HRS : Seed Report

Date: 2016-10-20

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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 |
| a | Level | 274.85 (2.75) <.01 | 248.48 (5.60) <.01 | 256.77 (6.16) <.01 |
| a | Slope | -2.67 (0.62) <.01 | -2.21 (1.33) .10 | -2.16 (1.29) .09 |
| a | Level \* age | -3.82 (0.23) <.01 | -3.55 (0.23) <.01 | -3.83 (0.24) <.01 |
| a | Level \* education | --- | 4.71 (0.90) <.01 | 4.33 (0.90) <.01 |
| a | Level \* height | --- | 93.44 (45.99) .04 | 100.45 (45.73) .03 |
| a | Level \* smoking | --- | --- | -47.01 (8.79) <.01 |
| a | Level \* cardio | --- | --- | -9.63 (6.63) .15 |
| a | Level \* diabetes | --- | --- | 7.60 (7.00) .28 |
| a | Slope \* age | -0.25 (0.05) <.01 | -0.25 (0.06) <.01 | -0.26 (0.04) <.01 |
| a | Slope \* education | --- | -0.09 (0.21) .66 | -0.09 (0.19) .64 |
| a | Slope \* height | --- | 5.86 (8.19) .47 | 5.27 (7.13) .46 |
| a | Slope \* smoking | --- | --- | 0.56 (1.68) .74 |
| a | Slope \* cardio | --- | --- | -0.63 (1.27) .62 |
| a | Slope \* diabetes | --- | --- | -1.40 (1.27) .27 |
| b | Level | 3.46 (0.06) <.01 | 2.25 (0.13) <.01 | 2.22 (0.15) <.01 |
| b | Slope | -0.15 (0.01) <.01 | -0.11 (0.02) <.01 | -0.08 (0.02) <.01 |
| b | Level \* age | -0.02 (0.00) <.01 | -0.01 (0.00) .10 | -0.00 (0.00) .58 |
| b | Level \* education | --- | 0.22 (0.02) <.01 | 0.23 (0.02) <.01 |
| b | Level \* height | --- | 0.88 (0.90) .33 | 0.93 (0.90) .30 |
| b | Level \* smoking | --- | --- | 0.23 (0.18) .20 |
| b | Level \* cardio | --- | --- | -0.21 (0.15) .15 |
| b | Level \* diabetes | --- | --- | 0.04 (0.16) .78 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.01 (0.00) .03 | -0.01 (0.00) <.01 |
| b | Slope \* height | --- | 0.17 (0.12) .17 | 0.17 (0.12) .17 |
| b | Slope \* smoking | --- | --- | -0.09 (0.03) <.01 |
| b | Slope \* cardio | --- | --- | -0.02 (0.02) .41 |
| b | Slope \* diabetes | --- | --- | -0.02 (0.03) .38 |
| a | Var (Level) | 5221.29 (286.71) <.01 | 4967.41 (277.29) <.01 | 3544.60 (271.42) <.01 |
| a | Var (Slope) | 201.39 (29.59) <.01 | 200.95 (29.55) <.01 | 9.95 (9.80) .31 |
| a | Var (Residual) | 240.77 (19.29) <.01 | 240.55 (19.28) <.01 | 1837.96 (146.84) <.01 |
| a | Covar (Level, Slope) | -324.33 (55.22) <.01 | -323.22 (55.43) <.01 | -15.29 (37.85) .69 |
| b | Var (Level) | 0.19 (3.97) .96 | 0.14 (3.52) .97 | 1.58 (0.12) <.01 |
| b | Var (Slope) | 0.01 (0.26) .98 | 0.01 (0.26) .98 | 0.02 (0.00) <.01 |
| b | Var (Residual) | 240.77 (19.29) <.01 | 240.55 (19.28) <.01 | 1.22 (0.05) <.01 |
| b | Covar (Level, Slope) | -0.02 (0.60) .98 | -0.02 (0.58) .98 | -0.06 (0.01) <.01 |
| ab | Covar (Levels) | 16.89 (308.48) .96 | 7.26 (312.34) .98 | 8.15 (4.18) .05 |
| ab | Covar (Slopes) | 0.21 (16.54) .99 | 0.20 (16.59) .99 | 0.16 (0.11) .17 |
| ab | Covar (Residuals) | 0.29 (0.30) .33 | 0.20 (0.30) .50 | -0.44 (1.78) .80 |
|  | Correlation of Levels | 0.5419 | 0.27838 | 0.1089 |
|  | Correlation of Slopes | 0.1919 | 0.18487 | 0.3128 |
|  | Correlation of Residuals | 0.0012 | 0.00084 | -0.0094 |
|  | N | 715 | 715 | 715 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -25,181 | -25,159 | -17,046 |
|  | AIC | 50,402 | 50,374 | 34,173 |
|  | BIC | 50,493 | 50,502 | 34,361 |

## tics

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

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

## word\_de

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

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

## word\_im

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

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

## Summary

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

Computed correlations:

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

P-values for corresponding covariances:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Levels | serial7 | 0.96 | 0.98 | 0.05 |
| Covariance of Levels | tics | 0.00 | 0.02 | 0.12 |
| Covariance of Levels | word\_de | 0.99 | 0.63 | 0.00 |
| Covariance of Levels | word\_im | 0.94 | 0.98 | 0.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Slopes | serial7 | 0.99 | 0.99 | 0.17 |
| Covariance of Slopes | tics | 0.85 | 0.87 | 0.09 |
| Covariance of Slopes | word\_de | 0.99 | 0.99 | 0.12 |
| Covariance of Slopes | word\_im | 1.00 | 1.00 | 0.57 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Residuals | serial7 | 0.33 | 0.50 | 0.80 |
| Covariance of Residuals | tics | 0.53 | 0.67 | 0.61 |
| Covariance of Residuals | word\_de | 0.16 | 0.22 | 0.65 |
| Covariance of Residuals | word\_im | 0.14 | 0.19 | 0.27 |

# 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 |
| a | Level | 405.24 (5.02) <.01 | 320.42 (13.75) <.01 | 339.38 (14.50) <.01 |
| a | Slope | -5.67 (1.06) <.01 | -6.41 (3.13) .04 | -6.00 (2.75) .03 |
| a | Level \* age | -4.30 (0.43) <.01 | -3.66 (0.43) <.01 | -4.54 (0.48) <.01 |
| a | Level \* education | --- | 7.95 (1.46) <.01 | 7.11 (1.41) <.01 |
| a | Level \* height | --- | 231.94 (63.09) <.01 | 198.79 (63.01) <.01 |
| a | Level \* smoking | --- | --- | -55.99 (15.15) <.01 |
| a | Level \* cardio | --- | --- | 2.06 (10.49) .84 |
| a | Level \* diabetes | --- | --- | -3.47 (12.00) .77 |
| a | Slope \* age | -0.37 (0.09) <.01 | -0.36 (0.09) <.01 | -0.34 (0.08) <.01 |
| a | Slope \* education | --- | 0.19 (0.39) .62 | -0.02 (0.27) .93 |
| a | Slope \* height | --- | -2.40 (12.77) .85 | 13.98 (9.85) .16 |
| a | Slope \* smoking | --- | --- | -0.40 (2.08) .85 |
| a | Slope \* cardio | --- | --- | -3.48 (1.61) .03 |
| a | Slope \* diabetes | --- | --- | -1.18 (2.10) .57 |
| b | Level | 4.08 (0.06) <.01 | 3.10 (0.21) <.01 | 3.07 (0.22) <.01 |
| b | Slope | -0.19 (0.01) <.01 | -0.23 (0.03) <.01 | -0.18 (0.04) <.01 |
| b | Level \* age | -0.00 (0.01) .56 | 0.00 (0.01) .53 | 0.01 (0.01) .12 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.16 (0.02) <.01 |
| b | Level \* height | --- | 0.72 (0.84) .39 | 0.68 (0.85) .42 |
| b | Level \* smoking | --- | --- | 0.14 (0.17) .43 |
| b | Level \* cardio | --- | --- | -0.10 (0.14) .45 |
| b | Level \* diabetes | --- | --- | -0.06 (0.16) .72 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.00) .61 | -0.00 (0.00) .11 |
| b | Slope \* height | --- | 0.32 (0.16) .05 | 0.28 (0.16) .09 |
| b | Slope \* smoking | --- | --- | -0.10 (0.03) <.01 |
| b | Slope \* cardio | --- | --- | -0.00 (0.03) .86 |
| b | Slope \* diabetes | --- | --- | -0.05 (0.03) .11 |
| a | Var (Level) | 13344.73 (887.34) <.01 | 12303.09 (801.01) <.01 | 9995.32 (767.38) <.01 |
| a | Var (Slope) | 456.67 (64.22) <.01 | 455.94 (64.12) <.01 | 68.82 (24.50) <.01 |
| a | Var (Residual) | 358.57 (28.68) <.01 | 358.47 (28.68) <.01 | 2941.53 (237.04) <.01 |
| a | Covar (Level, Slope) | -648.61 (135.22) <.01 | -662.28 (132.67) <.01 | -124.00 (100.34) .22 |
| b | Var (Level) | 0.24 (6.18) .97 | 0.19 (5.35) .97 | 1.10 (0.14) <.01 |
| b | Var (Slope) | 0.01 (0.41) .98 | 0.01 (0.41) .98 | 0.04 (0.00) <.01 |
| b | Var (Residual) | 358.57 (28.68) <.01 | 358.47 (28.68) <.01 | 1.18 (0.06) <.01 |
| b | Covar (Level, Slope) | -0.02 (0.85) .98 | -0.02 (0.86) .98 | -0.03 (0.01) .06 |
| ab | Covar (Levels) | 24.34 (882.90) .98 | 10.39 (897.18) .99 | 11.16 (6.83) .10 |
| ab | Covar (Slopes) | 0.39 (46.01) .99 | 0.39 (46.51) .99 | 0.06 (0.23) .78 |
| ab | Covar (Residuals) | -0.29 (0.36) .42 | -0.37 (0.36) .31 | -2.73 (2.91) .35 |
|  | Correlation of Levels | 0.43013 | 0.213 | 0.107 |
|  | Correlation of Slopes | 0.19188 | 0.192 | 0.040 |
|  | Correlation of Residuals | -0.00082 | -0.001 | -0.046 |
|  | N | 535 | 535 | 535 |
|  | occasions | 5 | 5 | 5 |
|  | parameters | 20 | 28 | 41 |
|  | LL | -19,858 | -19,833 | -13,193 |
|  | AIC | 39,755 | 39,721 | 26,467 |
|  | BIC | 39,841 | 39,841 | 26,643 |

## tics

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

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

## word\_de

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

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

## word\_im

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

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

## Summary

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

Computed correlations:

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

P-values for corresponding covariances:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Levels | serial7 | 0.98 | 0.99 | 0.10 |
| Covariance of Levels | tics | 0.13 | 0.60 | 0.23 |
| Covariance of Levels | word\_de | 0.96 | 0.99 | 0.16 |
| Covariance of Levels | word\_im | 0.96 | 0.98 | 0.01 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Slopes | serial7 | 0.99 | 0.99 | 0.78 |
| Covariance of Slopes | tics | 0.99 | 1.00 | 0.32 |
| Covariance of Slopes | word\_de | 0.97 | 0.99 | 0.62 |
| Covariance of Slopes | word\_im | 0.96 | 1.00 | 1.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| label | process\_b | a | aeh | aehplus |
| Covariance of Residuals | serial7 | 0.42 | 0.31 | 0.35 |
| Covariance of Residuals | tics | 0.77 | 0.91 | 0.90 |
| Covariance of Residuals | word\_de | 0.47 | 0.57 | 0.38 |
| Covariance of Residuals | word\_im | 0.01 | 0.02 | 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] knitr\_1.14 ggplot2\_2.1.0 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 testit\_0.5 colorspace\_1.2-7 R6\_2.2.0 stringr\_1.1.0   
 [7] highr\_0.6 plyr\_1.8.4 dplyr\_0.5.0 tools\_3.3.1 DT\_0.2 grid\_3.3.1   
[13] gtable\_0.2.0 DBI\_0.5-1 htmltools\_0.3.5 yaml\_2.1.13 lazyeval\_0.2.0 assertthat\_0.1   
[19] digest\_0.6.10 tibble\_1.2 formatR\_1.4 readr\_1.0.0 tidyr\_0.6.0 htmlwidgets\_0.7   
[25] rsconnect\_0.5 evaluate\_0.10 rmarkdown\_1.1 stringi\_1.1.2 scales\_0.4.0