**Life-course persistent antisocial behavior and accelerated biological aging**

**in a longitudinal birth cohort**

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**Supplementary Results**

**Supplementary Table 1.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for participants’ health problems in adulthood (n=934).

**Supplementary Table 2.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for adverse experiences and early childhood self-control difficulties (n=934).

**Supplementary Table 3.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for corresponding childhood health measures, adult health problems, adverse experiences and early childhood self-control difficulties (n=934).

**Supplementary Table 4.** Association between antisocial behavior trajectories and facial age (n=934).

**Supplementary Table 5.** Association between antisocial behavior trajectories and accelerated Pace of Aging as measured by DunedinPACE and PoA (n=934).

**Supplementary Table 1.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for participants’ health problems in adulthood (n=934). All analyses were adjusted for participants’ sex. Model 1 presents associations adjusted for participants’ sex and each of the corresponding baseline measures of childhood health, and serves as a comparison model. Model 2 presents associations adjusted for each of the corresponding baseline measures of childhood health and tobacco smoking. Model 3 presents associations adjusted for each of the corresponding baseline measures of childhood health and antipsychotic medication use. Model 4 presents associations adjusted for each of the corresponding baseline measures of childhood health and cancer/heart attack/diabetes diagnosis up to age 45.

|  |  | Model 1 | Model 2 | Model 3 | Model 4 |
| --- | --- | --- | --- | --- | --- |
|  |  | β (95% Cl) | | | |
| **A. Pace of Aging** | |  |  |  |  |
|  | Life-course persistent | .20\*\*\* (.13, .27) | .16\*\*\* (.08, .22) | .20\*\*\* (.13, .27) | .20\*\*\* (.13, .27) |
|  | Childhood-limited | .11\*\* (.04, .17) | .08\* (.02, .15) | .10\*\* (.04, .17) | .10\*\* (.03, .16) |
|  | Adolescence-limited | .11\*\*\* (.05, .18) | .06 (.00, .13) | .11\*\*\* (.05, .17) | .11\*\*\* (.05, .18) |
|  | Poor childhood health | .20\*\*\* (.13, .27) | .20\*\*\* (.14, .27) | .19\*\*\* (.13, .26) | .19\*\*\* (.12, .26) |
|  | Tobacco smoking |  | .18\*\*\* (.12, .24) |  |  |
|  | Antipsychotic medication use |  |  | .17\*\* (.06, .28) |  |
|  | Cancer / heart attack / diabetes |  |  |  | .17\*\*\* (.09, .24) |
| **B. Social hearing** | |  |  |  |  |
|  | Life-course persistent | -.13\*\*\* (-.19, -.07) | -.10\*\* (-.17, -.03) | -.13\*\*\* (-.19, -.06) | -.13\*\*\* (-.19, -.07) |
|  | Childhood-limited | -.04 (-.11, .03) | -.03 (-.10, .04) | -.04 (-.11, .03) | -.04 (-.11, .03) |
|  | Adolescence-limited | -.01 (-.09, .06) | .02 (-.06, .10) | -.01 (-.08, .06) | -.01 (-.09, .06) |
|  | Childhood hearing | .09 (.00, .18) | .09 (.00, .18) | .09 (.00, .18) | .09 (.00, .18) |
|  | Tobacco smoking |  | -.09\*\* (-.17, -.02) |  |  |
|  | Antipsychotic medication use |  |  | -.09\* (-.16, -.01) |  |
|  | Cancer / heart attack / diabetes |  |  |  | -.04 (-.09, .03) |
| **C. One-legged balance** | |  |  |  |  |
|  | Life-course persistent | -.13\*\*\* (-.18, -.06) | -.09\*\* (-.15, -.03) | -.13\*\*\* (-.18, -.06) | -.13\*\*\* (-.18, -.06) |
|  | Childhood-limited | -.10\*\* (-.17, -.03) | -.09\* (-.15, -.02) | -.10\*\* (-.17, -.04) | -.10\*\* (-.16, -.03) |
|  | Adolescence-limited | -.10\*\* (-.17, -.04) | -.07 (-.13, .01) | -.10\*\* (-.17, -.03) | -.10\*\* (-.17, -.03) |
|  | Childhood balance | .15\*\*\* (.08, .21) | .15\*\*\* (.08, .21) | .15\*\*\* (.08, .21) | .15\*\*\* (.08, .21) |
|  | Tobacco smoking |  | -.13\*\*\* (-.20, -.06) |  |  |
|  | Antipsychotic medication use |  |  | -.12\*\*\* (-.16, -.07) |  |
|  | Cancer / heart attack / diabetes |  |  |  | -.11\*\*\* (-.17, -.05) |
| **D. Gait speed** | |  |  |  |  |
|  | Life-course persistent | -.16\*\*\* (-.21, -.09) | -.15\*\*\* (-.20, -.07) | -.15\*\*\* (-.21, -.09) | -.16\*\*\* (-.21, -.09) |
|  | Childhood-limited | -.08\* (-.15, -.01) | -.08\* (-.15, .00) | -.08\* (-.15, -.01) | -.08\* (-.15, -.01) |
|  | Adolescence-limited | .00 (-.07, .06) | .01 (-.07, .07) | .00 (-.07, .06) | .00 (-.07, .06) |
|  | Childhood motor development | .28\*\*\* (.21, .35) | .28\*\*\* (.21, .35) | .28\*\*\* (.21, .35) | .27\*\*\* (.20, .34) |
|  | Tobacco smoking |  | -.04 (-.11, .03) |  |  |
|  | Antipsychotic medication use |  |  | -.07 (-.15, .01) |  |
|  | Cancer / heart attack / diabetes |  |  |  | -.09\*\* (-.16, -.03) |
| **E. Visual contrast sensitivity** | |  |  |  |  |
|  | Life-course persistent | -.06 (-.12, .00) | -.04 (-.10, .02) | -.05 (-.11, .01) | -.06 (-.11, .00) |
|  | Childhood-limited | -.06 (-.13, .02) | -.05 (-.12, .03) | -.05 (-.13, .02) | -.05 (-.13, .02) |
|  | Adolescence-limited | .01 (-.05, .08) | .03 (-.03, .10) | .02 (-.04, .08) | .01 (-.04, .08) |
|  | Childhood vision | .12\* (.02, .23) | .12\* (.02, .22) | .12\* (.02, .22) | .12\* (.02, .23) |
|  | Tobacco smoking |  | -.08\* (-.14, -.01) |  |  |
|  | Antipsychotic medication use |  |  | -.12\*\* (-.20, -.03) |  |
|  | Cancer / heart attack / diabetes |  |  |  | -.03 (-.10, .05) |
| **F. Cognitive functioning** | |  |  |  |  |
|  | Life-course persistent | -.09\*\*\* (-.13, -.04) | -.07\*\* (-.11, -.02) | -.09\*\*\* (-.13, -.04) | -.09\*\*\* (-.13, -.04) |
|  | Childhood-limited | -.01 (-.06, .03) | .00 (-.05, .04) | -.01 (-.06, .03) | -.01 (-.06, .03) |
|  | Adolescence-limited | -.07\*\*\* (-.12, -.03) | -.05\* (-.10, -.01) | -.07\*\*\* (-.12, -.03) | -.07\*\*\* (-.12, -.03) |
|  | Childhood IQ | .77\*\*\* (.74, .80) | .76\*\*\* (.73, .79) | .76\*\*\* (.73, .79) | .77\*\*\* (.73, .80) |
|  | Tobacco smoking |  | -.07\*\*\* (-.12, -.03) |  |  |
|  | Antipsychotic medication use |  |  | -.09\*\* (-.15, -.03) |  |
|  | Cancer / heart attack / diabetes |  |  |  | -.03  (-.07, .01) |

*Notes.* Standardized regression coefficients and 95% confidence intervals are presented for all models. Analyses compare each antisocial group to the reference group “low antisocial behaviors”.  **Pace of Aging** was measured with repeated assessments of a panel of 19 biomarkers taken at ages 26, 32, 38, and 45 years. **Social hearing** was assessed using the Listening in Spatialised Noise–Sentences Test (LiSN-S; Phonak, Switzerland). **One-legged balance** was measured using the Unipedal Stance Test, as the maximum time achieved across 3 trials of the test with eyes closed. **Gait speed** was assessed with the 6-m-long GAITRite Electronic Walkway (CIR Systems, Inc). **Visual contrast sensitivity** was assessed using the Thomson Test Chart (2016). **Cognitive functioning (IQ)** was measured using the Wechsler Adult Intelligence Scale-IV (Wechsler, 2008). \*\*\*p ≤ .001, \*\* p ≤ .01, \* p ≤ .05

**Supplementary Table 2.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for adverse experiences and early childhood self-control difficulties (n=934). All analyses were adjusted for participants’ sex. Model 1 presents associations adjusted for each of the corresponding baseline measures of childhood health, and serves as a comparison model. Model 2 presents associations adjusted for each of the corresponding baseline measures of childhood health and childhood socioeconomic status. Model 3 presents associations adjusted for each of the corresponding baseline measures of childhood health and childhood maltreatment. Model 4 presents associations adjusted for each of the corresponding baseline measures of childhood health and lifetime incarceration. Model 5 presents associations adjusted for each of the corresponding baseline measures of childhood health and early childhood self-control difficulties.

|  |  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | β (95% Cl) | | | | |
| **A. Pace of aging** | |  |  |  |  |  |
|  | Life-course persistent | .20\*\*\* (.13, .27) | .16\*\*\* (.09, .23) | .17\*\*\* (.10, .25) | .15\*\*\* (.07, .22) | .19\*\*\* (.12, .26) |
|  | Childhood-limited | .11\*\* (.04, .17) | .08\* (.02, .15) | .09\*\* (.03, .15) | .10\*\* (.04, .17) | .09\*\* (.02, .16) |
|  | Adolescence-limited | .11\*\*\* (.05, .18) | .09\*\* (.03, .16) | .10\*\* (.04, .17) | .10\*\* (.04, .16) | .11\*\*\* (.05, .18) |
|  | Poor childhood health | .20\*\*\* (.13, .27) | .19\*\*\* (.12, .25) | .20\*\*\* (.13, .27) | .19\*\*\* (.12, .26) | .19\*\*\* (.12, .26) |
|  | Childhood socioeconomic status |  | -.17\*\*\* (-.23, -.11) |  |  |  |
|  | Childhood maltreatment |  |  | .10\*\* (.03, .17) |  |  |
|  | Lifetime incarceration |  |  |  | .17\*\*\* (.07, .26) |  |
|  | Early self-control difficulties |  |  |  |  | .09\* (.02, .17) |
| **B. Social hearing** | |  |  |  |  |  |
|  | Life-course persistent | -.13\*\*\* (-.19, -.07) | -.10\*\* (-.17, -.04) | -.12\*\*\* (-.19, -.05) | -.10\*\* (-.17, -.04) | -.10\*\* (-.17, -.04) |
|  | Childhood-limited | -.04 (-.11, .03) | -.03 (-.10, .05) | -.04 (-.11, .04) | -.04 (-.11, .03) | -.02 (-.09, .05) |
|  | Adolescence-limited | -.01 (-.09, .06) | .01 (-.07, .08) | -.01 (-.08, .07) | .00 (-.08, .07) | .00 (-.08, .07) |
|  | Childhood hearing | .09 (.00, .18) | .08 (-.01, .17) | .09 (-.01, .18) | .09 (.00, .18) | .08 (-.01, .17) |
|  | Childhood socioeconomic status |  | .10\*\* (.03, .18) |  |  |  |
|  | Childhood maltreatment |  |  | -.03 (-.09, .04) |  |  |
|  | Lifetime incarceration |  |  |  | -.08\*\* (-.14, -.02) |  |
|  | Early self-control difficulties |  |  |  |  | -.15\*\*\* (-.21, -.08) |
| **C. One-legged balance** | |  |  |  |  |  |
|  | Life-course persistent | -.13\*\*\* (-.18, -.06) | -.09\*\* (-.15, -.02) | -.11\*\*\* (-.17, -.04) | -.11\*\*\* (-.16, -.04) | -.11\*\*\* (-.16, -.04) |
|  | Childhood-limited | -.10\*\* (-.17, -.03) | -.08\* (-.15, -.01) | -.09\*\* (-.16, -.02) | -.10\*\* (-.17, -.03) | -.08\* (-.15, -.01) |
|  | Adolescence-limited | -.10\*\* (-.17, -.04) | -.08\* (-.14, -.01) | -.10\*\* (-.16, -.03) | -.10\*\* (-.16, -.03) | -.10\*\* (-.16, -.03) |
|  | Childhood balance | .15\*\*\* (.08, .21) | .13\*\*\* (.07, .20) | .14\*\*\* (.07, .21) | .15\*\*\* (.08, .21) | .13\*\*\* (.06, .20) |
|  | Childhood socioeconomic status |  | .15\*\*\* (.09, .22) |  |  |  |
|  | Childhood maltreatment |  |  | -.06\* (-.12, .00) |  |  |
|  | Lifetime incarceration |  |  |  | -.06 (-.13, .00) |  |
|  | Early self-control difficulties |  |  |  |  | -.10\*\*\* (-.16, -.04) |
| **D. Gait speed** | |  |  |  |  |  |
|  | Life-course persistent | -.16\*\*\* (-.21, -.09) | -.12\*\*\* (-.19, -.06) | -.14\*\*\* (-.20, -.07) | -.13\*\*\* (-.20, -.07) | -.15\*\*\* (-.21, -.08) |
|  | Childhood-limited | -.08\* (-.15, -.01) | -.06 (-.13, .01) | -.07\* (-.14, .00) | -.08\* (-.15, -.01) | -.07\* (-.14, .00) |
|  | Adolescence-limited | .00 (-.07, .06) | .02 (-.06, .08) | .00 (-.07, .07) | .00 (-.07, .07) | .00 (-.07, .06) |
|  | Childhood motor development | .28\*\*\* (.21, .35) | .26\*\*\* (.18, .33) | .28\*\*\* (.21, .35) | .28\*\*\* (.21, .35) | .26\*\*\* (.18, .34) |
|  | Childhood socioeconomic status |  | .13\*\*\* (.07, .20) |  |  |  |
|  | Childhood maltreatment |  |  | -.05 (-.11, .02) |  |  |
|  | Lifetime incarceration |  |  |  | -.07\* (-.13, -.01) |  |
|  | Early self-control difficulties |  |  |  |  | -.05 (-.12, .02) |
| **E. Visual contrast sensitivity** | |  |  |  |  |  |
|  | Life-course persistent | -.06 (-.12, .00) | -.05 (-.10, .01) | -.03 (-.09, .04) | -.07\* (-.14, -.01) | -.04 (-.10, .02) |
|  | Childhood-limited | -.06 (-.13, .02) | -.05 (-.12, .02) | -.04 (-.11, .04) | -.06 (-.13, .02) | -.04 (-.12, .04) |
|  | Adolescence-limited | .01 (-.05, .08) | .02 (-.04, .08) | .03 (-.03, .09) | .01 (-.05, .07) | .02 (-.04, .08) |
|  | Childhood vision | .12\* (.02, .23) | .12\* (.02, .23) | .11\* (.02, .23) | .11\* (.02, .22) | .11 (.01, .22) |
|  | Childhood socioeconomic status |  | .05 (-.02, .11) |  |  |  |
|  | Childhood maltreatment |  |  | -.11\*\* (-.18, -.04) |  |  |
|  | Lifetime incarceration |  |  |  | .05 (-.01, .11) |  |
|  | Early self-control difficulties |  |  |  |  | -.08\* (-.15, -.01) |
| **F. Cognitive functioning** | |  |  |  |  |  |
|  | Life-course persistent | -.09\*\*\* (-.13, -.04) | -.08\*\*\* (-.12, -.04) | -.08\*\*\* (-.12, -.04) | -.07\*\* (-.11, -.02) | -.08\*\*\* (-.12, -.04) |
|  | Childhood-limited | -.01 (-.06, .03) | -.01 (-.06, .03) | -.01 (-.05, .04) | -.01 (-.06, .03) | -.01 (-.05, .04) |
|  | Adolescence-limited | -.07\*\*\* (-.12, -.03) | -.07\*\* (-.12, -.03) | -.07\*\* (-.12, -.03) | -.07\*\* (-.11, -.03) | -.07\*\*\* (-.12, -.03) |
|  | Childhood IQ | .77\*\*\* (.74, .80) | .75\*\*\* (.72, .79) | .77\*\*\* (.73, .80) | .77\*\*\* (.73, .80) | .75\*\*\* (.72, .79) |
|  | Childhood socioeconomic status |  | .03 (-.01, .08) |  |  |  |
|  | Childhood maltreatment |  |  | -.02 (-.06, .02) |  |  |
|  | Lifetime incarceration |  |  |  | -.05 (-.11, .00) |  |
|  | Early self-control difficulties |  |  |  |  | -.04  (-.09, .00) |

*Notes.* Standardized regression coefficients and 95% confidence intervals are presented for all models. Analyses compare each antisocial group to the reference group “low antisocial behaviors”.  **Pace of Aging** was measured with repeated assessments of a panel of 19 biomarkers taken at ages 26, 32, 38, and 45 years. **Social hearing** was assessed using the Listening in Spatialised Noise–Sentences Test (LiSN-S; Phonak, Switzerland). **One-legged balance** was measured using the Unipedal Stance Test, as the maximum time achieved across 3 trials of the test with eyes closed. **Gait speed** was assessed with the 6-m-long GAITRite Electronic Walkway (CIR Systems, Inc). **Visual contrast sensitivity** was assessed using the Thomson Test Chart (2016). **Cognitive functioning (IQ)** was measured using the Wechsler Adult Intelligence Scale-IV (Wechsler, 2008). \*\*\*p≤.001, \*\* p≤..01, \* p≤.05

**Supplementary Table 3.** Association between antisocial behavior trajectories and aging outcomes at age 45 adjusted for corresponding childhood health, adult health problems, adverse experiences and early childhood self-control difficulties (n=934). All analyses were adjusted for participants’ sex. Model 1 presents associations adjusted for each of the corresponding baseline measures of childhood health and adult health problems. Model 2 presents associations adjusted for each of the corresponding baseline measures of childhood health and adverse experiences. Model 3 presents associations adjusted for each of the corresponding baseline measures of childhood health, adult health problems, adverse experiences, and early childhood self-control difficulties.

|  |  | Model 1 | Model 2 | Model 3 |
| --- | --- | --- | --- | --- |
|  |  | β (95% Cl) | | |
| **A. Pace of aging** | |  |  |  |
|  | Life-course persistent | .15\*\*\* (.08, .22) | .09\* (.01, .17) | .06 (-.02, .14) |
|  | Childhood-limited | .07\* (.01, .14) | .07\* (.00, .13) | .04 (-.02, .10) |
|  | Adolescence-limited | .06 (-.01, .12) | .07\* (.00, .13) | .03 (-.04, .09) |
|  | Poor childhood health | .18\*\*\* (.12, .25) | .18\*\*\* (.11, .25) | .16\*\*\* (.09, .22) |
|  | Tobacco smoking | .18\*\*\* (.12, .24) |  | .15\*\*\* (.09, .21) |
|  | Antipsychotic medication use | .17\*\* (.06, .28) |  | .17\*\* (.06, .27) |
|  | Cancer / heart attack / diabetes | .17\*\*\* (.09, .25) |  | .16\*\*\* (.09, .23) |
|  | Childhood socioeconomic status |  | -.15\*\*\* (-.21, -.10) | -.14\*\*\* (-.20, -.09) |
|  | Childhood maltreatment |  | .08\* (.02, .15) | .07\* (.01, .14) |
|  | Lifetime incarceration |  | .16\*\*\* (.06, .26) | .13\*\* (.04, .22) |
|  | Early self-control difficulties |  |  | .03 (-.03, .10) |
| **B. Social hearing** | |  |  |  |
|  | Life-course persistent | -.10\*\* (-.17, -.03) | -.08\* (-.15, -.01) | -.05 (-.12, .03) |
|  | Childhood-limited | -.03 (-.10, .04) | -.02 (-.10, .05) | .01 (-.06, .08) |
|  | Adolescence-limited | .02 (-.06, .10) | .02 (-.06, .09) | .04 (-.05, .11) |
|  | Childhood hearing | .09 (.00, .18) | .09 (-.01, .17) | .08 (-.01, .17) |
|  | Tobacco smoking | -.09\*\* (-.17, -.02) |  | -.07\* (-.15, .00) |
|  | Antipsychotic medication use | -.09\* (-.16, -.01) |  | -.08 (-.15, .01) |
|  | Cancer / heart attack / diabetes | -.04 (-.09, .02) |  | -.02 (-.08, .03) |
|  | Childhood socioeconomic status |  | .09\* (.02, .17) | .09\* (.02, .17) |
|  | Childhood maltreatment |  | -.02 (-.08, .05) | .00 (-.06, .07) |
|  | Lifetime incarceration |  | -.07\* (-.13, -.01) | -.05 (-.11, .01) |
|  | Early self-control difficulties |  |  | -.13\*\*\* (-.19, -.06) |
| **C. One-legged balance** | |  |  |  |
|  | Life-course persistent | -.09\*\* (-.15, -.03) | -.06 (-.12, .01) | -.03 (-.10, .04) |
|  | Childhood-limited | -.08\* (-.15, -.01) | -.07\* (-.14, .00) | -.04 (-.11, .03) |
|  | Adolescence-limited | -.06 (-.13, .01) | -.07\* (-.13, .00) | -.04 (-.10, .04) |
|  | Childhood balance | .15\*\*\* (.08, .21) | .13\*\*\* (.07, .20) | .12\*\*\* (.06, .18) |
|  | Tobacco smoking | -.13\*\*\* (-.20, -.06) |  | -.11\*\* (-.18, -.05) |
|  | Antipsychotic medication use | -.11\*\*\* (-.15, -.07) |  | -.11\*\*\* (-.16, -.06) |
|  | Cancer / heart attack / diabetes | -.11\*\*\* (-.17, -.05) |  | -.10\*\*\* (-.16, -.05) |
|  | Childhood socioeconomic status |  | .14\*\*\* (.08, .21) | .13\*\*\* (.07, .20) |
|  | Childhood maltreatment |  | -.05 (-.12, .01) | -.04 (-.10, .02) |
|  | Lifetime incarceration |  | -.05 (-.12, .01) | -.02 (-.08, .04) |
|  | Early self-control difficulties |  |  | -.08\* (-.14, -.01) |
| **D. Gait speed** | |  |  |  |
|  | Life-course persistent | -.14\*\*\* (-.21, -.07) | -.10\*\* (-.16, -.03) | -.09\* (-.15, -.02) |
|  | Childhood-limited | -.07\* (-.15, .00) | -.06 (-.13, .01) | -.05 (-.12, .02) |
|  | Adolescence-limited | .01 (-.06, .07) | .03 (-.04, .09) | .03 (-.04, .10) |
|  | Childhood motor development | .27\*\*\* (.19, .34) | .26\*\*\* (.18, .33) | .23\*\*\* (.15, .31) |
|  | Tobacco smoking | -.04 (-.11, .02) |  | -.02 (-.09, .04) |
|  | Antipsychotic medication use | -.07 (-.15, .01) |  | -.07 (-.15, .01) |
|  | Cancer / heart attack / diabetes | -.09\*\* (-.16, -.03) |  | -.09\* (-.16, -.02) |
|  | Childhood socioeconomic status |  | .13\*\*\* (.06, .19) | .13\*\*\* (.06, .19) |
|  | Childhood maltreatment |  | -.03 (-.10, .02) | -.03 (-.10, .03) |
|  | Lifetime incarceration |  | -.06\* (-.12, .00) | -.05 (-.11, .01) |
|  | Early self-control difficulties |  |  | -.04 (-.11, .03) |
| **E. Visual contrast sensitivity** | |  |  |  |
|  | Life-course persistent | -.04 (-.10, .02) | -.03 (-.10, .03) | -.01 (-.08, .05) |
|  | Childhood-limited | -.04 (-.11, .03) | -.03 (-.10, .04) | -.01 (-.09, .06) |
|  | Adolescence-limited | .04 (-.03, .10) | .03 (-.04, .09) | .05 (-.02, .11) |
|  | Childhood vision | .12\* (.02, .22) | .11\* (.02, .23) | .11\* (.01, .22) |
|  | Tobacco smoking | -.07\* (-.14, -.01) |  | -.07\* (-.14, .00) |
|  | Antipsychotic medication use | -.12\*\* (-.20, -.03) |  | -.12\*\* (-.20, -.03) |
|  | Cancer / heart attack / diabetes | -.03 (-.10, .05) |  | -.03 (-.10, .05) |
|  | Childhood socioeconomic status |  | .04 (-.02, .11) | .04 (-.03, .10) |
|  | Childhood maltreatment |  | -.10\*\* (-.18, -.03) | -.09\*\* (-.17, -.03) |
|  | Lifetime incarceration |  | .05 (-.01, .11) | .07\* (.01, .13) |
|  | Early self-control difficulties |  |  | -.06 (-.13, .01) |
| **F. Cognitive functioning** | |  |  |  |
|  | Life-course persistent | -.07\*\* (-.11, -.02) | -.06\* (-.10, -.01) | -.05 (-.09, .00) |
|  | Childhood-limited | .00 (-.05, .04) | -.01 (-.05, .04) | .01 (-.04, .05) |
|  | Adolescence-limited | -.05\* (-.10, -.01) | -.06\*\* (-.11, -.02) | -.05\* (-.09, .00) |
|  | Childhood IQ | .75\*\*\* (.72, .78) | .75\*\*\* (.71, .79) | .73\*\*\* (.69, .77) |
|  | Tobacco smoking | -.07\*\*\* (-.12, -.03) |  | -.06\*\* (-.11, -.02) |
|  | Antipsychotic medication use | -.09\*\* (-.15, -.03) |  | -.09\*\* (-.15, -.03) |
|  | Cancer / heart attack / diabetes | -.03 (-.07, .01) |  | -.03 (-.06, .01) |
|  | Childhood socioeconomic status |  | .03 (-.02, .08) | .04 (-.01, .08) |
|  | Childhood maltreatment |  | -.02 (-.06, .02) | -.01 (-.05, .03) |
|  | Lifetime incarceration |  | -.05 (-.10, .00) | -.04 (-.08, .01) |
|  | Early self-control difficulties |  |  | -.03 (-.08, .01) |

*Notes.* Standardized regression coefficients and 95% confidence intervals are presented for all models. Analyses compare each antisocial group to the reference group “low antisocial behaviors”.  **Pace of Aging** was measured with repeated assessments of a panel of 19 biomarkers taken at ages 26, 32, 38, and 45 years. **Social hearing** was assessed using the Listening in Spatialised Noise–Sentences Test (LiSN-S; Phonak, Switzerland). **One-legged balance** was measured using the Unipedal Stance Test, as the maximum time achieved across 3 trials of the test with eyes closed. **Gait speed** was assessed with the 6-m-long GAITRite Electronic Walkway (CIR Systems, Inc). **Visual contrast sensitivity** was assessed using the Thomson Test Chart (2016). **Cognitive functioning (IQ)** was measured using the Wechsler Adult Intelligence Scale-IV (Wechsler, 2008). \*\*\*p≤.001, \*\* p≤..01, \* p≤.05

**Supplementary Table 4.** Association between antisocial behavior trajectories and facial age. Model 1 presents associations adjusted for participants’ sex, and serves as a comparison model. Model 2 presents associations adjusted for participants’ sex and tobacco smoking. Model 3 presents associations adjusted for participants’ sex and antipsychotic medication use. Model 4 presents associations adjusted for participants’ sex and cancer/heart attack/diabetes diagnosis up to age 45. Model 5 presents associations adjusted for participants’ sex and childhood socioeconomic status. Model 6 presents associations adjusted for participants’ sex and childhood maltreatment. Model 7 presents associations adjusted for participants’ sex and lifetime incarceration. Model 8 presents associations adjusted for participants’ sex and early childhood self-control difficulties.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|  |  | β (95% Cl) | | | | | | | |
| **Facial age** | |  |  |  |  |  |  |  |  |
|  | Life-course persistent | .19\*\*\* (.12, .27) | .15\*\*\*(.08, .23) | .19\*\*\*(.11, .26) | .19\*\*\*(.12, .26) | .14\*\*\*(.07, .22) | .17\*\*\*(.10, .25) | .15\*\*\*(.07, .23) | .17\*\*\*(.09, .24) |
|  | Childhood-limited | .09\*\* (.02, .16) | .07\* (.00, .14) | .09\*\* (.02, .15) | .09\* (.02, .15) | .06 (-.01, .12) | .08\* (.01, .14) | .09\* (.02, .15) | .07 (.00, .13) |
|  | Adolescence-limited | .15\*\*\* (.08, .22) | .10\*\* (.04, .17) | .15\*\*\*(.08, .22) | .15\*\*\*(.08, .21) | .12\*\*\*(.05, .19) | .14\*\*\*(.08, .21) | .14\*\*\*(.07, .20) | .14\*\*\*(.08, .21) |
|  | Tobacco smoking |  | .16\*\*\*(.09, .22) |  |  |  |  |  |  |
|  | Antipsychotic medication  use | |  | .08\* (.02.15) |  |  |  |  |  |
|  | Cancer/heart attack/diabetes | |  |  | .09\*\*\*(.04, .14) |  |  |  |  |
|  | Childhood socioeconomic status | |  |  |  | -.19\*\*\*(-.25,-.12) |  |  |  |
|  | Childhood maltreatment | |  |  |  |  | .06 (-.01, .12) |  |  |
|  | Lifetime incarceration |  |  |  |  |  |  | .13\*\*\*(.06, .19) |  |
|  | Early self-control difficulties | |  |  |  |  |  |  | .11\*\* (.04, .19) |

*Notes.* Standardized regression coefficients and 95% confidence intervals are presented for all models. Analyses compare each antisocial group to the reference group “low antisocial behaviors”. **Facial age** was measured by a panel of 8 independent raters using standardized (non-smiling) facial photographs using a Likert scale to categorize participants into a 5-year age range and a 7-item Likert scale to assign a “relative age” to each participant (1= “looking young”, 7= “looking old”). Facial age was derived by standardizing and averaging these two scores. \*\*\*p ≤ .001, \*\* p ≤ .01, \* p ≤ .05

**Supplementary Table 5.** Association between antisocial behavior trajectories and accelerated Pace of Aging. Panel A presents results using DunedinPACE, a novel single-time-point measure that quantifies Pace of Aging from a blood test. Panel B presents the original results presented in the Main Article, using Pace of Aging (a composite measure of 19 biomarkers measured repeatedly from ages 26-45 years) as the outcome variable.

|  |  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | β (95% Cl) | | | | | | | |
| **A. Dunedin PACE** | |  |  |  |  |  |  |  |  |
|  | Life-course persistent | .23\*\*\*(.16, .30) | .18\*\*\*(.11, .24) | .23\*\*\*(.16, .30) | .23\*\*\*(.16, .30) | .19\*\*\*(.12, .26) | .19\*\*\*(.12, .26) | .18\*\*\*(.11, .25) | .21\*\*\*(.14, .28) |
|  | Childhood-limited | .11\*\*\*(.05, .18) | .09\* (.02, .15) | .12\*\*\*(.05, .18) | .11\*\* (.04, .17) | .09\*\* (.02, .15) | .09\*\* (.03, .16) | .11\*\*\*(.04, .17) | .09\*\* (.02, .16) |
|  | Adolescence-limited | .13\*\*\*(.06, .20) | .07\* (.00, .14) | .13\*\*\*(.06, .20) | .13\*\*\*(.06, .20) | .11\*\*(.04, .18) | .12\*\*\*(.05, .19) | .12\*\*\*(.05, .19) | .13\*\*\*(.06, .20) |
|  | Poor childhood health | .19\*\*\*(.12, .26) | .19\*\*\*(.12, .26) | .19\*\*\*(.12, .25) | .18\*\*\*(.11, .25) | .18\*\*\*(.11, .24) | .19\*\*\*(.12, .26) | .18\*\*\*(.11, .25) | .18\*\*\*(.11, .24) |
|  | Tobacco smoking |  | .22\*\*\*(.15, .28) |  |  |  |  |  |  |
|  | Antipsychotic medication use | |  | .15\*\*(.05, .24) |  |  |  |  |  |
|  | Cancer / heart attack / diabetes | |  |  | .15\*\*\*(.08, .22) |  |  |  |  |
|  | Childhood socioeconomic status | |  |  |  | -.18\*\*\*(-.24, -.12) |  |  |  |
|  | Childhood maltreatment | |  |  |  |  | .14\*\*\*(.07, .21) |  |  |
|  | Lifetime incarceration |  |  |  |  |  |  | .18\*\*\*(.08, .27) |  |
|  | Early self-control difficulties | |  |  |  |  |  |  | .13\*\*\*(.06, .19) |
| **B. Pace of aging** | |  |  |  |  |  |  |  |  |
|  | Life-course persistent | .20\*\*\*(.13, .27) | .16\*\*\*(.08, .22) | .20\*\*\*(.13, .27) | .20\*\*\*(.13, .27) | .16\*\*\*(.09, .23) | .17\*\*\*(.10, .25) | .15\*\*\*(.07, .22) | .19\*\*\*(.12, .26) |
|  | Childhood-limited | .11\*\* (.04, .17) | .08\*\* (.02, .15) | .10\*\* (.04, .17) | .10\*\* (.03, .16) | .08\* (.02, .15) | .09\*\* (.03, .15) | .10\*\* (.04, .17) | .09\*\* (.02, .16) |
|  | Adolescence-limited | .11\*\*\*(.05, .18) | .06 (.00, .13) | .11\*\*\*(.05, .17) | .11\*\*\*(.05, .18) | .09\*\*(.03, .16) | .10\*\* (.04, .17) | .10\*\* (.04, .16) | .11\*\*\*(.05, .18) |
|  | Poor childhood health | .20\*\*\*(.13, .27) | .20\*\*\*(.14, .27) | .19\*\*\*(.13, .26) | .19\*\*\*(.12, .26) | .19\*\*\*(.12, .25) | .20\*\*\*(.13, .27) | .19\*\*\*(.12, .26) | .19\*\*\*(.12, .26) |
|  | Tobacco smoking |  | .18\*\*\*(.12, .24) |  |  |  |  |  |  |
|  | Antipsychotic medication use |  |  | .17\*\*(.06, .28) |  |  |  |  |  |
|  | Cancer / heart attack / diabetes | |  |  | .17\*\*\*(.09, .24) |  |  |  |  |
|  | Childhood socioeconomic status | |  |  |  | -.17\*\*\*(-.23, -.11) |  |  |  |
|  | Childhood maltreatment |  |  |  |  |  | .10\*\* (.03, .17) |  |  |
|  | Lifetime incarceration |  |  |  |  |  |  | .17\*\*\*(.07, .26) |  |
|  | Early self-control difficulties |  |  |  |  |  |  |  | .09\* (.02, .17) |

*Notes.* All analyses were adjusted for participants’ sex. Standardized regression coefficients and 95% confidence intervals are presented for all models. Analyses compare each antisocial group to the reference group “low antisocial behaviors”. Model 1 presents associations adjusted for corresponding childhood measure, and serves as the comparison model. Model 2 presents associations adjusted for corresponding childhood measure and tobacco smoking. Model 3 presents associations adjusted for corresponding childhood measure, and antipsychotic medication use. Model 4 presents associations adjusted for corresponding childhood measure, and cancer/heart attack/diabetes diagnosis. Model 5 presents associations adjusted for corresponding childhood measure, and low childhood socioeconomic status. Model 6 presents associations adjusted for corresponding childhood measure and childhood maltreatment. Model 7 presents associations adjusted for corresponding childhood measure, and lifetime incarceration. Model 8 presents associations adjusted for corresponding childhood measure, and early childhood self-control difficulties. **DunedinPACE** measured within-individual decline in 19 indicators of organ-system integrity across four time points spanning two decades distilled into a single-time-point DNA-methylation blood-test using elastic-net regression. DunedinPACE can be implemented in Illumina 450 k or in EPIC array data, making it immediately available for testing in a wide range of existing datasets as a complement to existing methylation measures of aging. \*\*\*p ≤ .001, \*\* p ≤ .01, \* p ≤ .05