HRS : Seed Report

Date: 2016-10-10

Table of Contents

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

# Available models

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

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| pef | serial7 | 6 |
| pef | tics | 6 |
| pef | word\_de | 6 |
| pef | word\_im | 6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| hrs | female | a | pef | serial7 | 1 |
| hrs | female | a | pef | tics | 1 |
| hrs | female | a | pef | word\_de | 1 |
| hrs | female | a | pef | word\_im | 1 |
| hrs | female | aeh | pef | serial7 | 1 |
| hrs | female | aeh | pef | tics | 1 |
| hrs | female | aeh | pef | word\_de | 1 |
| hrs | female | aeh | pef | word\_im | 1 |
| hrs | female | aehplus | pef | serial7 | 1 |
| hrs | female | aehplus | pef | tics | 1 |
| hrs | female | aehplus | pef | word\_de | 1 |
| hrs | female | aehplus | pef | word\_im | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| hrs | male | a | pef | serial7 | 1 |
| hrs | male | a | pef | tics | 1 |
| hrs | male | a | pef | word\_de | 1 |
| hrs | male | a | pef | word\_im | 1 |
| hrs | male | aeh | pef | serial7 | 1 |
| hrs | male | aeh | pef | tics | 1 |
| hrs | male | aeh | pef | word\_de | 1 |
| hrs | male | aeh | pef | word\_im | 1 |
| hrs | male | aehplus | pef | serial7 | 1 |
| hrs | male | aehplus | pef | tics | 1 |
| hrs | male | aehplus | pef | word\_de | 1 |
| hrs | male | aehplus | pef | word\_im | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *pef*; Process (b): *serial7*, *tics*, *word\_de*, *word\_im*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | serial7 | tics | word\_de | word\_im | mean(sd) |
| a | Level | 256.77(6.16), <.01 | 256.95(6.16), <.01 | 256.73(6.16), <.01 | 256.72(6.16), <.01 | 256.79(0.11) |
| a | Slope | -2.16(1.29), .09 | -2.34(1.28), .07 | -2.11(1.28), .10 | -2.10(1.28), .10 | -2.18(0.11) |
| a | Level \* age | -3.83(0.24), <.01 | -3.83(0.24), <.01 | -3.83(0.24), <.01 | -3.83(0.24), <.01 | -3.83(0.00) |
| a | Level \* education | 4.33(0.90), <.01 | 4.29(0.90), <.01 | 4.31(0.90), <.01 | 4.31(0.90), <.01 | 4.31(0.02) |
| a | Level \* height | 100.45(45.73), .03 | 100.89(45.82), .03 | 100.60(45.85), .03 | 100.21(45.89), .03 | 100.53(0.28) |
| a | Level \* smoking | -47.01(8.79), <.01 | -47.12(8.79), <.01 | -47.13(8.79), <.01 | -47.13(8.79), <.01 | -47.10(0.06) |
| a | Level \* cardio | -9.63(6.63), .15 | -9.68(6.63), .14 | -9.65(6.64), .15 | -9.68(6.64), .14 | -9.66(0.02) |
| a | Level \* diabetes | 7.60(7.00), .28 | 7.46(7.00), .29 | 7.59(7.01), .28 | 7.65(7.00), .28 | 7.58(0.08) |
| a | Slope \* age | -0.26(0.04), <.01 | -0.26(0.05), <.01 | -0.25(0.04), <.01 | -0.26(0.04), <.01 | -0.26(0.00) |
| a | Slope \* education | -0.09(0.19), .64 | -0.05(0.19), .80 | -0.06(0.19), .74 | -0.07(0.19), .72 | -0.07(0.02) |
| a | Slope \* height | 5.27(7.13), .46 | 4.72(7.13), .51 | 4.92(7.15), .49 | 4.99(7.20), .49 | 4.97(0.23) |
| a | Slope \* smoking | 0.56(1.68), .74 | 0.70(1.68), .68 | 0.72(1.68), .67 | 0.67(1.69), .69 | 0.66(0.07) |
| a | Slope \* cardio | -0.63(1.27), .62 | -0.58(1.26), .65 | -0.60(1.26), .64 | -0.57(1.26), .65 | -0.60(0.03) |
| a | Slope \* diabetes | -1.40(1.27), .27 | -1.25(1.26), .32 | -1.38(1.27), .28 | -1.44(1.27), .26 | -1.37(0.08) |
| b | Level | 2.22(0.15), <.01 | 8.08(0.25), <.01 | 3.58(0.14), <.01 | 4.75(0.11), <.01 | --- |
| b | Slope | -0.08(0.02), <.01 | -0.12(0.04), .01 | -0.04(0.02), .09 | -0.08(0.02), <.01 | --- |
| b | Level \* age | -0.00(0.00), .58 | 0.04(0.01), <.01 | -0.07(0.00), <.01 | -0.05(0.00), <.01 | --- |
| b | Level \* education | 0.23(0.02), <.01 | 0.15(0.03), <.01 | 0.16(0.02), <.01 | 0.15(0.02), <.01 | --- |
| b | Level \* height | 0.93(0.90), .30 | 0.85(1.12), .45 | 0.63(0.86), .46 | 0.63(0.69), .36 | --- |
| b | Level \* smoking | 0.23(0.18), .20 | 0.82(0.32), .01 | 0.19(0.18), .29 | 0.01(0.14), .92 | --- |
| b | Level \* cardio | -0.21(0.15), .15 | -0.28(0.19), .14 | -0.29(0.15), .06 | -0.18(0.12), .12 | --- |
| b | Level \* diabetes | 0.04(0.16), .78 | 0.01(0.19), .97 | -0.29(0.16), .06 | -0.20(0.12), .11 | --- |
| b | Slope \* age | -0.01(0.00), <.01 | 0.01(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), <.01 | --- |
| b | Slope \* education | -0.01(0.00), <.01 | -0.01(0.01), .05 | -0.01(0.00), .03 | -0.00(0.00), .51 | --- |
| b | Slope \* height | 0.17(0.12), .17 | 0.11(0.25), .67 | 0.07(0.14), .60 | 0.16(0.13), .20 | --- |
| b | Slope \* smoking | -0.09(0.03), <.01 | -0.22(0.07), <.01 | -0.07(0.03), .01 | -0.04(0.02), .10 | --- |
| b | Slope \* cardio | -0.02(0.02), .41 | -0.00(0.04), .96 | -0.00(0.03), .90 | -0.02(0.02), .42 | --- |
| b | Slope \* diabetes | -0.02(0.03), .38 | 0.05(0.04), .19 | -0.02(0.03), .45 | -0.01(0.02), .62 | --- |
| a | Var (Level) | 3544.60(271.42), <.01 | 3541.31(272.12), <.01 | 3546.45(271.98), <.01 | 3542.24(271.79), <.01 | 3543.65(2.32) |
| a | Var (Slope) | 9.95(9.80), .31 | 9.33(9.85), .34 | 9.91(9.86), .32 | 9.36(9.82), .34 | 9.64(0.34) |
| a | Var (Residual) | 1837.96(146.84), <.01 | 1842.73(147.59), <.01 | 1838.54(147.22), <.01 | 1842.30(147.70), <.01 | 1840.38(2.48) |
| a | Covar (Level, Slope) | -15.29(37.85), .69 | -14.06(37.71), .71 | -16.14(37.76), .67 | -14.81(37.67), .69 | -15.07(0.87) |
| b | Var (Level) | 1.58(0.12), <.01 | 1.86(0.76), .01 | 1.38(0.16), <.01 | 0.77(0.10), <.01 | --- |
| b | Var (Slope) | 0.02(0.00), <.01 | 0.10(0.02), <.01 | 0.01(0.00), .08 | 0.00(0.00), .15 | --- |
| b | Var (Residual) | 1.22(0.05), <.01 | 1.85(0.19), <.01 | 1.83(0.08), <.01 | 1.36(0.06), <.01 | --- |
| b | Covar (Level, Slope) | -0.06(0.01), <.01 | -0.07(0.11), .52 | -0.00(0.02), .87 | 0.00(0.01), .76 | --- |
| ab | Covar (Levels) | 8.15(4.18), .05 | 10.30(6.60), .12 | 17.88(4.41), <.01 | 15.65(3.75), <.01 | --- |
| ab | Covar (Slopes) | 0.16(0.11), .17 | 0.33(0.20), .09 | 0.17(0.11), .12 | 0.06(0.10), .57 | --- |
| ab | Covar (Residuals) | -0.44(1.78), .80 | -1.12(2.17), .61 | 0.86(1.90), .65 | 1.76(1.61), .27 | --- |
|  | Correlation of Levels | 0.1089 | 0.127 | 0.255 | 0.299 | 0.20(0.09) |
|  | Correlation of Slopes | 0.3128 | 0.330 | 0.657 | 0.259 | 0.39(0.18) |
|  | Correlation of Residuals | -0.0094 | -0.019 | 0.015 | 0.035 | 0.01(0.02) |
|  | N | 715 | 715 | 715 | 715 | 715.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -17,046 | -15,945 | -16,658 | -16,134 | -1.644561e+04( 501) |
|  | AIC | 34,173 | 31,972 | 33,398 | 32,349 | 3.297321e+04(1,002) |
|  | BIC | 34,361 | 32,159 | 33,586 | 32,537 | 3.316068e+04(1,002) |

## serial7

Gender = *female*; Process (a) = *pef*; Process (b) = *serial7*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 274.85(2.75), <.01 | 248.48(5.60), <.01 | 256.77(6.16), <.01 | 260.03(13.49) |
| a | Slope | -2.67(0.62), <.01 | -2.21(1.33), .10 | -2.16(1.29), .09 | -2.35(0.29) |
| a | Level \* age | -3.82(0.23), <.01 | -3.55(0.23), <.01 | -3.83(0.24), <.01 | -3.73(0.16) |
| a | Level \* education | --- | 4.71(0.90), <.01 | 4.33(0.90), <.01 | 4.52(0.27) |
| a | Level \* height | --- | 93.44(45.99), .04 | 100.45(45.73), .03 | 96.94(4.95) |
| a | Level \* smoking | --- | --- | -47.01(8.79), <.01 | -47.01(NA) |
| a | Level \* cardio | --- | --- | -9.63(6.63), .15 | -9.63(NA) |
| a | Level \* diabetes | --- | --- | 7.60(7.00), .28 | 7.60(NA) |
| a | Slope \* age | -0.25(0.05), <.01 | -0.25(0.06), <.01 | -0.26(0.04), <.01 | -0.25(0.01) |
| a | Slope \* education | --- | -0.09(0.21), .66 | -0.09(0.19), .64 | -0.09(0.00) |
| a | Slope \* height | --- | 5.86(8.19), .47 | 5.27(7.13), .46 | 5.56(0.42) |
| a | Slope \* smoking | --- | --- | 0.56(1.68), .74 | 0.56(NA) |
| a | Slope \* cardio | --- | --- | -0.63(1.27), .62 | -0.63(NA) |
| a | Slope \* diabetes | --- | --- | -1.40(1.27), .27 | -1.40(NA) |
| b | Level | 3.46(0.06), <.01 | 2.25(0.13), <.01 | 2.22(0.15), <.01 | 2.64(0.71) |
| b | Slope | -0.15(0.01), <.01 | -0.11(0.02), <.01 | -0.08(0.02), <.01 | -0.11(0.03) |
| b | Level \* age | -0.02(0.00), <.01 | -0.01(0.00), .10 | -0.00(0.00), .58 | -0.01(0.01) |
| b | Level \* education | --- | 0.22(0.02), <.01 | 0.23(0.02), <.01 | 0.22(0.01) |
| b | Level \* height | --- | 0.88(0.90), .33 | 0.93(0.90), .30 | 0.90(0.04) |
| b | Level \* smoking | --- | --- | 0.23(0.18), .20 | 0.23(NA) |
| b | Level \* cardio | --- | --- | -0.21(0.15), .15 | -0.21(NA) |
| b | Level \* diabetes | --- | --- | 0.04(0.16), .78 | 0.04(NA) |
| 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(0.00), .03 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* height | --- | 0.17(0.12), .17 | 0.17(0.12), .17 | 0.17(0.00) |
| b | Slope \* smoking | --- | --- | -0.09(0.03), <.01 | -0.09(NA) |
| b | Slope \* cardio | --- | --- | -0.02(0.02), .41 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | -0.02(0.03), .38 | -0.02(NA) |
| a | Var (Level) | 5221.29(286.71), <.01 | 4967.41(277.29), <.01 | 3544.60(271.42), <.01 | 4577.76(903.71) |
| a | Var (Slope) | 201.39(29.59), <.01 | 200.95(29.55), <.01 | 9.95(9.80), .31 | 137.43(110.40) |
| a | Var (Residual) | 240.77(19.29), <.01 | 240.55(19.28), <.01 | 1837.96(146.84), <.01 | 773.10(922.20) |
| a | Covar (Level, Slope) | -324.33(55.22), <.01 | -323.22(55.43), <.01 | -15.29(37.85), .69 | -220.95(178.11) |
| b | Var (Level) | 0.19(3.97), .96 | 0.14(3.52), .97 | 1.58(0.12), <.01 | 0.64(0.82) |
| b | Var (Slope) | 0.01(0.26), .98 | 0.01(0.26), .98 | 0.02(0.00), <.01 | 0.01(0.01) |
| b | Var (Residual) | 240.77(19.29), <.01 | 240.55(19.28), <.01 | 1.22(0.05), <.01 | 160.85(138.24) |
| b | Covar (Level, Slope) | -0.02(0.60), .98 | -0.02(0.58), .98 | -0.06(0.01), <.01 | -0.03(0.02) |
| ab | Covar (Levels) | 16.89(308.48), .96 | 7.26(312.34), .98 | 8.15(4.18), .05 | 10.77(5.32) |
| ab | Covar (Slopes) | 0.21(16.54), .99 | 0.20(16.59), .99 | 0.16(0.11), .17 | 0.19(0.03) |
| ab | Covar (Residuals) | 0.29(0.30), .33 | 0.20(0.30), .50 | -0.44(1.78), .80 | 0.02(0.40) |
|  | Correlation of Levels | 0.5419 | 0.27838 | 0.1089 | 0.31(0.22) |
|  | Correlation of Slopes | 0.1919 | 0.18487 | 0.3128 | 0.23(0.07) |
|  | Correlation of Residuals | 0.0012 | 0.00084 | -0.0094 | -0.00(0.01) |
|  | N | 715 | 715 | 715 | 715.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -25,181 | -25,159 | -17,046 | -2.246192e+04(4,691) |
|  | AIC | 50,402 | 50,374 | 34,173 | 4.498317e+04(9,362) |
|  | BIC | 50,493 | 50,502 | 34,361 | 4.511881e+04(9,317) |

## tics

Gender = *female*; Process (a) = *pef*; Process (b) = *tics*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 274.84(2.74), <.01 | 248.54(5.60), <.01 | 256.95(6.16), <.01 | 260.11(13.43) |
| a | Slope | -2.66(0.56), <.01 | -2.28(1.27), .07 | -2.34(1.28), .07 | -2.42(0.20) |
| a | Level \* age | -3.82(0.23), <.01 | -3.55(0.23), <.01 | -3.83(0.24), <.01 | -3.73(0.16) |
| a | Level \* education | --- | 4.69(0.90), <.01 | 4.29(0.90), <.01 | 4.49(0.28) |
| a | Level \* height | --- | 93.47(46.04), .04 | 100.89(45.82), .03 | 97.18(5.25) |
| a | Level \* smoking | --- | --- | -47.12(8.79), <.01 | -47.12(NA) |
| a | Level \* cardio | --- | --- | -9.68(6.63), .14 | -9.68(NA) |
| a | Level \* diabetes | --- | --- | 7.46(7.00), .29 | 7.46(NA) |
| a | Slope \* age | -0.25(0.05), <.01 | -0.25(0.05), <.01 | -0.26(0.05), <.01 | -0.25(0.01) |
| a | Slope \* education | --- | -0.08(0.20), .70 | -0.05(0.19), .80 | -0.06(0.02) |
| a | Slope \* height | --- | 5.83(7.77), .45 | 4.72(7.13), .51 | 5.27(0.79) |
| a | Slope \* smoking | --- | --- | 0.70(1.68), .68 | 0.70(NA) |
| a | Slope \* cardio | --- | --- | -0.58(1.26), .65 | -0.58(NA) |
| a | Slope \* diabetes | --- | --- | -1.25(1.26), .32 | -1.25(NA) |
| b | Level | 9.09(0.12), <.01 | 8.37(0.18), <.01 | 8.08(0.25), <.01 | 8.51(0.52) |
| b | Slope | -0.17(0.08), .03 | -0.14(0.06), .03 | -0.12(0.04), .01 | -0.14(0.02) |
| b | Level \* age | -0.01(0.01), .59 | -0.00(0.01), .85 | 0.04(0.01), <.01 | 0.01(0.03) |
| b | Level \* education | --- | 0.13(0.03), <.01 | 0.15(0.03), <.01 | 0.14(0.01) |
| b | Level \* height | --- | 0.67(1.16), .56 | 0.85(1.12), .45 | 0.76(0.13) |
| b | Level \* smoking | --- | --- | 0.82(0.32), .01 | 0.82(NA) |
| b | Level \* cardio | --- | --- | -0.28(0.19), .14 | -0.28(NA) |
| b | Level \* diabetes | --- | --- | 0.01(0.19), .97 | 0.01(NA) |
| b | Slope \* age | 0.02(0.01), <.01 | 0.02(0.01), .01 | 0.01(0.00), <.01 | 0.02(0.01) |
| b | Slope \* education | --- | -0.01(0.01), .45 | -0.01(0.01), .05 | -0.01(0.00) |
| b | Slope \* height | --- | 0.08(0.47), .86 | 0.11(0.25), .67 | 0.10(0.02) |
| b | Slope \* smoking | --- | --- | -0.22(0.07), <.01 | -0.22(NA) |
| b | Slope \* cardio | --- | --- | -0.00(0.04), .96 | -0.00(NA) |
| b | Slope \* diabetes | --- | --- | 0.05(0.04), .19 | 0.05(NA) |
| a | Var (Level) | 5134.44(285.07), <.01 | 4880.96(275.29), <.01 | 3541.31(272.12), <.01 | 4518.90(856.06) |
| a | Var (Slope) | 159.56(23.68), <.01 | 158.85(23.56), <.01 | 9.33(9.85), .34 | 109.25(86.53) |
| a | Var (Residual) | 333.55(26.22), <.01 | 333.65(26.25), <.01 | 1842.73(147.59), <.01 | 836.64(871.30) |
| a | Covar (Level, Slope) | -283.47(49.35), <.01 | -282.61(49.73), <.01 | -14.06(37.71), .71 | -193.38(155.30) |
| b | Var (Level) | 0.31(4.53), .95 | 0.27(4.55), .95 | 1.86(0.76), .01 | 0.81(0.91) |
| b | Var (Slope) | 0.01(0.34), .97 | 0.01(0.34), .97 | 0.10(0.02), <.01 | 0.04(0.05) |
| b | Var (Residual) | 333.55(26.22), <.01 | 333.65(26.25), <.01 | 1.85(0.19), <.01 | 223.02(191.54) |
| b | Covar (Level, Slope) | -0.05(0.69), .94 | -0.04(0.68), .95 | -0.07(0.11), .52 | -0.06(0.01) |
| ab | Covar (Levels) | 17.86(5.01), <.01 | 12.05(5.03), .02 | 10.30(6.60), .12 | 13.40(3.96) |
| ab | Covar (Slopes) | 0.42(2.28), .85 | 0.39(2.30), .87 | 0.33(0.20), .09 | 0.38(0.05) |
| ab | Covar (Residuals) | 0.99(1.57), .53 | 0.82(1.94), .67 | -1.12(2.17), .61 | 0.23(1.17) |
|  | Correlation of Levels | 0.448 | 0.3295 | 0.127 | 0.30(0.16) |
|  | Correlation of Slopes | 0.304 | 0.2796 | 0.330 | 0.30(0.03) |
|  | Correlation of Residuals | 0.003 | 0.0025 | -0.019 | -0.00(0.01) |
|  | N | 715 | 715 | 715 | 715.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -21,271 | -21,251 | -15,945 | -1.948884e+04(3,069) |
|  | AIC | 42,582 | 42,557 | 31,972 | 3.903700e+04(6,118) |
|  | BIC | 42,673 | 42,685 | 32,159 | 3.917265e+04(6,074) |

## word\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 274.85(2.76), <.01 | 248.50(5.61), <.01 | 256.73(6.16), <.01 | 260.03(13.48) |
| a | Slope | -2.67(0.59), <.01 | -2.23(1.30), .09 | -2.11(1.28), .10 | -2.34(0.29) |
| a | Level \* age | -3.82(0.23), <.01 | -3.55(0.23), <.01 | -3.83(0.24), <.01 | -3.73(0.16) |
| a | Level \* education | --- | 4.70(0.90), <.01 | 4.31(0.90), <.01 | 4.50(0.28) |
| a | Level \* height | --- | 93.45(46.01), .04 | 100.60(45.85), .03 | 97.02(5.05) |
| a | Level \* smoking | --- | --- | -47.13(8.79), <.01 | -47.13(NA) |
| a | Level \* cardio | --- | --- | -9.65(6.64), .15 | -9.65(NA) |
| a | Level \* diabetes | --- | --- | 7.59(7.01), .28 | 7.59(NA) |
| a | Slope \* age | -0.25(0.05), <.01 | -0.25(0.05), <.01 | -0.25(0.04), <.01 | -0.25(0.00) |
| a | Slope \* education | --- | -0.09(0.21), .67 | -0.06(0.19), .74 | -0.08(0.02) |
| a | Slope \* height | --- | 5.85(8.04), .47 | 4.92(7.15), .49 | 5.38(0.66) |
| a | Slope \* smoking | --- | --- | 0.72(1.68), .67 | 0.72(NA) |
| a | Slope \* cardio | --- | --- | -0.60(1.26), .64 | -0.60(NA) |
| a | Slope \* diabetes | --- | --- | -1.38(1.27), .28 | -1.38(NA) |
| b | Level | 4.38(0.81), <.01 | 3.46(0.12), <.01 | 3.58(0.14), <.01 | 3.81(0.50) |
| b | Slope | -0.08(0.54), .89 | -0.05(0.11), .63 | -0.04(0.02), .09 | -0.06(0.02) |
| b | Level \* age | -0.08(0.07), .26 | -0.07(0.01), <.01 | -0.07(0.00), <.01 | -0.07(0.01) |
| b | Level \* education | --- | 0.17(0.03), <.01 | 0.16(0.02), <.01 | 0.17(0.00) |
| b | Level \* height | --- | 0.75(1.10), .49 | 0.63(0.86), .46 | 0.69(0.08) |
| b | Level \* smoking | --- | --- | 0.19(0.18), .29 | 0.19(NA) |
| b | Level \* cardio | --- | --- | -0.29(0.15), .06 | -0.29(NA) |
| b | Level \* diabetes | --- | --- | -0.29(0.16), .06 | -0.29(NA) |
| b | Slope \* age | -0.00(0.04), .93 | -0.00(0.01), .75 | -0.00(0.00), <.01 | -0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.01), .69 | -0.01(0.00), .03 | -0.01(0.00) |
| b | Slope \* height | --- | 0.05(0.80), .95 | 0.07(0.14), .60 | 0.06(0.01) |
| b | Slope \* smoking | --- | --- | -0.07(0.03), .01 | -0.07(NA) |
| b | Slope \* cardio | --- | --- | -0.00(0.03), .90 | -0.00(NA) |
| b | Slope \* diabetes | --- | --- | -0.02(0.03), .45 | -0.02(NA) |
| a | Var (Level) | 5191.40(288.09), <.01 | 4937.58(276.53), <.01 | 3546.45(271.98), <.01 | 4558.48(885.58) |
| a | Var (Slope) | 186.07(27.73), <.01 | 185.49(27.68), <.01 | 9.91(9.86), .32 | 127.16(101.54) |
| a | Var (Residual) | 271.83(21.60), <.01 | 271.79(21.60), <.01 | 1838.54(147.22), <.01 | 794.05(904.55) |
| a | Covar (Level, Slope) | -309.62(53.25), <.01 | -308.55(53.51), <.01 | -16.14(37.76), .67 | -211.44(169.13) |
| b | Var (Level) | 0.28(19.48), .99 | 0.22(4.33), .96 | 1.38(0.16), <.01 | 0.63(0.65) |
| b | Var (Slope) | 0.01(0.30), .98 | 0.01(0.29), .98 | 0.01(0.00), .08 | 0.01(0.00) |
| b | Var (Residual) | 271.83(21.60), <.01 | 271.79(21.60), <.01 | 1.83(0.08), <.01 | 181.82(155.88) |
| b | Covar (Level, Slope) | -0.02(3.14), .99 | -0.02(0.70), .97 | -0.00(0.02), .87 | -0.02(0.01) |
| ab | Covar (Levels) | 23.85(2160.11), .99 | 16.56(34.73), .63 | 17.88(4.41), <.01 | 19.43(3.89) |
| ab | Covar (Slopes) | 0.23(37.51), .99 | 0.20(12.73), .99 | 0.17(0.11), .12 | 0.20(0.03) |
| ab | Covar (Residuals) | 0.62(0.45), .16 | 0.53(0.44), .22 | 0.86(1.90), .65 | 0.67(0.17) |
|  | Correlation of Levels | 0.6234 | 0.501 | 0.255 | 0.46(0.19) |
|  | Correlation of Slopes | 0.1989 | 0.176 | 0.657 | 0.34(0.27) |
|  | Correlation of Residuals | 0.0023 | 0.002 | 0.015 | 0.01(0.01) |
|  | N | 715 | 715 | 715 | 715.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -23,567 | -23,546 | -16,658 | -2.125693e+04(3,983) |
|  | AIC | 47,173 | 47,148 | 33,398 | 4.257319e+04(7,946) |
|  | BIC | 47,265 | 47,276 | 33,586 | 4.270883e+04(7,901) |

## word\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 274.85(2.78), <.01 | 248.50(5.61), <.01 | 256.72(6.16), <.01 | 260.02(13.48) |
| a | Slope | -2.67(0.59), <.01 | -2.23(1.30), .09 | -2.10(1.28), .10 | -2.33(0.30) |
| a | Level \* age | -3.82(0.23), <.01 | -3.55(0.23), <.01 | -3.83(0.24), <.01 | -3.73(0.16) |
| a | Level \* education | --- | 4.70(0.90), <.01 | 4.31(0.90), <.01 | 4.51(0.27) |
| a | Level \* height | --- | 93.45(46.01), .04 | 100.21(45.89), .03 | 96.83(4.78) |
| a | Level \* smoking | --- | --- | -47.13(8.79), <.01 | -47.13(NA) |
| a | Level \* cardio | --- | --- | -9.68(6.64), .14 | -9.68(NA) |
| a | Level \* diabetes | --- | --- | 7.65(7.00), .28 | 7.65(NA) |
| a | Slope \* age | -0.25(0.05), <.01 | -0.25(0.05), <.01 | -0.26(0.04), <.01 | -0.25(0.00) |
| a | Slope \* education | --- | -0.09(0.21), .67 | -0.07(0.19), .72 | -0.08(0.01) |
| a | Slope \* height | --- | 5.85(8.04), .47 | 4.99(7.20), .49 | 5.42(0.61) |
| a | Slope \* smoking | --- | --- | 0.67(1.69), .69 | 0.67(NA) |
| a | Slope \* cardio | --- | --- | -0.57(1.26), .65 | -0.57(NA) |
| a | Slope \* diabetes | --- | --- | -1.44(1.27), .26 | -1.44(NA) |
| b | Level | 5.51(0.61), <.01 | 4.65(0.10), <.01 | 4.75(0.11), <.01 | 4.97(0.47) |
| b | Slope | -0.09(0.63), .89 | -0.09(0.26), .74 | -0.08(0.02), <.01 | -0.08(0.00) |
| b | Level \* age | -0.06(0.05), .27 | -0.05(0.03), .06 | -0.05(0.00), <.01 | -0.05(0.00) |
| b | Level \* education | --- | 0.15(0.06), .01 | 0.15(0.02), <.01 | 0.15(0.00) |
| b | Level \* height | --- | 0.72(1.67), .67 | 0.63(0.69), .36 | 0.68(0.06) |
| b | Level \* smoking | --- | --- | 0.01(0.14), .92 | 0.01(NA) |
| b | Level \* cardio | --- | --- | -0.18(0.12), .12 | -0.18(NA) |
| b | Level \* diabetes | --- | --- | -0.20(0.12), .11 | -0.20(NA) |
| b | Slope \* age | -0.00(0.05), .93 | -0.00(0.03), .89 | -0.00(0.00), <.01 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.02), .99 | -0.00(0.00), .51 | -0.00(0.00) |
| b | Slope \* height | --- | 0.16(1.92), .94 | 0.16(0.13), .20 | 0.16(0.00) |
| b | Slope \* smoking | --- | --- | -0.04(0.02), .10 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | -0.02(0.02), .42 | -0.02(NA) |
| b | Slope \* diabetes | --- | --- | -0.01(0.02), .62 | -0.01(NA) |
| a | Var (Level) | 5192.60(285.59), <.01 | 4938.80(275.67), <.01 | 3542.24(271.79), <.01 | 4557.88(888.67) |
| a | Var (Slope) | 186.68(28.17), <.01 | 186.11(28.21), <.01 | 9.36(9.82), .34 | 127.39(102.21) |
| a | Var (Residual) | 270.56(21.52), <.01 | 270.50(21.52), <.01 | 1842.30(147.70), <.01 | 794.45(907.46) |
| a | Covar (Level, Slope) | -310.20(53.40), <.01 | -309.14(53.82), <.01 | -14.81(37.67), .69 | -211.38(170.24) |
| b | Var (Level) | 0.26(6.99), .97 | 0.21(9.07), .98 | 0.77(0.10), <.01 | 0.41(0.31) |
| b | Var (Slope) | 0.01(0.29), .98 | 0.01(0.29), .98 | 0.00(0.00), .15 | 0.01(0.00) |
| b | Var (Residual) | 270.56(21.52), <.01 | 270.50(21.52), <.01 | 1.36(0.06), <.01 | 180.80(155.40) |
| b | Covar (Level, Slope) | -0.03(1.47), .99 | -0.03(0.70), .97 | 0.00(0.01), .76 | -0.02(0.02) |
| ab | Covar (Levels) | 22.67(292.29), .94 | 15.93(870.74), .98 | 15.65(3.75), <.01 | 18.08(3.97) |
| ab | Covar (Slopes) | 0.13(31.45), .99 | 0.10(32.23), .99 | 0.06(0.10), .57 | 0.09(0.04) |
| ab | Covar (Residuals) | 0.64(0.43), .14 | 0.55(0.42), .19 | 1.76(1.61), .27 | 0.98(0.68) |
|  | Correlation of Levels | 0.6133 | 0.496 | 0.299 | 0.47(0.16) |
|  | Correlation of Slopes | 0.1128 | 0.084 | 0.259 | 0.15(0.09) |
|  | Correlation of Residuals | 0.0024 | 0.002 | 0.035 | 0.01(0.02) |
|  | N | 715 | 715 | 715 | 715.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -23,576 | -23,555 | -16,134 | -2.108801e+04(4,291) |
|  | AIC | 47,191 | 47,166 | 32,349 | 4.223535e+04(8,562) |
|  | BIC | 47,283 | 47,294 | 32,537 | 4.237099e+04(8,517) |

## Summary

Study = *HRS*; Gender = *female*; Process (a) = *pef*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Levels | serial7 | 0.54 | 0.28 | 0.11 |
| Correlation of Levels | tics | 0.45 | 0.33 | 0.13 |
| Correlation of Levels | word\_de | 0.62 | 0.50 | 0.26 |
| Correlation of Levels | word\_im | 0.61 | 0.50 | 0.30 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Slopes | serial7 | 0.19 | 0.18 | 0.31 |
| Correlation of Slopes | tics | 0.30 | 0.28 | 0.33 |
| Correlation of Slopes | word\_de | 0.20 | 0.18 | 0.66 |
| Correlation of Slopes | word\_im | 0.11 | 0.08 | 0.26 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Residuals | serial7 | 0.00 | 0.00 | -0.01 |
| Correlation of Residuals | tics | 0.00 | 0.00 | -0.02 |
| Correlation of Residuals | word\_de | 0.00 | 0.00 | 0.01 |
| Correlation of Residuals | word\_im | 0.00 | 0.00 | 0.04 |

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *pef*; Process (b): *serial7*, *tics*, *word\_de*, *word\_im*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| process | label | serial7 | tics | word\_de | word\_im | mean(sd) |
| a | Level | 339.38(14.50), <.01 | 339.43(14.45), <.01 | 339.22(14.45), <.01 | 339.27(14.46), <.01 | 339.33(0.10) |
| a | Slope | -6.00(2.75), .03 | -5.94(2.66), .03 | -5.64(2.64), .03 | -5.61(2.65), .04 | -5.80(0.20) |
| a | Level \* age | -4.54(0.48), <.01 | -4.54(0.48), <.01 | -4.55(0.48), <.01 | -4.56(0.48), <.01 | -4.54(0.01) |
| a | Level \* education | 7.11(1.41), <.01 | 7.08(1.41), <.01 | 7.09(1.41), <.01 | 7.07(1.41), <.01 | 7.09(0.02) |
| a | Level \* height | 198.79(63.01), <.01 | 198.03(62.97), <.01 | 198.82(63.02), <.01 | 199.03(63.05), <.01 | 198.67(0.44) |
| a | Level \* smoking | -55.99(15.15), <.01 | -56.07(15.16), <.01 | -56.21(15.14), <.01 | -56.38(15.16), <.01 | -56.16(0.17) |
| a | Level \* cardio | 2.06(10.49), .84 | 2.28(10.49), .83 | 2.29(10.49), .83 | 2.38(10.50), .82 | 2.25(0.13) |
| a | Level \* diabetes | -3.47(12.00), .77 | -3.54(12.00), .77 | -3.65(12.00), .76 | -3.63(12.00), .76 | -3.57(0.09) |
| a | Slope \* age | -0.34(0.08), <.01 | -0.33(0.08), <.01 | -0.32(0.08), <.01 | -0.31(0.08), <.01 | -0.33(0.01) |
| a | Slope \* education | -0.02(0.27), .93 | 0.01(0.27), .97 | -0.02(0.27), .95 | -0.00(0.27), .99 | -0.01(0.02) |
| a | Slope \* height | 13.98(9.85), .16 | 14.51(9.81), .14 | 13.75(9.90), .16 | 13.27(9.90), .18 | 13.88(0.51) |
| a | Slope \* smoking | -0.40(2.08), .85 | -0.30(2.10), .89 | -0.15(2.09), .94 | -0.04(2.11), .99 | -0.22(0.16) |
| a | Slope \* cardio | -3.48(1.61), .03 | -3.67(1.60), .02 | -3.69(1.61), .02 | -3.79(1.62), .02 | -3.66(0.13) |
| a | Slope \* diabetes | -1.18(2.10), .57 | -1.18(2.11), .57 | -0.98(2.10), .64 | -1.07(2.11), .61 | -1.10(0.10) |
| b | Level | 3.07(0.22), <.01 | 8.60(0.25), <.01 | 2.94(0.20), <.01 | 4.24(0.16), <.01 | --- |
| b | Slope | -0.18(0.04), <.01 | -0.18(0.05), <.01 | -0.06(0.03), .05 | -0.10(0.03), <.01 | --- |
| b | Level \* age | 0.01(0.01), .12 | 0.02(0.01), .02 | -0.05(0.01), <.01 | -0.05(0.00), <.01 | --- |
| b | Level \* education | 0.16(0.02), <.01 | 0.10(0.02), <.01 | 0.17(0.02), <.01 | 0.14(0.02), <.01 | --- |
| b | Level \* height | 0.68(0.85), .42 | 0.86(0.67), .20 | 1.49(0.79), .06 | 1.35(0.73), .06 | --- |
| b | Level \* smoking | 0.14(0.17), .43 | 0.09(0.21), .67 | -0.21(0.19), .26 | -0.30(0.15), .05 | --- |
| b | Level \* cardio | -0.10(0.14), .45 | 0.06(0.10), .56 | -0.17(0.13), .19 | 0.02(0.12), .84 | --- |
| b | Level \* diabetes | -0.06(0.16), .72 | 0.01(0.11), .93 | -0.34(0.18), .06 | -0.32(0.15), .03 | --- |
| b | Slope \* age | -0.01(0.00), <.01 | 0.02(0.00), <.01 | -0.00(0.00), <.01 | -0.00(0.00), <.01 | --- |
| b | Slope \* education | -0.00(0.00), .11 | -0.01(0.00), .07 | -0.00(0.00), .13 | 0.00(0.00), .69 | --- |
| b | Slope \* height | 0.28(0.16), .09 | 0.18(0.21), .40 | -0.10(0.14), .48 | -0.04(0.14), .74 | --- |
| b | Slope \* smoking | -0.10(0.03), <.01 | -0.28(0.06), <.01 | -0.04(0.03), .12 | 0.00(0.03), .90 | --- |
| b | Slope \* cardio | -0.00(0.03), .86 | 0.00(0.03), .96 | 0.01(0.02), .52 | -0.03(0.02), .13 | --- |
| b | Slope \* diabetes | -0.05(0.03), .11 | -0.05(0.04), .21 | 0.02(0.03), .54 | 0.00(0.03), .99 | --- |
| a | Var (Level) | 9995.32(767.38), <.01 | 9985.40(766.81), <.01 | 9968.96(766.46), <.01 | 9983.60(768.19), <.01 | 9983.32(10.87) |
| a | Var (Slope) | 68.82(24.50), <.01 | 65.87(24.18), .01 | 63.96(23.97), .01 | 65.84(24.36), .01 | 66.12(2.01) |
| a | Var (Residual) | 2941.53(237.04), <.01 | 2948.91(237.45), <.01 | 2961.50(238.77), <.01 | 2952.02(238.15), <.01 | 2950.99(8.27) |
| a | Covar (Level, Slope) | -124.00(100.34), .22 | -119.15(99.17), .23 | -111.59(99.08), .26 | -118.65(100.57), .24 | -118.35(5.11) |
| b | Var (Level) | 1.10(0.14), <.01 | 0.25(0.41), .54 | 0.96(0.14), <.01 | 0.62(0.09), <.01 | --- |
| b | Var (Slope) | 0.04(0.00), <.01 | 0.07(0.01), <.01 | 0.00(0.00), .66 | 0.00(0.00), .54 | --- |
| b | Var (Residual) | 1.18(0.06), <.01 | 1.42(0.18), <.01 | 1.58(0.07), <.01 | 1.30(0.07), <.01 | --- |
| b | Covar (Level, Slope) | -0.03(0.01), .06 | 0.06(0.07), .41 | 0.02(0.02), .27 | 0.01(0.01), .63 | --- |
| ab | Covar (Levels) | 11.16(6.83), .10 | 8.15(6.79), .23 | 9.99(7.04), .16 | 16.41(6.13), .01 | --- |
| ab | Covar (Slopes) | 0.06(0.23), .78 | -0.29(0.29), .32 | 0.08(0.16), .62 | -0.00(0.16), .99 | --- |
| ab | Covar (Residuals) | -2.73(2.91), .35 | 0.44(3.30), .90 | 2.30(2.62), .38 | 4.22(2.37), .07 | --- |
|  | Correlation of Levels | 0.107 | 0.1626 | 0.102 | 0.2086 | 0.14(0.05) |
|  | Correlation of Slopes | 0.040 | -0.1313 | 0.224 | -0.0028 | 0.03(0.15) |
|  | Correlation of Residuals | -0.046 | 0.0067 | 0.034 | 0.0681 | 0.02(0.05) |
|  | N | 535 | 535 | 535 | 535 | 535.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -13,193 | -12,045 | -12,596 | -12,323 | -1.253938e+04(490) |
|  | AIC | 26,467 | 24,172 | 25,275 | 24,729 | 2.516077e+04(980) |
|  | BIC | 26,643 | 24,348 | 25,450 | 24,904 | 2.533634e+04(980) |

## serial7

Gender = *male*; Process (a) = *pef*; Process (b) = *serial7*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 405.24(5.02), <.01 | 320.42(13.75), <.01 | 339.38(14.50), <.01 | 355.02(44.52) |
| a | Slope | -5.67(1.06), <.01 | -6.41(3.13), .04 | -6.00(2.75), .03 | -6.03(0.37) |
| a | Level \* age | -4.30(0.43), <.01 | -3.66(0.43), <.01 | -4.54(0.48), <.01 | -4.17(0.45) |
| a | Level \* education | --- | 7.95(1.46), <.01 | 7.11(1.41), <.01 | 7.53(0.59) |
| a | Level \* height | --- | 231.94(63.09), <.01 | 198.79(63.01), <.01 | 215.36(23.45) |
| a | Level \* smoking | --- | --- | -55.99(15.15), <.01 | -55.99(NA) |
| a | Level \* cardio | --- | --- | 2.06(10.49), .84 | 2.06(NA) |
| a | Level \* diabetes | --- | --- | -3.47(12.00), .77 | -3.47(NA) |
| a | Slope \* age | -0.37(0.09), <.01 | -0.36(0.09), <.01 | -0.34(0.08), <.01 | -0.36(0.02) |
| a | Slope \* education | --- | 0.19(0.39), .62 | -0.02(0.27), .93 | 0.08(0.15) |
| a | Slope \* height | --- | -2.40(12.77), .85 | 13.98(9.85), .16 | 5.79(11.58) |
| a | Slope \* smoking | --- | --- | -0.40(2.08), .85 | -0.40(NA) |
| a | Slope \* cardio | --- | --- | -3.48(1.61), .03 | -3.48(NA) |
| a | Slope \* diabetes | --- | --- | -1.18(2.10), .57 | -1.18(NA) |
| b | Level | 4.08(0.06), <.01 | 3.10(0.21), <.01 | 3.07(0.22), <.01 | 3.42(0.57) |
| b | Slope | -0.19(0.01), <.01 | -0.23(0.03), <.01 | -0.18(0.04), <.01 | -0.20(0.03) |
| b | Level \* age | -0.00(0.01), .56 | 0.00(0.01), .53 | 0.01(0.01), .12 | 0.00(0.01) |
| b | Level \* education | --- | 0.15(0.02), <.01 | 0.16(0.02), <.01 | 0.15(0.01) |
| b | Level \* height | --- | 0.72(0.84), .39 | 0.68(0.85), .42 | 0.70(0.03) |
| b | Level \* smoking | --- | --- | 0.14(0.17), .43 | 0.14(NA) |
| b | Level \* cardio | --- | --- | -0.10(0.14), .45 | -0.10(NA) |
| b | Level \* diabetes | --- | --- | -0.06(0.16), .72 | -0.06(NA) |
| b | Slope \* age | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00), <.01 | -0.01(0.00) |
| b | Slope \* education | --- | -0.00(0.00), .61 | -0.00(0.00), .11 | -0.00(0.00) |
| b | Slope \* height | --- | 0.32(0.16), .05 | 0.28(0.16), .09 | 0.30(0.03) |
| b | Slope \* smoking | --- | --- | -0.10(0.03), <.01 | -0.10(NA) |
| b | Slope \* cardio | --- | --- | -0.00(0.03), .86 | -0.00(NA) |
| b | Slope \* diabetes | --- | --- | -0.05(0.03), .11 | -0.05(NA) |
| a | Var (Level) | 13344.73(887.34), <.01 | 12303.09(801.01), <.01 | 9995.32(767.38), <.01 | 11881.05(1714.12) |
| a | Var (Slope) | 456.67(64.22), <.01 | 455.94(64.12), <.01 | 68.82(24.50), <.01 | 327.14(223.72) |
| a | Var (Residual) | 358.57(28.68), <.01 | 358.47(28.68), <.01 | 2941.53(237.04), <.01 | 1219.53(1491.30) |
| a | Covar (Level, Slope) | -648.61(135.22), <.01 | -662.28(132.67), <.01 | -124.00(100.34), .22 | -478.30(306.91) |
| b | Var (Level) | 0.24(6.18), .97 | 0.19(5.35), .97 | 1.10(0.14), <.01 | 0.51(0.51) |
| b | Var (Slope) | 0.01(0.41), .98 | 0.01(0.41), .98 | 0.04(0.00), <.01 | 0.02(0.02) |
| b | Var (Residual) | 358.57(28.68), <.01 | 358.47(28.68), <.01 | 1.18(0.06), <.01 | 239.41(206.31) |
| b | Covar (Level, Slope) | -0.02(0.85), .98 | -0.02(0.86), .98 | -0.03(0.01), .06 | -0.02(0.01) |
| ab | Covar (Levels) | 24.34(882.90), .98 | 10.39(897.18), .99 | 11.16(6.83), .10 | 15.30(7.84) |
| ab | Covar (Slopes) | 0.39(46.01), .99 | 0.39(46.51), .99 | 0.06(0.23), .78 | 0.28(0.19) |
| ab | Covar (Residuals) | -0.29(0.36), .42 | -0.37(0.36), .31 | -2.73(2.91), .35 | -1.13(1.39) |
|  | Correlation of Levels | 0.43013 | 0.213 | 0.107 | 0.25(0.16) |
|  | Correlation of Slopes | 0.19188 | 0.192 | 0.040 | 0.14(0.09) |
|  | Correlation of Residuals | -0.00082 | -0.001 | -0.046 | -0.02(0.03) |
|  | N | 535 | 535 | 535 | 535.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -19,858 | -19,833 | -13,193 | -1.762761e+04(3,841) |
|  | AIC | 39,755 | 39,721 | 26,467 | 3.531455e+04(7,662) |
|  | BIC | 39,841 | 39,841 | 26,643 | 3.544159e+04(7,620) |

## tics

Gender = *male*; Process (a) = *pef*; Process (b) = *tics*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 405.13(5.00), <.01 | 320.47(13.75), <.01 | 339.43(14.45), <.01 | 355.01(44.43) |
| a | Slope | -5.54(0.98), <.01 | -6.47(2.97), .03 | -5.94(2.66), .03 | -5.98(0.47) |
| a | Level \* age | -4.30(0.43), <.01 | -3.66(0.43), <.01 | -4.54(0.48), <.01 | -4.17(0.45) |
| a | Level \* education | --- | 7.96(1.45), <.01 | 7.08(1.41), <.01 | 7.52(0.63) |
| a | Level \* height | --- | 230.54(63.15), <.01 | 198.03(62.97), <.01 | 214.29(22.99) |
| a | Level \* smoking | --- | --- | -56.07(15.16), <.01 | -56.07(NA) |
| a | Level \* cardio | --- | --- | 2.28(10.49), .83 | 2.28(NA) |
| a | Level \* diabetes | --- | --- | -3.54(12.00), .77 | -3.54(NA) |
| a | Slope \* age | -0.37(0.09), <.01 | -0.36(0.09), <.01 | -0.33(0.08), <.01 | -0.35(0.02) |
| a | Slope \* education | --- | 0.18(0.37), .63 | 0.01(0.27), .97 | 0.09(0.12) |
| a | Slope \* height | --- | -0.64(12.27), .96 | 14.51(9.81), .14 | 6.93(10.71) |
| a | Slope \* smoking | --- | --- | -0.30(2.10), .89 | -0.30(NA) |
| a | Slope \* cardio | --- | --- | -3.67(1.60), .02 | -3.67(NA) |
| a | Slope \* diabetes | --- | --- | -1.18(2.11), .57 | -1.18(NA) |
| b | Level | 9.37(0.09), <.01 | 8.75(0.23), <.01 | 8.60(0.25), <.01 | 8.91(0.41) |
| b | Slope | -0.22(0.07), <.01 | -0.23(0.07), <.01 | -0.18(0.05), <.01 | -0.21(0.03) |
| b | Level \* age | 0.00(0.01), .97 | 0.00(0.01), .77 | 0.02(0.01), .02 | 0.01(0.01) |
| b | Level \* education | --- | 0.09(0.05), .06 | 0.10(0.02), <.01 | 0.09(0.01) |
| b | Level \* height | --- | 0.72(1.37), .60 | 0.86(0.67), .20 | 0.79(0.10) |
| b | Level \* smoking | --- | --- | 0.09(0.21), .67 | 0.09(NA) |
| b | Level \* cardio | --- | --- | 0.06(0.10), .56 | 0.06(NA) |
| b | Level \* diabetes | --- | --- | 0.01(0.11), .93 | 0.01(NA) |
| b | Slope \* age | 0.03(0.00), <.01 | 0.03(0.01), <.01 | 0.02(0.00), <.01 | 0.02(0.01) |
| b | Slope \* education | --- | -0.00(0.02), .83 | -0.01(0.00), .07 | -0.01(0.00) |
| b | Slope \* height | --- | 0.26(0.28), .36 | 0.18(0.21), .40 | 0.22(0.06) |
| b | Slope \* smoking | --- | --- | -0.28(0.06), <.01 | -0.28(NA) |
| b | Slope \* cardio | --- | --- | 0.00(0.03), .96 | 0.00(NA) |
| b | Slope \* diabetes | --- | --- | -0.05(0.04), .21 | -0.05(NA) |
| a | Var (Level) | 13221.81(885.56), <.01 | 12181.50(800.16), <.01 | 9985.40(766.81), <.01 | 11796.23(1652.24) |
| a | Var (Slope) | 394.15(58.31), <.01 | 393.12(58.36), <.01 | 65.87(24.18), .01 | 284.38(189.24) |
| a | Var (Residual) | 484.22(38.08), <.01 | 484.35(38.13), <.01 | 2948.91(237.45), <.01 | 1305.83(1422.95) |
| a | Covar (Level, Slope) | -587.63(128.89), <.01 | -602.07(126.56), <.01 | -119.15(99.17), .23 | -436.28(274.74) |
| b | Var (Level) | 0.32(7.12), .96 | 0.30(7.15), .97 | 0.25(0.41), .54 | 0.29(0.04) |
| b | Var (Slope) | 0.01(0.51), .98 | 0.01(0.51), .98 | 0.07(0.01), <.01 | 0.03(0.03) |
| b | Var (Residual) | 484.22(38.08), <.01 | 484.35(38.13), <.01 | 1.42(0.18), <.01 | 323.33(278.78) |
| b | Covar (Level, Slope) | -0.04(1.05), .97 | -0.05(1.06), .96 | 0.06(0.07), .41 | -0.01(0.06) |
| ab | Covar (Levels) | 16.18(10.78), .13 | 7.36(14.16), .60 | 8.15(6.79), .23 | 10.57(4.88) |
| ab | Covar (Slopes) | 0.06(4.11), .99 | 0.01(6.81), .99 | -0.29(0.29), .32 | -0.07(0.19) |
| ab | Covar (Residuals) | 0.40(1.38), .77 | 0.22(1.90), .91 | 0.44(3.30), .90 | 0.35(0.11) |
|  | Correlation of Levels | 0.24687 | 0.12100 | 0.1626 | 0.18(0.06) |
|  | Correlation of Slopes | 0.02767 | 0.00469 | -0.1313 | -0.03(0.09) |
|  | Correlation of Residuals | 0.00082 | 0.00046 | 0.0067 | 0.00(0.00) |
|  | N | 535 | 535 | 535 | 535.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -16,904 | -16,880 | -12,045 | -1.527647e+04(2,798) |
|  | AIC | 33,849 | 33,816 | 24,172 | 3.061227e+04(5,577) |
|  | BIC | 33,934 | 33,936 | 24,348 | 3.073931e+04(5,535) |

## word\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 405.19(5.01), <.01 | 320.44(13.77), <.01 | 339.22(14.45), <.01 | 354.95(44.51) |
| a | Slope | -5.61(1.00), <.01 | -6.43(3.05), .04 | -5.64(2.64), .03 | -5.89(0.47) |
| a | Level \* age | -4.30(0.43), <.01 | -3.66(0.43), <.01 | -4.55(0.48), <.01 | -4.17(0.46) |
| a | Level \* education | --- | 7.95(1.45), <.01 | 7.09(1.41), <.01 | 7.52(0.61) |
| a | Level \* height | --- | 231.32(63.16), <.01 | 198.82(63.02), <.01 | 215.07(22.98) |
| a | Level \* smoking | --- | --- | -56.21(15.14), <.01 | -56.21(NA) |
| a | Level \* cardio | --- | --- | 2.29(10.49), .83 | 2.29(NA) |
| a | Level \* diabetes | --- | --- | -3.65(12.00), .76 | -3.65(NA) |
| a | Slope \* age | -0.37(0.09), <.01 | -0.36(0.09), <.01 | -0.32(0.08), <.01 | -0.35(0.03) |
| a | Slope \* education | --- | 0.19(0.38), .63 | -0.02(0.27), .95 | 0.08(0.14) |
| a | Slope \* height | --- | -1.62(12.54), .90 | 13.75(9.90), .16 | 6.06(10.87) |
| a | Slope \* smoking | --- | --- | -0.15(2.09), .94 | -0.15(NA) |
| a | Slope \* cardio | --- | --- | -3.69(1.61), .02 | -3.69(NA) |
| a | Slope \* diabetes | --- | --- | -0.98(2.10), .64 | -0.98(NA) |
| b | Level | 4.01(0.08), <.01 | 2.79(0.18), <.01 | 2.94(0.20), <.01 | 3.25(0.67) |
| b | Slope | -0.08(0.05), .08 | -0.06(0.04), .20 | -0.06(0.03), .05 | -0.07(0.01) |
| b | Level \* age | -0.06(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.01), <.01 | -0.05(0.00) |
| b | Level \* education | --- | 0.16(0.03), <.01 | 0.17(0.02), <.01 | 0.17(0.00) |
| b | Level \* height | --- | 1.60(0.78), .04 | 1.49(0.79), .06 | 1.54(0.08) |
| b | Level \* smoking | --- | --- | -0.21(0.19), .26 | -0.21(NA) |
| b | Level \* cardio | --- | --- | -0.17(0.13), .19 | -0.17(NA) |
| b | Level \* diabetes | --- | --- | -0.34(0.18), .06 | -0.34(NA) |
| b | Slope \* age | -0.00(0.00), .20 | -0.00(0.01), .63 | -0.00(0.00), <.01 | -0.00(0.00) |
| b | Slope \* education | --- | -0.00(0.02), .96 | -0.00(0.00), .13 | -0.00(0.00) |
| b | Slope \* height | --- | -0.13(0.15), .38 | -0.10(0.14), .48 | -0.12(0.02) |
| b | Slope \* smoking | --- | --- | -0.04(0.03), .12 | -0.04(NA) |
| b | Slope \* cardio | --- | --- | 0.01(0.02), .52 | 0.01(NA) |
| b | Slope \* diabetes | --- | --- | 0.02(0.03), .54 | 0.02(NA) |
| a | Var (Level) | 13288.96(885.52), <.01 | 12248.07(800.66), <.01 | 9968.96(766.46), <.01 | 11835.33(1698.05) |
| a | Var (Slope) | 427.69(61.20), <.01 | 426.89(61.26), <.01 | 63.96(23.97), .01 | 306.18(209.77) |
| a | Var (Residual) | 414.88(32.87), <.01 | 414.77(32.89), <.01 | 2961.50(238.77), <.01 | 1263.72(1470.33) |
| a | Covar (Level, Slope) | -620.48(132.19), <.01 | -634.57(129.75), <.01 | -111.59(99.08), .26 | -455.55(297.95) |
| b | Var (Level) | 0.30(6.88), .96 | 0.24(6.44), .97 | 0.96(0.14), <.01 | 0.50(0.40) |
| b | Var (Slope) | 0.01(0.44), .98 | 0.01(0.45), .98 | 0.00(0.00), .66 | 0.01(0.01) |
| b | Var (Residual) | 414.88(32.87), <.01 | 414.77(32.89), <.01 | 1.58(0.07), <.01 | 277.08(238.58) |
| b | Covar (Level, Slope) | -0.03(0.97), .97 | -0.04(0.96), .97 | 0.02(0.02), .27 | -0.02(0.03) |
| ab | Covar (Levels) | 28.49(563.06), .96 | 11.90(688.37), .99 | 9.99(7.04), .16 | 16.79(10.18) |
| ab | Covar (Slopes) | 0.17(4.69), .97 | 0.10(15.65), .99 | 0.08(0.16), .62 | 0.12(0.05) |
| ab | Covar (Residuals) | 0.42(0.58), .47 | 0.33(0.58), .57 | 2.30(2.62), .38 | 1.02(1.11) |
|  | Correlation of Levels | 0.448 | 0.2190 | 0.102 | 0.26(0.18) |
|  | Correlation of Slopes | 0.077 | 0.0448 | 0.224 | 0.12(0.10) |
|  | Correlation of Residuals | 0.001 | 0.0008 | 0.034 | 0.01(0.02) |
|  | N | 535 | 535 | 535 | 535.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -18,309 | -18,284 | -12,596 | -1.639651e+04(3,291) |
|  | AIC | 36,658 | 36,624 | 25,275 | 3.285235e+04(6,563) |
|  | BIC | 36,744 | 36,744 | 25,450 | 3.297940e+04(6,521) |

## word\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | aeh | aehplus | mean(sd) |
| a | Level | 405.19(5.02), <.01 | 320.44(13.74), <.01 | 339.27(14.46), <.01 | 354.97(44.50) |
| a | Slope | -5.61(1.00), <.01 | -6.43(3.05), .04 | -5.61(2.65), .04 | -5.88(0.48) |
| a | Level \* age | -4.30(0.43), <.01 | -3.66(0.43), <.01 | -4.56(0.48), <.01 | -4.17(0.46) |
| a | Level \* education | --- | 7.95(1.45), <.01 | 7.07(1.41), <.01 | 7.51(0.62) |
| a | Level \* height | --- | 231.34(63.07), <.01 | 199.03(63.05), <.01 | 215.18(22.85) |
| a | Level \* smoking | --- | --- | -56.38(15.16), <.01 | -56.38(NA) |
| a | Level \* cardio | --- | --- | 2.38(10.50), .82 | 2.38(NA) |
| a | Level \* diabetes | --- | --- | -3.63(12.00), .76 | -3.63(NA) |
| a | Slope \* age | -0.37(0.09), <.01 | -0.36(0.09), <.01 | -0.31(0.08), <.01 | -0.35(0.03) |
| a | Slope \* education | --- | 0.19(0.38), .63 | -0.00(0.27), .99 | 0.09(0.13) |
| a | Slope \* height | --- | -1.64(12.54), .90 | 13.27(9.90), .18 | 5.81(10.55) |
| a | Slope \* smoking | --- | --- | -0.04(2.11), .99 | -0.04(NA) |
| a | Slope \* cardio | --- | --- | -3.79(1.62), .02 | -3.79(NA) |
| a | Slope \* diabetes | --- | --- | -1.07(2.11), .61 | -1.07(NA) |
| b | Level | 5.17(0.08), <.01 | 4.13(0.17), <.01 | 4.24(0.16), <.01 | 4.51(0.57) |
| b | Slope | -0.10(0.05), .04 | -0.11(0.05), .03 | -0.10(0.03), <.01 | -0.10(0.00) |
| b | Level \* age | -0.05(0.01), <.01 | -0.04(0.01), <.01 | -0.05(0.00), <.01 | -0.05(0.00) |
| b | Level \* education | --- | 0.14(0.03), <.01 | 0.14(0.02), <.01 | 0.14(0.00) |
| b | Level \* height | --- | 1.50(0.74), .04 | 1.35(0.73), .06 | 1.42(0.11) |
| b | Level \* smoking | --- | --- | -0.30(0.15), .05 | -0.30(NA) |
| b | Level \* cardio | --- | --- | 0.02(0.12), .84 | 0.02(NA) |
| b | Level \* diabetes | --- | --- | -0.32(0.15), .03 | -0.32(NA) |
| b | Slope \* age | -0.00(0.00), .15 | -0.00(0.01), .68 | -0.00(0.00), <.01 | -0.00(0.00) |
| b | Slope \* education | --- | 0.00(0.02), .86 | 0.00(0.00), .69 | 0.00(0.00) |
| b | Slope \* height | --- | -0.07(0.14), .60 | -0.04(0.14), .74 | -0.06(0.02) |
| b | Slope \* smoking | --- | --- | 0.00(0.03), .90 | 0.00(NA) |
| b | Slope \* cardio | --- | --- | -0.03(0.02), .13 | -0.03(NA) |
| b | Slope \* diabetes | --- | --- | 0.00(0.03), .99 | 0.00(NA) |
| a | Var (Level) | 13290.51(884.76), <.01 | 12249.56(799.47), <.01 | 9983.60(768.19), <.01 | 11841.22(1690.85) |
| a | Var (Slope) | 428.49(61.27), <.01 | 427.66(61.32), <.01 | 65.84(24.36), .01 | 307.33(209.14) |
| a | Var (Residual) | 413.34(32.75), <.01 | 413.27(32.77), <.01 | 2952.02(238.15), <.01 | 1259.55(1465.73) |
| a | Covar (Level, Slope) | -621.27(132.28), <.01 | -635.32(129.86), <.01 | -118.65(100.57), .24 | -458.41(294.33) |
| b | Var (Level) | 0.32(7.32), .97 | 0.25(6.88), .97 | 0.62(0.09), <.01 | 0.40(0.20) |
| b | Var (Slope) | 0.01(0.44), .98 | 0.01(0.44), .98 | 0.00(0.00), .54 | 0.01(0.01) |
| b | Var (Residual) | 413.34(32.75), <.01 | 413.27(32.77), <.01 | 1.30(0.07), <.01 | 275.97(237.87) |
| b | Covar (Level, Slope) | -0.03(0.99), .97 | -0.03(1.00), .97 | 0.01(0.01), .63 | -0.02(0.02) |
| ab | Covar (Levels) | 33.01(653.48), .96 | 18.97(839.59), .98 | 16.41(6.13), .01 | 22.80(8.94) |
| ab | Covar (Slopes) | 0.18(4.09), .96 | 0.10(19.00), .99 | -0.00(0.16), .99 | 0.09(0.09) |
| ab | Covar (Residuals) | 1.28(0.48), .01 | 1.18(0.53), .02 | 4.22(2.37), .07 | 2.23(1.73) |
|  | Correlation of Levels | 0.5094 | 0.3407 | 0.2086 | 0.35(0.15) |
|  | Correlation of Slopes | 0.0820 | 0.0461 | -0.0028 | 0.04(0.04) |
|  | Correlation of Residuals | 0.0031 | 0.0029 | 0.0681 | 0.02(0.04) |
|  | N | 535 | 535 | 535 | 535.00(0.00) |
|  | occasions | 5 | 5 | 5 | 5.00(0.00) |
|  | parameters | 20 | 28 | 41 | 29.67(10.60) |
|  | LL | -18,327 | -18,302 | -12,323 | -1.631728e+04(3,459) |
|  | AIC | 36,693 | 36,660 | 24,729 | 3.269390e+04(6,898) |
|  | BIC | 36,779 | 36,780 | 24,904 | 3.282094e+04(6,856) |

## Summary

Study = *HRS*; Gender = *male*; Process (a) = *pef*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Levels | serial7 | 0.43 | 0.21 | 0.11 |
| Correlation of Levels | tics | 0.25 | 0.12 | 0.16 |
| Correlation of Levels | word\_de | 0.45 | 0.22 | 0.10 |
| Correlation of Levels | word\_im | 0.51 | 0.34 | 0.21 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Slopes | serial7 | 0.19 | 0.19 | 0.04 |
| Correlation of Slopes | tics | 0.03 | 0.00 | -0.13 |
| Correlation of Slopes | word\_de | 0.08 | 0.04 | 0.22 |
| Correlation of Slopes | word\_im | 0.08 | 0.05 | -0.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Correlation of Residuals | serial7 | -0.00 | -0.00 | -0.05 |
| Correlation of Residuals | tics | 0.00 | 0.00 | 0.01 |
| Correlation of Residuals | word\_de | 0.00 | 0.00 | 0.03 |
| Correlation of Residuals | word\_im | 0.00 | 0.00 | 0.07 |

#Session Info

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
locale:  
[1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252  
[4] LC\_NUMERIC=C LC\_TIME=English\_United States.1252   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] ggplot2\_2.1.0 knitr\_1.14 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 testit\_0.5 colorspace\_1.2-6 R6\_2.1.3 highr\_0.6   
 [7] plyr\_1.8.4 stringr\_1.1.0 dplyr\_0.5.0 tools\_3.3.1 DT\_0.2 grid\_3.3.1   
[13] gtable\_0.2.0 DBI\_0.5-1 htmltools\_0.3.5 yaml\_2.1.13 lazyeval\_0.2.0 assertthat\_0.1   
[19] digest\_0.6.10 tibble\_1.2 readr\_1.0.0 formatR\_1.4 tidyr\_0.6.0 htmlwidgets\_0.7   
[25] rsconnect\_0.4.3 evaluate\_0.9 rmarkdown\_1.0 stringi\_1.1.1 scales\_0.4.0