**Risk Factor Profile in Youth, Genetic Risk and Adulthood Cognitive Function:**

**The Cardiovascular Risk in Young Finns Study**

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**Supplemental material**

**Supplemental methods**

***Cognitive function***

During the latest follow-up examination in 2011, the Cambridge Neuropsychological Test Automated Battery (CANTAB®, Cambridge Cognition, Cambridge, UK) was used to assess cognitive function among the participants aged 34-49 years, N=2,026. The CANTAB® is a computerized, predominantly nonlinguistic, and culturally neutral test focusing on a wide range of cognitive domains. The test is performed using a validated touchscreen computer system. The full test battery includes 24 individual tests from which a suitable test battery for each particular study may be selected. In the YFS, the test battery was selected so that it could be accomplished in 20–30 minutes and included tests that are sensitive to aging(1,2). The tests in YFS measured several cognitive domains: (a) short-term memory, (b) spatial working memory, (c) problem solving, (d) reaction time, (e) attention, (f) rapid visual processing, (g) visual memory, (h) episodic memory, and (i) visuospatial learning.

Cognitive testing was performed during clinical examination. Due to the blood sampling included in the study protocol, the subjects came to the examinations after fasting at least 12 hours. They were instructed to avoid smoking and heavy physical activity as well as to avoid drinking alcohol and coffee during the previous evening and the morning before the examinations. Before the cognitive testing, the subjects were provided with a light snack, including a whole grain oat-based snack biscuit, a small portion of fruit or berry oatmeal, and weak fruit or berry juice.

During cognitive testing, the participants first conducted a motor screening test (MOT) measuring psychomotor speed and accuracy. In this study, the MOT was considered a training procedure where the participants were introduced to the equipment used in the testing and a screening tool to point out any difficulties in vision, movement, comprehension, or ability to follow simple instructions. During the MOT, a series of red crosses were shown in different locations on the screen, and the participants were advised to touch, as quickly as possible, the center of the cross every time it appeared. **Paired Associates Learning (PAL) test** was used to assess visual and episodic memory as well as visuospatial associative learning, containing aspects of both delayed-response procedure and conditional learning. During the PAL-test, one, two, three, six, or eight patterns were displayed sequentially in boxes placed on the screen. After that, the patterns were presented in the center of the screen, and the participants were supposed to point to the box in which the particular pattern was previously seen. The test moves on to the next stage if all the patterns are placed to the right boxes. In the case of an incorrect response, all the patterns are redisplayed in their original locations and another recall phase is followed. The test terminated if the patterns were still incorrectly placed after 10 presentation and recall phases. **Spatial Working Memory (SWM) test** was used to measure ability to retain spatial information and to manipulate items stored in the working memory, problem solving, and the ability to conduct a self-organized search strategy. During this test, the participants were presented with randomly distributed colored boxes ranging in number from four to eight. After that, the participants were supposed to search for tokens hidden in the boxes. When a token was found, it was supposed to be moved to fill an empty panel on the right-hand side of the screen. Once the token had been moved from the box, the participant had to recall that the computer would never hide a new token in a box that previously contained one; therefore, the participants were not supposed to revisit the same boxes again. **Reaction Time (RTI) test** assessed speed of response and movement on tasks where the stimulus was either predictable (simple location task) or unpredictable (five-choice location task). In the first part of this test, a large circle was presented in the center of the screen. The participant was supposed to press a button on a press pad until a small yellow spot appeared in the large circle. When the yellow spot appeared, the participant was supposed to touch the spot as soon as possible with the same hand that was pressing the button on the press pad. In the second part of the test, the same task was performed, except that in this part, five large circles were presented on the screen, and the small yellow spot could appear in any of the five circles. Again, the participant was supposed to touch, as soon as possible, the yellow spot with the hand pressing the button on the press pad. **Rapid Visual Information (RVP) test** was used to assess visual processing, recognition, and sustained attention. In this test, the participant was presented with a number sequence (e.g., 3, 5, 7) next to a large box where numbers appeared in a random order. Whenever the particular sequence was presented, the participant was supposed to press a button on a press pad. At the beginning, the participant was given visual cues (*i.e.* colored or underlined numbers) to help the participant recognize the particular sequence. When the test proceeded, the cues were removed. The validity of the test battery has been previously studied comparing the individual outcome variables derived from each test to traditional pen-and-paper tests. These comparisons have provided correlation coefficients ranging between 0.12 and 0.26 for the RVP test(3), between 0.47 and 0.69 for the PAL test(4-6), 0.80 for the RTI test(7), and between 0.16 and 0.28 for the SWM test(3). Additionally, the prior studies have reported good test-retest reliability for the test battery (correlation coefficients ranging between 0.71 and 0.89)(8,9).

**Supplemental references**

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**Supplemental Table** **1.** Youth characteristics of participants in the Cardiovascular Risk in Young Finns Study

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Participants (n=2025)** | **Non-participants (n=1571)** | **p-value** |
| ***Youth factors from participants*** |  |  |  |
| Age (years) | 10.8 (5.0) | 9.9 (4.9) | <0.001 |
| Male sex, n (%) | 922 (45.5) | 842 (53.6) | <0.001 |
| BMI (kg/m2) | 18.0 (3.1) | 17.7 (3.1) | 0.008 |
| Systolic blood pressure (mmHg) | 112.8 (11.9) | 112.2 (12.5) | 0.15 |
| Diastolic blood pressure (mmHg) | 68.6 (9.4) | 69.0 (9.8) | 0.24 |
| LDL cholesterol (mmol/L) | 3.42 (0.82) | 3.45 (0.86) | 0.43 |
| HDL cholesterol (mmol/L) | 1.56 (0.31) | 1.56 (0.31) | 0.91 |
| Triglycerides (mmol/L) | 0.67 (0.31) | 0.66 (0.32) | 0.43 |
| Total cholesterol (mmol/L) | 5.29 (0.90) | 5.30 (0.93) | 0.56 |
| Daily smoking (yes/no), n (%) | 309 (15.5) | 218 (14.3) | 0.32 |
| Alcohol use (yes/no), n (%) | 1229 (61) | 777 (50) | <0.001 |
| Fruit intake, n (%) b | 1596 (79) | 1259 (81) | 0.19 |
| Vegetables intake, n (%) b | 681 (34) | 552 (36) | 0.27 |
| Physical activity a | 0.003 (0.99) | -0.003 (1.01) | 0.86 |
| Insulin (mU/L) | 9.86 (6.00) | 9.20 (5.89) | 0.001 |
| CRP (mg/L) | 1.03 (3.12) | 0.97 (2.59) | 0.66 |
| Academic performance | 7.77 (0.72) | 7.66 (0.74) | <0.001 |
| Birth weight (g) | 3520 (545) | 3495 (550) | 0.22 |
| ***Youth factors from parents*** |  |  |  |
| Mother’s BMI (kg/m2) | 24.0 (3.8) | 24.0 (4.0) | 0.89 |
| Father’s BMI (kg/m2) | 25.5 (3.0) | 25.5 (3.2) | 0.56 |
| Maternal diabetes | 18 (0.9) | 18 (1.2) | 0.42 |
| Paternal diabetes | 29 (1.6) | 25 (1.9) | 0.62 |
| Maternal hypertension | 107 (5.4) | 85 (5.6) | 0.82 |
| Paternal hypertension | 170 (9.6) | 125 (9.4) | 0.84 |
| Maternal myocardial infarction | 8 (0.4) | 5 (0.3) | 0.72 |
| Paternal myocardial infarction | 37 (2.1) | 13 (1.0) | 0.02 |
| Maternal coronary heart disease | 35 (1.8) | 18 (1.2) | 0.16 |
| Paternal coronary heart disease | 65 (3.7) | 40 (3.0) | 0.31 |
| Maternal stroke | 8 (0.4) | 5 (0.3) | 0.72 |
| Paternal stroke | 13 (0.7) | 16 (1.2) | 0.18 |
| Socioeconomic status | 0.02 (0.59) | 0.07 (0.58) | 0.008 |

BMI, body mass index; LDL, low-density lipoprotein; HDL, high-density lipoprotein; CRP, C-reactive protein.

a age-specific standardized.

b frequency more than once a week.

c either parent had alcohol use enough to feel intoxicated at least once per week.

**Supplemental Table** **2.** Age and sex-adjusted associations of youth factors and polygenic risk score with midlife cognitive function components

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Episodic memory and associative learning (PAL-test; N=1848)** | | | | **Short-term and spatial working memory and problem solving (SWM-test; N=2011)** | | | | **Reaction and movement speed and attention (RTI-test; N=1922)** | | | | | **Visual processing and sustained attention (RVP-test; N=1975)** | | | |
| **Youth factors from participants** | β | p-value | 95% CI | | β | p-value | 95% CI | | β | p-value | 95% CI | | β | | p-value | 95% CI | |
| Polygenic risk score a | **-0.173** | **<0.001** | **-0.219** | **-0.126** | **-0.125** | **<0.001** | **-0.170** | **-0.080** | -0.003 | 0.915 | -0.051 | 0.046 | **-0.199** | | **<0.001** | **-0.245** | **-0.153** |
| Age a | **-0.259** | **<0.001** | **-0.303** | **-0.216** | **-0.224** | **<0.001** | **-0.266** | **-0.182** | **-0.076** | **0.001** | **-0.120** | **-0.031** | **-0.114** | | **<0.001** | **-0.158** | **-0.071** |
| Male sex | **-0.110** | **0.014** | **-0.199** | **-0.022** | **0.350** | **<0.001** | **0.266** | **0.434** | **0.401** | **<0.001** | **0.311** | **0.491** | **0.130** | | **0.004** | **0.042** | **0.218** |
| Body mass index a | -0.020 | 0.525 | -0.080 | 0.041 | 0.036 | 0.213 | -0.021 | 0.094 | 0.004 | 0.907 | -0.058 | 0.065 | -0.042 | | 0.171 | -0.102 | 0.018 |
| Systolic blood pressure a | **-0.074** | **0.006** | **-0.126** | **-0.022** | 0.011 | 0.663 | -0.039 | 0.062 | 0.014 | 0.612 | -0.040 | 0.067 | 0.014 | | 0.599 | -0.039 | 0.067 |
| Diastolic blood pressure a | -0.035 | 0.167 | -0.085 | 0.015 | 0.004 | 0.857 | -0.043 | 0.051 | 0.005 | 0.850 | -0.046 | 0.056 | **-0.048** | | **0.055** | **-0.096** | **0.001** |
| Low-density lipoprotein cholesterol a | -0.023 | 0.328 | -0.069 | 0.023 | -0.023 | 0.298 | -0.067 | 0.020 | -0.012 | 0.620 | -0.059 | 0.035 | -0.003 | | 0.887 | -0.049 | 0.043 |
| High-density lipoprotein cholesterol a | -0.015 | 0.501 | -0.060 | 0.029 | 0.019 | 0.367 | -0.023 | 0.062 | 0.014 | 0.536 | -0.031 | 0.060 | -0.004 | | 0.861 | -0.048 | 0.040 |
| Triglycerides a | **-0.043** | **0.069** | **-0.089** | **0.003** | **-0.039** | **0.082** | **-0.082** | **0.005** | -0.024 | 0.309 | -0.072 | 0.023 | -0.022 | | 0.350 | -0.067 | 0.024 |
| Total cholesterol a | -0.033 | 0.160 | -0.078 | 0.013 | -0.021 | 0.351 | -0.064 | 0.023 | -0.009 | 0.699 | -0.056 | 0.037 | -0.008 | | 0.739 | -0.053 | 0.038 |
| Daily smoking (yes/no) | **-0.109** | **0.096** | **-0.237** | **0.019** | 0.002 | 0.973 | -0.120 | 0.124 | -0.005 | 0.943 | -0.135 | 0.126 | -0.058 | | 0.369 | -0.186 | 0.069 |
| Alcohol use (yes/no) | -0.055 | 0.389 | -0.179 | 0.070 | 0.090 | 0.135 | -0.028 | 0.208 | 0.014 | 0.834 | -0.114 | 0.141 | 0.066 | | 0.289 | -0.056 | 0.189 |
| Fruit intake weekly b | 0.021 | 0.720 | -0.092 | 0.134 | 0.056 | 0.302 | -0.050 | 0.163 | -0.023 | 0.694 | -0.139 | 0.092 | **0.154** | | **0.006** | **0.043** | **0.265** |
| Vegetables intake weekly b | **0.081** | **0.090** | **-0.013** | **0.174** | -0.052 | 0.258 | -0.142 | 0.038 | 0.039 | 0.421 | -0.056 | 0.135 | 0.034 | | 0.477 | -0.060 | 0.128 |
| Physical activity c | -0.012 | 0.609 | -0.058 | 0.034 | 0.006 | 0.776 | -0.038 | 0.051 | **0.100** | **<0.001** | **0.053** | **0.147** | 0.017 | | 0.468 | -0.029 | 0.063 |
| Insulin a | **-0.054** | **0.044** | **-0.106** | **-0.001** | 0.010 | 0.687 | -0.040 | 0.060 | -0.030 | 0.271 | -0.084 | 0.024 | **-0.051** | | **0.057** | **-0.104** | **0.002** |
| C-reactive protein a | -0.039 | 0.104 | -0.085 | 0.008 | **-0.038** | **0.090** | **-0.082** | **0.006** | 0.022 | 0.361 | -0.025 | 0.069 | -0.025 | | 0.281 | -0.071 | 0.021 |
| Academic performance a | **0.190** | **<0.001** | **0.140** | **0.239** | **0.122** | **<0.001** | **0.075** | **0.169** | **0.109** | **<0.001** | **0.058** | **0.159** | **0.296** | | **<0.001** | **0.248** | **0.343** |
| Birth weight a | 0.020 | 0.405 | -0.028 | 0.068 | **0.070** | **0.003** | **0.025** | **0.116** | 0.031 | 0.210 | -0.018 | 0.080 | 0.035 | | 0.157 | -0.013 | 0.083 |
| **Youth factors from parents** |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |
| Maternal body mass index a | **-0.075** | **0.002** | **-0.123** | **-0.028** | -0.010 | 0.656 | -0.055 | 0.035 | -0.028 | 0.258 | -0.076 | 0.020 | **-0.116** | | **<0.001** | **-0.162** | **-0.070** |
| Paternal body mass index a | **-0.052** | **0.036** | **-0.101** | **-0.003** | -0.016 | 0.505 | -0.063 | 0.031 | -0.020 | 0.428 | -0.069 | 0.029 | **-0.063** | | **0.010** | **-0.111** | **-0.015** |
| Maternal diabetes (yes/no) | 0.294 | 0.198 | -0.154 | 0.743 | -0.106 | 0.640 | -0.551 | 0.339 | **-0.439** | **0.058** | **-0.892** | **0.015** | -0.165 | | 0.482 | -0.625 | 0.295 |
| Paternal diabetes (yes/no) | -0.084 | 0.662 | -0.458 | 0.291 | -0.034 | 0.851 | -0.387 | 0.319 | 0.176 | 0.362 | -0.202 | 0.554 | -0.244 | | 0.185 | -0.604 | 0.117 |
| Maternal hypertension (yes/no) | -0.022 | 0.830 | -0.222 | 0.178 | 0.019 | 0.841 | -0.169 | 0.208 | -0.022 | 0.833 | -0.226 | 0.182 | 0.048 | | 0.633 | -0.148 | 0.243 |
| Paternal hypertension (yes/no) | **-0.236** | **0.004** | **-0.398** | **-0.073** | -0.081 | 0.302 | -0.234 | 0.073 | -0.061 | 0.469 | -0.226 | 0.104 | -0.118 | | 0.147 | -0.277 | 0.042 |
| Maternal myocardial infarction (yes/no) | -0.188 | 0.606 | -0.905 | 0.528 | -0.063 | 0.853 | -0.728 | 0.603 | -0.457 | 0.217 | -1.181 | 0.268 | -0.451 | | 0.199 | -1.138 | 0.237 |
| Paternal myocardial infarction (yes/no) | **-0.437** | **0.009** | **-0.766** | **-0.109** | -0.221 | 0.173 | -0.539 | 0.097 | **-0.394** | **0.022** | **-0.730** | **-0.058** | **-0.415** | | **0.013** | **-0.744** | **-0.086** |
| Maternal coronary heart disease (yes/no) | -0.229 | 0.193 | -0.573 | 0.115 | -0.212 | 0.197 | -0.534 | 0.110 | -0.156 | 0.379 | -0.505 | 0.192 | **-0.285** | | **0.093** | **-0.618** | **0.048** |
| Paternal coronary heart disease (yes/no) | -0.207 | 0.115 | -0.464 | 0.051 | **-0.239** | **0.055** | **-0.483** | **0.005** | -0.142 | 0.292 | -0.407 | 0.122 | **-0.232** | | **0.070** | **-0.483** | **0.019** |
| Maternal stroke (yes/no) | -0.247 | 0.499 | -0.966 | 0.471 | **-0.732** | **0.031** | **-1.399** | **-0.066** | 0.212 | 0.568 | -0.515 | 0.939 | -0.053 | | 0.880 | -0.742 | 0.636 |
| Paternal stroke (yes/no) | -0.395 | 0.141 | -0.922 | 0.131 | **-0.784** | **0.003** | **-1.307** | **-0.260** | 0.011 | 0.969 | -0.521 | 0.543 | -0.244 | | 0.371 | -0.780 | 0.291 |
| Socioeconomic status a | **-0.120** | **<0.001** | **-0.164** | **-0.076** | -0.028 | 0.191 | -0.071 | 0.014 | **-0.090** | **<0.001** | **-0.135** | **-0.045** | **-0.213** | | **<0.001** | **-0.256** | **-0.169** |

Bold denotes p<0.1. All analyses adjusted for age and sex. CI, confidence interval.

a standardized. b frequency more than once a week. c age-specific standardized.

**Supplemental Table 3.** Adulthood Cognitive Function According to Youth Risk Profile Quartile Groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cognitive domain** | **Youth risk profile** | **N** | **β (95% confidence interval) a** | **P value** |
| Memory and learning  (*PAL-test*) | Q1 (Favourable) | 310 | Reference |  |
| Q2 | 298 | -0.134 (-0.282 to 0.014) | 0.075 |
| Q3 | 305 | **-0.375 (-0.426 to -0.224)** | <0.001 |
| Q4 (Unfavourable) | 267 | **-0.512 (-0.675 to -0.348)** | <0.001 |
| Short-term working memory  (*SWM-test*) | Q1 (Favourable) | 306 | Reference |  |
| Q2 | 319 | -0.014 (-0.165 to 0.137) | 0.856 |
| Q3 | 287 | -0.053 (-0.208 to 0.103) | 0.506 |
| Q4 (Unfavourable) | 277 | **-0.283 (-0.442 to -0.124)** | <0.001 |
| Reaction time  (*RTI-test*) | Q1 (Favourable) | 305 | Reference |  |
| Q2 | 294 | -0.113 (-0.271 to 0.046) | 0.163 |
| Q3 | 300 | **-0.185 (-0.342 to -0.027)** | 0.021 |
| Q4 (Unfavourable) | 281 | **-0.355 (-0.516 to -0.194)** | <0.001 |
| Information processing (*RVP-test*) | Q1 (Favourable) | 339 | Reference |  |
| Q2 | 327 | **-0.194 (-0.334 to -0.054)** | 0.007 |
| Q3 | 318 | **-0.397 (-0.539 to -0.254)** | <0.001 |
| Q4 (Unfavourable) | 319 | **-0.755 (-0.904 to -0.607)** | <0.001 |

a Adjusted for age, sex and polygenic risk score.

Bold denotes statistical significance, p<0.05

**Supplemental Table 4.** Adulthood Cognitive Function According to Youth Risk Profile Quintile Groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cognitive domain** | **Youth risk profile** | **N** | **β (95% confidence interval) a** | **P value** |
| Memory and learning  (*PAL-test*) | Q1 (Favourable) | 246 | Reference |  |
| Q2 | 245 | -0.116 (-0.280 to 0.048) | 0.166 |
| Q3 | 231 | **-0.296 (-0.464 to -0.128)** | 0.001 |
| Q4 | 245 | **-0.362 (-0.532 to -0.192)** | <0.001 |
|  | Q5 (Unfavourable) | 212 | **-0.592 (-0.774 to -0.409)** | <0.001 |
| Short-term working memory  (*SWM-test*) | Q1 (Favourable) | 249 | Reference |  |
| Q2 | 243 | 0.018 (-0.151 to 0.186) | 0.835 |
| Q3 | 245 | 0.096 (-0.073 to 0.265) | 0.264 |
| Q4 | 228 | -0.160 (-0.333 to 0.012) | 0.069 |
|  | Q5 (Unfavourable) | 224 | **-0.300 (-0.476 to -0.125)** | 0.001 |
| Reaction time  (*RTI-test*) | Q1 (Favourable) | 249 | Reference |  |
| Q2 | 240 | -0.122 (-0.298 to 0.053) | 0.172 |
| Q3 | 239 | **-0.219 (-0.395 to -0.044)** | 0.014 |
| Q4 | 228 | **-0.247 (-0.424 to -0.069)** | 0.006 |
|  | Q5 (Unfavourable) | 224 | **-0.375 (-0.555 to -0.196)** | <0.001 |
| Information processing (*RVP-test*) | Q1 (Favourable) | 269 | Reference |  |
| Q2 | 273 | -0.139 (-0.295 to 0.018) | 0.082 |
| Q3 | 253 | **-0.328 (-0.487 to -0.170)** | <0.001 |
| Q4 | 265 | **-0.487 (-0.647 to -0.327)** | <0.001 |
|  | Q5 (Unfavourable) | 243 | **-0.792 (-0.959 to -0.626)** | <0.001 |

a Adjusted for age, sex and polygenic risk score.

Bold denotes statistical significance, p<0.05

**Supplemental Table 5.** Cognitive function according to youth risk profile and genetic risk

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Episodic memory and associative learning (PAL-test) | | | |  | Short-term and spatial working memory and problem solving (SWM-test) | | | |  | Reaction and movement time (RTI-test) | | | |  | Visual processing and sustained attention (RVP-test) | | | |
| Subgroups | N | β | p-value | 95%CI | | N | β | p-value | 95%CI | | N | β | p-value | 95%CI | | N | β | p-value | 95%CI | |
| Low genetic risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Favourable youth risk | 74 | Ref. |  |  |  | 81 | Ref. |  |  |  | 71 | Ref. |  |  |  | 89 | Ref. |  |  |  |
| Intermediate youth risk | 143 | **-0.412** | **0.002** | **-0.675** | **-0.149** | 144 | -0.071 | 0.592 | -0.331 | 0.189 | 152 | -0.130 | 0.358 | -0.407 | 0.148 | 156 | **-0.300** | **0.015** | **-0.542** | **-0.057** |
| Unfavourable youth risk | 35 | **-0.592** | **0.002** | **-0.974** | **-0.210** | 28 | **-0.570** | **0.007** | **-0.981** | **-0.160** | 32 | -0.315 | 0.134 | -0.726 | 0.097 | 30 | **-0.881** | **<0.001** | **-1.266** | **-0.496** |
| Intermediate genetic risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Favourable youth risk | 139 | **-0.300** | **0.025** | **-0.563** | **-0.037** | 131 | **-0.288** | **0.033** | **-0.552** | **-0.023** | 137 | 0.066 | 0.644 | -0.216 | 0.348 | 148 | -0.242 | 0.051 | -0.486 | 0.001 |
| Intermediate youth risk | 427 | **-0.562** | **<0.001** | **-0.793** | **-0.330** | 429 | **-0.233** | **0.044** | **-0.460** | **-0.006** | 427 | -0.093 | 0.463 | -0.341 | 0.155 | 475 | **-0.539** | **<0.001** | **-0.750** | **-0.329** |
| Unfavourable youth risk | 137 | **-0.867** | **<0.001** | **-1.138** | **-0.597** | 147 | **-0.477** | **<0.001** | **-0.737** | **-0.217** | 140 | **-0.351** | **0.015** | **-0.632** | **-0.069** | 157 | **-1.086** | **<0.001** | **-1.330** | **-0.842** |
| High genetic risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Favourable youth risk | 33 | **-0.786** | **<0.001** | **-1.170** | **-0.402** | 37 | -0.321 | 0.090 | -0.692 | 0.051 | 41 | 0.134 | 0.487 | -0.244 | 0.512 | 32 | **-0.444** | **0.020** | **-0.819** | **-0.070** |
| Intermediate youth risk | 152 | **-0.810** | **<0.001** | **-1.070** | **-0.550** | 143 | **-0.471** | **<0.001** | **-0.731** | **-0.210** | 128 | -0.269 | 0.066 | -0.555 | 0.017 | 160 | **-0.890** | **<0.001** | **-1.131** | **-0.649** |
| Unfavourable youth risk | 40 | **-1.355** | **<0.001** | **-1.716** | **-0.994** | 49 | **-0.794** | **<0.001** | **-1.132** | **-0.456** | 52 | -0.190 | 0.289 | -0.542 | 0.161 | 56 | **-1.079** | **<0.001** | **-1.390** | **-0.768** |

Adjusted for age and sex.

CI, confidence interval.

Bold denotes statistical significance, p<0.05