MAP : Seed report

Date: 2017-06-27

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Observations: 1,621  
Variables: 230  
$ software <chr> "Mplus VERSION 7.3", "Mplus VERSION 7.3", "Mplus VERSION 7.3", "Mplus VERSION 7.3", "Mplu...  
$ version <dbl> 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1,...  
$ date <chr> "11/30/2016", "11/30/2016", "11/30/2016", "11/30/2016", "12/05/2016", "11/30/2016", "11/3...  
$ time <chr> " 1:04 PM", " 1:10 PM", " 1:29 PM", " 2:00 PM", " 8:54 AM", " 1:41 PM", " 1:33 PM", "12:5...  
$ output\_file <chr> "b1\_female\_aehplus\_walking\_fluency\_gait\_bostonnaming.out", "b1\_female\_aehplus\_walking\_flu...  
$ data\_file <chr> " C:\\Users\\Andrea Zammit\\Desktop\\EASMaster.csv", " C:\\Users\\Andrea Zammit\\Desktop\...  
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$ study\_name <chr> "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas"...  
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$ parameter\_count <int> 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 43, 2...  
$ ll <dbl> -5629.857, -7127.299, -7323.221, -9769.100, -5099.137, -7619.850, -5943.564, -6837.136, -...  
$ aic <dbl> 11345.714, 14340.597, 14732.442, 19624.200, 10284.275, 15325.700, 11973.128, 13760.272, 1...  
$ bic <dbl> 11513.174, 14508.057, 14899.663, 19791.541, 10451.734, 15493.160, 12140.588, 13927.731, 1...  
$ adj\_bic <dbl> 11376.753, 14371.637, 14763.245, 19655.122, 10315.314, 15356.740, 12004.168, 13791.311, 1...  
$ aaic <dbl> 11357.576, 14352.459, 14744.379, 19636.099, 10296.137, 15337.562, 11984.990, 13772.134, 1...  
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$ ab\_tau\_00\_est <dbl> -0.879, 11.432, 67.831, -4.863, 2.686, 51.981, 12.353, 11.874, 3.856, 16.749, 46.977, 6.1...  
$ ab\_tau\_00\_se <dbl> 4.926, 13.718, 23.064, 107.756, 2.326, 22.895, 6.175, 11.820, 11.155, 14.113, 24.645, 6.1...  
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$ ab\_tau\_00\_pval <dbl> 0.858, 0.405, 0.003, 0.964, 0.248, 0.023, 0.045, 0.315, 0.730, 0.235, 0.057, 0.317, 0.083...  
$ ab\_tau\_11\_est <dbl> 0.007, 0.674, 2.084, 3.359, 0.016, 1.527, 0.619, 0.286, 0.737, 0.190, 2.528, -0.005, 1.74...  
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$ ab\_tau\_11\_pval <dbl> 0.982, 0.464, 0.059, 0.610, 0.923, 0.224, 0.076, 0.726, 0.402, 0.822, 0.010, 0.991, 0.144...  
$ ab\_tau\_01\_est <dbl> 1.036, 6.892, -3.643, -47.703, 0.665, -1.343, -0.411, 5.700, 3.550, 0.407, 0.666, -0.228,...  
$ ab\_tau\_01\_se <dbl> 1.304, 3.884, 4.501, 30.254, 0.666, 5.061, 1.531, 3.100, 3.351, 2.923, 4.239, 1.694, 5.39...  
$ ab\_tau\_01\_wald <dbl> 0.794, 1.774, -0.809, -1.577, 0.998, -0.265, -0.269, 1.839, 1.059, 0.139, 0.157, -0.135, ...  
$ ab\_tau\_01\_pval <dbl> 0.427, 0.076, 0.418, 0.115, 0.318, 0.791, 0.788, 0.066, 0.289, 0.889, 0.875, 0.893, 0.230...  
$ ab\_tau\_10\_est <dbl> 0.719, -0.921, -8.915, -26.013, -0.162, -7.519, -2.544, 0.486, -1.056, 1.220, -6.960, 0.3...  
$ ab\_tau\_10\_se <dbl> 1.328, 3.060, 4.888, 32.873, 0.613, 6.227, 1.650, 3.347, 2.818, 3.805, 5.620, 1.618, 7.15...  
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$ ab\_sigma\_00\_est <dbl> 0.492, 0.429, -0.793, -4.350, -0.370, -0.852, -0.237, 1.282, 0.347, 1.103, 0.165, 0.289, ...  
$ ab\_sigma\_00\_se <dbl> 0.917, 2.704, 3.333, 25.362, 0.511, 3.631, 0.881, 2.263, 2.306, 2.256, 2.915, 0.947, 3.20...  
$ ab\_sigma\_00\_wald <dbl> 0.536, 0.159, -0.238, -0.172, -0.725, -0.235, -0.269, 0.567, 0.150, 0.489, 0.057, 0.306, ...  
$ ab\_sigma\_00\_pval <dbl> 0.592, 0.874, 0.812, 0.864, 0.468, 0.815, 0.788, 0.571, 0.881, 0.625, 0.955, 0.760, 0.984...  
$ aa\_tau\_00\_est <dbl> 359.459, 352.089, 363.387, 359.614, 359.772, 361.276, 356.869, 354.922, 357.495, 356.798,...  
$ aa\_tau\_00\_se <dbl> 59.481, 56.294, 56.239, 57.406, 57.737, 58.521, 56.349, 58.408, 57.406, 57.556, 56.811, 7...  
$ aa\_tau\_00\_wald <dbl> 6.043, 6.254, 6.461, 6.264, 6.231, 6.173, 6.333, 6.077, 6.227, 6.199, 6.200, 4.210, 4.162...  
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$ aa\_tau\_11\_wald <dbl> 2.406, 2.539, 2.664, 2.417, 2.573, 2.636, 2.636, 2.572, 2.526, 2.502, 2.624, 0.642, 0.868...  
$ aa\_tau\_11\_pval <dbl> 0.016, 0.011, 0.008, 0.016, 0.010, 0.008, 0.008, 0.010, 0.012, 0.012, 0.009, 0.521, 0.386...  
$ aa\_tau\_01\_est <dbl> -6.262, -4.077, -7.738, -6.107, -5.931, -6.531, -5.293, -3.920, -5.622, -5.615, -3.750, 1...  
$ aa\_tau\_01\_se <dbl> 11.018, 9.447, 9.635, 9.117, 9.321, 9.847, 9.194, 9.429, 9.659, 9.333, 8.798, 14.524, 18....  
$ aa\_tau\_01\_wald <dbl> -0.568, -0.432, -0.803, -0.670, -0.636, -0.663, -0.576, -0.416, -0.582, -0.602, -0.426, 0...  
$ aa\_tau\_01\_pval <dbl> 0.570, 0.666, 0.422, 0.503, 0.525, 0.507, 0.565, 0.678, 0.561, 0.547, 0.670, 0.898, 0.893...  
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$ a\_sigma\_00\_se <dbl> 5.974, 5.818, 6.013, 6.144, 5.822, 5.866, 5.722, 5.868, 5.719, 5.978, 5.877, 8.715, 9.092...  
$ a\_sigma\_00\_wald <dbl> 10.556, 10.867, 10.491, 10.324, 10.853, 10.699, 11.119, 10.790, 11.007, 10.585, 10.834, 8...  
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$ bb\_tau\_00\_wald <dbl> 6.156, 7.715, 7.715, 4.381, 5.475, 6.716, 8.185, 5.719, 5.463, 7.457, 8.984, 4.254, 5.818...  
$ bb\_tau\_00\_pval <dbl> 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000...  
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$ bb\_tau\_11\_se <dbl> 0.031, 0.320, 0.638, 35.706, 0.012, 0.661, 0.061, 0.304, 0.364, 0.461, 0.748, 0.046, 0.66...  
$ bb\_tau\_11\_wald <dbl> 0.429, 1.992, 1.542, 1.490, 0.540, 0.524, 1.849, 0.601, 0.784, 1.844, 3.172, 0.141, 1.946...  
$ bb\_tau\_11\_pval <dbl> 0.668, 0.046, 0.123, 0.136, 0.590, 0.600, 0.064, 0.548, 0.433, 0.065, 0.002, 0.888, 0.052...  
$ bb\_tau\_10\_est <dbl> 0.071, 1.493, 0.965, -16.147, 0.046, -1.830, -0.083, 0.610, -0.133, -1.645, -6.320, 0.075...  
$ bb\_tau\_10\_se <dbl> 0.125, 1.131, 2.508, 117.131, 0.040, 2.650, 0.191, 0.903, 1.003, 1.472, 2.913, 0.144, 2.2...  
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$ bb\_tau\_10\_pval <dbl> 0.568, 0.187, 0.700, 0.890, 0.243, 0.490, 0.664, 0.499, 0.895, 0.264, 0.030, 0.600, 0.045...  
$ b\_sigma\_00\_est <dbl> 1.893, 17.326, 27.806, 1746.799, 0.819, 40.920, 2.656, 12.843, 15.431, 19.990, 28.133, 1....  
$ b\_sigma\_00\_se <dbl> 0.101, 0.999, 1.570, 81.310, 0.038, 1.843, 0.154, 0.626, 0.847, 1.015, 1.509, 0.133, 1.22...  
$ b\_sigma\_00\_wald <dbl> 18.769, 17.349, 17.710, 21.483, 21.377, 22.199, 17.228, 20.517, 18.218, 19.700, 18.645, 1...  
$ b\_sigma\_00\_pval <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...  
$ a\_gamma\_00\_est <dbl> 106.385, 106.769, 106.219, 106.842, 105.879, 105.744, 105.688, 106.287, 106.163, 106.158,...  
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$ a\_gamma\_10\_pval <dbl> 0.029, 0.024, 0.027, 0.026, 0.038, 0.043, 0.036, 0.032, 0.043, 0.024, 0.019, 0.259, 0.186...  
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$ b\_gamma\_00\_se <dbl> 0.424, 1.356, 2.123, 11.828, 0.277, 1.883, 0.598, 0.973, 1.144, 1.552, 2.591, 0.615, 2.78...  
$ b\_gamma\_00\_wald <dbl> 24.347, 27.525, 13.190, 13.031, 92.526, 19.159, 20.425, 35.145, 15.591, 9.996, 13.853, 17...  
$ b\_gamma\_00\_pval <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...  
$ b\_gamma\_10\_est <dbl> 0.056, -0.523, 0.419, 1.031, 0.052, -0.743, 0.300, 0.176, -0.074, 1.079, 1.233, 0.107, 0....  
$ b\_gamma\_10\_se <dbl> 0.121, 0.397, 0.542, 3.990, 0.080, 0.551, 0.151, 0.323, 0.373, 0.454, 0.668, 0.174, 0.746...  
$ b\_gamma\_10\_wald <dbl> 0.458, -1.317, 0.774, 0.258, 0.647, -1.349, 1.991, 0.546, -0.197, 2.377, 1.845, 0.613, 0....  
$ b\_gamma\_10\_pval <dbl> 0.647, 0.188, 0.439, 0.796, 0.517, 0.177, 0.046, 0.585, 0.844, 0.017, 0.065, 0.540, 0.355...  
$ er\_tau\_00\_est <dbl> -0.024, 0.095, 0.355, -0.006, 0.142, 0.287, 0.243, 0.154, 0.043, 0.128, 0.209, 0.188, 0.3...  
$ er\_tau\_00\_se <dbl> 0.135, 0.112, 0.105, 0.125, 0.123, 0.116, 0.113, 0.156, 0.123, 0.105, 0.104, 0.178, 0.161...  
$ er\_tau\_00\_wald <dbl> -0.178, 0.844, 3.377, -0.045, 1.153, 2.477, 2.144, 0.993, 0.347, 1.223, 2.013, 1.061, 1.9...  
$ er\_tau\_00\_pval <dbl> 0.858, 0.399, 0.001, 0.964, 0.249, 0.013, 0.032, 0.321, 0.728, 0.221, 0.044, 0.289, 0.052...  
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$ er\_tau\_11\_se <dbl> 1.076, 0.448, 0.475, 0.364, 0.793, 1.156, 0.400, 0.760, 0.751, 0.364, 0.242, 3.452, 0.722...  
$ er\_tau\_11\_wald <dbl> 0.022, 0.737, 1.699, 0.503, 0.098, 0.864, 1.845, 0.346, 0.717, 0.226, 2.729, -0.011, 1.07...  
$ er\_tau\_11\_pval <dbl> 0.982, 0.461, 0.089, 0.615, 0.922, 0.388, 0.065, 0.729, 0.473, 0.821, 0.006, 0.991, 0.282...  
$ er\_sigma\_00\_est <dbl> 0.045, 0.013, -0.019, -0.013, -0.051, -0.017, -0.018, 0.045, 0.011, 0.031, 0.004, 0.025, ...  
$ er\_sigma\_00\_se <dbl> 0.084, 0.082, 0.079, 0.076, 0.071, 0.072, 0.068, 0.079, 0.074, 0.063, 0.069, 0.081, 0.086...  
$ er\_sigma\_00\_wald <dbl> 0.534, 0.159, -0.239, -0.171, -0.721, -0.235, -0.268, 0.566, 0.150, 0.489, 0.057, 0.307, ...  
$ er\_sigma\_00\_pval <dbl> 0.593, 0.874, 0.811, 0.864, 0.471, 0.814, 0.789, 0.571, 0.880, 0.625, 0.955, 0.759, 0.984...  
$ a\_gamma\_01\_est <dbl> -1.560, -1.619, -1.526, -1.572, -1.564, -1.457, -1.497, -1.546, -1.555, -1.559, -1.577, -...  
$ a\_gamma\_01\_se <dbl> 0.366, 0.410, 0.363, 0.376, 0.368, 0.374, 0.368, 0.379, 0.376, 0.381, 0.367, 0.422, 0.422...  
$ a\_gamma\_01\_wald <dbl> -4.262, -3.947, -4.207, -4.183, -4.247, -3.898, -4.069, -4.084, -4.137, -4.091, -4.298, -...  
$ a\_gamma\_01\_pval <dbl> 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.010, 0.006...  
$ a\_gamma\_11\_est <dbl> -0.075, -0.084, -0.066, -0.079, -0.081, -0.104, -0.104, -0.100, -0.088, -0.074, -0.091, -...  
$ a\_gamma\_11\_se <dbl> 0.103, 0.117, 0.099, 0.107, 0.099, 0.110, 0.099, 0.105, 0.101, 0.103, 0.102, 0.131, 0.142...  
$ a\_gamma\_11\_wald <dbl> -0.729, -0.719, -0.669, -0.737, -0.817, -0.949, -1.057, -0.954, -0.868, -0.725, -0.893, -...  
$ a\_gamma\_11\_pval <dbl> 0.466, 0.472, 0.503, 0.461, 0.414, 0.343, 0.290, 0.340, 0.385, 0.468, 0.372, 0.364, 0.479...  
$ b\_gamma\_01\_est <dbl> -0.053, -0.276, -0.220, 2.646, -0.003, 0.042, -0.031, -0.157, -0.247, -0.144, -0.385, -0....  
$ b\_gamma\_01\_se <dbl> 0.027, 0.098, 0.137, 0.806, 0.017, 0.138, 0.040, 0.071, 0.076, 0.107, 0.154, 0.037, 0.139...  
$ b\_gamma\_01\_wald <dbl> -1.958, -2.807, -1.609, 3.283, -0.196, 0.302, -0.771, -2.229, -3.230, -1.348, -2.507, -0....  
$ b\_gamma\_01\_pval <dbl> 0.050, 0.005, 0.108, 0.001, 0.845, 0.763, 0.440, 0.026, 0.001, 0.178, 0.012, 0.339, 0.177...  
$ b\_gamma\_11\_est <dbl> -0.011, -0.045, -0.030, 0.184, -0.005, -0.028, -0.013, -0.074, -0.006, -0.031, -0.096, -0...  
$ b\_gamma\_11\_se <dbl> 0.007, 0.024, 0.033, 0.262, 0.005, 0.036, 0.011, 0.021, 0.024, 0.030, 0.036, 0.010, 0.036...  
$ b\_gamma\_11\_wald <dbl> -1.566, -1.919, -0.893, 0.703, -1.082, -0.787, -1.182, -3.527, -0.258, -1.019, -2.707, -0...  
$ b\_gamma\_11\_pval <dbl> 0.117, 0.055, 0.372, 0.482, 0.279, 0.431, 0.237, 0.000, 0.797, 0.308, 0.007, 0.374, 0.201...  
$ a\_gamma\_02\_est <dbl> 0.593, 0.559, 0.544, 0.521, 0.626, 0.581, 0.613, 0.596, 0.597, 0.601, 0.512, 0.745, 0.616...  
$ a\_gamma\_02\_se <dbl> 0.592, 0.555, 0.541, 0.571, 0.592, 0.573, 0.560, 0.565, 0.574, 0.591, 0.546, 0.682, 0.712...  
$ a\_gamma\_02\_wald <dbl> 1.002, 1.007, 1.004, 0.912, 1.057, 1.014, 1.096, 1.056, 1.039, 1.017, 0.937, 1.092, 0.865...  
$ a\_gamma\_02\_pval <dbl> 0.316, 0.314, 0.315, 0.362, 0.290, 0.311, 0.273, 0.291, 0.299, 0.309, 0.349, 0.275, 0.387...  
$ a\_gamma\_12\_est <dbl> 0.117, 0.142, 0.122, 0.133, 0.108, 0.120, 0.104, 0.122, 0.104, 0.117, 0.138, -0.102, -0.0...  
$ a\_gamma\_12\_se <dbl> 0.167, 0.159, 0.153, 0.160, 0.176, 0.170, 0.163, 0.164, 0.179, 0.163, 0.151, 0.188, 0.191...  
$ a\_gamma\_12\_wald <dbl> 0.700, 0.897, 0.796, 0.829, 0.617, 0.708, 0.636, 0.743, 0.584, 0.717, 0.915, -0.540, -0.3...  
$ a\_gamma\_12\_pval <dbl> 0.484, 0.370, 0.426, 0.407, 0.537, 0.479, 0.524, 0.457, 0.559, 0.473, 0.360, 0.589, 0.725...  
$ b\_gamma\_02\_est <dbl> 0.282, 0.683, 1.293, -6.580, 0.129, 1.652, 0.292, 0.081, 0.683, 0.949, 1.563, 0.187, 0.90...  
$ b\_gamma\_02\_se <dbl> 0.043, 0.135, 0.211, 1.168, 0.025, 0.195, 0.060, 0.099, 0.113, 0.155, 0.231, 0.054, 0.224...  
$ b\_gamma\_02\_wald <dbl> 6.535, 5.048, 6.127, -5.634, 5.175, 8.487, 4.900, 0.815, 6.033, 6.122, 6.773, 3.489, 4.03...  
$ b\_gamma\_02\_pval <dbl> 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.000, 0.415, 0.000, 0.000, 0.000, 0.000, 0.000...  
$ b\_gamma\_12\_est <dbl> -0.001, 0.059, 0.052, 0.049, -0.001, 0.061, -0.014, 0.034, 0.040, -0.077, -0.007, -0.007,...  
$ b\_gamma\_12\_se <dbl> 0.014, 0.042, 0.061, 0.364, 0.008, 0.062, 0.015, 0.034, 0.035, 0.045, 0.060, 0.015, 0.058...  
$ b\_gamma\_12\_wald <dbl> -0.064, 1.428, 0.840, 0.133, -0.139, 0.987, -0.939, 1.019, 1.149, -1.720, -0.122, -0.482,...  
$ b\_gamma\_12\_pval <dbl> 0.949, 0.153, 0.401, 0.894, 0.890, 0.324, 0.348, 0.308, 0.250, 0.086, 0.903, 0.630, 0.380...  
$ a\_gamma\_03\_est <dbl> 0.099, 0.107, 0.132, 0.083, 0.103, 0.138, 0.164, 0.161, 0.110, 0.106, 0.099, 0.083, 0.163...  
$ a\_gamma\_03\_se <dbl> 0.285, 0.278, 0.279, 0.287, 0.280, 0.281, 0.278, 0.277, 0.287, 0.276, 0.293, 0.450, 0.417...  
$ a\_gamma\_03\_wald <dbl> 0.349, 0.384, 0.475, 0.288, 0.367, 0.493, 0.589, 0.581, 0.382, 0.385, 0.337, 0.185, 0.391...  
$ a\_gamma\_03\_pval <dbl> 0.727, 0.701, 0.635, 0.773, 0.713, 0.622, 0.556, 0.561, 0.702, 0.700, 0.736, 0.853, 0.695...  
$ a\_gamma\_13\_est <dbl> 0.039, 0.034, 0.040, 0.041, 0.031, 0.030, 0.014, 0.028, 0.027, 0.034, 0.024, 0.022, -0.01...  
$ a\_gamma\_13\_se <dbl> 0.066, 0.079, 0.068, 0.075, 0.066, 0.065, 0.062, 0.076, 0.073, 0.066, 0.067, 0.144, 0.130...  
$ a\_gamma\_13\_wald <dbl> 0.586, 0.432, 0.591, 0.549, 0.477, 0.456, 0.218, 0.367, 0.376, 0.510, 0.359, 0.151, -0.11...  
$ a\_gamma\_13\_pval <dbl> 0.558, 0.666, 0.555, 0.583, 0.634, 0.648, 0.827, 0.713, 0.707, 0.610, 0.719, 0.880, 0.910...  
$ b\_gamma\_03\_est <dbl> -0.005, -0.105, -0.169, 0.402, 0.010, -0.001, 0.075, 0.070, 0.051, -0.013, 0.132, -0.001,...  
$ b\_gamma\_03\_se <dbl> 0.033, 0.099, 0.156, 0.996, 0.021, 0.151, 0.046, 0.083, 0.090, 0.118, 0.191, 0.067, 0.155...  
$ b\_gamma\_03\_wald <dbl> -0.137, -1.067, -1.085, 0.404, 0.472, -0.006, 1.631, 0.843, 0.567, -0.111, 0.695, -0.020,...  
$ b\_gamma\_03\_pval <dbl> 0.891, 0.286, 0.278, 0.686, 0.637, 0.995, 0.103, 0.399, 0.570, 0.912, 0.487, 0.984, 0.910...  
$ b\_gamma\_13\_est <dbl> 0.003, 0.017, 0.055, -0.100, -0.002, 0.001, -0.026, -0.038, -0.006, -0.011, -0.036, 0.008...  
$ b\_gamma\_13\_se <dbl> 0.011, 0.027, 0.038, 0.406, 0.007, 0.040, 0.011, 0.023, 0.022, 0.035, 0.042, 0.014, 0.045...  
$ b\_gamma\_13\_wald <dbl> 0.266, 0.624, 1.439, -0.247, -0.339, 0.027, -2.322, -1.632, -0.262, -0.320, -0.849, 0.588...  
$ b\_gamma\_13\_pval <dbl> 0.790, 0.533, 0.150, 0.805, 0.735, 0.978, 0.020, 0.103, 0.793, 0.749, 0.396, 0.556, 0.256...  
$ a\_gamma\_04\_est <dbl> 3.229, 3.448, 3.130, 3.058, 3.298, 3.621, 3.340, 2.720, 3.240, 3.171, 3.267, -6.226, -5.5...  
$ a\_gamma\_04\_se <dbl> 2.548, 2.695, 2.551, 2.757, 2.667, 2.793, 2.671, 2.553, 2.499, 2.804, 2.471, 4.538, 4.712...  
$ a\_gamma\_04\_wald <dbl> 1.267, 1.279, 1.227, 1.109, 1.237, 1.297, 1.251, 1.066, 1.296, 1.131, 1.322, -1.372, -1.1...  
$ a\_gamma\_04\_pval <dbl> 0.205, 0.201, 0.220, 0.267, 0.216, 0.195, 0.211, 0.287, 0.195, 0.258, 0.186, 0.170, 0.242...  
$ a\_gamma\_14\_est <dbl> -0.296, -0.286, -0.286, -0.258, -0.293, -0.336, -0.344, -0.331, -0.310, -0.297, -0.305, 1...  
$ a\_gamma\_14\_se <dbl> 0.844, 0.861, 0.838, 0.855, 0.840, 0.846, 0.864, 0.854, 0.881, 0.861, 0.845, 1.431, 1.514...  
$ a\_gamma\_14\_wald <dbl> -0.351, -0.332, -0.342, -0.302, -0.348, -0.397, -0.399, -0.387, -0.352, -0.346, -0.362, 1...  
$ a\_gamma\_14\_pval <dbl> 0.725, 0.740, 0.733, 0.763, 0.728, 0.691, 0.690, 0.698, 0.725, 0.730, 0.718, 0.193, 0.297...  
$ b\_gamma\_04\_est <dbl> 0.046, 0.424, 1.068, -5.129, 0.157, 0.474, 0.238, -1.122, 0.625, 0.531, 1.070, 0.631, 2.9...  
$ b\_gamma\_04\_se <dbl> 0.169, 0.607, 0.980, 5.395, 0.171, 1.019, 0.332, 0.434, 0.478, 0.523, 1.060, 0.393, 1.695...  
$ b\_gamma\_04\_wald <dbl> 0.269, 0.698, 1.089, -0.951, 0.918, 0.465, 0.718, -2.587, 1.307, 1.017, 1.009, 1.605, 1.7...  
$ b\_gamma\_04\_pval <dbl> 0.788, 0.485, 0.276, 0.342, 0.358, 0.642, 0.473, 0.010, 0.191, 0.309, 0.313, 0.109, 0.086...  
$ b\_gamma\_14\_est <dbl> 0.014, -0.054, 0.012, -0.257, -0.006, 0.122, -0.006, 0.042, -0.162, -0.114, 0.164, -0.157...  
$ b\_gamma\_14\_se <dbl> 0.083, 0.238, 0.316, 2.204, 0.046, 0.338, 0.090, 0.205, 0.237, 0.217, 0.350, 0.111, 0.413...  
$ b\_gamma\_14\_wald <dbl> 0.174, -0.225, 0.038, -0.117, -0.132, 0.361, -0.065, 0.204, -0.685, -0.524, 0.469, -1.407...  
$ b\_gamma\_14\_pval <dbl> 0.862, 0.822, 0.970, 0.907, 0.895, 0.718, 0.948, 0.838, 0.494, 0.600, 0.639, 0.159, 0.237...  
$ a\_gamma\_05\_est <dbl> -7.408, -7.502, -6.707, -7.242, -7.348, -7.841, -7.427, -6.916, -7.302, -7.269, -6.843, -...  
$ a\_gamma\_05\_se <dbl> 3.489, 3.331, 3.153, 3.632, 3.274, 3.206, 3.287, 3.223, 3.177, 3.427, 3.375, 4.631, 4.785...  
$ a\_gamma\_05\_wald <dbl> -2.124, -2.252, -2.127, -1.994, -2.244, -2.445, -2.260, -2.146, -2.299, -2.121, -2.027, -...  
$ a\_gamma\_05\_pval <dbl> 0.034, 0.024, 0.033, 0.046, 0.025, 0.014, 0.024, 0.032, 0.022, 0.034, 0.043, 0.662, 0.565...  
$ a\_gamma\_15\_est <dbl> 0.592, 0.577, 0.487, 0.629, 0.544, 0.639, 0.554, 0.589, 0.538, 0.544, 0.371, 0.622, 0.763...  
$ a\_gamma\_15\_se <dbl> 1.251, 1.234, 1.193, 1.258, 1.354, 1.276, 1.252, 1.333, 1.265, 1.275, 1.180, 1.259, 1.260...  
$ a\_gamma\_15\_wald <dbl> 0.473, 0.468, 0.408, 0.500, 0.402, 0.501, 0.443, 0.442, 0.425, 0.427, 0.314, 0.494, 0.605...  
$ a\_gamma\_15\_pval <dbl> 0.636, 0.640, 0.683, 0.617, 0.688, 0.617, 0.658, 0.659, 0.671, 0.670, 0.753, 0.621, 0.545...  
$ b\_gamma\_05\_est <dbl> 0.032, 0.180, 0.373, 10.502, -0.088, -0.502, -0.458, 0.677, -1.074, -0.349, -2.538, 0.103...  
$ b\_gamma\_05\_se <dbl> 0.246, 1.245, 1.481, 7.628, 0.160, 1.327, 0.499, 1.188, 0.982, 1.105, 2.065, 0.364, 1.249...  
$ b\_gamma\_05\_wald <dbl> 0.130, 0.145, 0.252, 1.377, -0.553, -0.378, -0.917, 0.569, -1.094, -0.316, -1.229, 0.283,...  
$ b\_gamma\_05\_pval <dbl> 0.897, 0.885, 0.801, 0.169, 0.580, 0.705, 0.359, 0.569, 0.274, 0.752, 0.219, 0.778, 0.238...  
$ b\_gamma\_15\_est <dbl> -0.005, 0.061, -0.307, 1.438, -0.074, -0.150, 0.003, -0.040, 0.429, -0.207, 0.034, 0.023,...  
$ b\_gamma\_15\_se <dbl> 0.098, 0.286, 0.274, 2.146, 0.044, 0.459, 0.114, 0.255, 0.277, 0.299, 0.489, 0.123, 0.363...  
$ b\_gamma\_15\_wald <dbl> -0.054, 0.213, -1.121, 0.670, -1.670, -0.327, 0.028, -0.156, 1.551, -0.694, 0.069, 0.185,...  
$ b\_gamma\_15\_pval <dbl> 0.957, 0.832, 0.262, 0.503, 0.095, 0.744, 0.978, 0.876, 0.121, 0.488, 0.945, 0.853, 0.703...  
$ a\_gamma\_06\_est <dbl> -15.337, -15.443, -14.884, -15.466, -15.279, -14.366, -15.462, -15.587, -15.511, -15.515,...  
$ a\_gamma\_06\_se <dbl> 4.733, 4.569, 4.342, 4.533, 4.391, 4.481, 4.293, 4.343, 4.528, 4.457, 4.403, 5.302, 5.488...  
$ a\_gamma\_06\_wald <dbl> -3.240, -3.380, -3.428, -3.412, -3.480, -3.206, -3.602, -3.589, -3.426, -3.481, -3.642, -...  
$ a\_gamma\_06\_pval <dbl> 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.000, 0.000, 0.001, 0.000, 0.000, 0.015, 0.019...  
$ a\_gamma\_16\_est <dbl> 0.763, 0.926, 0.788, 0.717, 0.838, 0.733, 0.792, 0.742, 0.956, 0.901, 0.964, 0.047, 0.183...  
$ a\_gamma\_16\_se <dbl> 1.465, 1.392, 1.277, 1.367, 1.340, 1.361, 1.259, 1.347, 1.418, 1.378, 1.326, 1.414, 1.476...  
$ a\_gamma\_16\_wald <dbl> 0.521, 0.665, 0.617, 0.525, 0.625, 0.539, 0.629, 0.551, 0.675, 0.654, 0.727, 0.033, 0.124...  
$ a\_gamma\_16\_pval <dbl> 0.602, 0.506, 0.537, 0.600, 0.532, 0.590, 0.529, 0.582, 0.500, 0.513, 0.467, 0.973, 0.901...  
$ b\_gamma\_06\_est <dbl> -0.816, -3.795, -4.495, 28.854, -0.338, -2.910, -1.367, -1.202, 0.161, -4.179, -4.654, -0...  
$ b\_gamma\_06\_se <dbl> 0.393, 1.261, 1.848, 11.310, 0.213, 1.746, 0.540, 1.006, 1.124, 1.405, 2.010, 0.494, 1.70...  
$ b\_gamma\_06\_wald <dbl> -2.078, -3.009, -2.431, 2.551, -1.587, -1.667, -2.529, -1.195, 0.143, -2.975, -2.315, -1....  
$ b\_gamma\_06\_pval <dbl> 0.038, 0.003, 0.015, 0.011, 0.112, 0.095, 0.011, 0.232, 0.886, 0.003, 0.021, 0.166, 0.149...  
$ b\_gamma\_16\_est <dbl> -0.013, -0.005, -0.198, 0.133, 0.014, 0.243, 0.164, -0.257, -0.271, 0.643, -0.750, 0.155,...  
$ b\_gamma\_16\_se <dbl> 0.101, 0.339, 0.400, 3.870, 0.070, 0.468, 0.141, 0.270, 0.319, 0.367, 0.506, 0.140, 0.496...  
$ b\_gamma\_16\_wald <dbl> -0.128, -0.014, -0.495, 0.034, 0.195, 0.519, 1.163, -0.954, -0.850, 1.750, -1.484, 1.113,...  
$ b\_gamma\_16\_pval <dbl> 0.898, 0.989, 0.621, 0.973, 0.845, 0.604, 0.245, 0.340, 0.395, 0.080, 0.138, 0.266, 0.984...  
$ process\_a <chr> "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "...  
$ process\_b <chr> "bnt", "categories", "fas", "trailsb", "mmse", "waisvocab", "digit\_tot", "word\_im", "logi...  
$ process\_b\_cell <chr> "bnt", "cat", "fas", "trailsb", "mmse", "waisvoc", "digit\_tot", "freerecall", "logic\_tot"...  
$ process\_b\_row <chr> "boston naming test", "categories", "f-a-s phonemic words", "switching", "mini mental sta...  
$ process\_b\_domain <chr> "semantic memory", "fluency", "fluency", "executive function", "mental status", "semantic...  
$ outcome\_count <int> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,...  
$ cr\_levels\_est <dbl> -0.024086300, 0.094892406, 0.355315956, -0.005662834, 0.141538728, 0.286858037, 0.2425718...  
$ cr\_levels\_z <dbl> -0.024090959, 0.095178776, 0.371514771, -0.005662895, 0.142495413, 0.295139195, 0.2475049...  
$ cr\_levels\_ztest <dbl> -0.4570938, 1.8058903, 7.0293893, -0.1072965, 2.7036604, 5.5998725, 4.6960768, 2.9544600,...  
$ cr\_levels\_zpval <dbl> 0.9807801, 0.9241728, 0.7102542, 0.9954817, 0.8866887, 0.7678875, 0.8045174, 0.8762587, 0...  
$ cr\_levels\_zeta\_lo <dbl> -0.127390131, -0.008120396, 0.267927456, -0.109105837, 0.039196241, 0.191840023, 0.144205...  
$ cr\_levels\_zeta\_hi <dbl> 0.07920821, 0.19847795, 0.47510209, 0.09778005, 0.24579458, 0.39843837, 0.35080415, 0.259...  
$ cr\_levels\_ci95\_lo <dbl> -0.126705469, -0.008120217, 0.261695277, -0.108674954, 0.039176180, 0.189520755, 0.143214...  
$ cr\_levels\_ci95\_hi <dbl> 0.07904298, 0.19591212, 0.44231247, 0.09746961, 0.24096146, 0.37861198, 0.33708851, 0.253...  
$ cr\_slopes\_est <dbl> 0.02314786, 0.32989072, 0.80678349, 0.18301032, 0.08130736, 0.99767766, 0.73754894, 0.262...  
$ cr\_slopes\_z <dbl> 0.02315200, 0.34270562, 1.11774605, 0.18509556, 0.08148725, 3.37858170, 0.94508305, 0.269...  
$ cr\_slopes\_ztest <dbl> 0.4392783, 6.5023820, 21.1487478, 3.5070602, 1.5461118, 64.1040806, 17.9316901, 5.1093374...  
$ cr\_slopes\_zpval <dbl> 6.604599e-01, 7.905803e-11, 2.833641e-99, 4.530866e-04, 1.220776e-01, 0.000000e+00, 6.672...  
$ cr\_slopes\_zeta\_lo <dbl> -0.080147172, 0.239406450, 1.014158736, 0.081652615, -0.021811924, 3.275282527, 0.8417838...  
$ cr\_slopes\_zeta\_hi <dbl> 0.12645117, 0.44600479, 1.22133337, 0.28853850, 0.18478642, 3.48188087, 1.04838222, 0.372...  
$ cr\_slopes\_ci95\_lo <dbl> -0.079976001, 0.234935039, 0.767476637, 0.081471635, -0.021808465, 0.997145465, 0.6867527...  
$ cr\_slopes\_ci95\_hi <dbl> 0.12578147, 0.41860941, 0.84004705, 0.28078910, 0.18271152, 0.99811072, 0.78117660, 0.356...  
$ cr\_resid\_est <dbl> 0.045031127, 0.012962367, -0.018933785, -0.013068031, -0.051435107, -0.016811754, -0.0182...  
$ cr\_resid\_z <dbl> 0.045061602, 0.012963093, -0.018936048, -0.013068775, -0.051480538, -0.016813338, -0.0182...  
$ cr\_resid\_ztest <dbl> 0.85498378, 0.24595740, -0.35828683, -0.24761794, -0.97677453, -0.31901065, -0.34596330, ...  
$ cr\_resid\_zpval <dbl> 0.39256013, 0.80571521, 0.72012867, 0.80443003, 0.32868079, 0.74971843, 0.72937030, 0.393...  
$ cr\_resid\_zeta\_lo <dbl> -0.05823757, -0.09033608, -0.12252336, -0.11651172, -0.15477971, -0.12011251, -0.12153304...  
$ cr\_resid\_zeta\_hi <dbl> 0.14836077, 0.11626227, 0.08465127, 0.09037417, 0.05181863, 0.08648583, 0.08506531, 0.148...  
$ cr\_resid\_ci95\_lo <dbl> -0.05817182, -0.09009115, -0.12191392, -0.11598735, -0.15355543, -0.11953820, -0.12093819...  
$ cr\_resid\_ci95\_hi <dbl> 0.14728175, 0.11574125, 0.08444965, 0.09012893, 0.05177230, 0.08627085, 0.08486072, 0.147...

Observations: 63,345  
Variables: 22  
$ study\_name <chr> "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas", "eas",...  
$ model\_number <chr> "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", "b1", ...  
$ subgroup <chr> "female", "female", "female", "female", "female", "female", "female", "female", "female", ...  
$ model\_type <chr> "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", ...  
$ process\_a <chr> "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "gait", "g...  
$ process\_b <chr> "block", "block", "block", "block", "block", "block", "block", "block", "block", "block", ...  
$ process\_b\_cell <chr> "block", "block", "block", "block", "block", "block", "block", "block", "block", "block", ...  
$ process\_b\_row <chr> "block design", "block design", "block design", "block design", "block design", "block des...  
$ process\_b\_domain <chr> "fluid reasoning", "fluid reasoning", "fluid reasoning", "fluid reasoning", "fluid reasoni...  
$ subject\_count <int> 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, 563, ...  
$ parameter\_count <int> 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21...  
$ wave\_count <int> 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, ...  
$ ll <dbl> -8545.247, -8545.247, -8545.247, -8545.247, -8545.247, -8545.247, -8545.247, -8545.247, -8...  
$ aic <dbl> 17132.49, 17132.49, 17132.49, 17132.49, 17132.49, 17132.49, 17132.49, 17132.49, 17132.49, ...  
$ bic <dbl> 17223.49, 17223.49, 17223.49, 17223.49, 17223.49, 17223.49, 17223.49, 17223.49, 17223.49, ...  
$ process <chr> "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "aa", "aa", "aa", "a...  
$ coefficient <chr> "gamma", "gamma", "gamma", "gamma", "gamma", "gamma", "gamma", "gamma", "gamma", "gamma", ...  
$ subindex <chr> "00", "01", "02", "03", "04", "05", "06", "10", "11", "12", "13", "14", "15", "16", "00", ...  
$ est <dbl> 106.265, -1.552, NaN, NaN, NaN, NaN, NaN, -2.691, -0.048, NaN, NaN, NaN, NaN, NaN, 401.241...  
$ pval <dbl> 0.000, 0.000, NaN, NaN, NaN, NaN, NaN, 0.000, 0.429, NaN, NaN, NaN, NaN, NaN, 0.000, 0.761...  
$ se <dbl> 2.845, 0.285, NaN, NaN, NaN, NaN, NaN, 0.516, 0.061, NaN, NaN, NaN, NaN, NaN, 54.968, 7.17...  
$ wald <dbl> 37.353, -5.447, NaN, NaN, NaN, NaN, NaN, -5.211, -0.792, NaN, NaN, NaN, NaN, NaN, 7.300, -...

Observations: 42  
Variables: 4  
$ type <chr> "Covariance", "Covariance", "Covariance", "Correlation", "Correlation", "Correlation", "Fixed Eff...  
$ process <chr> "ab", "ab", "ab", "er", "er", "er", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "a", "...  
$ full\_name <chr> "ab\_tau\_00", "ab\_tau\_11", "ab\_sigma\_00", "er\_tau\_00", "er\_tau\_11", "er\_sigma\_00", "a\_gamma\_00", "...  
$ label <chr> "Covar (Levels)", "Covar (Slopes)", "Covar (Residuals)", "Corr (Levels)", "Corr (Slopes)", "Corr ...

Observations: 80  
Variables: 7  
$ study\_name <chr> "map", "map", "nas", "octo", "satsa", "nas", "eas", "eas", "map", "octo", "satsa", "...  
$ process\_b <chr> "digit\_o", "digit\_b", "digit\_b", "digit\_b", "digit\_b", "digit\_b\_tot", "digit\_tot", "...  
$ process\_b\_domain <chr> "working memory", "working memory", "working memory", "working memory", "working mem...  
$ process\_b\_domain\_new <chr> "attention and working memory", "attention and working memory", "attention and worki...  
$ response <chr> NA, NA, NA, NA, NA, NA, "working", NA, NA, NA, NA, NA, "delayed", "delayed", NA, "de...  
$ process\_b\_label <chr> "Digit Ordering", "Digit Span Backward", "Digit Span Backward", "Digit Span Backward...  
$ process\_b\_domain\_label <chr> "Attention & Working Memory", "Attention & Working Memory", "Attention & Working Mem...

# Available models

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

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| fev | bnt | 7.454546 |
| fev | bstory\_de | 7.454546 |
| fev | bstory\_im | 7.454546 |
| fev | categories | 7.454546 |
| fev | digit\_b | 7.454546 |
| fev | digit\_f | 7.454546 |
| fev | digit\_o | 7.454546 |
| fev | ideas | 7.454546 |
| fev | line | 7.454546 |
| fev | logic\_de | 7.454546 |
| fev | logic\_im | 7.454546 |
| fev | mmse | 7.454546 |
| fev | nart | 7.454546 |
| fev | num\_comp | 7.454546 |
| fev | raven\_standard | 7.454546 |
| fev | symbol | 7.454546 |
| fev | word\_de | 7.454546 |
| fev | word\_im | 7.454546 |
| fev | word\_rec | 7.454546 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | female | a | fev | bnt | 0.9318182 |
| map | female | a | fev | bstory\_de | 0.9318182 |
| map | female | a | fev | bstory\_im | 0.9318182 |
| map | female | a | fev | categories | 0.9318182 |
| map | female | a | fev | digit\_b | 0.9318182 |
| map | female | a | fev | digit\_f | 0.9318182 |
| map | female | a | fev | digit\_o | 0.9318182 |
| map | female | a | fev | ideas | 0.9318182 |
| map | female | a | fev | line | 0.9318182 |
| map | female | a | fev | logic\_de | 0.9318182 |
| map | female | a | fev | logic\_im | 0.9318182 |
| map | female | a | fev | mmse | 0.9318182 |
| map | female | a | fev | nart | 0.9318182 |
| map | female | a | fev | num\_comp | 0.9318182 |
| map | female | a | fev | raven\_standard | 0.9318182 |
| map | female | a | fev | symbol | 0.9318182 |
| map | female | a | fev | word\_de | 0.9318182 |
| map | female | a | fev | word\_im | 0.9318182 |
| map | female | a | fev | word\_rec | 0.9318182 |
| map | female | ae | fev | bnt | 0.9318182 |
| map | female | ae | fev | bstory\_de | 0.9318182 |
| map | female | ae | fev | bstory\_im | 0.9318182 |
| map | female | ae | fev | categories | 0.9318182 |
| map | female | ae | fev | digit\_b | 0.9318182 |
| map | female | ae | fev | digit\_f | 0.9318182 |
| map | female | ae | fev | digit\_o | 0.9318182 |
| map | female | ae | fev | ideas | 0.9318182 |
| map | female | ae | fev | line | 0.9318182 |
| map | female | ae | fev | logic\_de | 0.9318182 |
| map | female | ae | fev | logic\_im | 0.9318182 |
| map | female | ae | fev | mmse | 0.9318182 |
| map | female | ae | fev | nart | 0.9318182 |
| map | female | ae | fev | num\_comp | 0.9318182 |
| map | female | ae | fev | raven\_standard | 0.9318182 |
| map | female | ae | fev | symbol | 0.9318182 |
| map | female | ae | fev | word\_de | 0.9318182 |
| map | female | ae | fev | word\_im | 0.9318182 |
| map | female | ae | fev | word\_rec | 0.9318182 |
| map | female | aeh | fev | bnt | 0.9318182 |
| map | female | aeh | fev | bstory\_de | 0.9318182 |
| map | female | aeh | fev | bstory\_im | 0.9318182 |
| map | female | aeh | fev | categories | 0.9318182 |
| map | female | aeh | fev | digit\_b | 0.9318182 |
| map | female | aeh | fev | digit\_f | 0.9318182 |
| map | female | aeh | fev | digit\_o | 0.9318182 |
| map | female | aeh | fev | ideas | 0.9318182 |
| map | female | aeh | fev | line | 0.9318182 |
| map | female | aeh | fev | logic\_de | 0.9318182 |
| map | female | aeh | fev | logic\_im | 0.9318182 |
| map | female | aeh | fev | mmse | 0.9318182 |
| map | female | aeh | fev | nart | 0.9318182 |
| map | female | aeh | fev | num\_comp | 0.9318182 |
| map | female | aeh | fev | raven\_standard | 0.9318182 |
| map | female | aeh | fev | symbol | 0.9318182 |
| map | female | aeh | fev | word\_de | 0.9318182 |
| map | female | aeh | fev | word\_im | 0.9318182 |
| map | female | aeh | fev | word\_rec | 0.9318182 |
| map | female | aehplus | fev | bnt | 0.9318182 |
| map | female | aehplus | fev | bstory\_de | 0.9318182 |
| map | female | aehplus | fev | bstory\_im | 0.9318182 |
| map | female | aehplus | fev | categories | 0.9318182 |
| map | female | aehplus | fev | digit\_b | 0.9318182 |
| map | female | aehplus | fev | digit\_f | 0.9318182 |
| map | female | aehplus | fev | digit\_o | 0.9318182 |
| map | female | aehplus | fev | ideas | 0.9318182 |
| map | female | aehplus | fev | line | 0.9318182 |
| map | female | aehplus | fev | logic\_de | 0.9318182 |
| map | female | aehplus | fev | logic\_im | 0.9318182 |
| map | female | aehplus | fev | mmse | 0.9318182 |
| map | female | aehplus | fev | nart | 0.9318182 |
| map | female | aehplus | fev | num\_comp | 0.9318182 |
| map | female | aehplus | fev | raven\_standard | 0.9318182 |
| map | female | aehplus | fev | symbol | 0.9318182 |
| map | female | aehplus | fev | word\_de | 0.9318182 |
| map | female | aehplus | fev | word\_im | 0.9318182 |
| map | female | aehplus | fev | word\_rec | 0.9318182 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | male | a | fev | bnt | 0.9318182 |
| map | male | a | fev | bstory\_de | 0.9318182 |
| map | male | a | fev | bstory\_im | 0.9318182 |
| map | male | a | fev | categories | 0.9318182 |
| map | male | a | fev | digit\_b | 0.9318182 |
| map | male | a | fev | digit\_f | 0.9318182 |
| map | male | a | fev | digit\_o | 0.9318182 |
| map | male | a | fev | ideas | 0.9318182 |
| map | male | a | fev | line | 0.9318182 |
| map | male | a | fev | logic\_de | 0.9318182 |
| map | male | a | fev | logic\_im | 0.9318182 |
| map | male | a | fev | mmse | 0.9318182 |
| map | male | a | fev | nart | 0.9318182 |
| map | male | a | fev | num\_comp | 0.9318182 |
| map | male | a | fev | raven\_standard | 0.9318182 |
| map | male | a | fev | symbol | 0.9318182 |
| map | male | a | fev | word\_de | 0.9318182 |
| map | male | a | fev | word\_im | 0.9318182 |
| map | male | a | fev | word\_rec | 0.9318182 |
| map | male | ae | fev | bnt | 0.9318182 |
| map | male | ae | fev | bstory\_de | 0.9318182 |
| map | male | ae | fev | bstory\_im | 0.9318182 |
| map | male | ae | fev | categories | 0.9318182 |
| map | male | ae | fev | digit\_b | 0.9318182 |
| map | male | ae | fev | digit\_f | 0.9318182 |
| map | male | ae | fev | digit\_o | 0.9318182 |
| map | male | ae | fev | ideas | 0.9318182 |
| map | male | ae | fev | line | 0.9318182 |
| map | male | ae | fev | logic\_de | 0.9318182 |
| map | male | ae | fev | logic\_im | 0.9318182 |
| map | male | ae | fev | mmse | 0.9318182 |
| map | male | ae | fev | nart | 0.9318182 |
| map | male | ae | fev | num\_comp | 0.9318182 |
| map | male | ae | fev | raven\_standard | 0.9318182 |
| map | male | ae | fev | symbol | 0.9318182 |
| map | male | ae | fev | word\_de | 0.9318182 |
| map | male | ae | fev | word\_im | 0.9318182 |
| map | male | ae | fev | word\_rec | 0.9318182 |
| map | male | aeh | fev | bnt | 0.9318182 |
| map | male | aeh | fev | bstory\_de | 0.9318182 |
| map | male | aeh | fev | bstory\_im | 0.9318182 |
| map | male | aeh | fev | categories | 0.9318182 |
| map | male | aeh | fev | digit\_b | 0.9318182 |
| map | male | aeh | fev | digit\_f | 0.9318182 |
| map | male | aeh | fev | digit\_o | 0.9318182 |
| map | male | aeh | fev | ideas | 0.9318182 |
| map | male | aeh | fev | line | 0.9318182 |
| map | male | aeh | fev | logic\_de | 0.9318182 |
| map | male | aeh | fev | logic\_im | 0.9318182 |
| map | male | aeh | fev | mmse | 0.9318182 |
| map | male | aeh | fev | nart | 0.9318182 |
| map | male | aeh | fev | num\_comp | 0.9318182 |
| map | male | aeh | fev | raven\_standard | 0.9318182 |
| map | male | aeh | fev | symbol | 0.9318182 |
| map | male | aeh | fev | word\_de | 0.9318182 |
| map | male | aeh | fev | word\_im | 0.9318182 |
| map | male | aeh | fev | word\_rec | 0.9318182 |
| map | male | aehplus | fev | bnt | 0.9318182 |
| map | male | aehplus | fev | bstory\_de | 0.9318182 |
| map | male | aehplus | fev | bstory\_im | 0.9318182 |
| map | male | aehplus | fev | categories | 0.9318182 |
| map | male | aehplus | fev | digit\_b | 0.9318182 |
| map | male | aehplus | fev | digit\_f | 0.9318182 |
| map | male | aehplus | fev | digit\_o | 0.9318182 |
| map | male | aehplus | fev | ideas | 0.9318182 |
| map | male | aehplus | fev | line | 0.9318182 |
| map | male | aehplus | fev | logic\_de | 0.9318182 |
| map | male | aehplus | fev | logic\_im | 0.9318182 |
| map | male | aehplus | fev | mmse | 0.9318182 |
| map | male | aehplus | fev | nart | 0.9318182 |
| map | male | aehplus | fev | num\_comp | 0.9318182 |
| map | male | aehplus | fev | raven\_standard | 0.9318182 |
| map | male | aehplus | fev | symbol | 0.9318182 |
| map | male | aehplus | fev | word\_de | 0.9318182 |
| map | male | aehplus | fev | word\_im | 0.9318182 |
| map | male | aehplus | fev | word\_rec | 0.9318182 |

# female

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | mmse | nart | num\_comp | raven\_standard | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| ab | Covar (Levels) | 0.03 (0.02) .10 | 0.01 (0.02) .74 | 0.03 (0.02) .12 | 0.52 (0.10) <.01 | 0.06 (0.02) .01 | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 | 0.02 (0.01) <.01 | 0.10 (0.03) <.01 | 0.05 (0.05) .31 | 0.05 (0.05) .33 | 0.01 (0.02) .71 | 0.09 (0.03) <.01 | 0.32 (0.08) <.01 | 0.10 (0.03) <.01 | 0.49 (0.11) <.01 | 0.02 (0.02) .41 | 0.11 (0.05) .02 | 0.00 (0.01) .68 | --- |
| ab | Covar (Slopes) | 0.00 (0.00) .92 | 0.00 (0.00) .97 | 0.00 (0.00) .84 | -0.00 (0.00) .37 | 0.00 (0.00) .10 | 0.00 (0.00) .98 | 0.00 (0.00) .69 | 0.00 (0.00) .61 | -0.00 (0.00) .70 | -0.00 (0.00) .14 | -0.00 (0.00) .80 | -0.00 (0.00) .69 | 0.00 (0.00) .56 | -0.00 (0.00) .86 | 0.00 (0.00) .28 | 0.00 (0.01) .77 | -0.00 (0.00) .29 | -0.01 (0.00) .09 | 0.00 (0.00) .95 | --- |
|  | Covar (Residuals) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| er | Corr (Levels) | 0.08 (0.05) .10 | 0.02 (0.06) .74 | 0.09 (0.06) .12 | 0.23 (0.04) <.01 | 0.12 (0.04) .01 | 0.13 (0.04) <.01 | 0.18 (0.05) <.01 | 0.19 (0.06) <.01 | 0.14 (0.05) <.01 | 0.05 (0.04) .31 | 0.04 (0.05) .33 | 0.02 (0.06) .71 | 0.15 (0.04) <.01 | 0.17 (0.04) <.01 | 0.18 (0.05) <.01 | 0.19 (0.04) <.01 | 0.04 (0.05) .41 | 0.11 (0.04) .02 | 0.02 (0.04) .68 | --- |
| er | Corr (Slopes) | -0.04 (0.43) .92 | -0.02 (0.47) .97 | 0.11 (0.60) .85 | -0.35 (0.44) .42 | 0.68 (0.53) .20 | 0.01 (0.60) .98 | -0.20 (0.57) .72 | -0.24 (0.56) .66 | -0.32 (0.87) .72 | -0.60 (0.79) .44 | -0.11 (0.47) .81 | -0.20 (0.57) .72 | 0.32 (0.63) .61 | -0.10 (0.60) .86 | 0.64 (0.82) .44 | 0.12 (0.39) .76 | -0.58 (0.84) .49 | -0.55 (0.43) .19 | 0.08 (1.14) .95 | --- |
| er | Corr (Residuals) | -0.03 (0.03) .35 | -0.04 (0.03) .17 | -0.03 (0.03) .22 | -0.04 (0.03) .10 | -0.04 (0.03) .18 | 0.02 (0.03) .46 | 0.03 (0.03) .28 | 0.02 (0.03) .46 | -0.04 (0.03) .11 | 0.01 (0.03) .78 | 0.00 (0.03) .91 | 0.05 (0.03) .07 | 0.01 (0.03) .72 | -0.01 (0.03) .59 | -0.05 (0.03) .08 | 0.05 (0.03) .12 | 0.02 (0.03) .53 | 0.03 (0.03) .33 | 0.00 (0.03) .89 | --- |
| a | Level | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.70 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.70 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71(0.00) |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04(0.00) |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02(0.00) |
| a | Level \* education | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01(0.00) |
| a | Level \* height | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.84 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.84 (0.18) <.01 | 1.83 (0.18) <.01 | 1.82 (0.18) <.01 | 1.83 (0.18) <.01 | 1.82 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83(0.00) |
| a | Level \* smoking | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11(0.00) |
| a | Level \* cardio | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .10 | -0.07 (0.04) .08 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .08 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .08 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07(0.00) |
| a | Level \* diabetes | -0.00 (0.03) .90 | -0.00 (0.03) .87 | -0.00 (0.03) .88 | -0.00 (0.03) .89 | -0.00 (0.03) .87 | -0.00 (0.03) .88 | -0.01 (0.03) .84 | -0.00 (0.03) .88 | -0.00 (0.03) .90 | -0.01 (0.03) .86 | -0.00 (0.03) .87 | -0.00 (0.03) .88 | -0.00 (0.03) .88 | -0.01 (0.03) .84 | -0.01 (0.03) .85 | -0.01 (0.03) .86 | -0.01 (0.03) .86 | -0.01 (0.03) .85 | -0.00 (0.03) .88 | -0.01(0.00) |
| a | Slope \* age | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .14 | 0.00 (0.00) .19 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .16 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .12 | 0.00 (0.00) .14 | 0.00 (0.00) .16 | 0.00 (0.00) .14 | 0.00 (0.00) .14 | 0.00 (0.00) .14 | 0.00 (0.00) .18 | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .91 | 0.00 (0.00) .94 | 0.00 (0.00) .93 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00 (0.00) .94 | 0.00 (0.00) .92 | 0.00 (0.00) .95 | 0.00 (0.00) .96 | 0.00 (0.00) .90 | 0.00 (0.00) .97 | 0.00 (0.00) .91 | 0.00 (0.00) .87 | 0.00 (0.00) .94 | 0.00 (0.00) .95 | 0.00 (0.00) .90 | 0.00 (0.00) .89 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00(0.00) |
| a | Slope \* height | -0.08 (0.04) .03 | -0.08 (0.04) .02 | -0.08 (0.04) .02 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.09 (0.04) .02 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .04 | -0.08 (0.04) .03 | -0.08(0.00) |
| a | Slope \* smoking | 0.01 (0.01) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .21 | 0.01 (0.00) .26 | 0.01 (0.01) .17 | 0.01 (0.01) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .24 | 0.01 (0.01) .20 | 0.01 (0.01) .19 | 0.01 (0.01) .19 | 0.01 (0.00) .21 | 0.01 (0.01) .16 | 0.01 (0.01) .22 | 0.01 (0.00) .21 | 0.01 (0.01) .20 | 0.01 (0.00) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .21 | 0.01(0.00) |
| a | Slope \* cardio | -0.01 (0.01) .40 | -0.01 (0.01) .38 | -0.01 (0.01) .39 | -0.01 (0.01) .37 | -0.01 (0.01) .43 | -0.01 (0.01) .37 | -0.01 (0.01) .39 | -0.01 (0.01) .39 | -0.01 (0.01) .40 | -0.01 (0.01) .36 | -0.01 (0.01) .38 | -0.01 (0.01) .40 | -0.01 (0.01) .38 | -0.01 (0.01) .37 | -0.01 (0.01) .36 | -0.01 (0.01) .38 | -0.01 (0.01) .38 | -0.01 (0.01) .36 | -0.01 (0.01) .39 | -0.01(0.00) |
| a | Slope \* diabetes | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .15 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .19 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .16 | 0.01 (0.01) .16 | 0.01 (0.01) .19 | 0.01 (0.01) .17 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01(0.00) |
| b | Level | 13.59 (0.15) <.01 | 8.92 (0.17) <.01 | 9.31 (0.16) <.01 | 32.40 (0.80) <.01 | 5.17 (0.20) <.01 | 7.35 (0.22) <.01 | 6.51 (0.16) <.01 | 7.58 (0.06) <.01 | 7.99 (0.30) <.01 | 8.46 (0.41) <.01 | 10.31 (0.42) <.01 | 27.80 (0.16) <.01 | 5.36 (0.24) <.01 | 23.28 (0.77) <.01 | 10.11 (0.27) <.01 | 35.72 (1.08) <.01 | 5.44 (0.21) <.01 | 16.81 (0.39) <.01 | 9.65 (0.09) <.01 | --- |
| b | Slope | 0.07 (0.04) .07 | 0.05 (0.07) .43 | 0.03 (0.06) .65 | 0.07 (0.22) .77 | -0.03 (0.06) .64 | -0.00 (0.06) .99 | 0.09 (0.05) .07 | 0.02 (0.02) .40 | 0.08 (0.09) .37 | 0.39 (0.12) <.01 | 0.31 (0.12) .01 | 0.06 (0.07) .35 | 0.02 (0.05) .70 | 0.39 (0.17) .02 | 0.05 (0.09) .59 | 0.85 (0.24) <.01 | 0.15 (0.06) .01 | 0.49 (0.12) <.01 | 0.02 (0.02) .38 | --- |
| b | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.26 (0.04) <.01 | 0.01 (0.01) .48 | 0.00 (0.01) .98 | -0.00 (0.01) .66 | 0.00 (0.00) .25 | -0.01 (0.01) .32 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.05 (0.01) <.01 | 0.04 (0.01) <.01 | -0.17 (0.03) <.01 | -0.05 (0.01) <.01 | -0.38 (0.04) <.01 | -0.06 (0.01) <.01 | -0.11 (0.02) <.01 | -0.02 (0.00) <.01 | --- |
| b | Level \* education | 0.09 (0.01) <.01 | 0.09 (0.02) <.01 | 0.08 (0.02) <.01 | 0.82 (0.08) <.01 | 0.15 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 | 0.02 (0.00) <.01 | 0.25 (0.03) <.01 | 0.35 (0.04) <.01 | 0.33 (0.04) <.01 | 0.14 (0.02) <.01 | 0.31 (0.02) <.01 | 0.50 (0.08) <.01 | 0.30 (0.02) <.01 | 1.01 (0.10) <.01 | 0.14 (0.02) <.01 | 0.35 (0.04) <.01 | 0.02 (0.01) .01 | --- |
| b | Level \* height | 2.33 (0.60) <.01 | 0.73 (0.80) .36 | 0.74 (0.79) .35 | 12.85 (3.74) <.01 | 2.82 (0.88) <.01 | 2.50 (0.91) .01 | 1.90 (0.68) .01 | 0.23 (0.26) .37 | 2.73 (1.26) .03 | 5.53 (1.75) <.01 | 4.28 (1.65) .01 | 0.80 (0.71) .26 | 3.20 (1.02) <.01 | 11.44 (3.37) <.01 | 4.94 (1.20) <.01 | 16.74 (4.22) <.01 | 2.03 (0.88) .02 | 4.40 (1.81) .01 | 0.45 (0.45) .31 | --- |
| b | Level \* smoking | 0.03 (0.07) .71 | 0.02 (0.12) .86 | 0.10 (0.10) .33 | -0.64 (0.51) .21 | -0.02 (0.12) .88 | -0.01 (0.12) .94 | -0.04 (0.09) .63 | -0.02 (0.03) .47 | -0.23 (0.18) .19 | 0.08 (0.26) .76 | -0.11 (0.25) .66 | -0.01 (0.09) .88 | 0.05 (0.13) .71 | -0.37 (0.44) .40 | 0.03 (0.16) .86 | -0.14 (0.59) .81 | -0.20 (0.13) .12 | -0.49 (0.25) .05 | -0.04 (0.05) .47 | --- |
| b | Level \* cardio | 0.08 (0.11) .44 | -0.12 (0.19) .53 | -0.08 (0.16) .60 | -0.63 (0.74) .39 | -0.38 (0.18) .04 | 0.23 (0.19) .24 | -0.05 (0.14) .71 | -0.03 (0.05) .59 | 0.06 (0.26) .81 | -0.05 (0.42) .90 | -0.10 (0.40) .81 | -0.10 (0.13) .43 | 0.25 (0.19) .19 | -0.49 (0.70) .48 | -0.46 (0.25) .06 | -0.71 (0.89) .43 | -0.33 (0.21) .12 | -0.34 (0.37) .37 | -0.10 (0.10) .32 | --- |
| b | Level \* diabetes | -0.22 (0.11) .04 | 0.14 (0.14) .32 | 0.17 (0.13) .19 | -0.37 (0.64) .57 | 0.17 (0.16) .28 | 0.16 (0.17) .35 | 0.07 (0.13) .59 | -0.10 (0.05) .06 | 0.07 (0.24) .78 | 0.20 (0.32) .54 | 0.04 (0.31) .91 | 0.01 (0.13) .96 | -0.50 (0.19) .01 | -0.32 (0.60) .59 | -0.13 (0.21) .55 | -1.22 (0.81) .13 | 0.16 (0.16) .30 | 0.33 (0.32) .31 | 0.09 (0.06) .17 | --- |
| b | Slope \* age | -0.00 (0.00) .63 | -0.01 (0.00) <.01 | -0.00 (0.00) .15 | -0.03 (0.01) <.01 | -0.00 (0.00) .82 | 0.00 (0.00) .71 | -0.00 (0.00) .04 | 0.00 (0.00) .77 | -0.00 (0.00) .78 | -0.02 (0.00) <.01 | -0.01 (0.00) .06 | -0.00 (0.00) .04 | -0.00 (0.00) .25 | -0.03 (0.01) <.01 | -0.01 (0.00) .01 | -0.06 (0.01) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 | -0.00 (0.00) .20 | --- |
| b | Slope \* education | -0.01 (0.00) .10 | -0.00 (0.01) .52 | 0.00 (0.01) .95 | -0.00 (0.02) .92 | -0.00 (0.00) .61 | -0.00 (0.01) .67 | -0.00 (0.00) .46 | -0.00 (0.00) .51 | -0.00 (0.01) .70 | 0.02 (0.01) .23 | 0.01 (0.01) .55 | -0.01 (0.01) .05 | 0.00 (0.00) .88 | -0.03 (0.02) .11 | 0.00 (0.01) .98 | -0.07 (0.03) .01 | 0.00 (0.01) .81 | -0.01 (0.01) .61 | -0.00 (0.00) .70 | --- |
| b | Slope \* height | -0.17 (0.16) .27 | -0.02 (0.33) .95 | 0.00 (0.29) .99 | -0.46 (1.11) .68 | 0.11 (0.26) .68 | 0.12 (0.27) .64 | -0.06 (0.23) .81 | 0.04 (0.09) .67 | 0.53 (0.39) .17 | -0.28 (0.60) .64 | 0.14 (0.52) .80 | 0.05 (0.26) .86 | 0.08 (0.19) .68 | 0.95 (0.81) .24 | 0.28 (0.39) .48 | 0.98 (1.16) .40 | 0.23 (0.29) .44 | 0.09 (0.56) .88 | 0.02 (0.10) .82 | --- |
| b | Slope \* smoking | 0.00 (0.02) .82 | -0.01 (0.05) .80 | -0.05 (0.04) .24 | 0.12 (0.15) .43 | 0.02 (0.04) .59 | -0.01 (0.04) .69 | -0.04 (0.03) .22 | 0.01 (0.01) .34 | 0.02 (0.05) .77 | -0.08 (0.08) .28 | -0.10 (0.07) .20 | 0.02 (0.04) .56 | 0.04 (0.02) .10 | -0.08 (0.11) .47 | -0.04 (0.05) .46 | -0.24 (0.15) .10 | -0.02 (0.04) .66 | 0.00 (0.08) .99 | 0.01 (0.01) .38 | --- |
| b | Slope \* cardio | 0.00 (0.03) .99 | 0.00 (0.07) .98 | -0.03 (0.06) .57 | -0.54 (0.21) .01 | 0.10 (0.06) .09 | -0.04 (0.05) .47 | -0.08 (0.04) .08 | 0.00 (0.02) .88 | -0.14 (0.09) .11 | -0.05 (0.12) .68 | -0.04 (0.12) .75 | -0.03 (0.06) .66 | -0.04 (0.04) .28 | -0.11 (0.17) .50 | -0.00 (0.09) .97 | -0.08 (0.22) .71 | 0.00 (0.06) .95 | -0.14 (0.12) .26 | -0.00 (0.02) .90 | --- |
| b | Slope \* diabetes | 0.06 (0.03) .02 | 0.10 (0.05) .06 | 0.04 (0.04) .33 | 0.07 (0.18) .67 | 0.03 (0.05) .53 | -0.02 (0.04) .68 | -0.01 (0.04) .87 | 0.03 (0.02) .06 | -0.12 (0.07) .07 | 0.06 (0.10) .54 | 0.21 (0.09) .02 | 0.07 (0.05) .14 | -0.03 (0.04) .42 | -0.04 (0.15) .77 | 0.00 (0.07) .98 | -0.08 (0.19) .69 | -0.05 (0.04) .23 | 0.02 (0.10) .80 | -0.00 (0.02) .77 | --- |
| a | Var (Level) | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11(0.00) |
| a | Var (Slope) | 0.00 (0.00) .65 | 0.00 (0.00) .63 | 0.00 (0.00) .60 | 0.00 (0.00) .59 | 0.00 (0.00) .30 | 0.00 (0.00) .62 | 0.00 (0.00) .64 | 0.00 (0.00) .64 | 0.00 (0.00) .46 | 0.00 (0.00) .63 | 0.00 (0.00) .61 | 0.00 (0.00) .66 | 0.00 (0.00) .60 | 0.00 (0.00) .63 | 0.00 (0.00) .62 | 0.00 (0.00) .61 | 0.00 (0.00) .66 | 0.00 (0.00) .32 | 0.00 (0.00) .50 | 0.00(0.00) |
|  | Var (Residual) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b | Var (Level) | 0.95 (0.09) <.01 | 1.33 (0.19) <.01 | 0.95 (0.11) <.01 | 46.05 (3.18) <.01 | 2.29 (0.16) <.01 | 2.37 (0.15) <.01 | 1.02 (0.10) <.01 | 0.13 (0.02) <.01 | 4.26 (0.32) <.01 | 11.12 (0.67) <.01 | 10.12 (0.63) <.01 | 0.88 (0.13) <.01 | 3.22 (0.20) <.01 | 32.44 (2.12) <.01 | 2.94 (0.26) <.01 | 62.40 (4.28) <.01 | 2.59 (0.18) <.01 | 9.68 (0.65) <.01 | 0.48 (0.13) <.01 | --- |
| b | Var (Slope) | 0.02 (0.01) <.01 | 0.07 (0.03) .01 | 0.04 (0.02) .02 | 1.10 (0.24) <.01 | 0.04 (0.02) .03 | 0.02 (0.01) .09 | 0.03 (0.01) .03 | 0.01 (0.00) .02 | 0.03 (0.03) .38 | 0.29 (0.06) <.01 | 0.23 (0.06) <.01 | 0.06 (0.03) .08 | 0.02 (0.01) .06 | 0.37 (0.15) .02 | 0.06 (0.03) .05 | 1.17 (0.33) <.01 | 0.04 (0.02) .02 | 0.30 (0.07) <.01 | 0.00 (0.01) .89 | --- |
|  | Var (Residual) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a | Covar (Level, Slope) | 0.00 (0.00) .83 | 0.00 (0.00) .78 | 0.00 (0.00) .78 | 0.00 (0.00) .91 | -0.00 (0.00) .54 | 0.00 (0.00) .78 | 0.00 (0.00) .82 | 0.00 (0.00) .80 | 0.00 (0.00) .65 | 0.00 (0.00) .76 | 0.00 (0.00) .76 | 0.00 (0.00) .79 | 0.00 (0.00) .65 | 0.00 (0.00) .80 | 0.00 (0.00) .78 | 0.00 (0.00) .83 | 0.00 (0.00) .86 | -0.00 (0.00) .65 | 0.00 (0.00) .71 | -0.00(0.00) |
| b | Covar (Level, Slope) | -0.09 (0.02) <.01 | 0.02 (0.06) .71 | -0.04 (0.04) .29 | -0.12 (0.63) .85 | -0.08 (0.04) .04 | -0.03 (0.04) .45 | -0.07 (0.03) .01 | -0.01 (0.01) .04 | 0.04 (0.08) .63 | -0.04 (0.15) .76 | -0.30 (0.14) .04 | -0.01 (0.04) .79 | -0.03 (0.03) .39 | -0.28 (0.43) .51 | -0.07 (0.07) .31 | 0.77 (0.82) .35 | 0.02 (0.04) .67 | 0.09 (0.16) .58 | -0.00 (0.03) .97 | --- |
|  | Correlation of Levels | 0.079 | 0.021 | 0.092 | 0.23 | 0.12 | 0.13 | 0.18 | 0.19 | 0.14 | 0.046 | 0.045 | 0.022 | 0.15 | 0.17 | 0.18 | 0.19 | 0.037 | 0.11 | 0.017 | 0.11(0.07) |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf | Inf | NaN | NaN | NaN | -Inf | -Inf | -Inf | -Inf | Inf | -Inf | Inf | Inf | -Inf | -Inf | NaN | --- |
|  | Correlation of Residuals | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | --- |
|  | N | 934 | 935 | 935 | 935 | 935 | 935 | 935 | 935 | 934 | 935 | 935 | 935 | 932 | 934 | 920 | 934 | 935 | 935 | 935 | 933.84(3.44) |
|  | occasions | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -4,437 | -7,106 | -6,642 | -11,446 | -6,650 | -6,662 | -5,902 | -2,608 | -7,918 | -9,022 | -8,933 | -6,293 | -5,515 | -10,533 | -7,005 | -11,355 | -6,810 | -9,012 | -3,826 | -7,246(2,393) |
|  | AIC | 8,956 | 14,294 | 13,366 | 22,974 | 13,383 | 13,406 | 11,885 | 5,299 | 15,919 | 18,127 | 17,949 | 12,668 | 11,112 | 21,148 | 14,093 | 22,792 | 13,701 | 18,107 | 7,735 | 14,574(4,785) |
|  | BIC | 9,154 | 14,492 | 13,564 | 23,172 | 13,581 | 13,604 | 12,084 | 5,497 | 16,117 | 18,325 | 18,147 | 12,867 | 11,311 | 21,347 | 14,291 | 22,990 | 13,900 | 18,305 | 7,933 | 14,773(4,785) |

## bnt

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.06 (0.02) <.01 | 0.04 (0.02) .03 | 0.02 (0.01) .17 | 0.03 (0.02) .10 |
| ab | Covar (Slopes) | 0.00 (0.00) .99 | 0.00 (0.00) .99 | 0.00 (0.00) .97 | 0.00 (0.00) .92 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.11 (0.05) .02 | 0.06 (0.04) .17 | 0.08 (0.05) .10 |
| er | Corr (Slopes) | -0.01 (0.48) .99 | -0.00 (0.47) .99 | 0.02 (0.49) .97 | -0.04 (0.43) .92 |
| er | Corr (Residuals) | -0.00 (0.03) .88 | -0.00 (0.03) .88 | -0.01 (0.03) .71 | -0.03 (0.03) .35 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .90 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .91 | 0.00 (0.00) .88 | 0.00 (0.00) .91 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 14.19 (0.06) <.01 | 13.41 (0.13) <.01 | 13.46 (0.13) <.01 | 13.59 (0.15) <.01 |
| b | Slope | 0.04 (0.01) <.01 | 0.08 (0.04) .02 | 0.08 (0.04) .02 | 0.07 (0.04) .07 |
| b | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| b | Level \* education | --- | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 |
| b | Level \* height | --- | --- | 1.88 (0.57) <.01 | 2.33 (0.60) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.03 (0.07) .71 |
| b | Level \* cardio | --- | --- | --- | 0.08 (0.11) .44 |
| b | Level \* diabetes | --- | --- | --- | -0.22 (0.11) .04 |
| b | Slope \* age | -0.00 (0.00) .51 | -0.00 (0.00) .45 | -0.00 (0.00) .44 | -0.00 (0.00) .63 |
| b | Slope \* education | --- | -0.01 (0.00) .13 | -0.01 (0.00) .13 | -0.01 (0.00) .10 |
| b | Slope \* height | --- | --- | -0.10 (0.15) .50 | -0.17 (0.16) .27 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.02) .82 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.03) .99 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.03) .02 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .75 | 0.00 (0.00) .75 | 0.00 (0.00) .74 | 0.00 (0.00) .65 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.28 (0.20) <.01 | 1.18 (0.20) <.01 | 1.00 (0.11) <.01 | 0.95 (0.09) <.01 |
| b | Var (Slope) | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .28 | -0.00 (0.00) .29 | -0.00 (0.00) .48 | 0.00 (0.00) .83 |
| b | Covar (Level, Slope) | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.08 (0.02) <.01 | -0.09 (0.02) <.01 |
|  | Correlation of Levels | 0.15 | 0.11 | 0.062 | 0.079 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -5,150 | -5,107 | -4,948 | -4,437 |
|  | AIC | 10,342 | 10,263 | 9,954 | 8,956 |
|  | BIC | 10,446 | 10,387 | 10,097 | 9,154 |

## bstory\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.03 (0.02) .19 | 0.01 (0.02) .52 | 0.01 (0.02) .70 | 0.01 (0.02) .74 |
| ab | Covar (Slopes) | 0.00 (0.00) .85 | 0.00 (0.00) .88 | 0.00 (0.00) .93 | 0.00 (0.00) .97 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.07 (0.05) .19 | 0.04 (0.06) .52 | 0.02 (0.06) .70 | 0.02 (0.06) .74 |
| er | Corr (Slopes) | 0.10 (0.61) .86 | 0.08 (0.60) .89 | 0.05 (0.59) .93 | -0.02 (0.47) .97 |
| er | Corr (Residuals) | -0.04 (0.03) .13 | -0.04 (0.03) .13 | -0.04 (0.03) .14 | -0.04 (0.03) .17 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .92 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.08 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 9.68 (0.07) <.01 | 8.97 (0.14) <.01 | 9.02 (0.14) <.01 | 8.92 (0.17) <.01 |
| b | Slope | 0.01 (0.03) .62 | 0.05 (0.05) .32 | 0.05 (0.05) .34 | 0.05 (0.07) .43 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) <.01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.68 (0.74) .36 | 0.73 (0.80) .36 |
| b | Level \* smoking | --- | --- | --- | 0.02 (0.12) .86 |
| b | Level \* cardio | --- | --- | --- | -0.12 (0.19) .53 |
| b | Level \* diabetes | --- | --- | --- | 0.14 (0.14) .32 |
| b | Slope \* age | -0.01 (0.00) .01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .43 | -0.00 (0.01) .44 | -0.00 (0.01) .52 |
| b | Slope \* height | --- | --- | 0.15 (0.34) .67 | -0.02 (0.33) .95 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.05) .80 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.07) .98 |
| b | Slope \* diabetes | --- | --- | --- | 0.10 (0.05) .06 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .63 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.37 (0.18) <.01 | 1.29 (0.17) <.01 | 1.25 (0.17) <.01 | 1.33 (0.19) <.01 |
| b | Var (Slope) | 0.07 (0.03) <.01 | 0.07 (0.03) <.01 | 0.07 (0.02) <.01 | 0.07 (0.03) .01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | 0.03 (0.06) .58 | 0.04 (0.05) .53 | 0.04 (0.05) .46 | 0.02 (0.06) .71 |
|  | Correlation of Levels | 0.07 | 0.037 | 0.021 | 0.021 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,931 | -7,906 | -7,821 | -7,106 |
|  | AIC | 15,903 | 15,862 | 15,699 | 14,294 |
|  | BIC | 16,007 | 15,986 | 15,842 | 14,492 |

## bstory\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.05 (0.02) .01 | 0.04 (0.02) .06 | 0.03 (0.02) .09 | 0.03 (0.02) .12 |
| ab | Covar (Slopes) | 0.00 (0.00) .53 | 0.00 (0.00) .54 | 0.00 (0.00) .55 | 0.00 (0.00) .84 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.13 (0.05) .01 | 0.10 (0.05) .06 | 0.09 (0.06) .09 | 0.09 (0.06) .12 |
| er | Corr (Slopes) | 0.38 (0.84) .66 | 0.36 (0.83) .66 | 0.36 (0.84) .67 | 0.11 (0.60) .85 |
| er | Corr (Residuals) | -0.04 (0.02) .10 | -0.04 (0.02) .10 | -0.04 (0.02) .12 | -0.03 (0.03) .22 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.84 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .91 | 0.00 (0.00) .93 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.08 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 10.03 (0.07) <.01 | 9.43 (0.13) <.01 | 9.47 (0.13) <.01 | 9.31 (0.16) <.01 |
| b | Slope | -0.01 (0.03) .76 | -0.03 (0.05) .50 | -0.04 (0.05) .47 | 0.03 (0.06) .65 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) <.01 |
| b | Level \* education | --- | 0.08 (0.01) <.01 | 0.07 (0.01) <.01 | 0.08 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.58 (0.73) .43 | 0.74 (0.79) .35 |
| b | Level \* smoking | --- | --- | --- | 0.10 (0.10) .33 |
| b | Level \* cardio | --- | --- | --- | -0.08 (0.16) .60 |
| b | Level \* diabetes | --- | --- | --- | 0.17 (0.13) .19 |
| b | Slope \* age | -0.00 (0.00) .35 | -0.00 (0.00) .34 | -0.00 (0.00) .37 | -0.00 (0.00) .15 |
| b | Slope \* education | --- | 0.00 (0.01) .56 | 0.00 (0.01) .53 | 0.00 (0.01) .95 |
| b | Slope \* height | --- | --- | 0.10 (0.27) .72 | 0.00 (0.29) .99 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.04) .24 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .57 |
| b | Slope \* diabetes | --- | --- | --- | 0.04 (0.04) .33 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .70 | 0.00 (0.00) .70 | 0.00 (0.00) .71 | 0.00 (0.00) .60 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.05 (0.11) <.01 | 0.99 (0.11) <.01 | 0.96 (0.11) <.01 | 0.95 (0.11) <.01 |
| b | Var (Slope) | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.04 (0.02) .02 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .26 | -0.00 (0.00) .46 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.05 (0.04) .14 | -0.06 (0.04) .12 | -0.05 (0.04) .15 | -0.04 (0.04) .29 |
|  | Correlation of Levels | 0.13 | 0.1 | 0.093 | 0.092 |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,456 | -7,426 | -7,341 | -6,642 |
|  | AIC | 14,954 | 14,903 | 14,741 | 13,366 |
|  | BIC | 15,057 | 15,026 | 14,884 | 13,564 |

## categories

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.81 (0.11) <.01 | 0.68 (0.10) <.01 | 0.55 (0.10) <.01 | 0.52 (0.10) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .64 | -0.00 (0.00) .63 | -0.00 (0.00) .58 | -0.00 (0.00) .37 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.31 (0.04) <.01 | 0.28 (0.04) <.01 | 0.24 (0.04) <.01 | 0.23 (0.04) <.01 |
| er | Corr (Slopes) | -0.21 (0.48) .66 | -0.22 (0.48) .65 | -0.25 (0.48) .60 | -0.35 (0.44) .42 |
| er | Corr (Residuals) | -0.03 (0.03) .20 | -0.03 (0.03) .19 | -0.04 (0.03) .18 | -0.04 (0.03) .10 |
| a | Level | 1.73 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.70 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.10 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .89 |
| a | Slope \* age | 0.00 (0.00) .10 | 0.00 (0.00) .10 | 0.00 (0.00) .19 | 0.00 (0.00) .19 |
| a | Slope \* education | --- | 0.00 (0.00) .79 | 0.00 (0.00) .98 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .26 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .15 |
| b | Level | 38.26 (0.41) <.01 | 31.91 (0.67) <.01 | 32.32 (0.66) <.01 | 32.40 (0.80) <.01 |
| b | Slope | 0.07 (0.10) .49 | 0.02 (0.18) .92 | 0.01 (0.18) .96 | 0.07 (0.22) .77 |
| b | Level \* age | -0.29 (0.03) <.01 | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.26 (0.04) <.01 |
| b | Level \* education | --- | 0.83 (0.08) <.01 | 0.78 (0.08) <.01 | 0.82 (0.08) <.01 |
| b | Level \* height | --- | --- | 12.35 (3.44) <.01 | 12.85 (3.74) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.64 (0.51) .21 |
| b | Level \* cardio | --- | --- | --- | -0.63 (0.74) .39 |
| b | Level \* diabetes | --- | --- | --- | -0.37 (0.64) .57 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | 0.01 (0.02) .76 | 0.01 (0.02) .75 | -0.00 (0.02) .92 |
| b | Slope \* height | --- | --- | -0.02 (1.01) .98 | -0.46 (1.11) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.12 (0.15) .43 |
| b | Slope \* cardio | --- | --- | --- | -0.54 (0.21) .01 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.18) .67 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .68 | 0.00 (0.00) .59 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 53.01 (3.31) <.01 | 46.27 (3.05) <.01 | 45.15 (3.00) <.01 | 46.05 (3.18) <.01 |
| b | Var (Slope) | 1.03 (0.22) <.01 | 1.03 (0.22) <.01 | 1.03 (0.22) <.01 | 1.10 (0.24) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .30 | -0.00 (0.00) .31 | -0.00 (0.00) .53 | 0.00 (0.00) .91 |
| b | Covar (Level, Slope) | 0.21 (0.64) .74 | 0.14 (0.59) .81 | 0.17 (0.59) .77 | -0.12 (0.63) .85 |
|  | Correlation of Levels | 0.31 | 0.28 | 0.24 | 0.23 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -12,781 | -12,719 | -12,625 | -11,446 |
|  | AIC | 25,603 | 25,489 | 25,308 | 22,974 |
|  | BIC | 25,707 | 25,612 | 25,451 | 23,172 |

## digit\_b

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.14 (0.02) <.01 | 0.11 (0.02) <.01 | 0.08 (0.02) <.01 | 0.06 (0.02) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .10 | 0.00 (0.00) .09 | 0.00 (0.00) .10 | 0.00 (0.00) .10 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.23 (0.04) <.01 | 0.20 (0.04) <.01 | 0.15 (0.04) <.01 | 0.12 (0.04) .01 |
| er | Corr (Slopes) | 0.68 (0.53) .20 | 0.68 (0.53) .20 | 0.68 (0.53) .21 | 0.68 (0.53) .20 |
| er | Corr (Residuals) | -0.04 (0.03) .22 | -0.04 (0.03) .21 | -0.04 (0.03) .21 | -0.04 (0.03) .18 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .85 | 0.00 (0.00) .91 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .17 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .43 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 6.36 (0.10) <.01 | 5.15 (0.16) <.01 | 5.25 (0.16) <.01 | 5.17 (0.20) <.01 |
| b | Slope | -0.03 (0.02) .25 | -0.02 (0.04) .69 | -0.02 (0.04) .63 | -0.03 (0.06) .64 |
| b | Level \* age | -0.01 (0.01) .42 | -0.00 (0.01) .70 | 0.00 (0.01) .87 | 0.01 (0.01) .48 |
| b | Level \* education | --- | 0.16 (0.02) <.01 | 0.14 (0.02) <.01 | 0.15 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.46 (0.84) <.01 | 2.82 (0.88) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.12) .88 |
| b | Level \* cardio | --- | --- | --- | -0.38 (0.18) .04 |
| b | Level \* diabetes | --- | --- | --- | 0.17 (0.16) .28 |
| b | Slope \* age | 0.00 (0.00) .93 | 0.00 (0.00) .98 | 0.00 (0.00) .96 | -0.00 (0.00) .82 |
| b | Slope \* education | --- | -0.00 (0.00) .81 | -0.00 (0.00) .87 | -0.00 (0.00) .61 |
| b | Slope \* height | --- | --- | -0.07 (0.24) .77 | 0.11 (0.26) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .59 |
| b | Slope \* cardio | --- | --- | --- | 0.10 (0.06) .09 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.05) .53 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .30 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.67 (0.17) <.01 | 2.43 (0.16) <.01 | 2.37 (0.16) <.01 | 2.29 (0.16) <.01 |
| b | Var (Slope) | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.02) .03 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .14 | -0.00 (0.00) .15 | -0.00 (0.00) .26 | -0.00 (0.00) .54 |
| b | Covar (Level, Slope) | -0.10 (0.04) .01 | -0.10 (0.04) .01 | -0.10 (0.04) .01 | -0.08 (0.04) .04 |
|  | Correlation of Levels | 0.23 | 0.2 | 0.15 | 0.12 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,457 | -7,410 | -7,330 | -6,650 |
|  | AIC | 14,956 | 14,870 | 14,719 | 13,383 |
|  | BIC | 15,060 | 14,994 | 14,862 | 13,581 |

## digit\_f

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.11 (0.02) <.01 | 0.09 (0.02) <.01 | 0.06 (0.02) <.01 | 0.07 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .66 | 0.00 (0.00) .66 | 0.00 (0.00) .68 | 0.00 (0.00) .98 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.20 (0.04) <.01 | 0.17 (0.04) <.01 | 0.12 (0.04) <.01 | 0.13 (0.04) <.01 |
| er | Corr (Slopes) | 0.31 (0.78) .69 | 0.31 (0.77) .68 | 0.30 (0.76) .70 | 0.01 (0.60) .98 |
| er | Corr (Residuals) | 0.01 (0.03) .58 | 0.01 (0.03) .59 | 0.01 (0.03) .61 | 0.02 (0.03) .46 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .91 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 8.36 (0.09) <.01 | 7.37 (0.17) <.01 | 7.45 (0.17) <.01 | 7.35 (0.22) <.01 |
| b | Slope | -0.03 (0.02) .20 | -0.01 (0.05) .86 | -0.01 (0.05) .85 | -0.00 (0.06) .99 |
| b | Level \* age | -0.01 (0.01) .34 | -0.00 (0.01) .54 | 0.00 (0.01) .97 | 0.00 (0.01) .98 |
| b | Level \* education | --- | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.86 (0.85) <.01 | 2.50 (0.91) .01 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.12) .94 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.19) .24 |
| b | Level \* diabetes | --- | --- | --- | 0.16 (0.17) .35 |
| b | Slope \* age | 0.00 (0.00) .84 | -0.00 (0.00) .79 | 0.00 (0.00) .88 | 0.00 (0.00) .71 |
| b | Slope \* education | --- | -0.00 (0.01) .66 | -0.00 (0.01) .66 | -0.00 (0.01) .67 |
| b | Slope \* height | --- | --- | 0.01 (0.25) .98 | 0.12 (0.27) .64 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.04) .69 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.05) .47 |
| b | Slope \* diabetes | --- | --- | --- | -0.02 (0.04) .68 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .62 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.55 (0.15) <.01 | 2.39 (0.14) <.01 | 2.35 (0.14) <.01 | 2.37 (0.15) <.01 |
| b | Var (Slope) | 0.02 (0.01) .09 | 0.02 (0.01) .09 | 0.02 (0.01) .09 | 0.02 (0.01) .09 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .25 | -0.00 (0.00) .27 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.02 (0.03) .48 | -0.02 (0.03) .51 | -0.02 (0.03) .49 | -0.03 (0.04) .45 |
|  | Correlation of Levels | 0.19 | 0.17 | 0.12 | 0.13 |
|  | Correlation of Slopes | Inf | Inf | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,472 | -7,440 | -7,361 | -6,662 |
|  | AIC | 14,986 | 14,930 | 14,780 | 13,406 |
|  | BIC | 15,089 | 15,054 | 14,923 | 13,604 |

## digit\_o

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.10 (0.02) <.01 | 0.08 (0.02) <.01 | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .82 | 0.00 (0.00) .82 | 0.00 (0.00) .81 | 0.00 (0.00) .69 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.26 (0.04) <.01 | 0.22 (0.04) <.01 | 0.20 (0.05) <.01 | 0.18 (0.05) <.01 |
| er | Corr (Slopes) | -0.14 (0.64) .83 | -0.14 (0.65) .83 | -0.15 (0.66) .82 | -0.20 (0.57) .72 |
| er | Corr (Residuals) | 0.02 (0.03) .54 | 0.02 (0.03) .54 | 0.01 (0.03) .59 | 0.03 (0.03) .28 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .84 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .87 | 0.00 (0.00) .90 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 7.36 (0.07) <.01 | 6.43 (0.14) <.01 | 6.48 (0.14) <.01 | 6.51 (0.16) <.01 |
| b | Slope | 0.02 (0.02) .21 | 0.05 (0.04) .22 | 0.05 (0.04) .21 | 0.09 (0.05) .07 |
| b | Level \* age | -0.01 (0.01) .18 | -0.00 (0.01) .35 | -0.00 (0.01) .58 | -0.00 (0.01) .66 |
| b | Level \* education | --- | 0.12 (0.01) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Level \* height | --- | --- | 1.76 (0.65) .01 | 1.90 (0.68) .01 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.09) .63 |
| b | Level \* cardio | --- | --- | --- | -0.05 (0.14) .71 |
| b | Level \* diabetes | --- | --- | --- | 0.07 (0.13) .59 |
| b | Slope \* age | -0.00 (0.00) .04 | -0.00 (0.00) .03 | -0.00 (0.00) .05 | -0.00 (0.00) .04 |
| b | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .44 | -0.00 (0.00) .46 |
| b | Slope \* height | --- | --- | 0.12 (0.22) .58 | -0.06 (0.23) .81 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.03) .22 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.04) .08 |
| b | Slope \* diabetes | --- | --- | --- | -0.01 (0.04) .87 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .64 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.20 (0.11) <.01 | 1.05 (0.10) <.01 | 1.04 (0.10) <.01 | 1.02 (0.10) <.01 |
| b | Var (Slope) | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.03 (0.01) .03 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .27 | -0.00 (0.00) .28 | -0.00 (0.00) .48 | 0.00 (0.00) .82 |
| b | Covar (Level, Slope) | -0.07 (0.03) .01 | -0.07 (0.03) .01 | -0.07 (0.03) .01 | -0.07 (0.03) .01 |
|  | Correlation of Levels | 0.26 | 0.22 | 0.19 | 0.18 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -6,679 | -6,626 | -6,551 | -5,902 |
|  | AIC | 13,399 | 13,302 | 13,160 | 11,885 |
|  | BIC | 13,503 | 13,426 | 13,303 | 12,084 |

## ideas

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) .01 | 0.02 (0.01) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .72 | 0.00 (0.00) .73 | 0.00 (0.00) .62 | 0.00 (0.00) .61 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.19 (0.05) <.01 | 0.17 (0.05) <.01 | 0.17 (0.06) <.01 | 0.19 (0.06) <.01 |
| er | Corr (Slopes) | -0.21 (0.66) .75 | -0.21 (0.67) .76 | -0.31 (0.78) .69 | -0.24 (0.56) .66 |
| er | Corr (Residuals) | 0.01 (0.03) .76 | 0.01 (0.03) .76 | 0.01 (0.03) .69 | 0.02 (0.03) .46 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.10 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .93 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .24 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 7.67 (0.03) <.01 | 7.52 (0.05) <.01 | 7.52 (0.05) <.01 | 7.58 (0.06) <.01 |
| b | Slope | 0.02 (0.01) .07 | 0.03 (0.02) .08 | 0.04 (0.02) .05 | 0.02 (0.02) .40 |
| b | Level \* age | 0.00 (0.00) .35 | 0.00 (0.00) .26 | 0.00 (0.00) .21 | 0.00 (0.00) .25 |
| b | Level \* education | --- | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Level \* height | --- | --- | 0.24 (0.24) .31 | 0.23 (0.26) .37 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.03) .47 |
| b | Level \* cardio | --- | --- | --- | -0.03 (0.05) .59 |
| b | Level \* diabetes | --- | --- | --- | -0.10 (0.05) .06 |
| b | Slope \* age | 0.00 (0.00) .62 | 0.00 (0.00) .58 | 0.00 (0.00) .88 | 0.00 (0.00) .77 |
| b | Slope \* education | --- | -0.00 (0.00) .28 | -0.00 (0.00) .16 | -0.00 (0.00) .51 |
| b | Slope \* height | --- | --- | 0.11 (0.09) .21 | 0.04 (0.09) .67 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .34 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.02) .88 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .06 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .64 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 | 0.13 (0.02) <.01 |
| b | Var (Slope) | 0.00 (0.00) .03 | 0.00 (0.00) .03 | 0.00 (0.00) .04 | 0.01 (0.00) .02 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .46 | 0.00 (0.00) .80 |
| b | Covar (Level, Slope) | -0.01 (0.01) .06 | -0.01 (0.01) .07 | -0.01 (0.01) .06 | -0.01 (0.01) .04 |
|  | Correlation of Levels | 0.19 | 0.17 | 0.17 | 0.19 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,010 | -2,995 | -2,915 | -2,608 |
|  | AIC | 6,062 | 6,040 | 5,888 | 5,299 |
|  | BIC | 6,166 | 6,163 | 6,031 | 5,497 |

## line

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.04) <.01 | 0.13 (0.04) <.01 | 0.10 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .53 | -0.00 (0.00) .50 | -0.00 (0.00) .57 | -0.00 (0.00) .70 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.20 (0.04) <.01 | 0.16 (0.05) <.01 | 0.14 (0.04) <.01 | 0.14 (0.05) <.01 |
| er | Corr (Slopes) | -0.80 (1.82) .66 | -0.85 (1.92) .66 | -0.74 (1.82) .68 | -0.32 (0.87) .72 |
| er | Corr (Residuals) | -0.03 (0.02) .18 | -0.03 (0.02) .18 | -0.03 (0.02) .19 | -0.04 (0.03) .11 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.70 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .90 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .81 | 0.00 (0.00) .95 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .19 |
| b | Level | 9.78 (0.14) <.01 | 7.66 (0.26) <.01 | 7.75 (0.26) <.01 | 7.99 (0.30) <.01 |
| b | Slope | 0.04 (0.03) .23 | 0.08 (0.07) .26 | 0.09 (0.07) .22 | 0.08 (0.09) .37 |
| b | Level \* age | -0.02 (0.01) .14 | -0.01 (0.01) .30 | -0.01 (0.01) .57 | -0.01 (0.01) .32 |
| b | Level \* education | --- | 0.28 (0.03) <.01 | 0.26 (0.03) <.01 | 0.25 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.90 (1.21) .02 | 2.73 (1.26) .03 |
| b | Level \* smoking | --- | --- | --- | -0.23 (0.18) .19 |
| b | Level \* cardio | --- | --- | --- | 0.06 (0.26) .81 |
| b | Level \* diabetes | --- | --- | --- | 0.07 (0.24) .78 |
| b | Slope \* age | -0.00 (0.00) .36 | -0.00 (0.00) .32 | -0.00 (0.00) .49 | -0.00 (0.00) .78 |
| b | Slope \* education | --- | -0.00 (0.01) .49 | -0.01 (0.01) .38 | -0.00 (0.01) .70 |
| b | Slope \* height | --- | --- | 0.58 (0.35) .10 | 0.53 (0.39) .17 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .77 |
| b | Slope \* cardio | --- | --- | --- | -0.14 (0.09) .11 |
| b | Slope \* diabetes | --- | --- | --- | -0.12 (0.07) .07 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .77 | 0.00 (0.00) .77 | 0.00 (0.00) .77 | 0.00 (0.00) .46 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 5.37 (0.37) <.01 | 4.62 (0.33) <.01 | 4.51 (0.32) <.01 | 4.26 (0.32) <.01 |
| b | Var (Slope) | 0.03 (0.03) .36 | 0.03 (0.03) .37 | 0.03 (0.03) .40 | 0.03 (0.03) .38 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .27 | -0.00 (0.00) .28 | -0.00 (0.00) .47 | 0.00 (0.00) .65 |
| b | Covar (Level, Slope) | 0.02 (0.08) .81 | 0.04 (0.08) .65 | 0.04 (0.08) .65 | 0.04 (0.08) .63 |
|  | Correlation of Levels | 0.2 | 0.16 | 0.14 | 0.14 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -8,876 | -8,815 | -8,737 | -7,918 |
|  | AIC | 17,793 | 17,679 | 17,532 | 15,919 |
|  | BIC | 17,897 | 17,803 | 17,675 | 16,117 |

## logic\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.05) <.01 | 0.12 (0.05) .02 | 0.06 (0.05) .21 | 0.05 (0.05) .31 |
| ab | Covar (Slopes) | -0.00 (0.00) .17 | -0.00 (0.00) .16 | -0.00 (0.00) .16 | -0.00 (0.00) .14 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.10 (0.04) .02 | 0.05 (0.04) .21 | 0.05 (0.04) .31 |
| er | Corr (Slopes) | -0.67 (1.14) .55 | -0.69 (1.13) .54 | -0.69 (1.13) .54 | -0.60 (0.79) .44 |
| er | Corr (Residuals) | 0.01 (0.03) .59 | 0.02 (0.03) .58 | 0.01 (0.03) .64 | 0.01 (0.03) .78 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .09 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .89 | 0.00 (0.00) .88 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .19 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 11.16 (0.18) <.01 | 8.50 (0.32) <.01 | 8.66 (0.32) <.01 | 8.46 (0.41) <.01 |
| b | Slope | 0.45 (0.05) <.01 | 0.28 (0.10) .01 | 0.27 (0.10) .01 | 0.39 (0.12) <.01 |
| b | Level \* age | -0.12 (0.02) <.01 | -0.11 (0.02) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | --- | 0.35 (0.04) <.01 | 0.32 (0.04) <.01 | 0.35 (0.04) <.01 |
| b | Level \* height | --- | --- | 6.04 (1.75) <.01 | 5.53 (1.75) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.08 (0.26) .76 |
| b | Level \* cardio | --- | --- | --- | -0.05 (0.42) .90 |
| b | Level \* diabetes | --- | --- | --- | 0.20 (0.32) .54 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | --- | 0.02 (0.01) .06 | 0.02 (0.01) .05 | 0.02 (0.01) .23 |
| b | Slope \* height | --- | --- | -0.21 (0.55) .70 | -0.28 (0.60) .64 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.08) .28 |
| b | Slope \* cardio | --- | --- | --- | -0.05 (0.12) .68 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.10) .54 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .63 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 12.25 (0.66) <.01 | 11.09 (0.64) <.01 | 10.93 (0.63) <.01 | 11.12 (0.67) <.01 |
| b | Var (Slope) | 0.28 (0.06) <.01 | 0.27 (0.06) <.01 | 0.28 (0.06) <.01 | 0.29 (0.06) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .25 | -0.00 (0.00) .43 | 0.00 (0.00) .76 |
| b | Covar (Level, Slope) | 0.08 (0.14) .60 | 0.01 (0.14) .95 | 0.01 (0.14) .93 | -0.04 (0.15) .76 |
|  | Correlation of Levels | 0.14 | 0.099 | 0.055 | 0.046 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,029 | 1,029 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,096 | -10,040 | -9,951 | -9,022 |
|  | AIC | 20,233 | 20,130 | 19,960 | 18,127 |
|  | BIC | 20,337 | 20,254 | 20,103 | 18,325 |

## logic\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.18 (0.05) <.01 | 0.13 (0.05) .01 | 0.08 (0.05) .08 | 0.05 (0.05) .33 |
| ab | Covar (Slopes) | 0.00 (0.00) .69 | 0.00 (0.00) .72 | 0.00 (0.00) .69 | -0.00 (0.00) .80 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.15 (0.04) <.01 | 0.11 (0.04) .01 | 0.08 (0.04) .08 | 0.04 (0.05) .33 |
| er | Corr (Slopes) | 0.20 (0.55) .71 | 0.18 (0.54) .73 | 0.20 (0.56) .72 | -0.11 (0.47) .81 |
| er | Corr (Residuals) | -0.00 (0.03) .85 | -0.00 (0.03) .87 | -0.01 (0.03) .76 | 0.00 (0.03) .91 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .06 | 0.00 (0.00) .07 | 0.00 (0.00) .12 | 0.00 (0.00) .12 |
| a | Slope \* education | --- | 0.00 (0.00) .80 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .09 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .19 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 12.75 (0.18) <.01 | 10.22 (0.32) <.01 | 10.31 (0.32) <.01 | 10.31 (0.42) <.01 |
| b | Slope | 0.34 (0.05) <.01 | 0.24 (0.10) .02 | 0.24 (0.10) .02 | 0.31 (0.12) .01 |
| b | Level \* age | -0.11 (0.02) <.01 | -0.10 (0.01) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | --- | 0.33 (0.04) <.01 | 0.32 (0.04) <.01 | 0.33 (0.04) <.01 |
| b | Level \* height | --- | --- | 4.86 (1.66) <.01 | 4.28 (1.65) .01 |
| b | Level \* smoking | --- | --- | --- | -0.11 (0.25) .66 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.40) .81 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.31) .91 |
| b | Slope \* age | -0.01 (0.00) .15 | -0.01 (0.00) .17 | -0.01 (0.00) .16 | -0.01 (0.00) .06 |
| b | Slope \* education | --- | 0.01 (0.01) .26 | 0.01 (0.01) .27 | 0.01 (0.01) .55 |
| b | Slope \* height | --- | --- | 0.15 (0.49) .76 | 0.14 (0.52) .80 |
| b | Slope \* smoking | --- | --- | --- | -0.10 (0.07) .20 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.12) .75 |
| b | Slope \* diabetes | --- | --- | --- | 0.21 (0.09) .02 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .68 | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .61 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 11.20 (0.63) <.01 | 10.13 (0.61) <.01 | 10.01 (0.60) <.01 | 10.12 (0.63) <.01 |
| b | Var (Slope) | 0.25 (0.06) <.01 | 0.25 (0.06) <.01 | 0.25 (0.06) <.01 | 0.23 (0.06) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .21 | -0.00 (0.00) .23 | -0.00 (0.00) .41 | 0.00 (0.00) .76 |
| b | Covar (Level, Slope) | -0.25 (0.14) .09 | -0.28 (0.14) .05 | -0.28 (0.14) .04 | -0.30 (0.14) .04 |
|  | Correlation of Levels | 0.15 | 0.11 | 0.078 | 0.045 |
|  | Correlation of Slopes | Inf | Inf | Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,029 | 1,029 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,012 | -9,957 | -9,872 | -8,933 |
|  | AIC | 20,065 | 19,963 | 19,803 | 17,949 |
|  | BIC | 20,169 | 20,087 | 19,946 | 18,147 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.04 (0.02) .03 | 0.02 (0.02) .26 | 0.01 (0.02) .54 | 0.01 (0.02) .71 |
| ab | Covar (Slopes) | 0.00 (0.00) .90 | 0.00 (0.00) .88 | 0.00 (0.00) .80 | -0.00 (0.00) .69 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.12 (0.05) .03 | 0.06 (0.06) .26 | 0.04 (0.06) .53 | 0.02 (0.06) .71 |
| er | Corr (Slopes) | -0.07 (0.64) .91 | -0.10 (0.65) .88 | -0.16 (0.71) .82 | -0.20 (0.57) .72 |
| er | Corr (Residuals) | 0.04 (0.02) .16 | 0.04 (0.02) .15 | 0.04 (0.02) .13 | 0.05 (0.03) .07 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.84 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .89 | 0.00 (0.00) .91 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 28.80 (0.07) <.01 | 27.71 (0.14) <.01 | 27.77 (0.14) <.01 | 27.80 (0.16) <.01 |
| b | Slope | -0.03 (0.02) .14 | 0.06 (0.06) .29 | 0.06 (0.06) .30 | 0.06 (0.07) .35 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.14 (0.01) <.01 | 0.14 (0.01) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.94 (0.66) .15 | 0.80 (0.71) .26 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.09) .88 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.13) .43 |
| b | Level \* diabetes | --- | --- | --- | 0.01 (0.13) .96 |
| b | Slope \* age | -0.01 (0.00) .01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.00 (0.00) .04 |
| b | Slope \* education | --- | -0.01 (0.01) .07 | -0.01 (0.01) .06 | -0.01 (0.01) .05 |
| b | Slope \* height | --- | --- | 0.18 (0.26) .50 | 0.05 (0.26) .86 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .56 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .66 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.05) .14 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .74 | 0.00 (0.00) .74 | 0.00 (0.00) .74 | 0.00 (0.00) .66 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.12 (0.14) <.01 | 0.92 (0.13) <.01 | 0.87 (0.12) <.01 | 0.88 (0.13) <.01 |
| b | Var (Slope) | 0.05 (0.03) .10 | 0.05 (0.03) .10 | 0.05 (0.03) .12 | 0.06 (0.03) .08 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .25 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .79 |
| b | Covar (Level, Slope) | -0.01 (0.04) .77 | 0.00 (0.04) .93 | 0.01 (0.04) .75 | -0.01 (0.04) .79 |
|  | Correlation of Levels | 0.11 | 0.064 | 0.035 | 0.022 |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,112 | -7,052 | -6,964 | -6,293 |
|  | AIC | 14,265 | 14,154 | 13,987 | 12,668 |
|  | BIC | 14,369 | 14,277 | 14,130 | 12,867 |

## nart

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.19 (0.03) <.01 | 0.14 (0.03) <.01 | 0.10 (0.02) <.01 | 0.09 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .36 | 0.00 (0.00) .36 | 0.00 (0.00) .35 | 0.00 (0.00) .56 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.24 (0.04) <.01 | 0.20 (0.04) <.01 | 0.16 (0.04) <.01 | 0.15 (0.04) <.01 |
| er | Corr (Slopes) | 0.56 (0.96) .56 | 0.53 (0.85) .54 | 0.55 (0.89) .54 | 0.32 (0.63) .61 |
| er | Corr (Residuals) | -0.00 (0.03) .96 | -0.00 (0.03) .96 | -0.00 (0.03) .96 | 0.01 (0.03) .72 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) .01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .88 | 0.00 (0.00) .87 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.09 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .16 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 7.58 (0.12) <.01 | 4.96 (0.21) <.01 | 5.06 (0.21) <.01 | 5.36 (0.24) <.01 |
| b | Slope | 0.03 (0.02) .07 | 0.04 (0.04) .36 | 0.04 (0.04) .37 | 0.02 (0.05) .70 |
| b | Level \* age | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.34 (0.02) <.01 | 0.33 (0.02) <.01 | 0.31 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.64 (0.96) <.01 | 3.20 (1.02) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.05 (0.13) .71 |
| b | Level \* cardio | --- | --- | --- | 0.25 (0.19) .19 |
| b | Level \* diabetes | --- | --- | --- | -0.50 (0.19) .01 |
| b | Slope \* age | -0.00 (0.00) .13 | -0.00 (0.00) .13 | -0.00 (0.00) .14 | -0.00 (0.00) .25 |
| b | Slope \* education | --- | 0.00 (0.00) .93 | 0.00 (0.00) .94 | 0.00 (0.00) .88 |
| b | Slope \* height | --- | --- | 0.02 (0.17) .91 | 0.08 (0.19) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.02) .10 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.04) .28 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .71 | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .60 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 4.70 (0.27) <.01 | 3.53 (0.20) <.01 | 3.39 (0.19) <.01 | 3.22 (0.20) <.01 |
| b | Var (Slope) | 0.02 (0.01) .03 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .06 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .22 | -0.00 (0.00) .20 | -0.00 (0.00) .38 | 0.00 (0.00) .65 |
| b | Covar (Level, Slope) | -0.04 (0.04) .24 | -0.04 (0.03) .21 | -0.04 (0.03) .24 | -0.03 (0.03) .39 |
|  | Correlation of Levels | 0.24 | 0.2 | 0.16 | 0.15 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,027 | 1,027 | 1,022 | 932 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -6,371 | -6,231 | -6,148 | -5,515 |
|  | AIC | 12,784 | 12,512 | 12,355 | 11,112 |
|  | BIC | 12,888 | 12,635 | 12,498 | 11,311 |

## num\_comp

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.56 (0.09) <.01 | 0.46 (0.09) <.01 | 0.34 (0.08) <.01 | 0.32 (0.08) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .82 | -0.00 (0.00) .80 | -0.00 (0.00) .85 | -0.00 (0.00) .86 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.25 (0.04) <.01 | 0.22 (0.04) <.01 | 0.18 (0.04) <.01 | 0.17 (0.04) <.01 |
| er | Corr (Slopes) | -0.15 (0.68) .82 | -0.16 (0.69) .81 | -0.13 (0.70) .85 | -0.10 (0.60) .86 |
| er | Corr (Residuals) | -0.00 (0.03) .95 | -0.00 (0.03) .94 | -0.00 (0.03) .92 | -0.01 (0.03) .59 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.82 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .84 |
| a | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .83 | 0.00 (0.00) .94 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .22 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .16 |
| b | Level | 26.65 (0.35) <.01 | 22.29 (0.66) <.01 | 22.63 (0.66) <.01 | 23.28 (0.77) <.01 |
| b | Slope | 0.11 (0.07) .12 | 0.26 (0.14) .06 | 0.27 (0.14) .06 | 0.39 (0.17) .02 |
| b | Level \* age | -0.19 (0.03) <.01 | -0.18 (0.03) <.01 | -0.17 (0.03) <.01 | -0.17 (0.03) <.01 |
| b | Level \* education | --- | 0.57 (0.07) <.01 | 0.53 (0.07) <.01 | 0.50 (0.08) <.01 |
| b | Level \* height | --- | --- | 11.30 (3.15) <.01 | 11.44 (3.37) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.37 (0.44) .40 |
| b | Level \* cardio | --- | --- | --- | -0.49 (0.70) .48 |
| b | Level \* diabetes | --- | --- | --- | -0.32 (0.60) .59 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | -0.02 (0.02) .23 | -0.02 (0.02) .18 | -0.03 (0.02) .11 |
| b | Slope \* height | --- | --- | 0.81 (0.76) .29 | 0.95 (0.81) .24 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.11) .47 |
| b | Slope \* cardio | --- | --- | --- | -0.11 (0.17) .50 |
| b | Slope \* diabetes | --- | --- | --- | -0.04 (0.15) .77 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .70 | 0.00 (0.00) .70 | 0.00 (0.00) .71 | 0.00 (0.00) .63 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 37.90 (2.26) <.01 | 34.70 (2.12) <.01 | 33.28 (2.03) <.01 | 32.44 (2.12) <.01 |
| b | Var (Slope) | 0.36 (0.14) .01 | 0.36 (0.14) .01 | 0.35 (0.14) .01 | 0.37 (0.15) .02 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .47 | 0.00 (0.00) .80 |
| b | Covar (Level, Slope) | -0.33 (0.41) .42 | -0.23 (0.41) .57 | -0.21 (0.40) .59 | -0.28 (0.43) .51 |
|  | Correlation of Levels | 0.25 | 0.22 | 0.18 | 0.17 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -11,739 | -11,699 | -11,612 | -10,533 |
|  | AIC | 23,521 | 23,448 | 23,282 | 21,148 |
|  | BIC | 23,624 | 23,572 | 23,425 | 21,347 |

## raven\_standard

Gender = *female*; Process (a) = *fev*; Process (b) = *raven\_standard*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.21 (0.03) <.01 | 0.16 (0.03) <.01 | 0.11 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .39 | 0.00 (0.00) .41 | 0.00 (0.00) .38 | 0.00 (0.00) .28 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.28 (0.04) <.01 | 0.25 (0.04) <.01 | 0.19 (0.04) <.01 | 0.18 (0.05) <.01 |
| er | Corr (Slopes) | 0.64 (1.09) .56 | 0.61 (1.04) .56 | 0.66 (1.12) .56 | 0.64 (0.82) .44 |
| er | Corr (Residuals) | -0.04 (0.03) .15 | -0.04 (0.03) .15 | -0.04 (0.03) .16 | -0.05 (0.03) .08 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .85 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .82 | 0.00 (0.00) .94 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .16 |
| b | Level | 12.31 (0.13) <.01 | 9.80 (0.23) <.01 | 9.92 (0.23) <.01 | 10.11 (0.27) <.01 |
| b | Slope | 0.03 (0.03) .41 | 0.01 (0.07) .87 | 0.02 (0.07) .83 | 0.05 (0.09) .59 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.33 (0.02) <.01 | 0.31 (0.02) <.01 | 0.30 (0.02) <.01 |
| b | Level \* height | --- | --- | 4.96 (1.10) <.01 | 4.94 (1.20) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.03 (0.16) .86 |
| b | Level \* cardio | --- | --- | --- | -0.46 (0.25) .06 |
| b | Level \* diabetes | --- | --- | --- | -0.13 (0.21) .55 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.01 (0.00) .01 |
| b | Slope \* education | --- | 0.00 (0.01) .79 | 0.00 (0.01) .86 | 0.00 (0.01) .98 |
| b | Slope \* height | --- | --- | 0.29 (0.36) .41 | 0.28 (0.39) .48 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.05) .46 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.09) .97 |
| b | Slope \* diabetes | --- | --- | --- | 0.00 (0.07) .98 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .71 | 0.00 (0.00) .71 | 0.00 (0.00) .71 | 0.00 (0.00) .62 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 4.26 (0.31) <.01 | 3.19 (0.27) <.01 | 3.07 (0.27) <.01 | 2.94 (0.26) <.01 |
| b | Var (Slope) | 0.05 (0.03) .07 | 0.05 (0.03) .08 | 0.05 (0.03) .09 | 0.06 (0.03) .05 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.06 (0.08) .41 | -0.06 (0.07) .40 | -0.07 (0.07) .36 | -0.07 (0.07) .31 |
|  | Correlation of Levels | 0.28 | 0.25 | 0.19 | 0.18 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,013 | 1,013 | 1,010 | 920 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,981 | -7,865 | -7,796 | -7,005 |
|  | AIC | 16,005 | 15,780 | 15,649 | 14,093 |
|  | BIC | 16,108 | 15,904 | 15,792 | 14,291 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.86 (0.12) <.01 | 0.68 (0.12) <.01 | 0.53 (0.11) <.01 | 0.49 (0.11) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .98 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00 (0.01) .77 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.27 (0.04) <.01 | 0.23 (0.04) <.01 | 0.20 (0.04) <.01 | 0.19 (0.04) <.01 |
| er | Corr (Slopes) | -0.01 (0.42) .98 | -0.02 (0.42) .97 | 0.04 (0.43) .92 | 0.12 (0.39) .76 |
| er | Corr (Residuals) | 0.04 (0.03) .17 | 0.04 (0.03) .18 | 0.04 (0.03) .21 | 0.05 (0.03) .12 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.82 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .06 | 0.00 (0.00) .07 | 0.00 (0.00) .13 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .91 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .19 |
| b | Level | 42.77 (0.50) <.01 | 34.21 (0.91) <.01 | 34.69 (0.92) <.01 | 35.72 (1.08) <.01 |
| b | Slope | 0.12 (0.10) .23 | 0.46 (0.21) .03 | 0.48 (0.21) .02 | 0.85 (0.24) <.01 |
| b | Level \* age | -0.40 (0.04) <.01 | -0.38 (0.04) <.01 | -0.37 (0.04) <.01 | -0.38 (0.04) <.01 |
| b | Level \* education | --- | 1.13 (0.09) <.01 | 1.07 (0.09) <.01 | 1.01 (0.10) <.01 |
| b | Level \* height | --- | --- | 15.00 (3.97) <.01 | 16.74 (4.22) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.14 (0.59) .81 |
| b | Level \* cardio | --- | --- | --- | -0.71 (0.89) .43 |
| b | Level \* diabetes | --- | --- | --- | -1.22 (0.81) .13 |
| b | Slope \* age | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Slope \* education | --- | -0.04 (0.02) .07 | -0.05 (0.03) .05 | -0.07 (0.03) .01 |
| b | Slope \* height | --- | --- | 1.19 (1.11) .28 | 0.98 (1.16) .40 |
| b | Slope \* smoking | --- | --- | --- | -0.24 (0.15) .10 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.22) .71 |
| b | Slope \* diabetes | --- | --- | --- | -0.08 (0.19) .69 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .61 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 78.80 (4.79) <.01 | 66.38 (4.15) <.01 | 64.62 (4.15) <.01 | 62.40 (4.28) <.01 |
| b | Var (Slope) | 1.17 (0.32) <.01 | 1.16 (0.32) <.01 | 1.16 (0.32) <.01 | 1.17 (0.33) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .28 | -0.00 (0.00) .28 | -0.00 (0.00) .47 | 0.00 (0.00) .83 |
| b | Covar (Level, Slope) | 0.61 (0.85) .47 | 1.10 (0.79) .17 | 1.00 (0.78) .20 | 0.77 (0.82) .35 |
|  | Correlation of Levels | 0.27 | 0.23 | 0.2 | 0.19 |
|  | Correlation of Slopes | NaN | NaN | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,028 | 1,028 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -12,730 | -12,656 | -12,576 | -11,355 |
|  | AIC | 25,503 | 25,362 | 25,209 | 22,792 |
|  | BIC | 25,607 | 25,486 | 25,352 | 22,990 |

## word\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.08 (0.03) <.01 | 0.06 (0.03) .02 | 0.04 (0.02) .15 | 0.02 (0.02) .41 |
| ab | Covar (Slopes) | -0.00 (0.00) .24 | -0.00 (0.00) .24 | -0.00 (0.00) .27 | -0.00 (0.00) .29 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.10 (0.04) .02 | 0.06 (0.04) .14 | 0.04 (0.05) .41 |
| er | Corr (Slopes) | -0.70 (1.23) .57 | -0.72 (1.26) .57 | -0.68 (1.22) .58 | -0.58 (0.84) .49 |
| er | Corr (Residuals) | 0.02 (0.03) .40 | 0.02 (0.03) .41 | 0.02 (0.03) .43 | 0.02 (0.03) .53 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .10 | 0.00 (0.00) .10 | 0.00 (0.00) .18 | 0.00 (0.00) .18 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .90 | 0.00 (0.00) .89 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 6.48 (0.09) <.01 | 5.34 (0.18) <.01 | 5.42 (0.17) <.01 | 5.44 (0.21) <.01 |
| b | Slope | 0.14 (0.02) <.01 | 0.12 (0.05) .02 | 0.12 (0.05) .02 | 0.15 (0.06) .01 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.14 (0.02) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.38 (0.87) .01 | 2.03 (0.88) .02 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.13) .12 |
| b | Level \* cardio | --- | --- | --- | -0.33 (0.21) .12 |
| b | Level \* diabetes | --- | --- | --- | 0.16 (0.16) .30 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | 0.00 (0.01) .61 | 0.00 (0.01) .69 | 0.00 (0.01) .81 |
| b | Slope \* height | --- | --- | 0.26 (0.28) .36 | 0.23 (0.29) .44 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.04) .66 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.06) .95 |
| b | Slope \* diabetes | --- | --- | --- | -0.05 (0.04) .23 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .74 | 0.00 (0.00) .75 | 0.00 (0.00) .75 | 0.00 (0.00) .66 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.90 (0.19) <.01 | 2.69 (0.18) <.01 | 2.63 (0.18) <.01 | 2.59 (0.18) <.01 |
| b | Var (Slope) | 0.04 (0.02) <.01 | 0.04 (0.02) <.01 | 0.04 (0.02) <.01 | 0.04 (0.02) .02 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .29 | -0.00 (0.00) .30 | -0.00 (0.00) .50 | 0.00 (0.00) .86 |
| b | Covar (Level, Slope) | 0.00 (0.04) .99 | -0.00 (0.04) .96 | -0.00 (0.04) .93 | 0.02 (0.04) .67 |
|  | Correlation of Levels | 0.14 | 0.1 | 0.064 | 0.037 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,640 | -7,600 | -7,514 | -6,810 |
|  | AIC | 15,321 | 15,251 | 15,087 | 13,701 |
|  | BIC | 15,425 | 15,374 | 15,230 | 13,900 |

## word\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.26 (0.05) <.01 | 0.20 (0.05) <.01 | 0.15 (0.04) <.01 | 0.11 (0.05) .02 |
| ab | Covar (Slopes) | -0.00 (0.00) .12 | -0.00 (0.00) .12 | -0.00 (0.00) .13 | -0.01 (0.00) .09 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.21 (0.04) <.01 | 0.17 (0.04) <.01 | 0.14 (0.04) <.01 | 0.11 (0.04) .02 |
| er | Corr (Slopes) | -0.52 (0.43) .23 | -0.52 (0.44) .23 | -0.52 (0.44) .24 | -0.55 (0.43) .19 |
| er | Corr (Residuals) | 0.03 (0.03) .29 | 0.03 (0.03) .30 | 0.03 (0.03) .31 | 0.03 (0.03) .33 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .85 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .15 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .81 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .12 | -0.08 (0.04) .04 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 19.36 (0.19) <.01 | 16.51 (0.34) <.01 | 16.67 (0.33) <.01 | 16.81 (0.39) <.01 |
| b | Slope | 0.40 (0.05) <.01 | 0.43 (0.10) <.01 | 0.43 (0.10) <.01 | 0.49 (0.12) <.01 |
| b | Level \* age | -0.13 (0.02) <.01 | -0.12 (0.01) <.01 | -0.12 (0.01) <.01 | -0.11 (0.02) <.01 |
| b | Level \* education | --- | 0.38 (0.04) <.01 | 0.35 (0.04) <.01 | 0.35 (0.04) <.01 |
| b | Level \* height | --- | --- | 4.40 (1.67) .01 | 4.40 (1.81) .01 |
| b | Level \* smoking | --- | --- | --- | -0.49 (0.25) .05 |
| b | Level \* cardio | --- | --- | --- | -0.34 (0.37) .37 |
| b | Level \* diabetes | --- | --- | --- | 0.33 (0.32) .31 |
| b | Slope \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .67 | -0.00 (0.01) .65 | -0.01 (0.01) .61 |
| b | Slope \* height | --- | --- | 0.34 (0.54) .53 | 0.09 (0.56) .88 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.08) .99 |
| b | Slope \* cardio | --- | --- | --- | -0.14 (0.12) .26 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.10) .80 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .36 | 0.00 (0.00) .37 | 0.00 (0.00) .36 | 0.00 (0.00) .32 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 11.47 (0.70) <.01 | 10.09 (0.66) <.01 | 9.72 (0.62) <.01 | 9.68 (0.65) <.01 |
| b | Var (Slope) | 0.29 (0.07) <.01 | 0.29 (0.07) <.01 | 0.29 (0.07) <.01 | 0.30 (0.07) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .20 | -0.00 (0.00) .21 | -0.00 (0.00) .35 | -0.00 (0.00) .65 |
| b | Covar (Level, Slope) | 0.00 (0.16) .99 | 0.01 (0.16) .93 | 0.04 (0.15) .80 | 0.09 (0.16) .58 |
|  | Correlation of Levels | 0.21 | 0.17 | 0.14 | 0.11 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,079 | -10,024 | -9,930 | -9,012 |
|  | AIC | 20,200 | 20,099 | 19,917 | 18,107 |
|  | BIC | 20,304 | 20,222 | 20,060 | 18,305 |

## word\_rec

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.01) .13 | 0.01 (0.01) .23 | 0.01 (0.01) .38 | 0.00 (0.01) .68 |
| ab | Covar (Slopes) | 0.00 (0.00) .92 | 0.00 (0.00) .92 | 0.00 (0.00) .92 | 0.00 (0.00) .95 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.07 (0.04) .13 | 0.05 (0.04) .23 | 0.04 (0.04) .39 | 0.02 (0.04) .68 |
| er | Corr (Slopes) | 0.13 (1.22) .91 | 0.12 (1.21) .92 | 0.15 (1.42) .92 | 0.08 (1.14) .95 |
| er | Corr (Residuals) | 0.00 (0.03) .98 | 0.00 (0.03) .99 | 0.00 (0.03) .95 | 0.00 (0.03) .89 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .09 | 0.00 (0.00) .10 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .90 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 9.83 (0.03) <.01 | 9.67 (0.07) <.01 | 9.69 (0.07) <.01 | 9.65 (0.09) <.01 |
| b | Slope | 0.02 (0.01) .02 | 0.02 (0.02) .32 | 0.02 (0.02) .34 | 0.02 (0.02) .38 |
| b | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Level \* education | --- | 0.02 (0.01) <.01 | 0.02 (0.01) .01 | 0.02 (0.01) .01 |
| b | Level \* height | --- | --- | 0.52 (0.43) .22 | 0.45 (0.45) .31 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.05) .47 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.10) .32 |
| b | Level \* diabetes | --- | --- | --- | 0.09 (0.06) .17 |
| b | Slope \* age | -0.00 (0.00) .23 | -0.00 (0.00) .21 | -0.00 (0.00) .20 | -0.00 (0.00) .20 |
| b | Slope \* education | --- | -0.00 (0.00) .81 | -0.00 (0.00) .81 | -0.00 (0.00) .70 |
| b | Slope \* height | --- | --- | 0.05 (0.10) .59 | 0.02 (0.10) .82 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .38 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.02) .90 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.02) .77 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .50 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 0.53 (0.14) <.01 | 0.53 (0.14) <.01 | 0.46 (0.12) <.01 | 0.48 (0.13) <.01 |
| b | Var (Slope) | 0.00 (0.01) .89 | 0.00 (0.01) .89 | 0.00 (0.01) .91 | 0.00 (0.01) .89 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.00 (0.00) .21 | -0.00 (0.00) .22 | -0.00 (0.00) .38 | 0.00 (0.00) .71 |
| b | Covar (Level, Slope) | -0.01 (0.03) .75 | -0.01 (0.03) .75 | -0.00 (0.03) .93 | -0.00 (0.03) .97 |
|  | Correlation of Levels | 0.068 | 0.053 | 0.035 | 0.017 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,252 | -4,241 | -4,117 | -3,826 |
|  | AIC | 8,546 | 8,531 | 8,291 | 7,735 |
|  | BIC | 8,650 | 8,655 | 8,434 | 7,933 |

## Summary

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

Computed correlations:

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Levels | bnt | 0.08 |
| Correlation of Levels | bstory\_de | 0.02 |
| Correlation of Levels | bstory\_im | 0.09 |
| Correlation of Levels | categories | 0.23 |
| Correlation of Levels | digit\_b | 0.12 |
| Correlation of Levels | digit\_f | 0.13 |
| Correlation of Levels | digit\_o | 0.18 |
| Correlation of Levels | ideas | 0.19 |
| Correlation of Levels | line | 0.14 |
| Correlation of Levels | logic\_de | 0.05 |
| Correlation of Levels | logic\_im | 0.04 |
| Correlation of Levels | mmse | 0.02 |
| Correlation of Levels | nart | 0.15 |
| Correlation of Levels | num\_comp | 0.17 |
| Correlation of Levels | raven\_standard | 0.18 |
| Correlation of Levels | symbol | 0.19 |
| Correlation of Levels | word\_de | 0.04 |
| Correlation of Levels | word\_im | 0.11 |
| Correlation of Levels | word\_rec | 0.02 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Slopes | bnt | NaN |
| Correlation of Slopes | bstory\_de | NaN |
| Correlation of Slopes | bstory\_im | NaN |
| Correlation of Slopes | categories | -Inf |
| Correlation of Slopes | digit\_b | Inf |
| Correlation of Slopes | digit\_f | NaN |
| Correlation of Slopes | digit\_o | NaN |
| Correlation of Slopes | ideas | NaN |
| Correlation of Slopes | line | -Inf |
| Correlation of Slopes | logic\_de | -Inf |
| Correlation of Slopes | logic\_im | -Inf |
| Correlation of Slopes | mmse | -Inf |
| Correlation of Slopes | nart | Inf |
| Correlation of Slopes | num\_comp | -Inf |
| Correlation of Slopes | raven\_standard | Inf |
| Correlation of Slopes | symbol | Inf |
| Correlation of Slopes | word\_de | -Inf |
| Correlation of Slopes | word\_im | -Inf |
| Correlation of Slopes | word\_rec | NaN |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Residuals | bnt | -0.03 |
| Correlation of Residuals | bstory\_de | -0.04 |
| Correlation of Residuals | bstory\_im | -0.03 |
| Correlation of Residuals | categories | -0.04 |
| Correlation of Residuals | digit\_b | -0.04 |
| Correlation of Residuals | digit\_f | 0.02 |
| Correlation of Residuals | digit\_o | 0.03 |
| Correlation of Residuals | ideas | 0.02 |
| Correlation of Residuals | line | -0.04 |
| Correlation of Residuals | logic\_de | 0.01 |
| Correlation of Residuals | logic\_im | 0.00 |
| Correlation of Residuals | mmse | 0.05 |
| Correlation of Residuals | nart | 0.01 |
| Correlation of Residuals | num\_comp | -0.02 |
| Correlation of Residuals | raven\_standard | -0.05 |
| Correlation of Residuals | symbol | 0.05 |
| Correlation of Residuals | word\_de | 0.01 |
| Correlation of Residuals | word\_im | 0.03 |
| Correlation of Residuals | word\_rec | 0.00 |

P-values for corresponding covariances:

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Levels | bnt | 0.10 |
| Covariance of Levels | bstory\_de | 0.74 |
| Covariance of Levels | bstory\_im | 0.12 |
| Covariance of Levels | categories | 0.00 |
| Covariance of Levels | digit\_b | 0.01 |
| Covariance of Levels | digit\_f | 0.00 |
| Covariance of Levels | digit\_o | 0.00 |
| Covariance of Levels | ideas | 0.00 |
| Covariance of Levels | line | 0.00 |
| Covariance of Levels | logic\_de | 0.31 |
| Covariance of Levels | logic\_im | 0.33 |
| Covariance of Levels | mmse | 0.71 |
| Covariance of Levels | nart | 0.00 |
| Covariance of Levels | num\_comp | 0.00 |
| Covariance of Levels | raven\_standard | 0.00 |
| Covariance of Levels | symbol | 0.00 |
| Covariance of Levels | word\_de | 0.41 |
| Covariance of Levels | word\_im | 0.02 |
| Covariance of Levels | word\_rec | 0.68 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Slopes | bnt | 0.92 |
| Covariance of Slopes | bstory\_de | 0.97 |
| Covariance of Slopes | bstory\_im | 0.84 |
| Covariance of Slopes | categories | 0.37 |
| Covariance of Slopes | digit\_b | 0.10 |
| Covariance of Slopes | digit\_f | 0.98 |
| Covariance of Slopes | digit\_o | 0.69 |
| Covariance of Slopes | ideas | 0.61 |
| Covariance of Slopes | line | 0.70 |
| Covariance of Slopes | logic\_de | 0.14 |
| Covariance of Slopes | logic\_im | 0.80 |
| Covariance of Slopes | mmse | 0.69 |
| Covariance of Slopes | nart | 0.56 |
| Covariance of Slopes | num\_comp | 0.86 |
| Covariance of Slopes | raven\_standard | 0.28 |
| Covariance of Slopes | symbol | 0.77 |
| Covariance of Slopes | word\_de | 0.29 |
| Covariance of Slopes | word\_im | 0.09 |
| Covariance of Slopes | word\_rec | 0.95 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Residuals | bnt | 0.35 |
| Covariance of Residuals | bstory\_de | 0.17 |
| Covariance of Residuals | bstory\_im | 0.22 |
| Covariance of Residuals | categories | 0.10 |
| Covariance of Residuals | digit\_b | 0.18 |
| Covariance of Residuals | digit\_f | 0.46 |
| Covariance of Residuals | digit\_o | 0.28 |
| Covariance of Residuals | ideas | 0.46 |
| Covariance of Residuals | line | 0.10 |
| Covariance of Residuals | logic\_de | 0.78 |
| Covariance of Residuals | logic\_im | 0.91 |
| Covariance of Residuals | mmse | 0.07 |
| Covariance of Residuals | nart | 0.72 |
| Covariance of Residuals | num\_comp | 0.59 |
| Covariance of Residuals | raven\_standard | 0.08 |
| Covariance of Residuals | symbol | 0.12 |
| Covariance of Residuals | word\_de | 0.53 |
| Covariance of Residuals | word\_im | 0.34 |
| Covariance of Residuals | word\_rec | 0.89 |

# male

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | mmse | nart | num\_comp | raven\_standard | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| ab | Covar (Levels) | 0.04 (0.04) .30 | 0.08 (0.07) .22 | 0.09 (0.06) .15 | 0.62 (0.29) .03 | 0.13 (0.06) .03 | 0.06 (0.06) .27 | -0.01 (0.04) .74 | -0.00 (0.02) .82 | 0.17 (0.08) .05 | 0.23 (0.12) .05 | 0.16 (0.11) .14 | 0.03 (0.06) .63 | 0.11 (0.06) .07 | 0.06 (0.21) .77 | 0.07 (0.07) .28 | 0.72 (0.33) .03 | 0.08 (0.07) .25 | 0.06 (0.11) .56 | 0.00 (0.04) .93 | --- |
| ab | Covar (Slopes) | 0.00 (0.00) .89 | 0.00 (0.00) .59 | 0.00 (0.00) .28 | 0.00 (0.01) .75 | -0.00 (0.00) .61 | 0.00 (0.00) .78 | 0.00 (0.00) .96 | -0.00 (0.00) .32 | 0.00 (0.00) .60 | 0.00 (0.01) .90 | 0.00 (0.01) .90 | -0.00 (0.01) .44 | 0.00 (0.00) .98 | -0.02 (0.01) .13 | 0.00 (0.00) .45 | -0.01 (0.02) .60 | 0.00 (0.00) .43 | 0.00 (0.01) .53 | -0.00 (0.00) .22 | --- |
|  | Covar (Residuals) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| er | Corr (Levels) | 0.07 (0.08) .35 | 0.13 (0.10) .21 | 0.16 (0.11) .14 | 0.16 (0.07) .02 | 0.16 (0.07) .03 | 0.08 (0.07) .27 | -0.02 (0.08) .74 | -0.02 (0.08) .82 | 0.15 (0.08) .04 | 0.14 (0.07) .04 | 0.11 (0.07) .14 | 0.04 (0.08) .66 | 0.11 (0.06) .07 | 0.02 (0.07) .77 | 0.08 (0.08) .28 | 0.16 (0.07) .02 | 0.10 (0.08) .25 | 0.05 (0.08) .56 | 0.01 (0.08) .93 | --- |
| er | Corr (Slopes) | 0.16 (1.34) .90 | 0.64 (2.09) .76 | 0.80 (1.12) .47 | 0.17 (0.50) .73 | -0.43 (0.98) .66 | 0.26 (1.03) .80 | 0.09 (1.68) .96 | -0.36 (0.38) .34 | 0.39 (0.74) .60 | 0.05 (0.44) .90 | 0.12 (1.05) .91 | -0.58 (0.79) .46 | -0.01 (0.59) .98 | -0.75 (0.49) .13 | 0.43 (0.68) .52 | -0.36 (0.81) .65 | 0.69 (1.04) .50 | 0.54 (0.97) .58 | -0.58 (0.43) .18 | --- |
| er | Corr (Residuals) | -0.04 (0.06) .53 | -0.02 (0.05) .66 | -0.05 (0.05) .29 | -0.01 (0.05) .76 | -0.01 (0.04) .77 | -0.02 (0.04) .56 | 0.00 (0.05) .95 | 0.04 (0.05) .42 | -0.02 (0.04) .68 | -0.01 (0.04) .76 | -0.01 (0.04) .78 | 0.02 (0.05) .72 | -0.02 (0.05) .70 | 0.02 (0.04) .64 | -0.02 (0.04) .70 | 0.06 (0.05) .17 | 0.00 (0.05) .92 | 0.10 (0.05) .04 | 0.06 (0.05) .17 | --- |
| a | Level | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.36 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.34 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35(0.00) |
| a | Slope | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) <.01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06(0.00) |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03(0.00) |
| a | Level \* education | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02(0.00) |
| a | Level \* height | 2.02 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 1.97 (0.42) <.01 | 2.03 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 1.98 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 2.02 (0.42) <.01 | 1.96 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 2.02 (0.42) <.01 | 2.01(0.02) |
| a | Level \* smoking | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) .01 | -0.18 (0.07) <.01 | -0.18 (0.07) .01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19(0.00) |
| a | Level \* cardio | -0.11 (0.08) .17 | -0.11 (0.08) .17 | -0.11 (0.08) .16 | -0.12 (0.08) .15 | -0.12 (0.08) .15 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11 (0.08) .17 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11 (0.08) .16 | -0.11 (0.08) .17 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11(0.00) |
| a | Level \* diabetes | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.20 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19(0.00) |
| a | Slope \* age | -0.00 (0.00) .32 | -0.00 (0.00) .32 | -0.00 (0.00) .34 | -0.00 (0.00) .29 | -0.00 (0.00) .35 | -0.00 (0.00) .31 | -0.00 (0.00) .31 | -0.00 (0.00) .28 | -0.00 (0.00) .31 | -0.00 (0.00) .34 | -0.00 (0.00) .33 | -0.00 (0.00) .26 | -0.00 (0.00) .36 | -0.00 (0.00) .32 | -0.00 (0.00) .38 | -0.00 (0.00) .33 | -0.00 (0.00) .30 | -0.00 (0.00) .27 | -0.00 (0.00) .36 | -0.00(0.00) |
| a | Slope \* education | -0.00 (0.00) .60 | -0.00 (0.00) .61 | -0.00 (0.00) .64 | -0.00 (0.00) .72 | -0.00 (0.00) .63 | -0.00 (0.00) .56 | -0.00 (0.00) .59 | -0.00 (0.00) .67 | -0.00 (0.00) .58 | -0.00 (0.00) .60 | -0.00 (0.00) .60 | -0.00 (0.00) .68 | -0.00 (0.00) .61 | -0.00 (0.00) .71 | -0.00 (0.00) .58 | -0.00 (0.00) .68 | -0.00 (0.00) .62 | -0.00 (0.00) .55 | -0.00 (0.00) .54 | -0.00(0.00) |
| a | Slope \* height | 0.05 (0.12) .70 | 0.05 (0.12) .65 | 0.06 (0.12) .60 | 0.05 (0.12) .69 | 0.05 (0.12) .69 | 0.06 (0.12) .63 | 0.06 (0.12) .63 | 0.05 (0.12) .70 | 0.06 (0.12) .61 | 0.05 (0.12) .66 | 0.05 (0.12) .67 | 0.07 (0.12) .56 | 0.05 (0.12) .68 | 0.05 (0.12) .68 | 0.05 (0.12) .67 | 0.05 (0.12) .70 | 0.06 (0.12) .65 | 0.06 (0.12) .64 | 0.06 (0.12) .64 | 0.05(0.01) |
| a | Slope \* smoking | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.05 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06(0.00) |
| a | Slope \* cardio | -0.02 (0.02) .13 | -0.02 (0.02) .12 | -0.02 (0.02) .12 | -0.02 (0.02) .14 | -0.02 (0.02) .12 | -0.02 (0.02) .11 | -0.02 (0.02) .11 | -0.02 (0.02) .12 | -0.03 (0.02) .10 | -0.03 (0.02) .11 | -0.02 (0.02) .11 | -0.02 (0.02) .15 | -0.03 (0.02) .10 | -0.02 (0.02) .11 | -0.03 (0.02) .11 | -0.03 (0.02) .11 | -0.02 (0.02) .13 | -0.02 (0.02) .12 | -0.03 (0.02) .10 | -0.03(0.00) |
| a | Slope \* diabetes | 0.02 (0.01) .30 | 0.02 (0.01) .30 | 0.02 (0.01) .28 | 0.01 (0.01) .34 | 0.01 (0.01) .30 | 0.01 (0.01) .32 | 0.01 (0.01) .31 | 0.02 (0.01) .28 | 0.01 (0.01) .32 | 0.01 (0.01) .31 | 0.01 (0.01) .31 | 0.02 (0.01) .28 | 0.02 (0.01) .30 | 0.02 (0.01) .24 | 0.01 (0.01) .34 | 0.01 (0.01) .33 | 0.01 (0.01) .32 | 0.01 (0.01) .35 | 0.02 (0.01) .28 | 0.02(0.00) |
| b | Level | 13.74 (0.28) <.01 | 8.68 (0.37) <.01 | 9.17 (0.32) <.01 | 31.21 (1.49) <.01 | 4.73 (0.34) <.01 | 7.01 (0.30) <.01 | 6.89 (0.25) <.01 | 7.72 (0.09) <.01 | 10.31 (0.50) <.01 | 7.56 (0.83) <.01 | 9.24 (0.79) <.01 | 27.35 (0.32) <.01 | 5.08 (0.41) <.01 | 21.18 (1.29) <.01 | 10.98 (0.46) <.01 | 35.55 (1.93) <.01 | 4.80 (0.37) <.01 | 15.42 (0.69) <.01 | 9.37 (0.20) <.01 | --- |
| b | Slope | 0.05 (0.05) .32 | -0.04 (0.12) .76 | -0.06 (0.12) .60 | -0.05 (0.38) .89 | 0.11 (0.10) .25 | 0.13 (0.09) .16 | -0.04 (0.09) .62 | 0.00 (0.04) .99 | -0.03 (0.14) .84 | 0.20 (0.23) .38 | 0.24 (0.20) .23 | -0.00 (0.12) .99 | 0.12 (0.08) .14 | 0.35 (0.32) .28 | 0.06 (0.15) .68 | -0.13 (0.43) .77 | 0.11 (0.11) .34 | 0.19 (0.20) .35 | 0.09 (0.06) .17 | --- |
| b | Level \* age | -0.03 (0.01) .08 | -0.06 (0.01) <.01 | -0.04 (0.01) <.01 | -0.29 (0.06) <.01 | -0.03 (0.02) .04 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.01 (0.01) .28 | -0.02 (0.02) .36 | -0.12 (0.03) <.01 | -0.13 (0.03) <.01 | -0.08 (0.02) <.01 | 0.01 (0.02) .55 | -0.18 (0.06) <.01 | -0.07 (0.02) <.01 | -0.46 (0.07) <.01 | -0.10 (0.01) <.01 | -0.15 (0.03) <.01 | -0.04 (0.01) <.01 | --- |
| b | Level \* education | 0.06 (0.02) .01 | 0.12 (0.03) <.01 | 0.09 (0.03) <.01 | 0.54 (0.12) <.01 | 0.20 (0.03) <.01 | 0.20 (0.02) <.01 | 0.10 (0.02) <.01 | 0.02 (0.01) .06 | 0.21 (0.05) <.01 | 0.27 (0.07) <.01 | 0.28 (0.07) <.01 | 0.14 (0.03) <.01 | 0.31 (0.04) <.01 | 0.53 (0.11) <.01 | 0.24 (0.04) <.01 | 0.87 (0.16) <.01 | 0.14 (0.03) <.01 | 0.30 (0.06) <.01 | 0.04 (0.02) .01 | --- |
| b | Level \* height | 2.96 (1.05) <.01 | 0.68 (1.51) .65 | 1.66 (1.31) .21 | 12.27 (6.08) .04 | 0.44 (1.46) .76 | 0.36 (1.43) .80 | 2.91 (1.11) .01 | 0.83 (0.41) .04 | 5.35 (2.29) .02 | 2.23 (3.01) .46 | 3.84 (2.94) .19 | 3.05 (1.31) .02 | 2.78 (1.68) .10 | 16.81 (5.10) <.01 | 9.24 (2.21) <.01 | 22.37 (6.41) <.01 | 1.62 (1.36) .23 | 2.02 (2.29) .38 | 0.86 (0.74) .25 | --- |
| b | Level \* smoking | 0.04 (0.15) .79 | -0.01 (0.21) .97 | 0.17 (0.18) .34 | -0.86 (0.92) .35 | 0.15 (0.21) .49 | 0.43 (0.21) .04 | -0.02 (0.16) .92 | -0.07 (0.07) .35 | -0.86 (0.30) <.01 | -0.04 (0.43) .92 | 0.06 (0.41) .88 | -0.08 (0.24) .73 | 0.17 (0.24) .47 | -0.60 (0.78) .44 | -0.50 (0.28) .07 | -0.83 (1.07) .44 | -0.20 (0.22) .36 | -0.27 (0.37) .46 | -0.20 (0.14) .13 | --- |
| b | Level \* cardio | 0.11 (0.15) .47 | 0.23 (0.24) .32 | 0.20 (0.22) .35 | 0.35 (1.04) .73 | 0.25 (0.22) .27 | 0.22 (0.23) .34 | 0.21 (0.19) .28 | 0.07 (0.07) .28 | -0.00 (0.35) .99 | 0.68 (0.49) .16 | 0.60 (0.48) .21 | 0.27 (0.27) .30 | -0.01 (0.27) .96 | 0.57 (0.85) .50 | 0.60 (0.31) .05 | 0.85 (1.13) .45 | 0.23 (0.24) .35 | 0.24 (0.41) .56 | 0.10 (0.16) .54 | --- |
| b | Level \* diabetes | 0.11 (0.12) .35 | 0.05 (0.24) .85 | 0.03 (0.21) .88 | -0.21 (1.06) .84 | 0.04 (0.23) .84 | -0.14 (0.23) .53 | -0.19 (0.17) .27 | -0.02 (0.07) .81 | -0.34 (0.34) .32 | 0.66 (0.47) .15 | 0.54 (0.45) .22 | 0.02 (0.21) .94 | -0.07 (0.25) .77 | 1.38 (0.86) .11 | -0.07 (0.33) .82 | 0.08 (1.26) .95 | 0.23 (0.26) .36 | 0.37 (0.44) .40 | 0.26 (0.14) .06 | --- |
| b | Slope \* age | 0.00 (0.00) .42 | 0.00 (0.01) .33 | 0.01 (0.00) .19 | -0.04 (0.02) .01 | -0.00 (0.00) .30 | -0.00 (0.00) .76 | -0.00 (0.00) .20 | 0.00 (0.00) .12 | 0.00 (0.01) .82 | -0.01 (0.01) .10 | -0.00 (0.01) .71 | -0.00 (0.01) .57 | -0.00 (0.00) .22 | -0.03 (0.01) <.01 | -0.01 (0.01) .25 | -0.05 (0.02) <.01 | 0.00 (0.00) .94 | -0.00 (0.01) .82 | 0.00 (0.00) .90 | --- |
| b | Slope \* education | -0.00 (0.00) .46 | -0.01 (0.01) .37 | -0.01 (0.01) .28 | -0.00 (0.04) .98 | -0.00 (0.01) .57 | -0.01 (0.01) .18 | 0.01 (0.01) .37 | -0.00 (0.00) .35 | 0.00 (0.01) .94 | 0.02 (0.02) .40 | -0.00 (0.02) .96 | -0.01 (0.01) .50 | -0.01 (0.01) .35 | -0.05 (0.03) .07 | -0.01 (0.01) .60 | 0.02 (0.04) .58 | -0.00 (0.01) .71 | 0.01 (0.02) .56 | -0.00 (0.01) .43 | --- |
| b | Slope \* height | -0.34 (0.18) .05 | 0.90 (0.47) .06 | 0.16 (0.44) .71 | 1.53 (1.52) .31 | 0.71 (0.41) .08 | 0.11 (0.41) .79 | 0.06 (0.33) .86 | -0.16 (0.14) .25 | 1.00 (0.58) .08 | 0.39 (0.85) .65 | 0.11 (0.76) .88 | -0.05 (0.56) .93 | 0.09 (0.27) .75 | 0.13 (1.12) .90 | -0.34 (0.79) .66 | 2.08 (1.59) .19 | 0.19 (0.45) .68 | -0.05 (0.77) .95 | -0.36 (0.25) .15 | --- |
| b | Slope \* smoking | 0.00 (0.03) .95 | -0.07 (0.07) .34 | -0.10 (0.07) .16 | 0.15 (0.23) .50 | -0.02 (0.06) .69 | -0.08 (0.06) .16 | -0.00 (0.05) .99 | 0.04 (0.03) .16 | 0.01 (0.09) .89 | 0.07 (0.14) .62 | 0.02 (0.12) .86 | -0.03 (0.08) .73 | 0.02 (0.04) .63 | 0.26 (0.18) .16 | 0.13 (0.09) .13 | 0.06 (0.23) .79 | -0.06 (0.07) .35 | -0.05 (0.13) .69 | -0.02 (0.04) .66 | --- |
| b | Slope \* cardio | -0.02 (0.03) .62 | 0.07 (0.08) .40 | 0.05 (0.08) .53 | 0.14 (0.29) .63 | -0.02 (0.07) .74 | -0.08 (0.07) .22 | -0.03 (0.06) .64 | -0.01 (0.02) .71 | 0.11 (0.12) .33 | 0.23 (0.15) .13 | 0.04 (0.15) .77 | 0.11 (0.08) .20 | 0.04 (0.05) .40 | -0.15 (0.19) .42 | 0.02 (0.11) .86 | 0.14 (0.27) .60 | 0.08 (0.07) .25 | 0.12 (0.14) .39 | 0.07 (0.04) .11 | --- |
| b | Slope \* diabetes | -0.00 (0.03) .96 | -0.00 (0.08) .98 | 0.05 (0.08) .53 | -0.25 (0.27) .35 | -0.05 (0.06) .44 | 0.02 (0.06) .73 | -0.03 (0.05) .59 | 0.00 (0.03) .94 | 0.06 (0.10) .54 | -0.07 (0.15) .65 | -0.15 (0.14) .28 | 0.07 (0.08) .39 | -0.06 (0.06) .30 | -0.17 (0.18) .34 | -0.03 (0.10) .78 | -0.18 (0.27) .50 | -0.08 (0.07) .21 | -0.14 (0.13) .30 | -0.03 (0.04) .42 | --- |
| a | Var (Level) | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27(0.00) |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .35 | 0.00 (0.00) .28 | 0.00 (0.00) .52 | 0.00 (0.00) .55 | 0.00 (0.00) .40 | 0.00 (0.00) .42 | 0.00 (0.00) .47 | 0.00 (0.00) .48 | 0.00 (0.00) .49 | 0.00 (0.00) .49 | 0.00 (0.00) .46 | 0.00 (0.00) .48 | 0.00 (0.00) .28 | 0.00 (0.00) .35 | 0.00 (0.00) .49 | 0.00 (0.00) .52 | 0.00 (0.00) .58 | 0.00 (0.00) .41 | 0.00(0.00) |
|  | Var (Residual) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b | Var (Level) | 1.07 (0.54) .05 | 1.70 (0.38) <.01 | 1.10 (0.24) <.01 | 54.93 (6.33) <.01 | 2.54 (0.27) <.01 | 2.15 (0.26) <.01 | 1.20 (0.23) <.01 | 0.20 (0.15) .19 | 4.47 (0.56) <.01 | 10.74 (1.09) <.01 | 8.31 (0.98) <.01 | 2.48 (1.52) .10 | 3.55 (0.40) <.01 | 35.35 (3.32) <.01 | 3.18 (0.49) <.01 | 71.21 (7.27) <.01 | 2.45 (0.31) <.01 | 6.36 (0.87) <.01 | 0.91 (0.24) <.01 | --- |
| b | Var (Slope) | 0.00 (0.01) .79 | 0.01 (0.06) .84 | 0.02 (0.04) .55 | 0.83 (0.38) .03 | 0.02 (0.02) .28 | 0.01 (0.02) .58 | 0.00 (0.02) .83 | 0.03 (0.02) .23 | 0.05 (0.04) .22 | 0.30 (0.11) <.01 | 0.04 (0.09) .64 | 0.08 (0.08) .29 | 0.02 (0.02) .22 | 0.41 (0.28) .14 | 0.05 (0.05) .27 | 0.65 (0.42) .12 | 0.03 (0.02) .20 | 0.07 (0.07) .29 | 0.03 (0.02) .08 | --- |
|  | Var (Residual) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .05 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .06 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .06 | -0.01 (0.00) .05 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .09 | -0.01 (0.00) .05 | -0.01(0.00) |
| b | Covar (Level, Slope) | -0.04 (0.06) .52 | -0.02 (0.15) .87 | -0.03 (0.08) .70 | -1.14 (1.22) .35 | -0.03 (0.06) .61 | -0.02 (0.06) .72 | 0.01 (0.06) .90 | -0.06 (0.05) .23 | -0.20 (0.12) .08 | -0.33 (0.26) .20 | 0.13 (0.21) .55 | -0.26 (0.32) .42 | -0.15 (0.07) .04 | -0.29 (0.85) .73 | -0.10 (0.13) .45 | 1.25 (1.39) .37 | 0.01 (0.08) .90 | 0.27 (0.22) .22 | -0.10 (0.05) .06 | --- |
|  | Correlation of Levels | 0.075 | 0.13 | 0.16 | 0.16 | 0.16 | 0.079 | -0.025 | -0.017 | 0.15 | 0.136 | 0.11 | 0.037 | 0.11 | 0.02 | 0.081 | 0.16 | 0.094 | 0.047 | 0.0061 | 0.09(0.06) |
|  | Correlation of Slopes | 0.000 | 0.58 | 1.07 | 0.14 | -0.43 | 0.289 | 0.000 | -0.385 | 0.29 | 0.058 | 0.16 | -0.549 | 0.00 | -0.89 | 0.408 | -0.31 | 0.567 | 0.471 | -0.5477 | 0.05(0.48) |
|  | Correlation of Residuals | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | --- |
|  | N | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 308 | 321 | 321 | 321 | 321 | 320.32(2.98) |
|  | occasions | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -1,790 | -2,814 | -2,667 | -4,250 | -2,605 | -2,560 | -2,348 | -1,216 | -2,982 | -3,419 | -3,438 | -2,692 | -2,275 | -3,958 | -2,733 | -4,241 | -2,639 | -3,366 | -1,875 | -2,835( 805) |
|  | AIC | 3,662 | 5,711 | 5,415 | 8,582 | 5,292 | 5,202 | 4,778 | 2,514 | 6,046 | 6,920 | 6,958 | 5,467 | 4,632 | 7,997 | 5,547 | 8,565 | 5,361 | 6,814 | 3,833 | 5,752(1,610) |
|  | BIC | 3,817 | 5,865 | 5,570 | 8,736 | 5,446 | 5,357 | 4,932 | 2,669 | 6,201 | 7,074 | 7,113 | 5,621 | 4,787 | 8,152 | 5,700 | 8,719 | 5,515 | 6,968 | 3,987 | 5,907(1,610) |

## bnt

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.12 (0.05) .01 | 0.08 (0.04) .05 | 0.05 (0.04) .21 | 0.04 (0.04) .30 |
| ab | Covar (Slopes) | 0.00 (0.00) .97 | 0.00 (0.00) .97 | 0.00 (0.00) .88 | 0.00 (0.00) .89 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.18 (0.08) .02 | 0.13 (0.08) .08 | 0.09 (0.08) .25 | 0.07 (0.08) .35 |
| er | Corr (Slopes) | 0.03 (0.87) .97 | -0.03 (0.88) .97 | 0.13 (0.99) .89 | 0.16 (1.34) .90 |
| er | Corr (Residuals) | -0.04 (0.05) .44 | -0.04 (0.05) .44 | -0.04 (0.06) .48 | -0.04 (0.06) .53 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .08 | -0.02 (0.02) .16 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .48 | -0.00 (0.00) .36 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .13 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 14.33 (0.13) <.01 | 13.72 (0.24) <.01 | 13.76 (0.23) <.01 | 13.74 (0.28) <.01 |
| b | Slope | 0.02 (0.02) .29 | 0.06 (0.04) .10 | 0.06 (0.04) .12 | 0.05 (0.05) .32 |
| b | Level \* age | -0.02 (0.01) .07 | -0.03 (0.01) .05 | -0.02 (0.01) .08 | -0.03 (0.01) .08 |
| b | Level \* education | --- | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) .01 |
| b | Level \* height | --- | --- | 3.13 (1.05) <.01 | 2.96 (1.05) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.04 (0.15) .79 |
| b | Level \* cardio | --- | --- | --- | 0.11 (0.15) .47 |
| b | Level \* diabetes | --- | --- | --- | 0.11 (0.12) .35 |
| b | Slope \* age | 0.00 (0.00) .52 | 0.00 (0.00) .50 | 0.00 (0.00) .59 | 0.00 (0.00) .42 |
| b | Slope \* education | --- | -0.00 (0.00) .18 | -0.00 (0.00) .35 | -0.00 (0.00) .46 |
| b | Slope \* height | --- | --- | -0.29 (0.17) .09 | -0.34 (0.18) .05 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.03) .95 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.03) .62 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.03) .96 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .51 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.35 (0.56) .02 | 1.28 (0.53) .02 | 1.23 (0.53) .02 | 1.07 (0.54) .05 |
| b | Var (Slope) | 0.00 (0.01) .72 | 0.00 (0.01) .74 | 0.00 (0.01) .78 | 0.00 (0.01) .79 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.05 (0.05) .36 | -0.05 (0.05) .38 | -0.04 (0.05) .43 | -0.04 (0.06) .52 |
|  | Correlation of Levels | 0.18 | 0.13 | 0.089 | 0.075 |
|  | Correlation of Slopes | 0.00 | 0.00 | 0.000 | 0.000 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,003 | -1,988 | -1,957 | -1,790 |
|  | AIC | 4,048 | 4,026 | 3,973 | 3,662 |
|  | BIC | 4,129 | 4,123 | 4,084 | 3,817 |

## bstory\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.16 (0.08) .03 | 0.10 (0.07) .15 | 0.08 (0.07) .24 | 0.08 (0.07) .22 |
| ab | Covar (Slopes) | 0.00 (0.00) .47 | 0.00 (0.00) .46 | 0.00 (0.00) .49 | 0.00 (0.00) .59 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.21 (0.09) .02 | 0.15 (0.10) .14 | 0.12 (0.10) .23 | 0.13 (0.10) .21 |
| er | Corr (Slopes) | 0.64 (1.74) .71 | 0.64 (1.72) .71 | 0.65 (1.93) .74 | 0.64 (2.09) .76 |
| er | Corr (Residuals) | -0.03 (0.04) .52 | -0.03 (0.04) .53 | -0.03 (0.04) .49 | -0.02 (0.05) .66 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.02) .15 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .47 | -0.00 (0.00) .37 | -0.00 (0.00) .61 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .40 | 0.05 (0.12) .65 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 9.70 (0.16) <.01 | 8.68 (0.29) <.01 | 8.65 (0.29) <.01 | 8.68 (0.37) <.01 |
| b | Slope | -0.13 (0.06) .02 | -0.10 (0.09) .26 | -0.08 (0.08) .32 | -0.04 (0.12) .76 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.12 (0.03) <.01 | 0.12 (0.03) <.01 | 0.12 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.70 (1.47) .63 | 0.68 (1.51) .65 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.21) .97 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.24) .32 |
| b | Level \* diabetes | --- | --- | --- | 0.05 (0.24) .85 |
| b | Slope \* age | 0.01 (0.00) .12 | 0.01 (0.00) .14 | 0.01 (0.00) .14 | 0.00 (0.01) .33 |
| b | Slope \* education | --- | -0.00 (0.01) .67 | -0.01 (0.01) .42 | -0.01 (0.01) .37 |
| b | Slope \* height | --- | --- | 0.68 (0.45) .13 | 0.90 (0.47) .06 |
| b | Slope \* smoking | --- | --- | --- | -0.07 (0.07) .34 |
| b | Slope \* cardio | --- | --- | --- | 0.07 (0.08) .40 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.08) .98 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .22 | 0.00 (0.00) .22 | 0.00 (0.00) .21 | 0.00 (0.00) .35 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.82 (0.40) <.01 | 1.64 (0.38) <.01 | 1.64 (0.38) <.01 | 1.70 (0.38) <.01 |
| b | Var (Slope) | 0.01 (0.06) .81 | 0.01 (0.06) .81 | 0.01 (0.06) .83 | 0.01 (0.06) .84 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .08 | -0.01 (0.00) .09 | -0.01 (0.00) .04 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | 0.02 (0.15) .91 | 0.02 (0.15) .90 | 0.01 (0.15) .96 | -0.02 (0.15) .87 |
|  | Correlation of Levels | 0.21 | 0.15 | 0.12 | 0.13 |
|  | Correlation of Slopes | 0.57 | 0.57 | 0.61 | 0.58 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,077 | -3,059 | -3,026 | -2,814 |
|  | AIC | 6,196 | 6,167 | 6,109 | 5,711 |
|  | BIC | 6,277 | 6,264 | 6,220 | 5,865 |

## bstory\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.15 (0.06) .02 | 0.11 (0.06) .08 | 0.08 (0.06) .18 | 0.09 (0.06) .15 |
| ab | Covar (Slopes) | 0.00 (0.00) .20 | 0.00 (0.00) .21 | 0.00 (0.00) .21 | 0.00 (0.00) .28 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.25 (0.10) .01 | 0.19 (0.11) .07 | 0.14 (0.11) .18 | 0.16 (0.11) .14 |
| er | Corr (Slopes) | 0.78 (0.90) .39 | 0.77 (0.94) .41 | 0.78 (0.94) .41 | 0.80 (1.12) .47 |
| er | Corr (Residuals) | -0.06 (0.04) .22 | -0.06 (0.04) .22 | -0.06 (0.04) .22 | -0.05 (0.05) .29 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.41) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .05 | -0.00 (0.00) .34 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .42 | -0.00 (0.00) .64 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .60 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 10.05 (0.14) <.01 | 9.28 (0.25) <.01 | 9.29 (0.25) <.01 | 9.17 (0.32) <.01 |
| b | Slope | -0.17 (0.05) <.01 | -0.08 (0.08) .31 | -0.08 (0.08) .29 | -0.06 (0.12) .60 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.08 (0.02) <.01 | 0.09 (0.03) <.01 |
| b | Level \* height | --- | --- | 1.93 (1.29) .14 | 1.66 (1.31) .21 |
| b | Level \* smoking | --- | --- | --- | 0.17 (0.18) .34 |
| b | Level \* cardio | --- | --- | --- | 0.20 (0.22) .35 |
| b | Level \* diabetes | --- | --- | --- | 0.03 (0.21) .88 |
| b | Slope \* age | 0.01 (0.00) .05 | 0.01 (0.00) .05 | 0.01 (0.00) .06 | 0.01 (0.00) .19 |
| b | Slope \* education | --- | -0.01 (0.01) .21 | -0.01 (0.01) .26 | -0.01 (0.01) .28 |
| b | Slope \* height | --- | --- | -0.10 (0.43) .82 | 0.16 (0.44) .71 |
| b | Slope \* smoking | --- | --- | --- | -0.10 (0.07) .16 |
| b | Slope \* cardio | --- | --- | --- | 0.05 (0.08) .53 |
| b | Slope \* diabetes | --- | --- | --- | 0.05 (0.08) .53 |
| a | Var (Level) | 0.32 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .20 | 0.00 (0.00) .21 | 0.00 (0.00) .19 | 0.00 (0.00) .28 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.18 (0.24) <.01 | 1.07 (0.22) <.01 | 1.05 (0.22) <.01 | 1.10 (0.24) <.01 |
| b | Var (Slope) | 0.02 (0.03) .48 | 0.02 (0.03) .50 | 0.02 (0.03) .50 | 0.02 (0.04) .55 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .08 | -0.01 (0.00) .09 | -0.01 (0.00) .04 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.03 (0.08) .71 | -0.02 (0.08) .82 | -0.02 (0.08) .81 | -0.03 (0.08) .70 |
|  | Correlation of Levels | 0.25 | 0.19 | 0.14 | 0.16 |
|  | Correlation of Slopes | 0.72 | 0.74 | 0.74 | 1.07 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,913 | -2,898 | -2,867 | -2,667 |
|  | AIC | 5,868 | 5,845 | 5,791 | 5,415 |
|  | BIC | 5,949 | 5,942 | 5,903 | 5,570 |

## categories

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.18 (0.31) <.01 | 0.87 (0.29) <.01 | 0.66 (0.27) .01 | 0.62 (0.29) .03 |
| ab | Covar (Slopes) | 0.01 (0.01) .45 | 0.01 (0.01) .43 | 0.01 (0.01) .57 | 0.00 (0.01) .75 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.27 (0.06) <.01 | 0.22 (0.07) <.01 | 0.17 (0.07) .01 | 0.16 (0.07) .02 |
| er | Corr (Slopes) | 0.32 (0.39) .42 | 0.33 (0.39) .40 | 0.23 (0.38) .55 | 0.17 (0.50) .73 |
| er | Corr (Residuals) | -0.01 (0.05) .76 | -0.01 (0.05) .78 | -0.01 (0.05) .84 | -0.01 (0.05) .76 |
| a | Level | 2.39 (0.06) <.01 | 2.09 (0.09) <.01 | 2.12 (0.09) <.01 | 2.36 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .06 | -0.03 (0.01) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.66 (0.41) <.01 | 1.97 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.12 (0.08) .15 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .29 |
| a | Slope \* education | --- | -0.00 (0.00) .62 | -0.00 (0.00) .50 | -0.00 (0.00) .72 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .69 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .14 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .34 |
| b | Level | 35.33 (0.77) <.01 | 30.15 (1.19) <.01 | 30.17 (1.18) <.01 | 31.21 (1.49) <.01 |
| b | Slope | 0.01 (0.17) .96 | -0.06 (0.32) .86 | -0.05 (0.32) .88 | -0.05 (0.38) .89 |
| b | Level \* age | -0.28 (0.06) <.01 | -0.29 (0.06) <.01 | -0.28 (0.06) <.01 | -0.29 (0.06) <.01 |
| b | Level \* education | --- | 0.62 (0.11) <.01 | 0.58 (0.12) <.01 | 0.54 (0.12) <.01 |
| b | Level \* height | --- | --- | 12.16 (5.97) .04 | 12.27 (6.08) .04 |
| b | Level \* smoking | --- | --- | --- | -0.86 (0.92) .35 |
| b | Level \* cardio | --- | --- | --- | 0.35 (1.04) .73 |
| b | Level \* diabetes | --- | --- | --- | -0.21 (1.06) .84 |
| b | Slope \* age | -0.04 (0.01) .02 | -0.04 (0.02) .01 | -0.04 (0.01) .01 | -0.04 (0.02) .01 |
| b | Slope \* education | --- | 0.01 (0.03) .78 | 0.01 (0.03) .86 | -0.00 (0.04) .98 |
| b | Slope \* height | --- | --- | 0.86 (1.49) .56 | 1.53 (1.52) .31 |
| b | Slope \* smoking | --- | --- | --- | 0.15 (0.23) .50 |
| b | Slope \* cardio | --- | --- | --- | 0.14 (0.29) .63 |
| b | Slope \* diabetes | --- | --- | --- | -0.25 (0.27) .35 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .34 | 0.00 (0.00) .34 | 0.00 (0.00) .32 | 0.00 (0.00) .52 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 60.30 (6.32) <.01 | 55.22 (6.10) <.01 | 53.56 (5.95) <.01 | 54.93 (6.33) <.01 |
| b | Var (Slope) | 0.78 (0.35) .03 | 0.80 (0.36) .03 | 0.79 (0.36) .03 | 0.83 (0.38) .03 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.40 (1.19) .73 | -0.53 (1.20) .66 | -0.57 (1.18) .63 | -1.14 (1.22) .35 |
|  | Correlation of Levels | 0.27 | 0.22 | 0.17 | 0.16 |
|  | Correlation of Slopes | 0.32 | 0.35 | 0.25 | 0.14 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,630 | -4,612 | -4,568 | -4,250 |
|  | AIC | 9,303 | 9,274 | 9,194 | 8,582 |
|  | BIC | 9,384 | 9,371 | 9,305 | 8,736 |

## digit\_b

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.20 (0.06) <.01 | 0.11 (0.06) .08 | 0.10 (0.06) .09 | 0.13 (0.06) .03 |
| ab | Covar (Slopes) | -0.00 (0.00) .47 | -0.00 (0.00) .54 | -0.00 (0.00) .49 | -0.00 (0.00) .61 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.21 (0.06) <.01 | 0.12 (0.07) .08 | 0.12 (0.07) .09 | 0.16 (0.07) .03 |
| er | Corr (Slopes) | -0.40 (0.62) .52 | -0.33 (0.59) .58 | -0.35 (0.57) .53 | -0.43 (0.98) .66 |
| er | Corr (Residuals) | -0.00 (0.04) .98 | -0.00 (0.04) .95 | -0.01 (0.04) .88 | -0.01 (0.04) .77 |
| a | Level | 2.40 (0.06) <.01 | 2.09 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.03 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.12 (0.08) .15 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .35 |
| a | Slope \* education | --- | -0.00 (0.00) .50 | -0.00 (0.00) .39 | -0.00 (0.00) .63 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.05 (0.12) .69 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .30 |
| b | Level | 6.53 (0.20) <.01 | 4.95 (0.28) <.01 | 4.93 (0.28) <.01 | 4.73 (0.34) <.01 |
| b | Slope | 0.03 (0.05) .54 | -0.00 (0.08) .99 | 0.01 (0.09) .90 | 0.11 (0.10) .25 |
| b | Level \* age | -0.03 (0.02) .04 | -0.04 (0.01) .02 | -0.04 (0.01) .02 | -0.03 (0.02) .04 |
| b | Level \* education | --- | 0.19 (0.03) <.01 | 0.19 (0.03) <.01 | 0.20 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.37 (1.42) .80 | 0.44 (1.46) .76 |
| b | Level \* smoking | --- | --- | --- | 0.15 (0.21) .49 |
| b | Level \* cardio | --- | --- | --- | 0.25 (0.22) .27 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.23) .84 |
| b | Slope \* age | -0.00 (0.00) .56 | -0.00 (0.00) .46 | -0.00 (0.00) .50 | -0.00 (0.00) .30 |
| b | Slope \* education | --- | 0.00 (0.01) .58 | 0.00 (0.01) .88 | -0.00 (0.01) .57 |
| b | Slope \* height | --- | --- | 0.69 (0.39) .08 | 0.71 (0.41) .08 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.06) .69 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.07) .74 |
| b | Slope \* diabetes | --- | --- | --- | -0.05 (0.06) .44 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .34 | 0.00 (0.00) .34 | 0.00 (0.00) .31 | 0.00 (0.00) .55 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.90 (0.28) <.01 | 2.44 (0.25) <.01 | 2.45 (0.25) <.01 | 2.54 (0.27) <.01 |
| b | Var (Slope) | 0.03 (0.02) .16 | 0.03 (0.02) .14 | 0.03 (0.02) .15 | 0.02 (0.02) .28 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .13 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 0.00 (0.06) .99 | -0.02 (0.06) .78 | -0.02 (0.06) .75 | -0.03 (0.06) .61 |
|  | Correlation of Levels | 0.21 | 0.12 | 0.12 | 0.16 |
|  | Correlation of Slopes | -0.36 | -0.35 | -0.36 | -0.43 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,867 | -2,836 | -2,804 | -2,605 |
|  | AIC | 5,776 | 5,722 | 5,665 | 5,292 |
|  | BIC | 5,857 | 5,818 | 5,777 | 5,446 |

## digit\_f

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.06) .01 | 0.07 (0.06) .18 | 0.06 (0.06) .26 | 0.06 (0.06) .27 |
| ab | Covar (Slopes) | 0.00 (0.00) .67 | 0.00 (0.00) .64 | 0.00 (0.00) .66 | 0.00 (0.00) .78 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.18 (0.06) <.01 | 0.09 (0.07) .18 | 0.08 (0.07) .26 | 0.08 (0.07) .27 |
| er | Corr (Slopes) | 0.29 (0.78) .71 | 0.32 (0.77) .68 | 0.30 (0.77) .69 | 0.26 (1.03) .80 |
| er | Corr (Residuals) | -0.03 (0.04) .44 | -0.03 (0.04) .43 | -0.04 (0.04) .39 | -0.02 (0.04) .56 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.01) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .06 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .47 | -0.00 (0.00) .36 | -0.00 (0.00) .56 |
| a | Slope \* height | --- | --- | 0.11 (0.11) .34 | 0.06 (0.12) .63 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 8.94 (0.17) <.01 | 7.29 (0.25) <.01 | 7.21 (0.25) <.01 | 7.01 (0.30) <.01 |
| b | Slope | -0.04 (0.04) .29 | 0.01 (0.08) .94 | 0.02 (0.08) .82 | 0.13 (0.09) .16 |
| b | Level \* age | -0.04 (0.02) .01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.20 (0.02) <.01 | 0.21 (0.02) <.01 | 0.20 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.09 (1.41) .95 | 0.36 (1.43) .80 |
| b | Level \* smoking | --- | --- | --- | 0.43 (0.21) .04 |
| b | Level \* cardio | --- | --- | --- | 0.22 (0.23) .34 |
| b | Level \* diabetes | --- | --- | --- | -0.14 (0.23) .53 |
| b | Slope \* age | 0.00 (0.00) .64 | 0.00 (0.00) .68 | 0.00 (0.00) .63 | -0.00 (0.00) .76 |
| b | Slope \* education | --- | -0.01 (0.01) .51 | -0.01 (0.01) .38 | -0.01 (0.01) .18 |
| b | Slope \* height | --- | --- | 0.23 (0.40) .57 | 0.11 (0.41) .79 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.06) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.07) .22 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.06) .73 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .26 | 0.00 (0.00) .40 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.80 (0.28) <.01 | 2.29 (0.26) <.01 | 2.22 (0.25) <.01 | 2.15 (0.26) <.01 |
| b | Var (Slope) | 0.02 (0.02) .48 | 0.02 (0.02) .47 | 0.02 (0.02) .48 | 0.01 (0.02) .58 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.03 (0.07) .68 | -0.02 (0.06) .78 | -0.01 (0.06) .87 | -0.02 (0.06) .72 |
|  | Correlation of Levels | 0.18 | 0.09 | 0.079 | 0.079 |
|  | Correlation of Slopes | 0.24 | 0.50 | 0.250 | 0.289 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,849 | -2,817 | -2,782 | -2,560 |
|  | AIC | 5,740 | 5,683 | 5,623 | 5,202 |
|  | BIC | 5,821 | 5,780 | 5,734 | 5,357 |

## digit\_o

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.08 (0.05) .11 | 0.02 (0.05) .69 | -0.01 (0.04) .78 | -0.01 (0.04) .74 |
| ab | Covar (Slopes) | 0.00 (0.00) .91 | 0.00 (0.00) .89 | 0.00 (0.00) .90 | 0.00 (0.00) .96 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.12 (0.07) .10 | 0.03 (0.08) .69 | -0.02 (0.08) .78 | -0.02 (0.08) .74 |
| er | Corr (Slopes) | 0.16 (1.44) .91 | 0.21 (1.52) .89 | 0.18 (1.50) .90 | 0.09 (1.68) .96 |
| er | Corr (Residuals) | 0.00 (0.05) .99 | 0.00 (0.05) .99 | 0.00 (0.05) .98 | 0.00 (0.05) .95 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.01) .13 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) .01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .50 | -0.00 (0.00) .37 | -0.00 (0.00) .59 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .63 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 7.74 (0.14) <.01 | 6.76 (0.22) <.01 | 6.79 (0.21) <.01 | 6.89 (0.25) <.01 |
| b | Slope | -0.03 (0.04) .46 | -0.05 (0.06) .39 | -0.05 (0.06) .46 | -0.04 (0.09) .62 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.12 (0.02) <.01 | 0.10 (0.02) <.01 | 0.10 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.59 (1.10) .02 | 2.91 (1.11) .01 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.16) .92 |
| b | Level \* cardio | --- | --- | --- | 0.21 (0.19) .28 |
| b | Level \* diabetes | --- | --- | --- | -0.19 (0.17) .27 |
| b | Slope \* age | -0.00 (0.00) .35 | -0.00 (0.00) .30 | -0.00 (0.00) .28 | -0.00 (0.00) .20 |
| b | Slope \* education | --- | 0.00 (0.01) .59 | 0.00 (0.01) .69 | 0.01 (0.01) .37 |
| b | Slope \* height | --- | --- | 0.09 (0.32) .77 | 0.06 (0.33) .86 |
| b | Slope \* smoking | --- | --- | --- | -0.00 (0.05) .99 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .64 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.05) .59 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .29 | 0.00 (0.00) .27 | 0.00 (0.00) .42 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 1.39 (0.25) <.01 | 1.21 (0.23) <.01 | 1.18 (0.23) <.01 | 1.20 (0.23) <.01 |
| b | Var (Slope) | 0.00 (0.02) .79 | 0.00 (0.02) .81 | 0.00 (0.02) .81 | 0.00 (0.02) .83 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | 0.01 (0.06) .83 | 0.00 (0.06) .93 | 0.01 (0.06) .92 | 0.01 (0.06) .90 |
|  | Correlation of Levels | 0.12 | 0.032 | -0.023 | -0.025 |
|  | Correlation of Slopes | 0.00 | 0.447 | 0.000 | 0.000 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,606 | -2,580 | -2,548 | -2,348 |
|  | AIC | 5,255 | 5,211 | 5,154 | 4,778 |
|  | BIC | 5,336 | 5,307 | 5,265 | 4,932 |

## ideas

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.02) .17 | 0.01 (0.02) .41 | 0.00 (0.02) .94 | -0.00 (0.02) .82 |
| ab | Covar (Slopes) | -0.00 (0.00) .59 | -0.00 (0.00) .60 | -0.00 (0.00) .64 | -0.00 (0.00) .32 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.10 (0.09) .29 | 0.07 (0.10) .49 | 0.01 (0.08) .94 | -0.02 (0.08) .82 |
| er | Corr (Slopes) | -0.14 (0.26) .58 | -0.14 (0.26) .59 | -0.13 (0.26) .63 | -0.36 (0.38) .34 |
| er | Corr (Residuals) | 0.04 (0.05) .48 | 0.04 (0.05) .50 | 0.03 (0.05) .58 | 0.04 (0.05) .42 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.03 (0.01) <.01 | -0.02 (0.01) .09 | -0.02 (0.02) .14 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .28 |
| a | Slope \* education | --- | -0.00 (0.00) .52 | -0.00 (0.00) .40 | -0.00 (0.00) .67 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .40 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 7.88 (0.04) <.01 | 7.74 (0.08) <.01 | 7.74 (0.08) <.01 | 7.72 (0.09) <.01 |
| b | Slope | -0.02 (0.02) .22 | -0.01 (0.03) .67 | -0.01 (0.03) .83 | 0.00 (0.04) .99 |
| b | Level \* age | -0.01 (0.01) .14 | -0.01 (0.01) .13 | -0.01 (0.01) .15 | -0.01 (0.01) .28 |
| b | Level \* education | --- | 0.02 (0.01) .08 | 0.02 (0.01) .09 | 0.02 (0.01) .06 |
| b | Level \* height | --- | --- | 0.63 (0.39) .10 | 0.83 (0.41) .04 |
| b | Level \* smoking | --- | --- | --- | -0.07 (0.07) .35 |
| b | Level \* cardio | --- | --- | --- | 0.07 (0.07) .28 |
| b | Level \* diabetes | --- | --- | --- | -0.02 (0.07) .81 |
| b | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .09 | 0.00 (0.00) .08 | 0.00 (0.00) .12 |
| b | Slope \* education | --- | -0.00 (0.00) .84 | -0.00 (0.00) .69 | -0.00 (0.00) .35 |
| b | Slope \* height | --- | --- | -0.09 (0.14) .54 | -0.16 (0.14) .25 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.03) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.01 (0.02) .71 |
| b | Slope \* diabetes | --- | --- | --- | 0.00 (0.03) .94 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .31 | 0.00 (0.00) .28 | 0.00 (0.00) .47 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 0.18 (0.14) .21 | 0.17 (0.14) .21 | 0.17 (0.14) .22 | 0.20 (0.15) .19 |
| b | Var (Slope) | 0.02 (0.02) .25 | 0.02 (0.02) .24 | 0.02 (0.02) .26 | 0.03 (0.02) .23 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.06 (0.05) .26 | -0.05 (0.05) .26 | -0.05 (0.05) .26 | -0.06 (0.05) .23 |
|  | Correlation of Levels | 0.098 | 0.066 | 0.0046 | -0.017 |
|  | Correlation of Slopes | -0.209 | -0.209 | -0.2132 | -0.385 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -1,410 | -1,398 | -1,366 | -1,216 |
|  | AIC | 2,863 | 2,846 | 2,791 | 2,514 |
|  | BIC | 2,944 | 2,943 | 2,902 | 2,669 |

## line

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.41 (0.10) <.01 | 0.29 (0.09) <.01 | 0.21 (0.08) .01 | 0.17 (0.08) .05 |
| ab | Covar (Slopes) | 0.00 (0.00) .65 | 0.00 (0.00) .64 | 0.00 (0.00) .68 | 0.00 (0.00) .60 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.31 (0.06) <.01 | 0.24 (0.07) <.01 | 0.19 (0.07) .01 | 0.15 (0.08) .04 |
| er | Corr (Slopes) | 0.21 (0.47) .65 | 0.23 (0.48) .64 | 0.21 (0.50) .68 | 0.39 (0.74) .60 |
| er | Corr (Residuals) | -0.02 (0.04) .68 | -0.02 (0.04) .68 | -0.02 (0.04) .68 | -0.02 (0.04) .68 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.67 (0.41) <.01 | 1.98 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) .01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .41 | -0.00 (0.00) .58 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .61 |
| a | Slope \* smoking | --- | --- | --- | 0.05 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 11.60 (0.26) <.01 | 9.54 (0.43) <.01 | 9.63 (0.43) <.01 | 10.31 (0.50) <.01 |
| b | Slope | 0.04 (0.07) .61 | -0.01 (0.12) .90 | 0.03 (0.12) .80 | -0.03 (0.14) .84 |
| b | Level \* age | -0.01 (0.02) .60 | -0.02 (0.02) .44 | -0.01 (0.02) .70 | -0.02 (0.02) .36 |
| b | Level \* education | --- | 0.25 (0.04) <.01 | 0.22 (0.04) <.01 | 0.21 (0.05) <.01 |
| b | Level \* height | --- | --- | 4.61 (2.22) .04 | 5.35 (2.29) .02 |
| b | Level \* smoking | --- | --- | --- | -0.86 (0.30) <.01 |
| b | Level \* cardio | --- | --- | --- | -0.00 (0.35) .99 |
| b | Level \* diabetes | --- | --- | --- | -0.34 (0.34) .32 |
| b | Slope \* age | 0.00 (0.01) .90 | 0.00 (0.01) .99 | 0.00 (0.01) .92 | 0.00 (0.01) .82 |
| b | Slope \* education | --- | 0.01 (0.01) .54 | 0.00 (0.01) .97 | 0.00 (0.01) .94 |
| b | Slope \* height | --- | --- | 0.88 (0.55) .11 | 1.00 (0.58) .08 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.09) .89 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.12) .33 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.10) .54 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .48 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 5.64 (0.68) <.01 | 4.84 (0.57) <.01 | 4.64 (0.55) <.01 | 4.47 (0.56) <.01 |
| b | Var (Slope) | 0.07 (0.04) .11 | 0.07 (0.04) .11 | 0.05 (0.04) .17 | 0.05 (0.04) .22 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.16 (0.13) .22 | -0.18 (0.12) .15 | -0.20 (0.12) .11 | -0.20 (0.12) .08 |
|  | Correlation of Levels | 0.31 | 0.24 | 0.19 | 0.15 |
|  | Correlation of Slopes | 0.24 | 0.24 | 0.28 | 0.29 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,302 | -3,274 | -3,223 | -2,982 |
|  | AIC | 6,647 | 6,598 | 6,505 | 6,046 |
|  | BIC | 6,728 | 6,694 | 6,616 | 6,201 |

## logic\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.40 (0.14) <.01 | 0.28 (0.12) .03 | 0.21 (0.12) .07 | 0.23 (0.12) .05 |
| ab | Covar (Slopes) | 0.00 (0.01) .95 | 0.00 (0.01) .99 | -0.00 (0.01) .91 | 0.00 (0.01) .90 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.21 (0.07) <.01 | 0.16 (0.07) .02 | 0.12 (0.07) .07 | 0.14 (0.07) .04 |
| er | Corr (Slopes) | -0.02 (0.34) .95 | 0.00 (0.34) .99 | -0.04 (0.34) .91 | 0.05 (0.44) .90 |
| er | Corr (Residuals) | -0.01 (0.04) .78 | -0.01 (0.04) .79 | -0.01 (0.04) .85 | -0.01 (0.04) .76 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.02) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .34 |
| a | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .38 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.05 (0.12) .66 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 10.02 (0.37) <.01 | 7.83 (0.67) <.01 | 7.82 (0.67) <.01 | 7.56 (0.83) <.01 |
| b | Slope | 0.40 (0.10) <.01 | 0.26 (0.18) .13 | 0.29 (0.17) .09 | 0.20 (0.23) .38 |
| b | Level \* age | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 |
| b | Level \* education | --- | 0.26 (0.06) <.01 | 0.26 (0.06) <.01 | 0.27 (0.07) <.01 |
| b | Level \* height | --- | --- | 2.38 (3.00) .43 | 2.23 (3.01) .46 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.43) .92 |
| b | Level \* cardio | --- | --- | --- | 0.68 (0.49) .16 |
| b | Level \* diabetes | --- | --- | --- | 0.66 (0.47) .15 |
| b | Slope \* age | -0.01 (0.01) .15 | -0.01 (0.01) .12 | -0.01 (0.01) .13 | -0.01 (0.01) .10 |
| b | Slope \* education | --- | 0.02 (0.02) .29 | 0.01 (0.02) .42 | 0.02 (0.02) .40 |
| b | Slope \* height | --- | --- | 0.21 (0.88) .81 | 0.39 (0.85) .65 |
| b | Slope \* smoking | --- | --- | --- | 0.07 (0.14) .62 |
| b | Slope \* cardio | --- | --- | --- | 0.23 (0.15) .13 |
| b | Slope \* diabetes | --- | --- | --- | -0.07 (0.15) .65 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .31 | 0.00 (0.00) .29 | 0.00 (0.00) .49 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 11.49 (1.12) <.01 | 10.59 (1.03) <.01 | 10.48 (1.04) <.01 | 10.74 (1.09) <.01 |
| b | Var (Slope) | 0.32 (0.11) <.01 | 0.32 (0.10) <.01 | 0.31 (0.10) <.01 | 0.30 (0.11) <.01 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.22 (0.26) .38 | -0.30 (0.26) .23 | -0.27 (0.25) .29 | -0.33 (0.26) .20 |
|  | Correlation of Levels | 0.21 | 0.16 | 0.124 | 0.136 |
|  | Correlation of Slopes | 0.00 | 0.00 | -0.057 | 0.058 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,738 | -3,717 | -3,680 | -3,419 |
|  | AIC | 7,519 | 7,485 | 7,417 | 6,920 |
|  | BIC | 7,600 | 7,581 | 7,529 | 7,074 |

## logic\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.37 (0.13) <.01 | 0.23 (0.12) .06 | 0.14 (0.11) .20 | 0.16 (0.11) .14 |
| ab | Covar (Slopes) | 0.00 (0.01) .98 | 0.00 (0.01) .96 | 0.00 (0.01) .99 | 0.00 (0.01) .90 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.21 (0.07) <.01 | 0.14 (0.07) .05 | 0.10 (0.07) .19 | 0.11 (0.07) .14 |
| er | Corr (Slopes) | 0.01 (0.51) .98 | 0.02 (0.52) .96 | -0.00 (0.52) .99 | 0.12 (1.05) .91 |
| er | Corr (Residuals) | -0.02 (0.04) .71 | -0.02 (0.04) .71 | -0.01 (0.04) .75 | -0.01 (0.04) .78 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.01) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .33 |
| a | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .38 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.05 (0.12) .67 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 11.85 (0.35) <.01 | 9.38 (0.63) <.01 | 9.42 (0.63) <.01 | 9.24 (0.79) <.01 |
| b | Slope | 0.20 (0.08) .01 | 0.20 (0.16) .21 | 0.22 (0.16) .17 | 0.24 (0.20) .23 |
| b | Level \* age | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 |
| b | Level \* education | --- | 0.30 (0.06) <.01 | 0.28 (0.06) <.01 | 0.28 (0.07) <.01 |
| b | Level \* height | --- | --- | 4.07 (2.95) .17 | 3.84 (2.94) .19 |
| b | Level \* smoking | --- | --- | --- | 0.06 (0.41) .88 |
| b | Level \* cardio | --- | --- | --- | 0.60 (0.48) .21 |
| b | Level \* diabetes | --- | --- | --- | 0.54 (0.45) .22 |
| b | Slope \* age | -0.00 (0.01) .95 | -0.00 (0.01) .89 | -0.00 (0.01) .89 | -0.00 (0.01) .71 |
| b | Slope \* education | --- | 0.00 (0.02) .95 | -0.00 (0.02) .96 | -0.00 (0.02) .96 |
| b | Slope \* height | --- | --- | -0.11 (0.79) .89 | 0.11 (0.76) .88 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.12) .86 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.15) .77 |
| b | Slope \* diabetes | --- | --- | --- | -0.15 (0.14) .28 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .49 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 9.52 (1.05) <.01 | 8.36 (0.93) <.01 | 8.15 (0.93) <.01 | 8.31 (0.98) <.01 |
| b | Var (Slope) | 0.11 (0.09) .22 | 0.11 (0.09) .22 | 0.10 (0.09) .25 | 0.04 (0.09) .64 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 0.07 (0.22) .76 | 0.06 (0.22) .78 | 0.09 (0.21) .66 | 0.13 (0.21) .55 |
|  | Correlation of Levels | 0.21 | 0.14 | 0.095 | 0.11 |
|  | Correlation of Slopes | 0.00 | 0.00 | 0.000 | 0.16 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,760 | -3,737 | -3,697 | -3,438 |
|  | AIC | 7,562 | 7,523 | 7,452 | 6,958 |
|  | BIC | 7,642 | 7,620 | 7,563 | 7,113 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.16 (0.07) .02 | 0.09 (0.07) .18 | 0.05 (0.07) .43 | 0.03 (0.06) .63 |
| ab | Covar (Slopes) | -0.00 (0.01) .51 | -0.00 (0.01) .57 | -0.00 (0.01) .41 | -0.00 (0.01) .44 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.16 (0.09) .07 | 0.10 (0.09) .25 | 0.06 (0.09) .48 | 0.04 (0.08) .66 |
| er | Corr (Slopes) | -0.33 (0.51) .52 | -0.28 (0.50) .57 | -0.39 (0.47) .41 | -0.58 (0.79) .46 |
| er | Corr (Residuals) | 0.01 (0.05) .80 | 0.01 (0.05) .82 | 0.01 (0.05) .79 | 0.02 (0.05) .72 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.02) .07 | -0.03 (0.02) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .26 |
| a | Slope \* education | --- | -0.00 (0.00) .60 | -0.00 (0.00) .45 | -0.00 (0.00) .68 |
| a | Slope \* height | --- | --- | 0.12 (0.12) .32 | 0.07 (0.12) .56 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .15 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 28.63 (0.17) <.01 | 27.38 (0.30) <.01 | 27.43 (0.30) <.01 | 27.35 (0.32) <.01 |
| b | Slope | -0.07 (0.05) .16 | -0.02 (0.10) .86 | -0.03 (0.10) .78 | -0.00 (0.12) .99 |
| b | Level \* age | -0.08 (0.02) <.01 | -0.09 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 |
| b | Level \* education | --- | 0.15 (0.03) <.01 | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.86 (1.28) .03 | 3.05 (1.31) .02 |
| b | Level \* smoking | --- | --- | --- | -0.08 (0.24) .73 |
| b | Level \* cardio | --- | --- | --- | 0.27 (0.27) .30 |
| b | Level \* diabetes | --- | --- | --- | 0.02 (0.21) .94 |
| b | Slope \* age | 0.00 (0.01) .94 | -0.00 (0.01) .92 | -0.00 (0.01) .82 | -0.00 (0.01) .57 |
| b | Slope \* education | --- | -0.00 (0.01) .64 | -0.00 (0.01) .72 | -0.01 (0.01) .50 |
| b | Slope \* height | --- | --- | 0.01 (0.55) .98 | -0.05 (0.56) .93 |
| b | Slope \* smoking | --- | --- | --- | -0.03 (0.08) .73 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.08) .20 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.08) .39 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .26 | 0.00 (0.00) .46 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 3.04 (1.57) .05 | 2.74 (1.48) .06 | 2.72 (1.49) .07 | 2.48 (1.52) .10 |
| b | Var (Slope) | 0.12 (0.08) .11 | 0.13 (0.08) .11 | 0.12 (0.08) .13 | 0.08 (0.08) .29 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.33 (0.32) .30 | -0.34 (0.33) .29 | -0.33 (0.32) .30 | -0.26 (0.32) .42 |
|  | Correlation of Levels | 0.16 | 0.10 | 0.061 | 0.037 |
|  | Correlation of Slopes | -0.36 | -0.35 | -0.455 | -0.549 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,963 | -2,941 | -2,907 | -2,692 |
|  | AIC | 5,969 | 5,931 | 5,872 | 5,467 |
|  | BIC | 6,050 | 6,028 | 5,984 | 5,621 |

## nart

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.31 (0.07) <.01 | 0.15 (0.06) .02 | 0.11 (0.06) .06 | 0.11 (0.06) .07 |
| ab | Covar (Slopes) | -0.00 (0.00) .53 | -0.00 (0.00) .52 | -0.00 (0.00) .55 | 0.00 (0.00) .98 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.24 (0.06) <.01 | 0.14 (0.06) .01 | 0.11 (0.06) .06 | 0.11 (0.06) .07 |
| er | Corr (Slopes) | -0.31 (0.50) .54 | -0.31 (0.50) .54 | -0.29 (0.49) .56 | -0.01 (0.59) .98 |
| er | Corr (Residuals) | -0.01 (0.05) .88 | -0.01 (0.05) .88 | -0.01 (0.05) .87 | -0.02 (0.05) .70 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .05 | -0.03 (0.01) .09 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .36 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .42 | -0.00 (0.00) .61 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .40 | 0.05 (0.12) .68 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 7.71 (0.22) <.01 | 4.81 (0.34) <.01 | 4.83 (0.34) <.01 | 5.08 (0.41) <.01 |
| b | Slope | 0.07 (0.04) .06 | 0.14 (0.07) .05 | 0.14 (0.07) .05 | 0.12 (0.08) .14 |
| b | Level \* age | 0.02 (0.02) .43 | 0.01 (0.02) .59 | 0.01 (0.02) .46 | 0.01 (0.02) .55 |
| b | Level \* education | --- | 0.35 (0.03) <.01 | 0.34 (0.03) <.01 | 0.31 (0.04) <.01 |
| b | Level \* height | --- | --- | 2.70 (1.66) .10 | 2.78 (1.68) .10 |
| b | Level \* smoking | --- | --- | --- | 0.17 (0.24) .47 |
| b | Level \* cardio | --- | --- | --- | -0.01 (0.27) .96 |
| b | Level \* diabetes | --- | --- | --- | -0.07 (0.25) .77 |
| b | Slope \* age | -0.00 (0.00) .24 | -0.00 (0.00) .23 | -0.00 (0.00) .21 | -0.00 (0.00) .22 |
| b | Slope \* education | --- | -0.01 (0.01) .20 | -0.01 (0.01) .19 | -0.01 (0.01) .35 |
| b | Slope \* height | --- | --- | 0.08 (0.26) .75 | 0.09 (0.27) .75 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .63 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.05) .40 |
| b | Slope \* diabetes | --- | --- | --- | -0.06 (0.06) .30 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .26 | 0.00 (0.00) .48 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 5.33 (0.54) <.01 | 3.77 (0.37) <.01 | 3.69 (0.38) <.01 | 3.55 (0.40) <.01 |
| b | Var (Slope) | 0.02 (0.01) .25 | 0.02 (0.01) .25 | 0.02 (0.01) .25 | 0.02 (0.02) .22 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.16 (0.08) .04 | -0.13 (0.06) .04 | -0.13 (0.06) .05 | -0.15 (0.07) .04 |
|  | Correlation of Levels | 0.24 | 0.14 | 0.11 | 0.11 |
|  | Correlation of Slopes | -0.24 | -0.24 | -0.24 | 0.00 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,541 | -2,480 | -2,448 | -2,275 |
|  | AIC | 5,124 | 5,010 | 4,954 | 4,632 |
|  | BIC | 5,205 | 5,107 | 5,065 | 4,787 |

## num\_comp

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.60 (0.24) .01 | 0.28 (0.22) .20 | 0.06 (0.21) .77 | 0.06 (0.21) .77 |
| ab | Covar (Slopes) | -0.02 (0.01) .08 | -0.02 (0.01) .08 | -0.02 (0.01) .09 | -0.02 (0.01) .13 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.16 (0.06) .01 | 0.09 (0.07) .20 | 0.02 (0.07) .77 | 0.02 (0.07) .77 |
| er | Corr (Slopes) | -0.88 (0.49) .08 | -0.89 (0.50) .08 | -0.85 (0.48) .08 | -0.75 (0.49) .13 |
| er | Corr (Residuals) | 0.03 (0.04) .46 | 0.03 (0.04) .48 | 0.03 (0.04) .53 | 0.02 (0.04) .64 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .06 | -0.02 (0.02) .10 | -0.06 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.40) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .58 | -0.00 (0.00) .45 | -0.00 (0.00) .71 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .40 | 0.05 (0.12) .68 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .24 |
| b | Level | 26.06 (0.65) <.01 | 20.85 (1.03) <.01 | 21.20 (1.02) <.01 | 21.18 (1.29) <.01 |
| b | Slope | -0.02 (0.13) .85 | 0.29 (0.26) .26 | 0.33 (0.26) .20 | 0.35 (0.32) .28 |
| b | Level \* age | -0.18 (0.06) <.01 | -0.19 (0.05) <.01 | -0.17 (0.05) <.01 | -0.18 (0.06) <.01 |
| b | Level \* education | --- | 0.63 (0.10) <.01 | 0.53 (0.10) <.01 | 0.53 (0.11) <.01 |
| b | Level \* height | --- | --- | 17.39 (5.06) <.01 | 16.81 (5.10) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.60 (0.78) .44 |
| b | Level \* cardio | --- | --- | --- | 0.57 (0.85) .50 |
| b | Level \* diabetes | --- | --- | --- | 1.38 (0.86) .11 |
| b | Slope \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | -0.04 (0.03) .16 | -0.04 (0.03) .12 | -0.05 (0.03) .07 |
| b | Slope \* height | --- | --- | -0.24 (1.08) .82 | 0.13 (1.12) .90 |
| b | Slope \* smoking | --- | --- | --- | 0.26 (0.18) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.15 (0.19) .42 |
| b | Slope \* diabetes | --- | --- | --- | -0.17 (0.18) .34 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .28 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 42.16 (3.76) <.01 | 37.18 (3.39) <.01 | 35.55 (3.21) <.01 | 35.35 (3.32) <.01 |
| b | Var (Slope) | 0.41 (0.26) .12 | 0.39 (0.26) .13 | 0.38 (0.26) .14 | 0.41 (0.28) .14 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.32 (0.93) .73 | -0.03 (0.82) .97 | -0.12 (0.82) .89 | -0.29 (0.85) .73 |
|  | Correlation of Levels | 0.16 | 0.086 | 0.02 | 0.02 |
|  | Correlation of Slopes | -0.99 | -1.011 | -0.98 | -0.89 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,333 | -4,308 | -4,257 | -3,958 |
|  | AIC | 8,707 | 8,667 | 8,573 | 7,997 |
|  | BIC | 8,788 | 8,763 | 8,684 | 8,152 |

## raven\_standard

Gender = *male*; Process (a) = *fev*; Process (b) = *raven\_standard*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.36 (0.08) <.01 | 0.22 (0.08) <.01 | 0.11 (0.07) .10 | 0.07 (0.07) .28 |
| ab | Covar (Slopes) | 0.01 (0.00) .11 | 0.01 (0.00) .12 | 0.01 (0.00) .12 | 0.00 (0.00) .45 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.29 (0.06) <.01 | 0.21 (0.07) <.01 | 0.12 (0.07) .11 | 0.08 (0.08) .28 |
| er | Corr (Slopes) | 0.90 (0.80) .26 | 0.87 (0.77) .26 | 0.85 (0.75) .26 | 0.43 (0.68) .52 |
| er | Corr (Residuals) | -0.03 (0.04) .51 | -0.03 (0.04) .51 | -0.02 (0.04) .55 | -0.02 (0.04) .70 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.01) .15 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.72 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .38 |
| a | Slope \* education | --- | -0.00 (0.00) .43 | -0.00 (0.00) .34 | -0.00 (0.00) .58 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .67 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .34 |
| b | Level | 13.08 (0.26) <.01 | 10.71 (0.41) <.01 | 10.88 (0.39) <.01 | 10.98 (0.46) <.01 |
| b | Slope | 0.03 (0.07) .65 | 0.11 (0.12) .39 | 0.10 (0.12) .41 | 0.06 (0.15) .68 |
| b | Level \* age | -0.07 (0.02) <.01 | -0.08 (0.02) <.01 | -0.07 (0.02) <.01 | -0.07 (0.02) <.01 |
| b | Level \* education | --- | 0.28 (0.04) <.01 | 0.24 (0.04) <.01 | 0.24 (0.04) <.01 |
| b | Level \* height | --- | --- | 8.68 (2.17) <.01 | 9.24 (2.21) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.50 (0.28) .07 |
| b | Level \* cardio | --- | --- | --- | 0.60 (0.31) .05 |
| b | Level \* diabetes | --- | --- | --- | -0.07 (0.33) .82 |
| b | Slope \* age | -0.01 (0.01) .31 | -0.01 (0.01) .31 | -0.01 (0.01) .27 | -0.01 (0.01) .25 |
| b | Slope \* education | --- | -0.01 (0.01) .51 | -0.01 (0.01) .61 | -0.01 (0.01) .60 |
| b | Slope \* height | --- | --- | -0.18 (0.76) .81 | -0.34 (0.79) .66 |
| b | Slope \* smoking | --- | --- | --- | 0.13 (0.09) .13 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.11) .86 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.10) .78 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .28 | 0.00 (0.00) .35 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 4.88 (0.67) <.01 | 3.84 (0.58) <.01 | 3.32 (0.49) <.01 | 3.18 (0.49) <.01 |
| b | Var (Slope) | 0.05 (0.05) .30 | 0.05 (0.05) .26 | 0.05 (0.05) .28 | 0.05 (0.05) .27 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .09 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.16 (0.15) .28 | -0.15 (0.14) .28 | -0.12 (0.13) .33 | -0.10 (0.13) .45 |
|  | Correlation of Levels | 0.29 | 0.21 | 0.12 | 0.081 |
|  | Correlation of Slopes | 1.00 | 0.97 | 0.99 | 0.408 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 336 | 336 | 331 | 308 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,015 | -2,980 | -2,932 | -2,733 |
|  | AIC | 6,071 | 6,009 | 5,922 | 5,547 |
|  | BIC | 6,151 | 6,105 | 6,033 | 5,700 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.59 (0.37) <.01 | 1.13 (0.36) <.01 | 0.75 (0.32) .02 | 0.72 (0.33) .03 |
| ab | Covar (Slopes) | -0.00 (0.02) .89 | -0.00 (0.02) .91 | -0.00 (0.02) .89 | -0.01 (0.02) .60 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.30 (0.06) <.01 | 0.24 (0.07) <.01 | 0.17 (0.07) .02 | 0.16 (0.07) .02 |
| er | Corr (Slopes) | -0.07 (0.50) .89 | -0.06 (0.53) .91 | -0.07 (0.49) .89 | -0.36 (0.81) .65 |
| er | Corr (Residuals) | 0.05 (0.04) .26 | 0.05 (0.05) .25 | 0.05 (0.04) .27 | 0.06 (0.05) .17 |
| a | Level | 2.40 (0.06) <.01 | 2.09 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .05 | -0.02 (0.01) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.65 (0.41) <.01 | 1.96 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .33 |
| a | Slope \* education | --- | -0.00 (0.00) .58 | -0.00 (0.00) .43 | -0.00 (0.00) .68 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .33 |
| b | Level | 42.77 (0.99) <.01 | 34.93 (1.58) <.01 | 35.18 (1.53) <.01 | 35.55 (1.93) <.01 |
| b | Slope | 0.09 (0.17) .61 | -0.33 (0.32) .29 | -0.28 (0.32) .39 | -0.13 (0.43) .77 |
| b | Level \* age | -0.45 (0.08) <.01 | -0.47 (0.07) <.01 | -0.45 (0.07) <.01 | -0.46 (0.07) <.01 |
| b | Level \* education | --- | 0.94 (0.15) <.01 | 0.86 (0.15) <.01 | 0.87 (0.16) <.01 |
| b | Level \* height | --- | --- | 22.00 (6.30) <.01 | 22.37 (6.41) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.83 (1.07) .44 |
| b | Level \* cardio | --- | --- | --- | 0.85 (1.13) .45 |
| b | Level \* diabetes | --- | --- | --- | 0.08 (1.26) .95 |
| b | Slope \* age | -0.05 (0.02) <.01 | -0.06 (0.02) <.01 | -0.05 (0.02) <.01 | -0.05 (0.02) <.01 |
| b | Slope \* education | --- | 0.05 (0.03) .10 | 0.04 (0.04) .23 | 0.02 (0.04) .58 |
| b | Slope \* height | --- | --- | 1.51 (1.56) .33 | 2.08 (1.59) .19 |
| b | Slope \* smoking | --- | --- | --- | 0.06 (0.23) .79 |
| b | Slope \* cardio | --- | --- | --- | 0.14 (0.27) .60 |
| b | Slope \* diabetes | --- | --- | --- | -0.18 (0.27) .50 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .28 | 0.00 (0.00) .49 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 89.47 (8.75) <.01 | 78.10 (7.82) <.01 | 72.66 (7.07) <.01 | 71.21 (7.27) <.01 |
| b | Var (Slope) | 0.85 (0.43) .05 | 0.81 (0.42) .06 | 0.80 (0.41) .05 | 0.65 (0.42) .12 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 1.79 (1.51) .24 | 1.00 (1.43) .48 | 0.85 (1.37) .54 | 1.25 (1.39) .37 |
|  | Correlation of Levels | 0.300 | 0.24 | 0.166 | 0.16 |
|  | Correlation of Slopes | -0.069 | -0.07 | -0.071 | -0.31 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,636 | -4,609 | -4,560 | -4,241 |
|  | AIC | 9,314 | 9,268 | 9,179 | 8,565 |
|  | BIC | 9,395 | 9,364 | 9,290 | 8,719 |

## word\_de

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.18 (0.07) .01 | 0.11 (0.07) .13 | 0.07 (0.07) .29 | 0.08 (0.07) .25 |
| ab | Covar (Slopes) | 0.00 (0.00) .74 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .43 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.19 (0.07) .01 | 0.12 (0.08) .12 | 0.08 (0.08) .28 | 0.10 (0.08) .25 |
| er | Corr (Slopes) | 0.20 (0.61) .74 | 0.20 (0.61) .74 | 0.20 (0.59) .73 | 0.69 (1.04) .50 |
| er | Corr (Residuals) | -0.00 (0.04) .90 | -0.00 (0.04) .91 | -0.00 (0.04) .93 | 0.00 (0.05) .92 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.02) .13 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .04 | -0.00 (0.00) .30 |
| a | Slope \* education | --- | -0.00 (0.00) .51 | -0.00 (0.00) .40 | -0.00 (0.00) .62 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.06 (0.12) .65 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .13 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 5.92 (0.18) <.01 | 4.72 (0.29) <.01 | 4.73 (0.29) <.01 | 4.80 (0.37) <.01 |
| b | Slope | 0.05 (0.05) .34 | 0.06 (0.08) .46 | 0.07 (0.09) .44 | 0.11 (0.11) .34 |
| b | Level \* age | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 |
| b | Level \* education | --- | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 |
| b | Level \* height | --- | --- | 1.26 (1.33) .34 | 1.62 (1.36) .23 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.22) .36 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.24) .35 |
| b | Level \* diabetes | --- | --- | --- | 0.23 (0.26) .36 |
| b | Slope \* age | 0.00 (0.00) .80 | 0.00 (0.00) .84 | 0.00 (0.00) .86 | 0.00 (0.00) .94 |
| b | Slope \* education | --- | -0.00 (0.01) .85 | -0.00 (0.01) .79 | -0.00 (0.01) .71 |
| b | Slope \* height | --- | --- | 0.11 (0.46) .82 | 0.19 (0.45) .68 |
| b | Slope \* smoking | --- | --- | --- | -0.06 (0.07) .35 |
| b | Slope \* cardio | --- | --- | --- | 0.08 (0.07) .25 |
| b | Slope \* diabetes | --- | --- | --- | -0.08 (0.07) .21 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .33 | 0.00 (0.00) .33 | 0.00 (0.00) .30 | 0.00 (0.00) .52 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 2.78 (0.31) <.01 | 2.50 (0.30) <.01 | 2.46 (0.30) <.01 | 2.45 (0.31) <.01 |
| b | Var (Slope) | 0.04 (0.02) .07 | 0.04 (0.02) .07 | 0.04 (0.02) .07 | 0.03 (0.02) .20 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.01 (0.08) .94 | -0.01 (0.07) .92 | -0.00 (0.07) .95 | 0.01 (0.08) .90 |
|  | Correlation of Levels | 0.19 | 0.12 | 0.085 | 0.094 |
|  | Correlation of Slopes | 0.16 | 0.16 | 0.156 | 0.567 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,896 | -2,876 | -2,844 | -2,639 |
|  | AIC | 5,834 | 5,803 | 5,746 | 5,361 |
|  | BIC | 5,915 | 5,899 | 5,858 | 5,515 |

## word\_im

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.31 (0.12) .01 | 0.14 (0.11) .20 | 0.08 (0.11) .43 | 0.06 (0.11) .56 |
| ab | Covar (Slopes) | 0.00 (0.01) .64 | 0.00 (0.01) .63 | 0.00 (0.01) .70 | 0.00 (0.01) .53 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.20 (0.07) .01 | 0.10 (0.08) .20 | 0.06 (0.08) .42 | 0.05 (0.08) .56 |
| er | Corr (Slopes) | 0.32 (0.74) .66 | 0.34 (0.75) .65 | 0.26 (0.70) .72 | 0.54 (0.97) .58 |
| er | Corr (Residuals) | 0.09 (0.05) .07 | 0.09 (0.05) .06 | 0.09 (0.05) .05 | 0.10 (0.05) .04 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.34 (0.12) <.01 |
| a | Slope | -0.03 (0.01) <.01 | -0.02 (0.01) .12 | -0.02 (0.02) .18 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.41) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .27 |
| a | Slope \* education | --- | -0.00 (0.00) .46 | -0.00 (0.00) .36 | -0.00 (0.00) .55 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.06 (0.12) .64 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .35 |
| b | Level | 17.90 (0.32) <.01 | 15.16 (0.54) <.01 | 15.13 (0.55) <.01 | 15.42 (0.69) <.01 |
| b | Slope | 0.21 (0.08) .01 | 0.20 (0.15) .17 | 0.19 (0.15) .20 | 0.19 (0.20) .35 |
| b | Level \* age | -0.14 (0.03) <.01 | -0.15 (0.02) <.01 | -0.15 (0.02) <.01 | -0.15 (0.03) <.01 |
| b | Level \* education | --- | 0.33 (0.05) <.01 | 0.33 (0.05) <.01 | 0.30 (0.06) <.01 |
| b | Level \* height | --- | --- | 1.88 (2.24) .40 | 2.02 (2.29) .38 |
| b | Level \* smoking | --- | --- | --- | -0.27 (0.37) .46 |
| b | Level \* cardio | --- | --- | --- | 0.24 (0.41) .56 |
| b | Level \* diabetes | --- | --- | --- | 0.37 (0.44) .40 |
| b | Slope \* age | 0.00 (0.01) .96 | 0.00 (0.01) .96 | -0.00 (0.01) .91 | -0.00 (0.01) .82 |
| b | Slope \* education | --- | 0.00 (0.02) .88 | 0.00 (0.02) .80 | 0.01 (0.02) .56 |
| b | Slope \* height | --- | --- | -0.18 (0.75) .81 | -0.05 (0.77) .95 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.13) .69 |
| b | Slope \* cardio | --- | --- | --- | 0.12 (0.14) .39 |
| b | Slope \* diabetes | --- | --- | --- | -0.14 (0.13) .30 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .35 | 0.00 (0.00) .36 | 0.00 (0.00) .34 | 0.00 (0.00) .58 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 7.96 (0.90) <.01 | 6.50 (0.86) <.01 | 6.45 (0.85) <.01 | 6.36 (0.87) <.01 |
| b | Var (Slope) | 0.07 (0.06) .30 | 0.07 (0.07) .31 | 0.07 (0.07) .29 | 0.07 (0.07) .29 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .15 | -0.01 (0.00) .07 | -0.01 (0.00) .09 |
| b | Covar (Level, Slope) | 0.35 (0.22) .12 | 0.33 (0.22) .13 | 0.32 (0.22) .14 | 0.27 (0.22) .22 |
|  | Correlation of Levels | 0.20 | 0.10 | 0.063 | 0.047 |
|  | Correlation of Slopes | 0.37 | 0.37 | 0.239 | 0.471 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,691 | -3,662 | -3,624 | -3,366 |
|  | AIC | 7,425 | 7,374 | 7,305 | 6,814 |
|  | BIC | 7,506 | 7,471 | 7,416 | 6,968 |

## word\_rec

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.04 (0.04) .31 | 0.02 (0.04) .61 | -0.01 (0.04) .87 | 0.00 (0.04) .93 |
| ab | Covar (Slopes) | -0.00 (0.00) .36 | -0.00 (0.00) .34 | -0.00 (0.00) .28 | -0.00 (0.00) .22 |
|  | Covar (Residuals) | --- | --- | --- | --- |
| er | Corr (Levels) | 0.07 (0.07) .31 | 0.04 (0.08) .61 | -0.01 (0.07) .87 | 0.01 (0.08) .93 |
| er | Corr (Slopes) | -0.38 (0.37) .31 | -0.39 (0.37) .29 | -0.44 (0.36) .22 | -0.58 (0.43) .18 |
| er | Corr (Residuals) | 0.06 (0.05) .20 | 0.06 (0.05) .18 | 0.06 (0.05) .17 | 0.06 (0.05) .17 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.02) .16 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .36 |
| a | Slope \* education | --- | -0.00 (0.00) .43 | -0.00 (0.00) .33 | -0.00 (0.00) .54 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.06 (0.12) .64 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 9.76 (0.08) <.01 | 9.45 (0.15) <.01 | 9.42 (0.15) <.01 | 9.37 (0.20) <.01 |
| b | Slope | 0.02 (0.02) .27 | 0.06 (0.05) .20 | 0.06 (0.05) .23 | 0.09 (0.06) .17 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.04 (0.02) .02 | 0.04 (0.02) .02 | 0.04 (0.02) .01 |
| b | Level \* height | --- | --- | 0.90 (0.70) .20 | 0.86 (0.74) .25 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.14) .13 |
| b | Level \* cardio | --- | --- | --- | 0.10 (0.16) .54 |
| b | Level \* diabetes | --- | --- | --- | 0.26 (0.14) .06 |
| b | Slope \* age | 0.00 (0.00) .67 | 0.00 (0.00) .67 | 0.00 (0.00) .76 | 0.00 (0.00) .90 |
| b | Slope \* education | --- | -0.00 (0.00) .45 | -0.00 (0.01) .61 | -0.00 (0.01) .43 |
| b | Slope \* height | --- | --- | -0.40 (0.24) .10 | -0.36 (0.25) .15 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.04) .66 |
| b | Slope \* cardio | --- | --- | --- | 0.07 (0.04) .11 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .26 | 0.00 (0.00) .26 | 0.00 (0.00) .23 | 0.00 (0.00) .41 |
|  | Var (Residual) | --- | --- | --- | --- |
| b | Var (Level) | 0.97 (0.25) <.01 | 0.95 (0.24) <.01 | 0.88 (0.23) <.01 | 0.91 (0.24) <.01 |
| b | Var (Slope) | 0.03 (0.02) .06 | 0.03 (0.02) .07 | 0.03 (0.02) .07 | 0.03 (0.02) .08 |
|  | Var (Residual) | --- | --- | --- | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .07 | -0.01 (0.00) .08 | -0.01 (0.00) .04 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.11 (0.06) .05 | -0.11 (0.06) .05 | -0.10 (0.05) .07 | -0.10 (0.05) .06 |
|  | Correlation of Levels | 0.074 | 0.041 | -0.012 | 0.0061 |
|  | Correlation of Slopes | -0.522 | -0.530 | -0.387 | -0.5477 |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,057 | -2,046 | -2,009 | -1,875 |
|  | AIC | 4,156 | 4,141 | 4,076 | 3,833 |
|  | BIC | 4,237 | 4,238 | 4,187 | 3,987 |

## Summary

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

Computed correlations:

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Levels | bnt | 0.08 |
| Correlation of Levels | bstory\_de | 0.13 |
| Correlation of Levels | bstory\_im | 0.16 |
| Correlation of Levels | categories | 0.16 |
| Correlation of Levels | digit\_b | 0.16 |
| Correlation of Levels | digit\_f | 0.08 |
| Correlation of Levels | digit\_o | -0.02 |
| Correlation of Levels | ideas | -0.02 |
| Correlation of Levels | line | 0.15 |
| Correlation of Levels | logic\_de | 0.14 |
| Correlation of Levels | logic\_im | 0.11 |
| Correlation of Levels | mmse | 0.04 |
| Correlation of Levels | nart | 0.11 |
| Correlation of Levels | num\_comp | 0.02 |
| Correlation of Levels | raven\_standard | 0.08 |
| Correlation of Levels | symbol | 0.16 |
| Correlation of Levels | word\_de | 0.09 |
| Correlation of Levels | word\_im | 0.05 |
| Correlation of Levels | word\_rec | 0.01 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Slopes | bnt | 0.00 |
| Correlation of Slopes | bstory\_de | 0.58 |
| Correlation of Slopes | bstory\_im | 1.07 |
| Correlation of Slopes | categories | 0.14 |
| Correlation of Slopes | digit\_b | -0.43 |
| Correlation of Slopes | digit\_f | 0.29 |
| Correlation of Slopes | digit\_o | 0.00 |
| Correlation of Slopes | ideas | -0.38 |
| Correlation of Slopes | line | 0.29 |
| Correlation of Slopes | logic\_de | 0.06 |
| Correlation of Slopes | logic\_im | 0.16 |
| Correlation of Slopes | mmse | -0.55 |
| Correlation of Slopes | nart | 0.00 |
| Correlation of Slopes | num\_comp | -0.89 |
| Correlation of Slopes | raven\_standard | 0.41 |
| Correlation of Slopes | symbol | -0.31 |
| Correlation of Slopes | word\_de | 0.57 |
| Correlation of Slopes | word\_im | 0.47 |
| Correlation of Slopes | word\_rec | -0.55 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Correlation of Residuals | bnt | -0.04 |
| Correlation of Residuals | bstory\_de | -0.02 |
| Correlation of Residuals | bstory\_im | -0.05 |
| Correlation of Residuals | categories | -0.01 |
| Correlation of Residuals | digit\_b | -0.01 |
| Correlation of Residuals | digit\_f | -0.03 |
| Correlation of Residuals | digit\_o | 0.00 |
| Correlation of Residuals | ideas | 0.04 |
| Correlation of Residuals | line | -0.02 |
| Correlation of Residuals | logic\_de | -0.01 |
| Correlation of Residuals | logic\_im | -0.01 |
| Correlation of Residuals | mmse | 0.02 |
| Correlation of Residuals | nart | -0.02 |
| Correlation of Residuals | num\_comp | 0.02 |
| Correlation of Residuals | raven\_standard | -0.02 |
| Correlation of Residuals | symbol | 0.06 |
| Correlation of Residuals | word\_de | 0.00 |
| Correlation of Residuals | word\_im | 0.10 |
| Correlation of Residuals | word\_rec | 0.06 |

P-values for corresponding covariances:

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Levels | bnt | 0.30 |
| Covariance of Levels | bstory\_de | 0.22 |
| Covariance of Levels | bstory\_im | 0.15 |
| Covariance of Levels | categories | 0.03 |
| Covariance of Levels | digit\_b | 0.03 |
| Covariance of Levels | digit\_f | 0.27 |
| Covariance of Levels | digit\_o | 0.74 |
| Covariance of Levels | ideas | 0.82 |
| Covariance of Levels | line | 0.05 |
| Covariance of Levels | logic\_de | 0.05 |
| Covariance of Levels | logic\_im | 0.14 |
| Covariance of Levels | mmse | 0.63 |
| Covariance of Levels | nart | 0.07 |
| Covariance of Levels | num\_comp | 0.77 |
| Covariance of Levels | raven\_standard | 0.28 |
| Covariance of Levels | symbol | 0.03 |
| Covariance of Levels | word\_de | 0.25 |
| Covariance of Levels | word\_im | 0.56 |
| Covariance of Levels | word\_rec | 0.93 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Slopes | bnt | 0.89 |
| Covariance of Slopes | bstory\_de | 0.59 |
| Covariance of Slopes | bstory\_im | 0.28 |
| Covariance of Slopes | categories | 0.75 |
| Covariance of Slopes | digit\_b | 0.61 |
| Covariance of Slopes | digit\_f | 0.78 |
| Covariance of Slopes | digit\_o | 0.96 |
| Covariance of Slopes | ideas | 0.32 |
| Covariance of Slopes | line | 0.60 |
| Covariance of Slopes | logic\_de | 0.90 |
| Covariance of Slopes | logic\_im | 0.90 |
| Covariance of Slopes | mmse | 0.44 |
| Covariance of Slopes | nart | 0.98 |
| Covariance of Slopes | num\_comp | 0.13 |
| Covariance of Slopes | raven\_standard | 0.45 |
| Covariance of Slopes | symbol | 0.60 |
| Covariance of Slopes | word\_de | 0.43 |
| Covariance of Slopes | word\_im | 0.53 |
| Covariance of Slopes | word\_rec | 0.22 |

|  |  |  |
| --- | --- | --- |
| label | process\_b | aehplus |
| Covariance of Residuals | bnt | 0.53 |
| Covariance of Residuals | bstory\_de | 0.66 |
| Covariance of Residuals | bstory\_im | 0.29 |
| Covariance of Residuals | categories | 0.76 |
| Covariance of Residuals | digit\_b | 0.77 |
| Covariance of Residuals | digit\_f | 0.56 |
| Covariance of Residuals | digit\_o | 0.95 |
| Covariance of Residuals | ideas | 0.41 |
| Covariance of Residuals | line | 0.68 |
| Covariance of Residuals | logic\_de | 0.76 |
| Covariance of Residuals | logic\_im | 0.78 |
| Covariance of Residuals | mmse | 0.72 |
| Covariance of Residuals | nart | 0.70 |
| Covariance of Residuals | num\_comp | 0.63 |
| Covariance of Residuals | raven\_standard | 0.70 |
| Covariance of Residuals | symbol | 0.17 |
| Covariance of Residuals | word\_de | 0.92 |
| Covariance of Residuals | word\_im | 0.04 |
| Covariance of Residuals | word\_rec | 0.19 |

#Session Info

R version 3.3.2 (2016-10-31)  
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] grid stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] knitr\_1.15.1 dplyr\_0.5.0 forestplot\_1.7 checkmate\_1.8.2 ggplot2\_2.2.1 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.9 devtools\_1.13.1 munsell\_0.4.3 testit\_0.6 colorspace\_1.3-2 R6\_2.2.0   
 [7] httr\_1.2.1 highr\_0.6 stringr\_1.1.0 plyr\_1.8.4 tools\_3.3.2 DT\_0.2   
[13] gtable\_0.2.0 plotrix\_3.6-4 DBI\_0.5-1 git2r\_0.18.0 withr\_1.0.2 htmltools\_0.3.5   
[19] yaml\_2.1.14 lazyeval\_0.2.0 assertthat\_0.1 digest\_0.6.12 rprojroot\_1.2 tibble\_1.2   
[25] readr\_1.0.0 tidyr\_0.6.1 htmlwidgets\_0.8 curl\_2.3 rsconnect\_0.7 memoise\_1.0.0   
[31] evaluate\_0.10 rmarkdown\_1.3 stringi\_1.1.2 scales\_0.4.1 backports\_1.0.5 jsonlite\_1.2