- |
| b | Var (Residual) | 5.60(0.32), <.01 | 0.83(0.04), <.01 | 0.70(0.03), <.01 | 7.56(0.37), <.01 | 7.47(0.37), <.01 | 1.87(0.08), <.01 | 109.69(6.04), <.01 | 4.01(0.25), <.01 | --- |
| b | Covar (Level, Slope) | -0.03(0.07), .66 | -0.00(0.01), .69 | -0.00(0.01), .82 | -0.07(0.09), .39 | -0.41(0.19), .03 | -0.04(0.03), .19 | -0.83(1.49), .58 | -0.06(0.08), .47 | --- |
| ab | Covar (Levels) | 0.15(0.14), .29 | 0.09(0.04), .03 | 0.06(0.04), .18 | 0.40(0.17), .02 | 0.35(0.27), .19 | 0.11(0.09), .20 | 1.50(0.69), .03 | 0.30(0.20), .14 | --- |
| ab | Covar (Slopes) | 0.00(0.00), .93 | 0.00(0.00), .57 | 0.00(0.00), .92 | 0.00(0.00), .91 | 0.00(0.00), .96 | 0.00(0.00), .28 | 0.00(0.00), .73 | 0.00(0.00), .79 | --- |
| ab | Covar (Residuals) | 0.04(0.04), .24 | -0.01(0.01), .40 | 0.01(0.01), .36 | 0.01(0.04), .78 | 0.08(0.04), .04 | 0.02(0.02), .29 | 0.06(0.15), .70 | 0.02(0.03), .38 | --- |
|  | Correlation of Levels | 0.109 | 0.220 | 0.147 | 0.227 | 0.11 | 0.161 | 0.191 | 0.13 | 0.16(0.05) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | NaN | Inf | Inf | NaN | Inf(NaN) |
|  | Correlation of Residuals | 0.062 | -0.033 | 0.048 | 0.013 | 0.10 | 0.051 | 0.018 | 0.04 | 0.04(0.04) |
|  | N | 300 | 299 | 299 | 299 | 300 | 300 | 299 | 300 | 299.50(0.53) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -3,115 | -2,210 | -2,131 | -3,374 | -3,680 | -2,762 | -4,581 | -3,247 | -3,137( 798) |
|  | AIC | 6,311 | 4,503 | 4,344 | 6,830 | 7,443 | 5,606 | 9,244 | 6,576 | 6,357(1,596) |
|  | BIC | 6,463 | 4,654 | 4,496 | 6,981 | 7,594 | 5,757 | 9,396 | 6,728 | 6,509(1,596) |

## analogies

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.53(0.05), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.55(0.07), <.01 | 2.50(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .36 | 0.04(0.04), .35 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .17 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.46(0.46), .32 | -0.46(NA) |
| a | Slope \* age | 0.00(0.00), .42 | 0.00(0.00), .52 | 0.00(0.00), .37 | 0.00(0.00), .41 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .95 | 0.00(0.00), .90 | 0.00(0.00), .94 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .22 | 0.00(0.00), .70 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .99 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .58 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.15), .91 | 0.02(NA) |
| b | Level | 14.24(0.33), <.01 | 13.20(0.35), <.01 | 13.07(0.36), <.01 | 13.20(0.48), <.01 | 13.43(0.55) |
| b | Slope | -0.12(0.02), <.01 | -0.13(0.02), <.01 | -0.12(0.03), <.01 | -0.14(0.04), <.01 | -0.13(0.01) |
| b | Level \* age | -0.23(0.03), <.01 | -0.20(0.03), <.01 | -0.18(0.03), <.01 | -0.17(0.03), <.01 | -0.19(0.02) |
| b | Level \* education | --- | 1.73(0.19), <.01 | 1.60(0.20), <.01 | 1.57(0.23), <.01 | 1.63(0.08) |
| b | Level \* height | --- | --- | 0.10(0.03), <.01 | 0.10(0.04), .01 | 0.10(0.00) |
| b | Level \* smoking | --- | --- | --- | -0.01(0.47), .99 | -0.01(NA) |
| b | Level \* cardio | --- | --- | --- | -0.24(0.68), .73 | -0.24(NA) |
| b | Level \* diabetes | --- | --- | --- | -1.32(3.56), .71 | -1.32(NA) |
| b | Slope \* age | -0.00(0.00), .01 | -0.00(0.00), .02 | -0.00(0.00), .02 | -0.00(0.00), .10 | -0.00(0.00) |
| b | Slope \* education | --- | 0.01(0.01), .40 | 0.01(0.01), .47 | 0.01(0.02), .51 | 0.01(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .84 | 0.00(0.00), .52 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.01(0.03), .65 | 0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.02(0.05), .63 | 0.02(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.13(0.75), .86 | -0.13(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00), .02 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .79 | 0.00(0.00), .83 | 0.00(0.00), .70 | 0.00(0.00), .44 | 0.00(0.00) |
| b | Var (Level) | 10.17(1.40), <.01 | 7.13(1.02), <.01 | 6.82(0.98), <.01 | 6.82(1.07), <.01 | 7.74(1.63) |
| b | Var (Slope) | 0.00(0.00), .38 | 0.00(0.00), .46 | 0.00(0.00), .47 | 0.00(0.00), .43 | 0.00(0.00) |
| b | Var (Residual) | 5.55(0.28), <.01 | 5.58(0.29), <.01 | 5.61(0.29), <.01 | 5.60(0.32), <.01 | 5.59(0.03) |
| b | Covar (Level, Slope) | -0.01(0.07), .91 | -0.01(0.06), .86 | -0.02(0.06), .73 | -0.03(0.07), .66 | -0.02(0.01) |
| ab | Covar (Levels) | 0.40(0.15), .01 | 0.27(0.14), .05 | 0.15(0.13), .24 | 0.15(0.14), .29 | 0.24(0.12) |
| ab | Covar (Slopes) | 0.00(0.00), .97 | 0.00(0.00), .96 | 0.00(0.00), .98 | 0.00(0.00), .93 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.05(0.03), .14 | 0.06(0.03), .10 | 0.05(0.04), .14 | 0.04(0.04), .24 | 0.05(0.00) |
|  | Correlation of Levels | 0.217 | 0.173 | 0.107 | 0.109 | 0.15(0.05) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.068 | 0.076 | 0.072 | 0.062 | 0.07(0.01) |
|  | N | 347 | 341 | 338 | 300 | 331.50(21.33) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -3,748 | -3,642 | -3,589 | -3,115 | -3,524(281) |
|  | AIC | 7,539 | 7,335 | 7,236 | 6,311 | 7,105(544) |
|  | BIC | 7,620 | 7,430 | 7,346 | 6,463 | 7,215(514) |

## block

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 2.52(0.06), <.01 | 2.47(0.06), <.01 | 2.42(0.06), <.01 | 2.47(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .36 | 0.06(0.03) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .56 | 0.00(0.00), .69 | 0.00(0.00), .54 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .96 | 0.00(0.00), .92 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .25 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 17.43(0.56), <.01 | 16.07(0.56), <.01 | 15.93(0.57), <.01 | 16.48(0.83) |
| b | Slope | -0.43(0.04), <.01 | -0.42(0.04), <.01 | -0.42(0.04), <.01 | -0.42(0.00) |
| b | Level \* age | -0.46(0.05), <.01 | -0.43(0.05), <.01 | -0.40(0.05), <.01 | -0.43(0.03) |
| b | Level \* education | --- | 2.27(0.40), <.01 | 2.18(0.40), <.01 | 2.23(0.07) |
| b | Level \* height | --- | --- | 0.10(0.06), .13 | 0.10(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.02(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | 0.01(0.02), .75 | -0.00(0.02), .93 | 0.00(0.01) |
| b | Slope \* height | --- | --- | 0.01(0.00), .13 | 0.01(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.32(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .85 | 0.00(0.00), .87 | 0.00(0.00), .74 | 0.00(0.00) |
| b | Var (Level) | 40.31(4.35), <.01 | 35.62(3.90), <.01 | 34.88(3.87), <.01 | 36.94(2.94) |
| b | Var (Slope) | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| b | Var (Residual) | 9.48(0.48), <.01 | 9.52(0.48), <.01 | 9.51(0.49), <.01 | 9.50(0.02) |
| b | Covar (Level, Slope) | -0.27(0.18), .14 | -0.29(0.18), .10 | -0.32(0.18), .07 | -0.30(0.03) |
| ab | Covar (Levels) | 1.06(0.27), <.01 | 0.90(0.26), <.01 | 0.78(0.24), <.01 | 0.91(0.14) |
| ab | Covar (Slopes) | 0.00(0.00), .11 | 0.00(0.00), .13 | 0.00(0.00), .11 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.04), .83 | 0.01(0.04), .86 | 0.00(0.05), .98 | 0.01(0.00) |
|  | Correlation of Levels | 0.286 | 0.2583 | 0.2436 | 0.26(0.02) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.011 | 0.0085 | 0.0011 | 0.01(0.01) |
|  | N | 347 | 341 | 338 | 342.00(4.58) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 27.00(2.00) |
|  | LL | -5,994 | -5,411 | -4,242 | -5,216( 892) |
|  | AIC | 12,038 | 10,876 | 8,541 | 10,485(1,781) |
|  | BIC | 12,134 | 10,980 | 8,652 | 10,589(1,774) |

## digit\_b

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.53(0.06), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.55(0.07), <.01 | 2.50(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .36 | 0.04(0.04), .35 | 0.05(0.03) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .18 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .02 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.45(0.25), .07 | -0.45(NA) |
| a | Slope \* age | 0.00(0.00), .40 | 0.00(0.00), .50 | 0.00(0.00), .35 | 0.00(0.00), .40 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .99 | 0.00(0.00), .92 | 0.00(0.00), .89 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .22 | 0.00(0.00), .70 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .99 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .55 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.04), .63 | 0.02(NA) |
| b | Level | 4.09(0.10), <.01 | 3.88(0.11), <.01 | 3.84(0.11), <.01 | 3.85(0.17), <.01 | 3.92(0.12) |
| b | Slope | -0.06(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.00) |
| b | Level \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.02(0.01), .02 | -0.02(0.01), .05 | -0.03(0.01) |
| b | Level \* education | --- | 0.35(0.07), <.01 | 0.30(0.07), <.01 | 0.32(0.08), <.01 | 0.32(0.02) |
| b | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.03(0.16), .87 | 0.03(NA) |
| b | Level \* cardio | --- | --- | --- | -0.22(0.21), .30 | -0.22(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.23(0.84), .78 | -0.23(NA) |
| b | Slope \* age | -0.00(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), .02 | -0.00(0.00) |
| b | Slope \* education | --- | -0.01(0.00), .05 | -0.01(0.00), .07 | -0.01(0.01), .07 | -0.01(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .99 | 0.00(0.00), .99 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.01(0.01), .37 | 0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.01(0.02), .66 | -0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.02(0.10), .81 | 0.02(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.04), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .80 | 0.00(0.00), .83 | 0.00(0.00), .67 | 0.00(0.00), .42 | 0.00(0.00) |
| b | Var (Level) | 0.77(0.10), <.01 | 0.69(0.10), <.01 | 0.65(0.10), <.01 | 0.68(0.11), <.01 | 0.70(0.05) |
| b | Var (Slope) | 0.00(0.00), .55 | 0.00(0.00), .57 | 0.00(0.00), .59 | 0.00(0.00), .55 | 0.00(0.00) |
| b | Var (Residual) | 0.91(0.04), <.01 | 0.88(0.04), <.01 | 0.87(0.04), <.01 | 0.83(0.04), <.01 | 0.88(0.03) |
| b | Covar (Level, Slope) | 0.00(0.01), .96 | 0.00(0.01), .96 | -0.00(0.01), .91 | -0.00(0.01), .69 | -0.00(0.00) |
| ab | Covar (Levels) | 0.15(0.04), <.01 | 0.13(0.04), <.01 | 0.09(0.04), .02 | 0.09(0.04), .03 | 0.12(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .85 | 0.00(0.00), .72 | 0.00(0.00), .78 | 0.00(0.00), .57 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.00(0.01), .68 | -0.00(0.01), .73 | -0.00(0.01), .58 | -0.01(0.01), .40 | -0.01(0.00) |
|  | Correlation of Levels | 0.304 | 0.27 | 0.208 | 0.220 | 0.25(0.05) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | -0.014 | -0.01 | -0.018 | -0.033 | -0.02(0.01) |
|  | N | 347 | 341 | 338 | 299 | 331.25(21.82) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -4,307 | -3,744 | -2,581 | -2,210 | -3,211( 980) |
|  | AIC | 8,663 | 7,543 | 5,219 | 4,503 | 6,482(1,949) |
|  | BIC | 8,759 | 7,646 | 5,330 | 4,654 | 6,598(1,928) |

## digit\_f

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.52(0.06), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.55(0.07), <.01 | 2.50(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .37 | 0.04(0.04), .36 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .18 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.46(0.25), .06 | -0.46(NA) |
| a | Slope \* age | 0.00(0.00), .41 | 0.00(0.00), .51 | 0.00(0.00), .36 | 0.00(0.00), .39 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .93 | 0.00(0.00), .89 | 0.00(0.00), .91 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .22 | 0.00(0.00), .71 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .93 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .57 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.04), .68 | 0.02(NA) |
| b | Level | 5.50(0.10), <.01 | 5.33(0.10), <.01 | 5.26(0.10), <.01 | 5.36(0.13), <.01 | 5.36(0.10) |
| b | Slope | -0.02(0.01), .01 | -0.02(0.01), .03 | -0.02(0.01), .04 | -0.02(0.01), .06 | -0.02(0.00) |
| b | Level \* age | -0.03(0.01), <.01 | -0.03(0.01), <.01 | -0.02(0.01), .03 | -0.01(0.01), .18 | -0.02(0.01) |
| b | Level \* education | --- | 0.31(0.06), <.01 | 0.26(0.06), <.01 | 0.24(0.07), <.01 | 0.27(0.03) |
| b | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.00(0.14), .99 | 0.00(NA) |
| b | Level \* cardio | --- | --- | --- | -0.07(0.22), .76 | -0.07(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.73(0.54), .18 | -0.73(NA) |
| b | Slope \* age | 0.00(0.00), .51 | 0.00(0.00), .56 | -0.00(0.00), .45 | -0.00(0.00), .26 | -0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.00), .54 | -0.00(0.00), .54 | -0.00(0.01), .54 | -0.00(0.00) |
| b | Slope \* height | --- | --- | -0.00(0.00), .46 | -0.00(0.00), .45 | -0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.01(0.01), .56 | 0.01(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.01(0.02), .48 | -0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.03(0.10), .78 | 0.03(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.04), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .02 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .80 | 0.00(0.00), .84 | 0.00(0.00), .71 | 0.00(0.00), .45 | 0.00(0.00) |
| b | Var (Level) | 0.79(0.11), <.01 | 0.72(0.11), <.01 | 0.64(0.10), <.01 | 0.64(0.11), <.01 | 0.70(0.07) |
| b | Var (Slope) | 0.00(0.00), .81 | 0.00(0.00), .49 | 0.00(0.00), .77 | 0.00(0.00), .68 | 0.00(0.00) |
| b | Var (Residual) | 0.70(0.03), <.01 | 0.69(0.03), <.01 | 0.69(0.03), <.01 | 0.70(0.03), <.01 | 0.69(0.01) |
| b | Covar (Level, Slope) | -0.00(0.00), .54 | -0.00(0.00), .45 | -0.00(0.00), .69 | -0.00(0.01), .82 | -0.00(0.00) |
| ab | Covar (Levels) | 0.13(0.04), <.01 | 0.11(0.04), .01 | 0.06(0.04), .10 | 0.06(0.04), .18 | 0.09(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .74 | 0.00(0.00), .78 | 0.00(0.00), .87 | 0.00(0.00), .92 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.01), .43 | 0.01(0.01), .40 | 0.01(0.01), .43 | 0.01(0.01), .36 | 0.01(0.00) |
|  | Correlation of Levels | 0.249 | 0.217 | 0.143 | 0.147 | 0.19(0.05) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.035 | 0.035 | 0.036 | 0.048 | 0.04(0.01) |
|  | N | 347 | 341 | 338 | 299 | 331.25(21.82) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -4,169 | -3,622 | -2,456 | -2,131 | -3,095( 961) |
|  | AIC | 8,388 | 7,298 | 4,971 | 4,344 | 6,250(1,910) |
|  | BIC | 8,484 | 7,402 | 5,081 | 4,496 | 6,366(1,889) |

## fig\_id

Gender = *male*; Process (a) = *fev*; Process (b) = *fig\_id*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 2.53(0.05), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.48(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .37 | 0.06(0.03) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .39 | 0.00(0.00), .49 | 0.00(0.00), .35 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .94 | 0.00(0.00), .90 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .23 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 26.80(0.50), <.01 | 25.54(0.59), <.01 | 25.37(0.62), <.01 | 25.90(0.78) |
| b | Slope | -0.57(0.06), <.01 | -0.58(0.06), <.01 | -0.59(0.06), <.01 | -0.58(0.01) |
| b | Level \* age | -0.44(0.05), <.01 | -0.40(0.05), <.01 | -0.37(0.05), <.01 | -0.41(0.03) |
| b | Level \* education | --- | 2.13(0.34), <.01 | 1.94(0.35), <.01 | 2.04(0.14) |
| b | Level \* height | --- | --- | 0.14(0.06), .02 | 0.14(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.03(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00) |
| b | Slope \* education | --- | 0.04(0.03), .15 | 0.03(0.03), .28 | 0.04(0.01) |
| b | Slope \* height | --- | --- | 0.01(0.00), .14 | 0.01(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.32(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .82 | 0.00(0.00), .85 | 0.00(0.00), .70 | 0.00(0.00) |
| b | Var (Level) | 33.63(3.74), <.01 | 29.47(3.51), <.01 | 28.91(3.47), <.01 | 30.67(2.58) |
| b | Var (Slope) | 0.07(0.02), <.01 | 0.07(0.02), <.01 | 0.07(0.02), <.01 | 0.07(0.00) |
| b | Var (Residual) | 15.87(0.79), <.01 | 15.98(0.81), <.01 | 16.08(0.82), <.01 | 15.98(0.11) |
| b | Covar (Level, Slope) | 0.01(0.18), .96 | -0.10(0.20), .61 | -0.17(0.20), .40 | -0.09(0.09) |
| ab | Covar (Levels) | 0.95(0.27), <.01 | 0.79(0.26), <.01 | 0.61(0.24), .01 | 0.78(0.17) |
| ab | Covar (Slopes) | 0.00(0.00), .40 | 0.00(0.00), .42 | 0.00(0.00), .38 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.06(0.05), .20 | -0.06(0.05), .21 | -0.06(0.05), .26 | -0.06(0.00) |
|  | Correlation of Levels | 0.282 | 0.251 | 0.210 | 0.25(0.04) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | -0.048 | -0.049 | -0.045 | -0.05(0.00) |
|  | N | 347 | 341 | 338 | 342.00(4.58) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 25.00(4.00) |
|  | LL | -4,609 | -4,519 | -4,459 | -4,529( 75) |
|  | AIC | 9,259 | 9,089 | 8,975 | 9,108(143) |
|  | BIC | 9,340 | 9,185 | 9,086 | 9,204(128) |

## fig\_mem

Gender = *male*; Process (a) = *fev*; Process (b) = *fig\_mem*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.53(0.05), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.56(0.07), <.01 | 2.50(0.06) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .07 | 0.04(0.04), .41 | 0.04(0.04), .41 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.12(0.08), .16 | -0.12(NA) |
| a | Level \* cardio | --- | --- | --- | -0.28(0.12), .02 | -0.28(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.44(0.38), .24 | -0.44(NA) |
| a | Slope \* age | 0.00(0.00), .39 | 0.00(0.00), .50 | 0.00(0.00), .38 | 0.00(0.00), .42 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .87 | 0.00(0.00), .85 | 0.00(0.00), .85 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .25 | 0.00(0.00), .78 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .93 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .46 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.01(0.06), .79 | 0.01(NA) |
| b | Level | 19.00(0.33), <.01 | 18.42(0.35), <.01 | 18.43(0.36), <.01 | 18.49(0.52), <.01 | 18.59(0.28) |
| b | Slope | -0.18(0.03), <.01 | -0.18(0.03), <.01 | -0.18(0.03), <.01 | -0.16(0.04), <.01 | -0.18(0.01) |
| b | Level \* age | -0.19(0.03), <.01 | -0.19(0.03), <.01 | -0.19(0.04), <.01 | -0.17(0.04), <.01 | -0.18(0.01) |
| b | Level \* education | --- | 0.95(0.26), <.01 | 0.94(0.27), <.01 | 1.04(0.31), <.01 | 0.98(0.05) |
| b | Level \* height | --- | --- | -0.00(0.04), .98 | 0.00(0.04), .99 | -0.00(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.21(0.58), .72 | 0.21(NA) |
| b | Level \* cardio | --- | --- | --- | 0.05(0.83), .96 | 0.05(NA) |
| b | Level \* diabetes | --- | --- | --- | -1.74(4.05), .67 | -1.74(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(0.02), .42 | 0.01(0.02), .63 | 0.00(0.02), .97 | 0.01(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .14 | 0.00(0.00), .21 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.04(0.04), .31 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | --- | -0.08(0.08), .32 | -0.08(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.09(0.58), .87 | 0.09(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .02 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .78 | 0.00(0.00), .80 | 0.00(0.00), .66 | 0.00(0.00), .39 | 0.00(0.00) |
| b | Var (Level) | 13.21(1.80), <.01 | 12.08(1.68), <.01 | 12.14(1.70), <.01 | 11.70(1.81), <.01 | 12.28(0.65) |
| b | Var (Slope) | 0.01(0.01), .04 | 0.01(0.01), .04 | 0.01(0.01), .05 | 0.01(0.01), .15 | 0.01(0.00) |
| b | Var (Residual) | 7.55(0.32), <.01 | 7.56(0.32), <.01 | 7.58(0.33), <.01 | 7.56(0.37), <.01 | 7.56(0.01) |
| b | Covar (Level, Slope) | -0.14(0.08), .08 | -0.13(0.08), .09 | -0.14(0.08), .09 | -0.07(0.09), .39 | -0.12(0.03) |
| ab | Covar (Levels) | 0.41(0.18), .02 | 0.35(0.17), .04 | 0.35(0.17), .04 | 0.40(0.17), .02 | 0.38(0.03) |
| ab | Covar (Slopes) | 0.00(0.00), .46 | 0.00(0.00), .50 | 0.00(0.00), .46 | 0.00(0.00), .91 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.03), .79 | 0.01(0.03), .77 | 0.01(0.04), .79 | 0.01(0.04), .78 | 0.01(0.00) |
|  | Correlation of Levels | 0.197 | 0.175 | 0.185 | 0.227 | 0.20(0.02) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.011 | 0.012 | 0.011 | 0.013 | 0.01(0.00) |
|  | N | 347 | 341 | 337 | 299 | 331.00(21.73) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -5,629 | -5,054 | -3,892 | -3,374 | -4,487(1,036) |
|  | AIC | 11,308 | 10,163 | 7,842 | 6,830 | 9,035(2,060) |
|  | BIC | 11,404 | 10,266 | 7,952 | 6,981 | 9,151(2,038) |

## information

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.52(0.06), <.01 | 2.47(0.06), <.01 | 2.43(0.06), <.01 | 2.55(0.07), <.01 | 2.49(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .36 | 0.04(0.04), .34 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .17 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.48(0.24), .05 | -0.48(NA) |
| a | Slope \* age | 0.00(0.00), .46 | 0.00(0.00), .59 | 0.00(0.00), .44 | 0.00(0.00), .46 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .95 | 0.00(0.00), .92 | 0.00(0.00), .95 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .21 | 0.00(0.00), .71 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .98 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .58 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.05), .69 | 0.02(NA) |
| b | Level | 32.68(0.59), <.01 | 30.87(0.55), <.01 | 30.72(0.55), <.01 | 30.66(0.81), <.01 | 31.23(0.97) |
| b | Slope | -0.20(0.04), <.01 | -0.18(0.04), <.01 | -0.18(0.04), <.01 | -0.17(0.06), <.01 | -0.19(0.01) |
| b | Level \* age | -0.20(0.06), <.01 | -0.16(0.05), <.01 | -0.15(0.05), .01 | -0.15(0.06), .02 | -0.17(0.02) |
| b | Level \* education | --- | 2.88(0.54), <.01 | 2.72(0.54), <.01 | 2.61(0.59), <.01 | 2.73(0.13) |
| b | Level \* height | --- | --- | 0.11(0.07), .11 | 0.09(0.07), .21 | 0.10(0.01) |
| b | Level \* smoking | --- | --- | --- | 0.86(0.86), .32 | 0.86(NA) |
| b | Level \* cardio | --- | --- | --- | -2.65(1.13), .02 | -2.65(NA) |
| b | Level \* diabetes | --- | --- | --- | 1.55(2.67), .56 | 1.55(NA) |
| b | Slope \* age | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.02(0.00), <.01 | -0.01(0.00), <.01 | -0.02(0.00) |
| b | Slope \* education | --- | -0.02(0.03), .54 | -0.02(0.03), .51 | -0.02(0.03), .49 | -0.02(0.00) |
| b | Slope \* height | --- | --- | 0.00(0.00), .67 | 0.00(0.00), .42 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.02(0.05), .67 | 0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.01(0.06), .86 | 0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.05(0.35), .88 | 0.05(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .02 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .80 | 0.00(0.00), .82 | 0.00(0.00), .68 | 0.00(0.00), .41 | 0.00(0.00) |
| b | Var (Level) | 46.60(4.66), <.01 | 39.54(3.99), <.01 | 39.24(3.87), <.01 | 39.66(4.39), <.01 | 41.26(3.56) |
| b | Var (Slope) | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.05(0.01), <.01 | 0.04(0.01), <.01 | 0.05(0.01) |
| b | Var (Residual) | 7.11(0.30), <.01 | 7.08(0.30), <.01 | 7.08(0.31), <.01 | 7.47(0.37), <.01 | 7.18(0.19) |
| b | Covar (Level, Slope) | -0.37(0.19), .05 | -0.33(0.17), .05 | -0.35(0.17), .04 | -0.41(0.19), .03 | -0.37(0.03) |
| ab | Covar (Levels) | 0.73(0.30), .01 | 0.53(0.27), .05 | 0.39(0.26), .14 | 0.35(0.27), .19 | 0.50(0.17) |
| ab | Covar (Slopes) | 0.00(0.00), .90 | 0.00(0.00), .88 | 0.00(0.00), .97 | 0.00(0.00), .96 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.07(0.04), .04 | 0.07(0.04), .05 | 0.07(0.04), .06 | 0.08(0.04), .04 | 0.07(0.01) |
|  | Correlation of Levels | 0.185 | 0.145 | 0.115 | 0.11 | 0.14(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.089 | 0.088 | 0.084 | 0.10 | 0.09(0.01) |
|  | N | 347 | 341 | 338 | 300 | 331.50(21.33) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -5,986 | -5,395 | -4,230 | -3,680 | -4,823(1,055) |
|  | AIC | 12,022 | 10,844 | 8,517 | 7,443 | 9,706(2,097) |
|  | BIC | 12,118 | 10,947 | 8,628 | 7,594 | 9,822(2,076) |

## mmse

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.52(0.06), <.01 | 2.47(0.06), <.01 | 2.42(0.06), <.01 | 2.55(0.08), <.01 | 2.49(0.06) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .37 | 0.04(0.04), .37 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .16 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.46(0.23), .04 | -0.46(NA) |
| a | Slope \* age | 0.00(0.00), .68 | 0.00(0.00), .83 | 0.00(0.00), .64 | 0.00(0.00), .58 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .96 | 0.00(0.00), .92 | 0.00(0.00), .89 | 0.00(0.00) |
| a | Slope \* height | --- | --- | -0.00(0.00), .20 | 0.00(0.00), .67 | -0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .95 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .62 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.04), .64 | 0.02(NA) |
| b | Level | 27.75(0.17), <.01 | 27.58(0.19), <.01 | 27.51(0.18), <.01 | 27.13(0.24), <.01 | 27.49(0.26) |
| b | Slope | -0.15(0.02), <.01 | -0.15(0.02), <.01 | -0.15(0.02), <.01 | -0.14(0.03), <.01 | -0.15(0.01) |
| b | Level \* age | -0.09(0.01), <.01 | -0.08(0.01), <.01 | -0.07(0.01), <.01 | -0.07(0.02), <.01 | -0.08(0.01) |
| b | Level \* education | --- | 0.29(0.18), .10 | 0.24(0.18), .18 | 0.28(0.19), .14 | 0.27(0.03) |
| b | Level \* height | --- | --- | 0.05(0.02), .03 | 0.06(0.03), .04 | 0.05(0.00) |
| b | Level \* smoking | --- | --- | --- | 0.67(0.30), .03 | 0.67(NA) |
| b | Level \* cardio | --- | --- | --- | -0.44(0.31), .16 | -0.44(NA) |
| b | Level \* diabetes | --- | --- | --- | 0.14(0.93), .88 | 0.14(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), .01 | -0.00(0.00), .02 | -0.00(0.00) |
| b | Slope \* education | --- | 0.02(0.01), .14 | 0.02(0.01), .22 | 0.01(0.02), .57 | 0.02(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.00), .70 | 0.00(0.00), .95 | 0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.03(0.04), .36 | -0.03(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.01(0.04), .87 | 0.01(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.07(0.14), .59 | 0.07(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .02 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .93 | 0.00(0.00), .95 | 0.00(0.00), .80 | 0.00(0.00), .51 | 0.00(0.00) |
| b | Var (Level) | 2.08(0.21), <.01 | 1.99(0.22), <.01 | 1.91(0.22), <.01 | 1.85(0.25), <.01 | 1.96(0.10) |
| b | Var (Slope) | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.02(0.00), <.01 | 0.01(0.00), <.01 | 0.02(0.00) |
| b | Var (Residual) | 1.85(0.06), <.01 | 1.86(0.07), <.01 | 1.86(0.07), <.01 | 1.87(0.08), <.01 | 1.86(0.01) |
| b | Covar (Level, Slope) | -0.04(0.02), .05 | -0.05(0.02), .03 | -0.05(0.02), .02 | -0.04(0.03), .19 | -0.05(0.01) |
| ab | Covar (Levels) | 0.20(0.09), .03 | 0.18(0.09), .04 | 0.12(0.09), .18 | 0.11(0.09), .20 | 0.15(0.04) |
| ab | Covar (Slopes) | 0.00(0.00), .16 | 0.00(0.00), .18 | 0.00(0.00), .19 | 0.00(0.00), .28 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.01(0.02), .42 | 0.01(0.02), .43 | 0.01(0.02), .45 | 0.02(0.02), .29 | 0.02(0.00) |
|  | Correlation of Levels | 0.237 | 0.218 | 0.157 | 0.161 | 0.19(0.04) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.034 | 0.034 | 0.034 | 0.051 | 0.04(0.01) |
|  | N | 346 | 341 | 338 | 300 | 331.25(21.09) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -3,290 | -3,234 | -3,183 | -2,762 | -3,117(241) |
|  | AIC | 6,623 | 6,519 | 6,424 | 5,606 | 6,293(465) |
|  | BIC | 6,703 | 6,615 | 6,535 | 5,757 | 6,403(436) |

## rotate

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.53(0.05), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.56(0.07), <.01 | 2.50(0.06) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .37 | 0.04(0.04), .37 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.12(0.08), .17 | -0.12(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.12), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.45(0.28), .11 | -0.45(NA) |
| a | Slope \* age | 0.00(0.00), .41 | 0.00(0.00), .52 | 0.00(0.00), .38 | 0.00(0.00), .45 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .93 | 0.00(0.00), .89 | 0.00(0.00), .93 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .25 | 0.00(0.00), .71 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .93 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .57 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.06), .78 | 0.02(NA) |
| b | Level | 50.48(1.75), <.01 | 48.14(1.92), <.01 | 48.09(2.00), <.01 | 49.54(2.65), <.01 | 49.06(1.16) |
| b | Slope | -1.37(0.15), <.01 | -1.40(0.16), <.01 | -1.45(0.16), <.01 | -1.57(0.20), <.01 | -1.45(0.09) |
| b | Level \* age | -1.09(0.14), <.01 | -1.03(0.14), <.01 | -1.02(0.15), <.01 | -1.01(0.16), <.01 | -1.04(0.03) |
| b | Level \* education | --- | 3.94(1.02), <.01 | 3.76(1.02), <.01 | 4.03(1.18), <.01 | 3.91(0.14) |
| b | Level \* height | --- | --- | 0.09(0.16), .58 | 0.09(0.17), .62 | 0.09(0.00) |
| b | Level \* smoking | --- | --- | --- | -2.28(2.46), .35 | -2.28(NA) |
| b | Level \* cardio | --- | --- | --- | 0.40(3.36), .91 | 0.40(NA) |
| b | Level \* diabetes | --- | --- | --- | -4.82(16.86), .78 | -4.82(NA) |
| b | Slope \* age | -0.06(0.01), <.01 | -0.06(0.01), <.01 | -0.05(0.01), <.01 | -0.06(0.01), <.01 | -0.06(0.00) |
| b | Slope \* education | --- | 0.10(0.08), .21 | 0.07(0.08), .38 | 0.05(0.09), .61 | 0.07(0.03) |
| b | Slope \* height | --- | --- | 0.03(0.01), <.01 | 0.03(0.01), .03 | 0.03(0.00) |
| b | Slope \* smoking | --- | --- | --- | 0.12(0.17), .46 | 0.12(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.00(0.25), .99 | 0.00(NA) |
| b | Slope \* diabetes | --- | --- | --- | -0.18(1.13), .87 | -0.18(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.04), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .81 | 0.00(0.00), .83 | 0.00(0.00), .69 | 0.00(0.00), .45 | 0.00(0.00) |
| b | Var (Level) | 230.60(27.84), <.01 | 219.69(27.02), <.01 | 219.56(27.22), <.01 | 228.54(30.50), <.01 | 224.60(5.81) |
| b | Var (Slope) | 0.32(0.12), <.01 | 0.31(0.11), .01 | 0.27(0.11), .01 | 0.25(0.13), .05 | 0.29(0.03) |
| b | Var (Residual) | 111.12(5.53), <.01 | 111.15(5.56), <.01 | 111.72(5.72), <.01 | 109.69(6.04), <.01 | 110.92(0.87) |
| b | Covar (Level, Slope) | 0.05(1.40), .97 | -0.28(1.34), .84 | -0.82(1.35), .54 | -0.83(1.49), .58 | -0.47(0.43) |
| ab | Covar (Levels) | 2.26(0.63), <.01 | 1.99(0.62), <.01 | 1.83(0.62), <.01 | 1.50(0.69), .03 | 1.90(0.31) |
| ab | Covar (Slopes) | 0.00(0.00), .56 | 0.00(0.00), .64 | 0.00(0.00), .48 | 0.00(0.00), .73 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.05(0.13), .68 | 0.08(0.13), .54 | 0.09(0.13), .50 | 0.06(0.15), .70 | 0.07(0.02) |
|  | Correlation of Levels | 0.256 | 0.231 | 0.229 | 0.191 | 0.23(0.03) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | 0.016 | 0.024 | 0.027 | 0.018 | 0.02(0.00) |
|  | N | 347 | 341 | 337 | 299 | 331.00(21.73) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 25 | 27 | 29 | 41 | 30.50(7.19) |
|  | LL | -7,057 | -6,466 | -5,287 | -4,581 | -5,848(1,120) |
|  | AIC | 14,165 | 12,986 | 10,631 | 9,244 | 11,757(2,228) |
|  | BIC | 14,261 | 13,090 | 10,742 | 9,396 | 11,872(2,206) |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | mean(sd) |
| a | Level | 2.52(0.05), <.01 | 2.48(0.05), <.01 | 2.43(0.05), <.01 | 2.48(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.03), .01 | 0.04(0.03), .26 | 0.06(0.03) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(NA) |
| a | Level \* smoking | --- | --- | --- | --,p= ---- |
| a | Level \* cardio | --- | --- | --- | --,p= ---- |
| a | Level \* diabetes | --- | --- | --- | --,p= ---- |
| a | Slope \* age | 0.00(0.00), .33 | 0.00(0.00), .48 | 0.00(0.00), .33 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .87 | 0.00(0.00), .84 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .14 | 0.00(NA) |
| a | Slope \* smoking | --- | --- | --- | --,p= ---- |
| a | Slope \* cardio | --- | --- | --- | --,p= ---- |
| a | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| b | Level | 34.49(0.84), <.01 | 32.27(0.89), <.01 | 31.95(0.87), <.01 | 32.91(1.38) |
| b | Slope | -0.96(0.07), <.01 | -0.98(0.07), <.01 | -0.98(0.07), <.01 | -0.97(0.01) |
| b | Level \* age | -0.86(0.07), <.01 | -0.80(0.07), <.01 | -0.75(0.07), <.01 | -0.80(0.05) |
| b | Level \* education | --- | 3.84(0.59), <.01 | 3.57(0.62), <.01 | 3.70(0.19) |
| b | Level \* height | --- | --- | 0.23(0.10), .02 | 0.23(NA) |
| b | Level \* smoking | --- | --- | --- | --,p= ---- |
| b | Level \* cardio | --- | --- | --- | --,p= ---- |
| b | Level \* diabetes | --- | --- | --- | --,p= ---- |
| b | Slope \* age | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00), <.01 | -0.03(0.00) |
| b | Slope \* education | --- | 0.06(0.03), .04 | 0.05(0.03), .10 | 0.06(0.01) |
| b | Slope \* height | --- | --- | 0.00(0.01), .39 | 0.00(NA) |
| b | Slope \* smoking | --- | --- | --- | --,p= ---- |
| b | Slope \* cardio | --- | --- | --- | --,p= ---- |
| b | Slope \* diabetes | --- | --- | --- | --,p= ---- |
| a | Var (Level) | 0.34(0.03), <.01 | 0.34(0.03), <.01 | 0.29(0.03), <.01 | 0.32(0.03) |
| a | Var (Slope) | 0.00(0.00), .01 | 0.00(0.00), .01 | 0.00(0.00), .01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.01), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .73 | 0.00(0.00), .79 | 0.00(0.00), .62 | 0.00(0.00) |
| b | Var (Level) | 92.30(8.33), <.01 | 78.40(7.84), <.01 | 76.21(7.52), <.01 | 82.30(8.73) |
| b | Var (Slope) | 0.08(0.02), <.01 | 0.08(0.02), <.01 | 0.08(0.02), <.01 | 0.08(0.00) |
| b | Var (Residual) | 24.00(1.69), <.01 | 24.14(1.71), <.01 | 24.25(1.73), <.01 | 24.13(0.12) |
| b | Covar (Level, Slope) | -0.57(0.38), .13 | -0.83(0.35), .02 | -0.88(0.36), .01 | -0.76(0.17) |
| ab | Covar (Levels) | 1.59(0.37), <.01 | 1.34(0.35), <.01 | 1.05(0.32), <.01 | 1.33(0.27) |
| ab | Covar (Slopes) | 0.00(0.00), .18 | 0.00(0.00), .17 | 0.00(0.00), .15 | 0.00(0.00) |
| ab | Covar (Residuals) | -0.04(0.06), .53 | -0.03(0.06), .61 | -0.03(0.06), .59 | -0.03(0.00) |
|  | Correlation of Levels | 0.286 | 0.26 | 0.222 | 0.26(0.03) |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf(NaN) |
|  | Correlation of Residuals | -0.025 | -0.02 | -0.021 | -0.02(0.00) |
|  | N | 347 | 341 | 338 | 342.00(4.58) |
|  | occasions | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 25.00(4.00) |
|  | LL | -4,866 | -4,758 | -4,698 | -4,774( 85) |
|  | AIC | 9,774 | 9,567 | 9,453 | 9,598(163) |
|  | BIC | 9,855 | 9,662 | 9,564 | 9,694(148) |

## synonyms

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus | mean(sd) |
| a | Level | 2.52(0.05), <.01 | 2.48(0.06), <.01 | 2.43(0.06), <.01 | 2.55(0.07), <.01 | 2.50(0.05) |
| a | Slope | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.00), <.01 | -0.05(0.01), <.01 | -0.04(0.00) |
| a | Level \* age | -0.05(0.00), <.01 | -0.05(0.00), <.01 | -0.04(0.00), <.01 | -0.04(0.01), <.01 | -0.04(0.00) |
| a | Level \* education | --- | 0.08(0.04), .06 | 0.04(0.04), .37 | 0.04(0.04), .36 | 0.05(0.02) |
| a | Level \* height | --- | --- | 0.04(0.01), <.01 | 0.04(0.01), <.01 | 0.04(0.00) |
| a | Level \* smoking | --- | --- | --- | -0.11(0.08), .17 | -0.11(NA) |
| a | Level \* cardio | --- | --- | --- | -0.27(0.13), .03 | -0.27(NA) |
| a | Level \* diabetes | --- | --- | --- | -0.47(0.24), .06 | -0.47(NA) |
| a | Slope \* age | 0.00(0.00), .44 | 0.00(0.00), .55 | 0.00(0.00), .40 | 0.00(0.00), .42 | 0.00(0.00) |
| a | Slope \* education | --- | 0.00(0.00), .97 | 0.00(0.00), .93 | 0.00(0.00), .93 | 0.00(0.00) |
| a | Slope \* height | --- | --- | 0.00(0.00), .22 | 0.00(0.00), .71 | 0.00(0.00) |
| a | Slope \* smoking | --- | --- | --- | 0.00(0.01), .97 | 0.00(NA) |
| a | Slope \* cardio | --- | --- | --- | 0.00(0.01), .53 | 0.00(NA) |
| a | Slope \* diabetes | --- | --- | --- | 0.02(0.04), .67 | 0.02(NA) |
| b | Level | 17.77(0.38), <.01 | 16.25(0.40), <.01 | 16.03(0.40), <.01 | 15.90(0.56), <.01 | 16.49(0.87) |
| b | Slope | -0.11(0.02), <.01 | -0.09(0.02), <.01 | -0.09(0.02), <.01 | -0.08(0.04), .04 | -0.09(0.01) |
| b | Level \* age | -0.20(0.04), <.01 | -0.16(0.04), <.01 | -0.13(0.04), <.01 | -0.10(0.04), .02 | -0.15(0.04) |
| b | Level \* education | --- | 2.59(0.31), <.01 | 2.39(0.31), <.01 | 2.36(0.36), <.01 | 2.44(0.12) |
| b | Level \* height | --- | --- | 0.16(0.05), <.01 | 0.15(0.06), .01 | 0.15(0.00) |
| b | Level \* smoking | --- | --- | --- | 1.21(0.62), .05 | 1.21(NA) |
| b | Level \* cardio | --- | --- | --- | -2.06(0.91), .02 | -2.06(NA) |
| b | Level \* diabetes | --- | --- | --- | -0.90(2.52), .72 | -0.90(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), .06 | -0.03(0.01), .03 | -0.03(0.00) |
| b | Slope \* height | --- | --- | -0.00(0.00), .62 | -0.00(0.00), .78 | -0.00(0.00) |
| b | Slope \* smoking | --- | --- | --- | -0.02(0.03), .59 | -0.02(NA) |
| b | Slope \* cardio | --- | --- | --- | 0.04(0.05), .45 | 0.04(NA) |
| b | Slope \* diabetes | --- | --- | --- | 0.10(0.41), .81 | 0.10(NA) |
| a | Var (Level) | 0.34(0.04), <.01 | 0.34(0.04), <.01 | 0.29(0.03), <.01 | 0.27(0.03), <.01 | 0.31(0.03) |
| a | Var (Slope) | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), <.01 | 0.00(0.00), .01 | 0.00(0.00) |
| a | Var (Residual) | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00), <.01 | 0.09(0.00) |
| a | Covar (Level, Slope) | 0.00(0.00), .83 | 0.00(0.00), .86 | 0.00(0.00), .73 | 0.00(0.00), .44 | 0.00(0.00) |
| b | Var (Level) | 28.73(2.98), <.01 | 22.56(2.39), <.01 | 21.83(2.34), <.01 | 20.51(2.53), <.01 | 23.41(3.65) |
| b | Var (Slope) | 0.01(0.00), .05 | 0.01(0.00), .06 | 0.01(0.00), .07 | 0.01(0.00), .10 | 0.01(0.00) |
| b | Var (Residual) | 3.92(0.21), <.01 | 3.88(0.21), <.01 | 3.88(0.22), <.01 | 4.01(0.25), <.01 | 3.92(0.06) |
| b | Covar (Level, Slope) | -0.09(0.08), .29 | -0.04(0.07), .58 | -0.04(0.07), .62 | -0.06(0.08), .47 | -0.06(0.02) |
| ab | Covar (Levels) | 0.64(0.22), <.01 | 0.46(0.20), .02 | 0.27(0.20), .18 | 0.30(0.20), .14 | 0.42(0.17) |
| ab | Covar (Slopes) | 0.00(0.00), .48 | 0.00(0.00), .63 | 0.00(0.00), .66 | 0.00(0.00), .79 | 0.00(0.00) |
| ab | Covar (Residuals) | 0.02(0.02), .52 | 0.02(0.02), .48 | 0.02(0.02), .45 | 0.02(0.03), .38 | 0.02(0.00) |
|  | Correlation of Levels | 0.206 | 0.17 | 0.105 | 0.13 | 0.15(0.04) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | --,p= ---- |
|  | Correlation of Residuals | 0.027 | 0.03 | 0.032 | 0.04 | 0.03(0.01) |
|  | N | 347 | 341 | 338 | 300 | 331.50(21.33) |
|  | occasions | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 21 | 25 | 29 | 41 | 29.00(8.64) |
|  | LL | -3,889 | -3,789 | -3,736 | -3,247 | -3,665(286) |
|  | AIC | 7,820 | 7,628 | 7,529 | 6,576 | 7,388(555) |
|  | BIC | 7,901 | 7,724 | 7,640 | 6,728 | 7,498(525) |

## Summary

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | . | 0.22 | 0.17 | 0.11 | 0.11 |
| Correlation of Levels | block | . | 0.29 | 0.26 | 0.24 | . |
| Correlation of Levels | digit\_b | . | 0.30 | 0.27 | 0.21 | 0.22 |
| Correlation of Levels | digit\_f | . | 0.25 | 0.22 | 0.14 | 0.15 |
| Correlation of Levels | fig\_id | . | 0.28 | 0.25 | 0.21 | . |
| Correlation of Levels | fig\_mem | . | 0.20 | 0.18 | 0.18 | 0.23 |
| Correlation of Levels | information | . | 0.18 | 0.15 | 0.11 | 0.11 |
| Correlation of Levels | mmse | . | 0.24 | 0.22 | 0.16 | 0.16 |
| Correlation of Levels | rotate | . | 0.26 | 0.23 | 0.23 | 0.19 |
| Correlation of Levels | symbol | . | 0.29 | 0.26 | 0.22 | . |
| Correlation of Levels | synonyms | . | 0.21 | 0.17 | 0.11 | 0.13 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | block | . | Inf | Inf | Inf | . |
| Correlation of Slopes | digit\_b | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | digit\_f | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | fig\_id | . | Inf | Inf | Inf | . |
| Correlation of Slopes | fig\_mem | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | information | . | NaN | NaN | NaN | NaN |
| Correlation of Slopes | mmse | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | rotate | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | symbol | . | Inf | Inf | Inf | . |
| Correlation of Slopes | synonyms | . | NaN | NaN | NaN | NaN |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.07 | 0.07 | 0.08 | 0.07 | 0.06 |
| Correlation of Residuals | block | 0.01 | 0.01 | 0.01 | 0.00 | . |
| Correlation of Residuals | digit\_b | -0.02 | -0.01 | -0.01 | -0.02 | -0.03 |
| Correlation of Residuals | digit\_f | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 |
| Correlation of Residuals | fig\_id | . | -0.05 | -0.05 | -0.04 | . |
| Correlation of Residuals | fig\_mem | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Correlation of Residuals | information | 0.08 | 0.09 | 0.09 | 0.08 | 0.10 |
| Correlation of Residuals | mmse | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 |
| Correlation of Residuals | rotate | 0.01 | 0.02 | 0.02 | 0.03 | 0.02 |
| Correlation of Residuals | symbol | -0.03 | -0.02 | -0.02 | -0.02 | . |
| Correlation of Residuals | synonyms | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 |

#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