GROWUPGROWOLD

HUMAN DEVELOPMENT, BIRTH TO DEATH

Moffitt & Caspi | Genes • Environment • Health • Behavior

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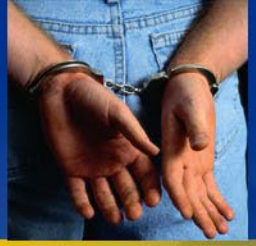
Early Childhood: What needs to change?

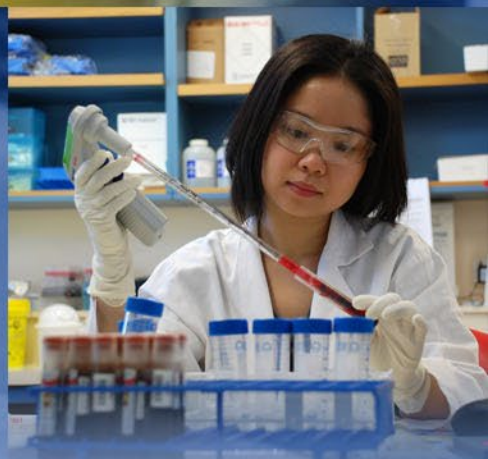
Children who got a poor start, followed up 5 decades later.

Evidence that educating parents improves child outcomes.



Childhood Self-Control

Health, Wealth and Public Safety



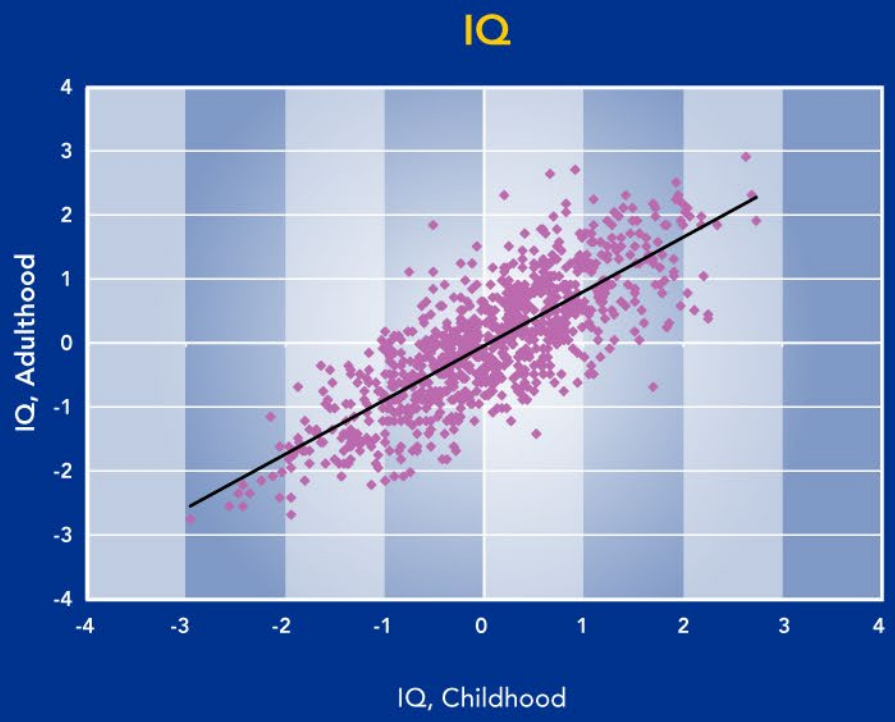
Outline

- Why self-control?
- The Dunedin Study
- Predicting midlife outcomes
- Accelerated aging
- Isolating self-control as an active ingredient
- Danish register study

Why Study Children's Self-control?

Childhood self-control predicts success and failure in adult life, above and beyond intelligence and family wealth, and it might be malleable.

Continuity from childhood to adulthood



Self-control:
More necessary today than it used to be?

- AVOID OBESITY in an era of ready food availability
- MAINTAIN FITNESS in an era of sedentary jobs
- SUSTAIN MARRIAGES in an era of easy divorce
- PREVENT ADDICTION in an era of access to substances
- RESIST SPENDING in an era of sophisticated internet marketing
- SAVE FOR OLD AGE in an era without guaranteed pensions

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New Zealand

Dunedin Study Design

Age	Year	Number	Percent*
Birth	1972-73		
3	1975-76	1037	**100%**
5	1977-78	991	96
7	1979-80	954	92
9	1981-82	955	92
11	1983-84	925	90
13	1985-86	850	82
15	1987-88	976	95
18	1990-91	993	97
21	1993-94	992	97
26	1998-99	980	96
32	2004-05	972	96
38	**2010-12**	**961**	**95**
45	**2017-2019**	**938**	**94%**

* Percent assessed, of those who were alive at each age.

- ✓ Impulsive, acts without thinking.
- ✓ Can’t wait his or her turn.
- ✓ Low frustration tolerance.
- ✓ Dislikes effortful tasks.
- ✓ Fleeting attention, easily distracted.
- ✓ Lacks persistence, easily forgets goals.
- ✓ Often goes for the risky thing.
- ✓ Requires constant attention and motivation from an adult.

Measuring Childhood Self-control

- A composite of ratings
- Across the early years
- Multiple reporters
  - *Staff observations of child's self-control in the clinic*
  - *Parents' reports*
  - *Different teachers' reports at successive ages*

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Health Measures

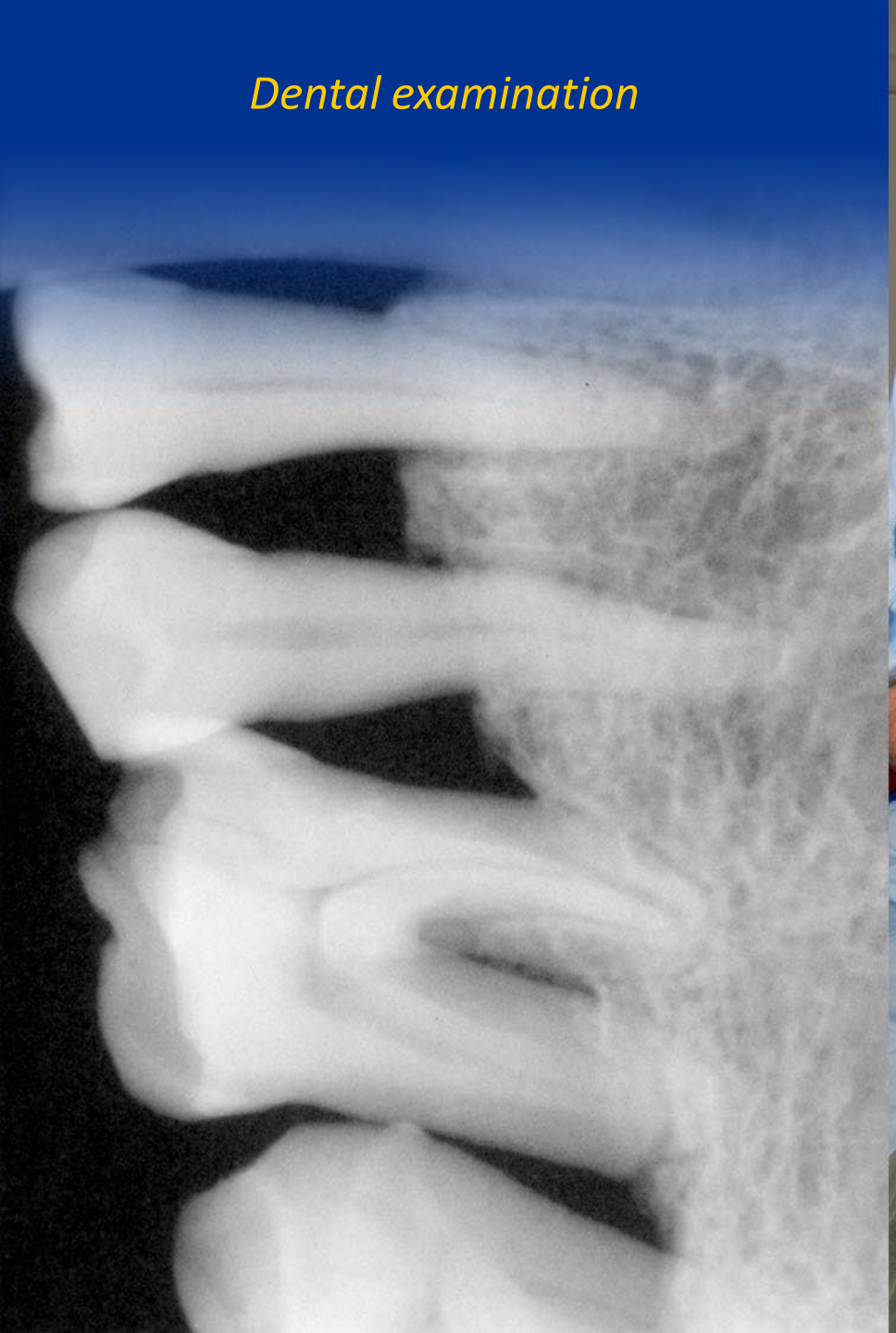
Assessments of Physical Health

Cardiovascular fitness

Anthropometrics

Lung function

Dental examination



Laboratory tests
(cholesterol, inflammation, sexually transmitted infections, etc.)

Health Outcomes composite:

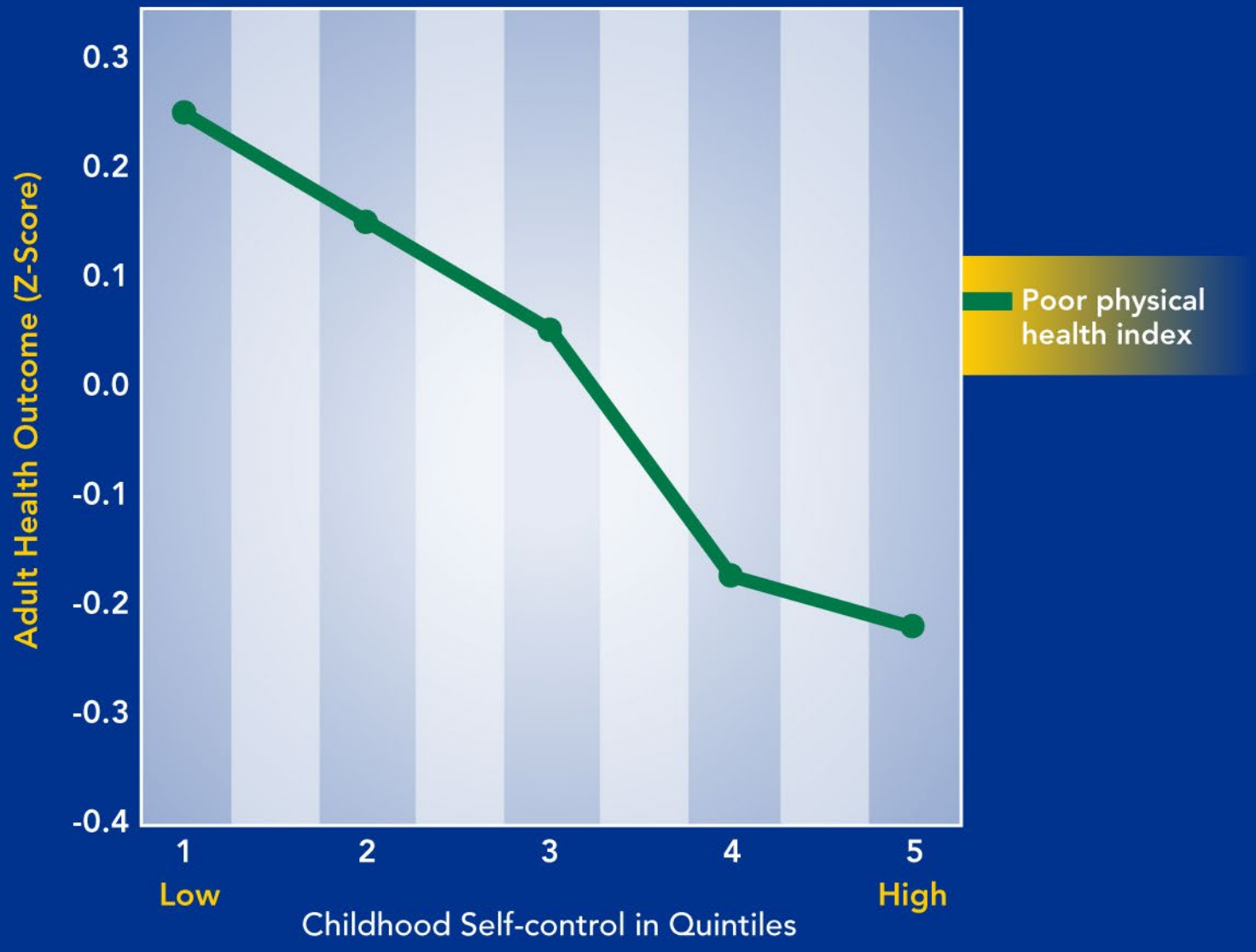
A count of clinical measures in adulthood

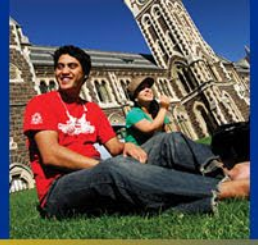
- Cluster of metabolic abnormalities (17%)
  - *E.g., obesity, blood pressure, cholesterol*
- Periodontal disease (20%)
- Sexually-transmitted infection serology (18%)
- Inflammation biomarkers abnormal (20%)
- Respiratory airflow obstruction (17%)

Moffitt et al. PNAS, 2011

Self-control gradient:

Children with low self-control had poorer health than those with high self-control



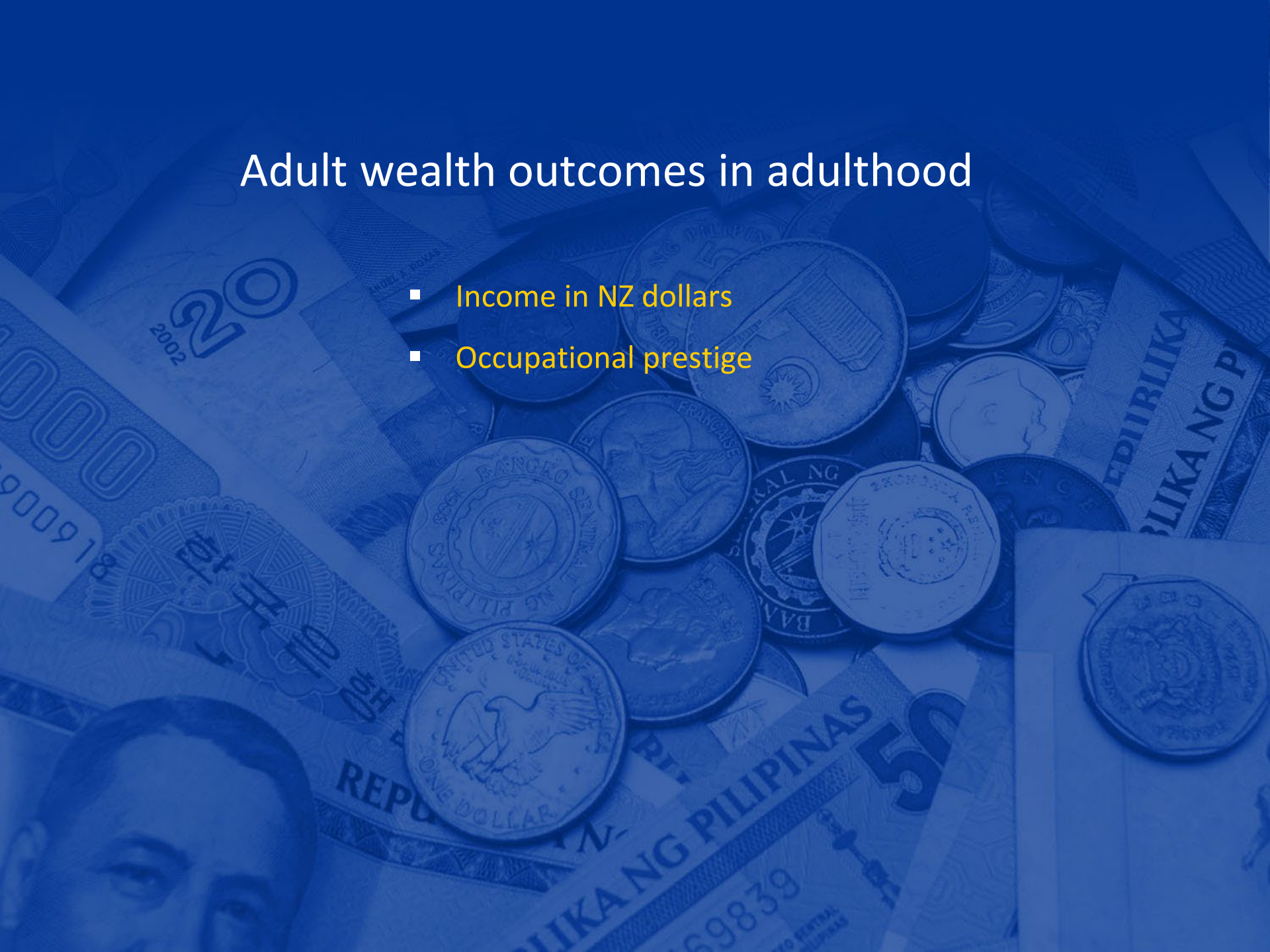


Wealth Measures

Assessments of Financial Success

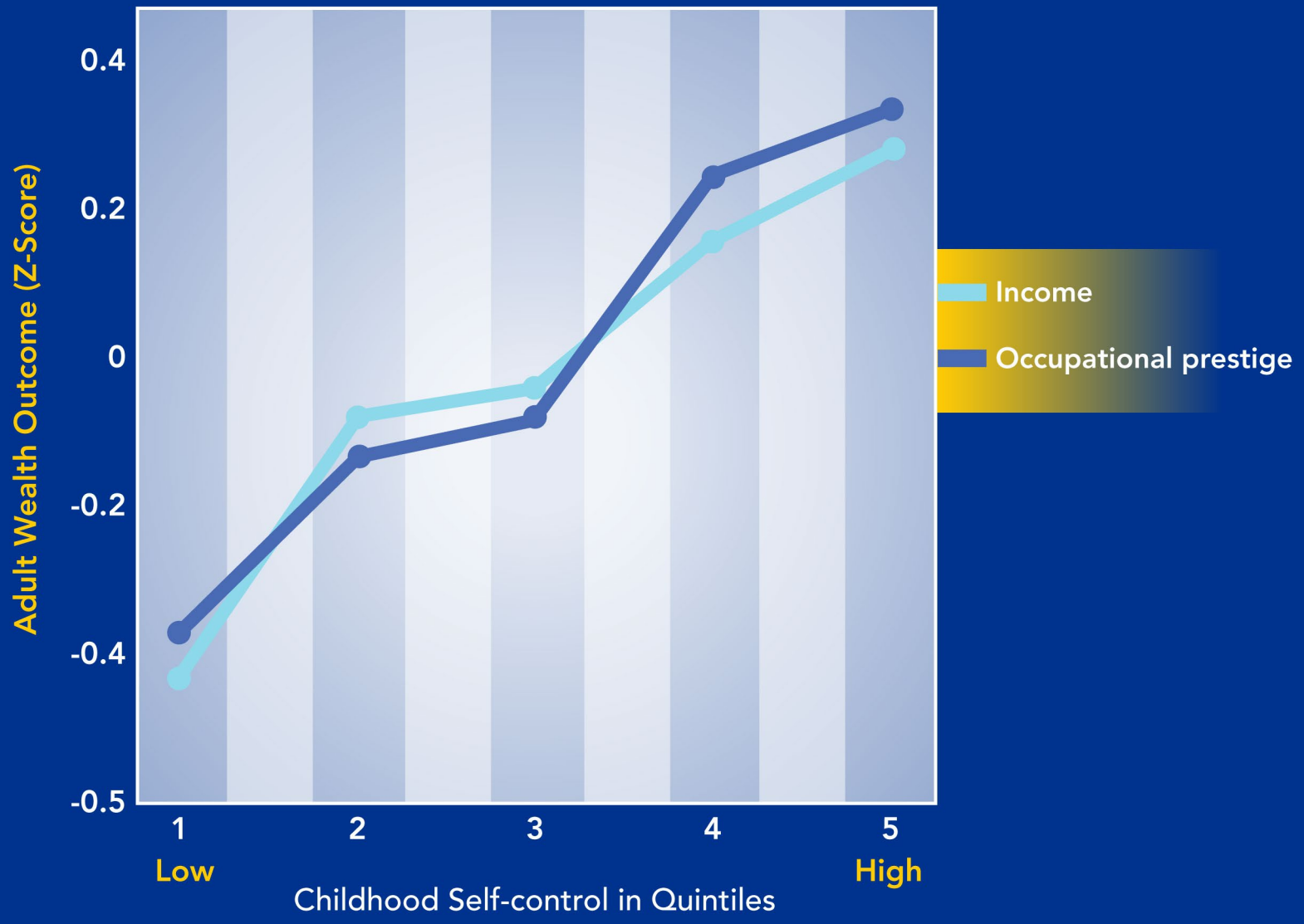
Adult wealth outcomes in adulthood

- Income in NZ dollars
- Occupational prestige



Self-control gradient:

Children with low self-control had less wealth than those with high self control



Financial planfulness in adulthood

- Attitudes toward saving and saving behavior
- e.g.,
  - *Is saving for the future important to you?*
  - *Do you find yourself living paycheck to paycheck?*
  - *Do you save money by putting money away and not touching it?*
- Financial building blocks
- e.g.,
  - *Home ownership*
  - *Investments*
  - *Retirement plan*

Self-control gradient:

Children with low self-control had not begun planning for the future

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Amendments 4 and 5 to the Credit Reporting Privacy Code 2004 introduce a number of changes to the current credit reporting regime. A copy of the Code may be downloaded from the Office of the Privacy Commissioner's website www.privacy.org.nz.

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PROTECT against Identity Theft

Veda specialises in credit reporting and identity security services.
The following information will help you to understand what we can do for you.

Read More

Understanding your Credit File

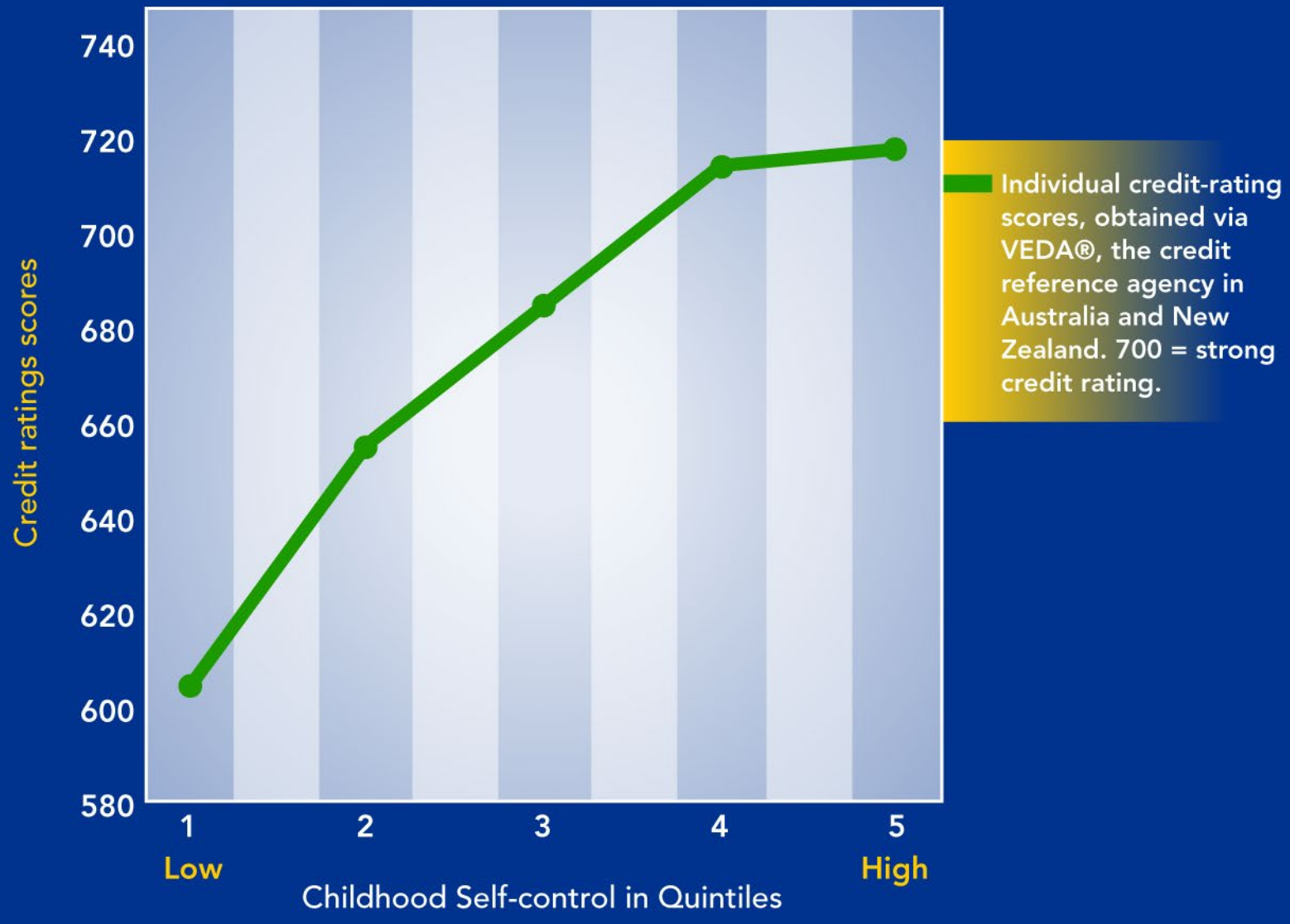
Understanding your credit file assists you to make more informed decisions regarding your finances.

Your credit file is a tool credit providers use to help them ascertain your financial reliability.

A credit file includes information about you and has four distinct sections. These are:

Self-control gradient:

Poor childhood self-control predicts credit ratings in adulthood



Israel, Moffitt et al. 2014, PNAS

Crime Measures

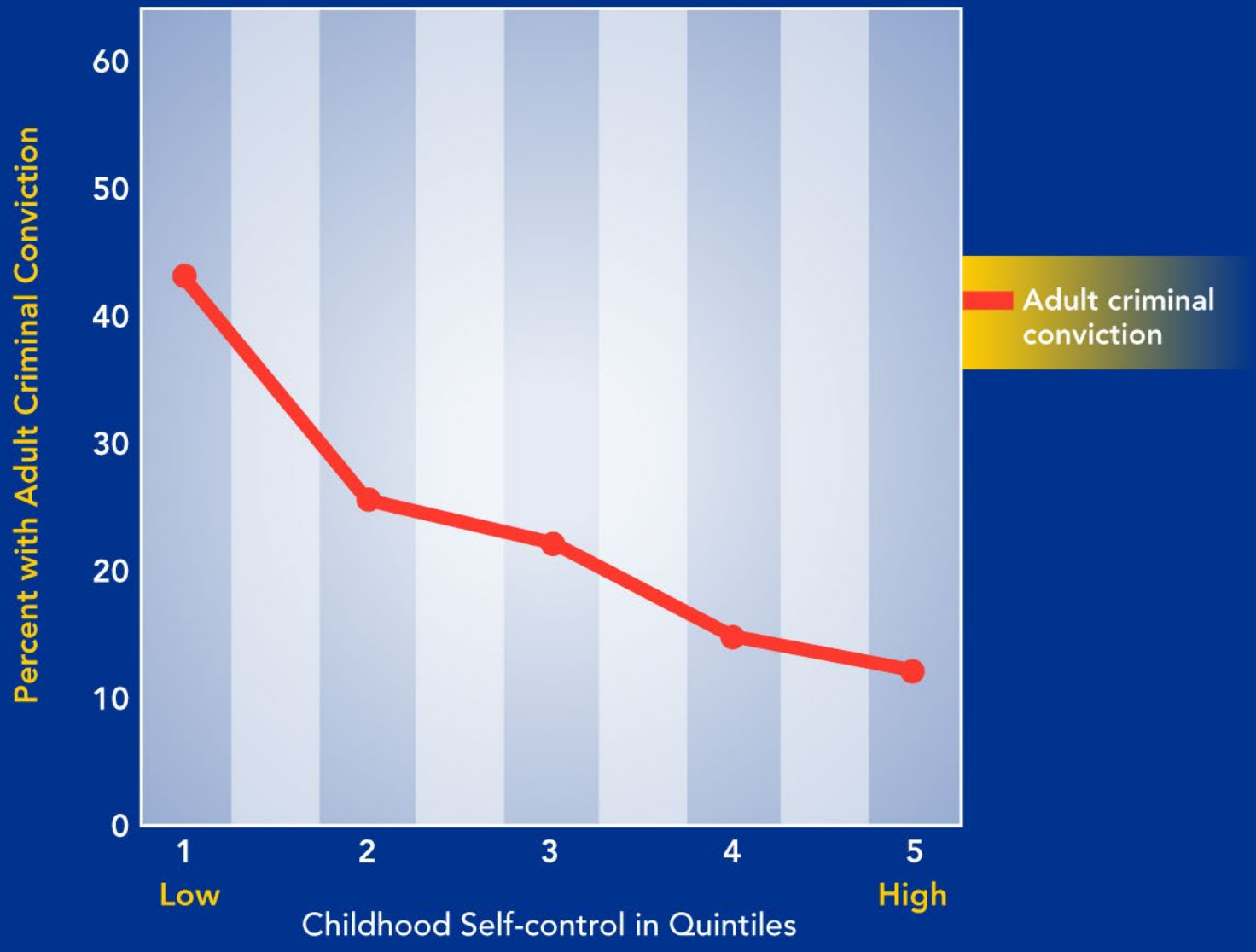
Assessments of Criminal Outcomes

Criminal court convictions, age 18 to 45

New Zealand and Australian Police

Self-control gradient:

Children with low self-control had more crime conviction than those with high self-control



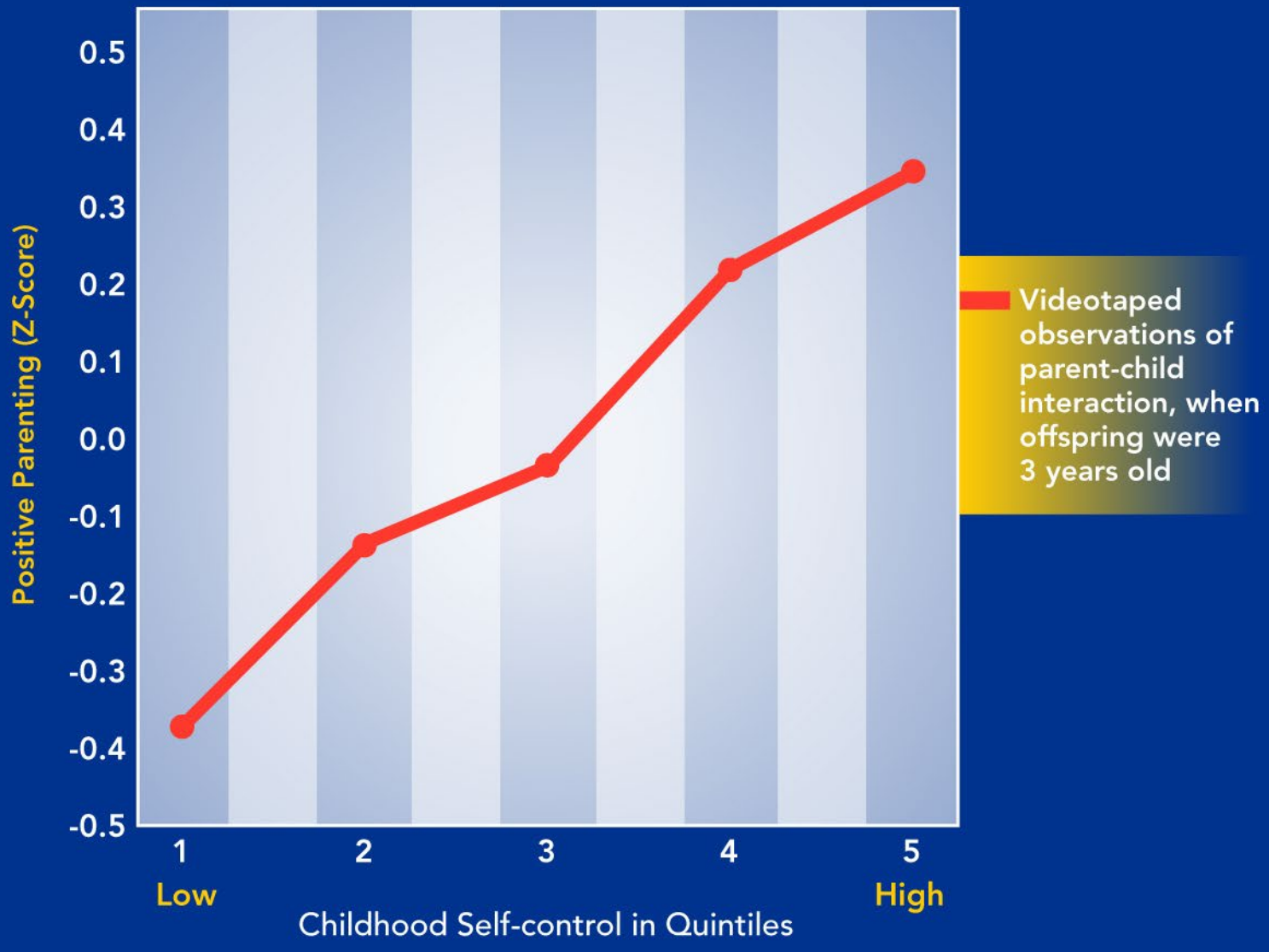
Parenting Measures

Assessments of Parental Involvement

When a Dunedin Study member has a 3-year-old….

Self-control gradient:

Children with low self-control were less warm/sensitive/stimulating parents with their own child



All analyses shown today controlled for four main alternative explanations…

- Gradients looked the same in
  - *Children from high-income families*
  - *Children with above-average IQ*
  - *Girls*
  - *Children with no ADHD diagnosis*

  - *AND the plotted means on each gradient graph in this talk were statistically adjusted for childhood SES and IQ*

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These Dunedin cohort members are 45 years old

Composites of 10 Dunedin Study cohort members, all born 1972.

Each composite is created from 10 faces with Psychomorph.

These cohort members are 45 years old too

Fastest-aging 10
Dunedin Study
Cohort women
and men

Elliott, Caspi… and Moffitt, *Nature Aging*, 2021

Lower childhood self-control forecasts faster facial aging in midlife: 1 SD difference = 5.8 years older appearance

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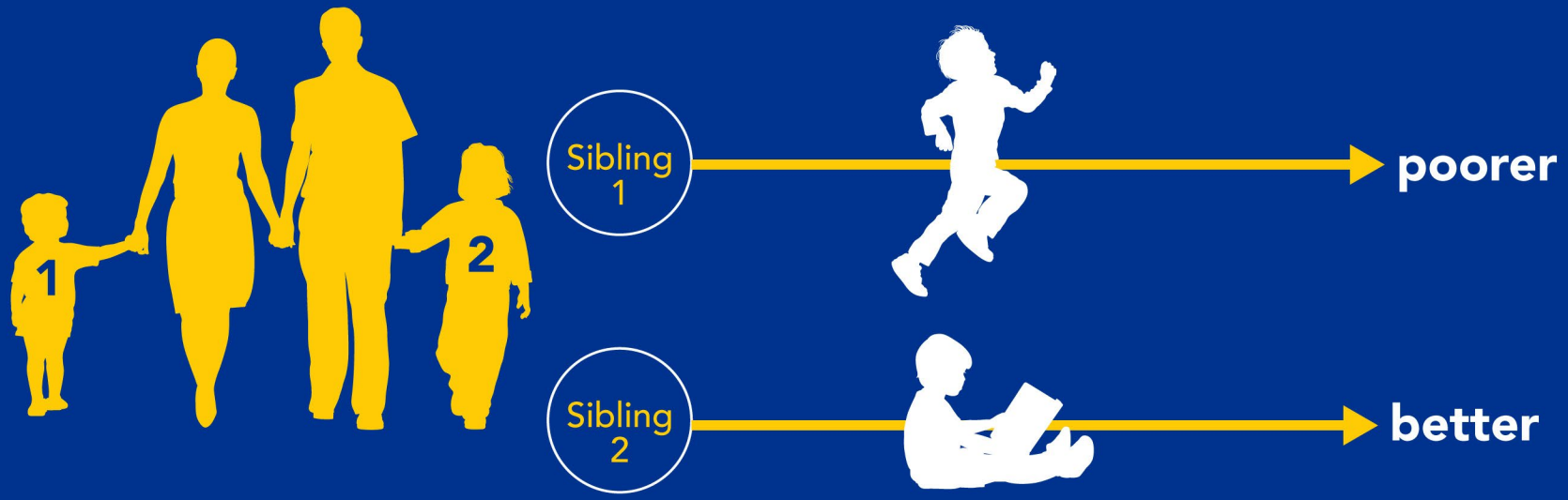
How can we isolate self-control as an active ingredient?



By comparing the outcomes of 2 siblings who differed on childhood self-control...but shared all other aspects of their family background


United Kingdom

The Environmental Risk (E-Risk)
Longitudinal Twin Study, N = 1,100 pairs

Self-control at age 5 years

- ✓ Impulsive, acts without thinking.
- ✓ Can’t wait his or her turn.
- ✓ Low frustration tolerance.
- ✓ Dislikes effortful tasks.
- ✓ Fleeting attention, easily distracted.
- ✓ Lacks persistence, easily forgets goals.
- ✓ Often goes for the risky thing.
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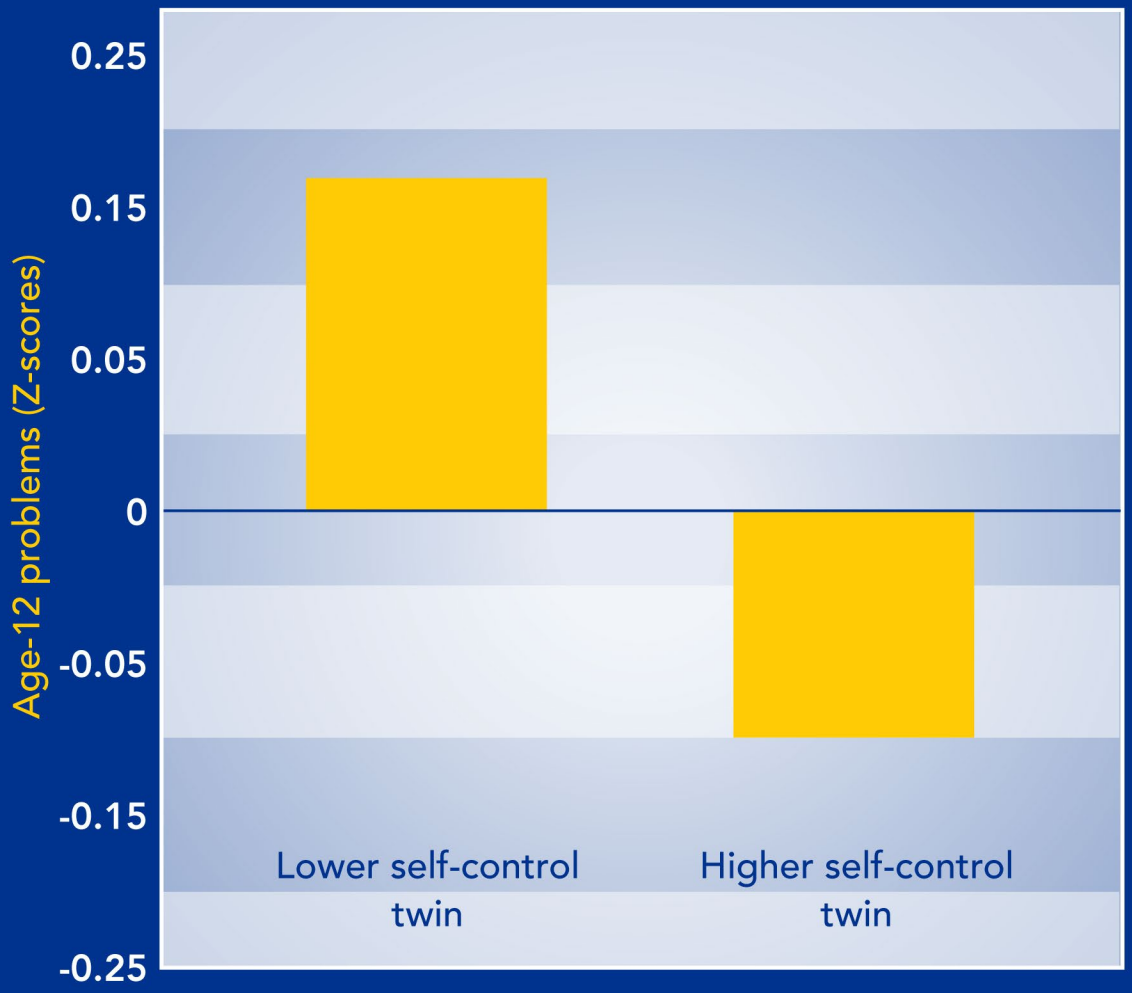
Sibling differences in adolescent school failure, smoking and delinquency



Differences between siblings in age-5 self-control predicted differences in their adolescent problems (school failure, smoking, delinquency)

Holds constant age, sex, parents, and home rearing environment, with statistical controls for birth weight and IQ.

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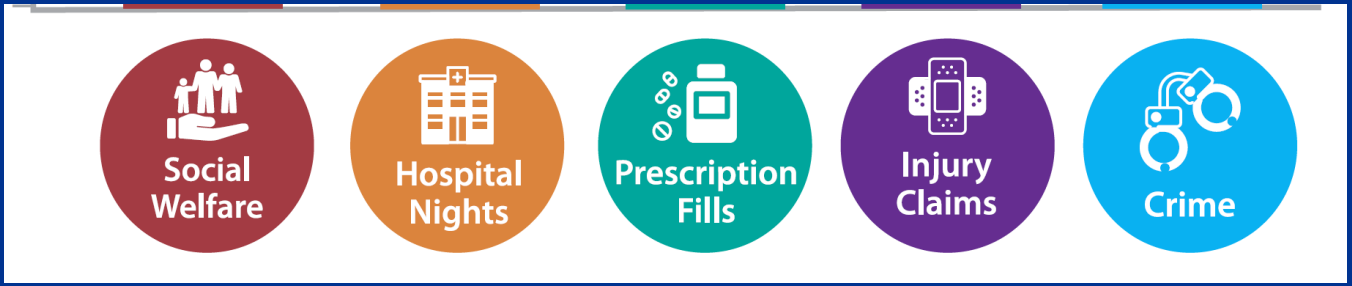
- ➤ Danish Register Study: Education disrupts the intergenerational continuity of a poor start


Denmark

Danish Registers: Can educating parents improve child outcomes?



- High-rate users on the health care, social welfare benefits, and crime registers among…
- 420,000 grandmothers/400,000 grandfathers (G1)
- 650,000 parents born 1974-84 (G2)

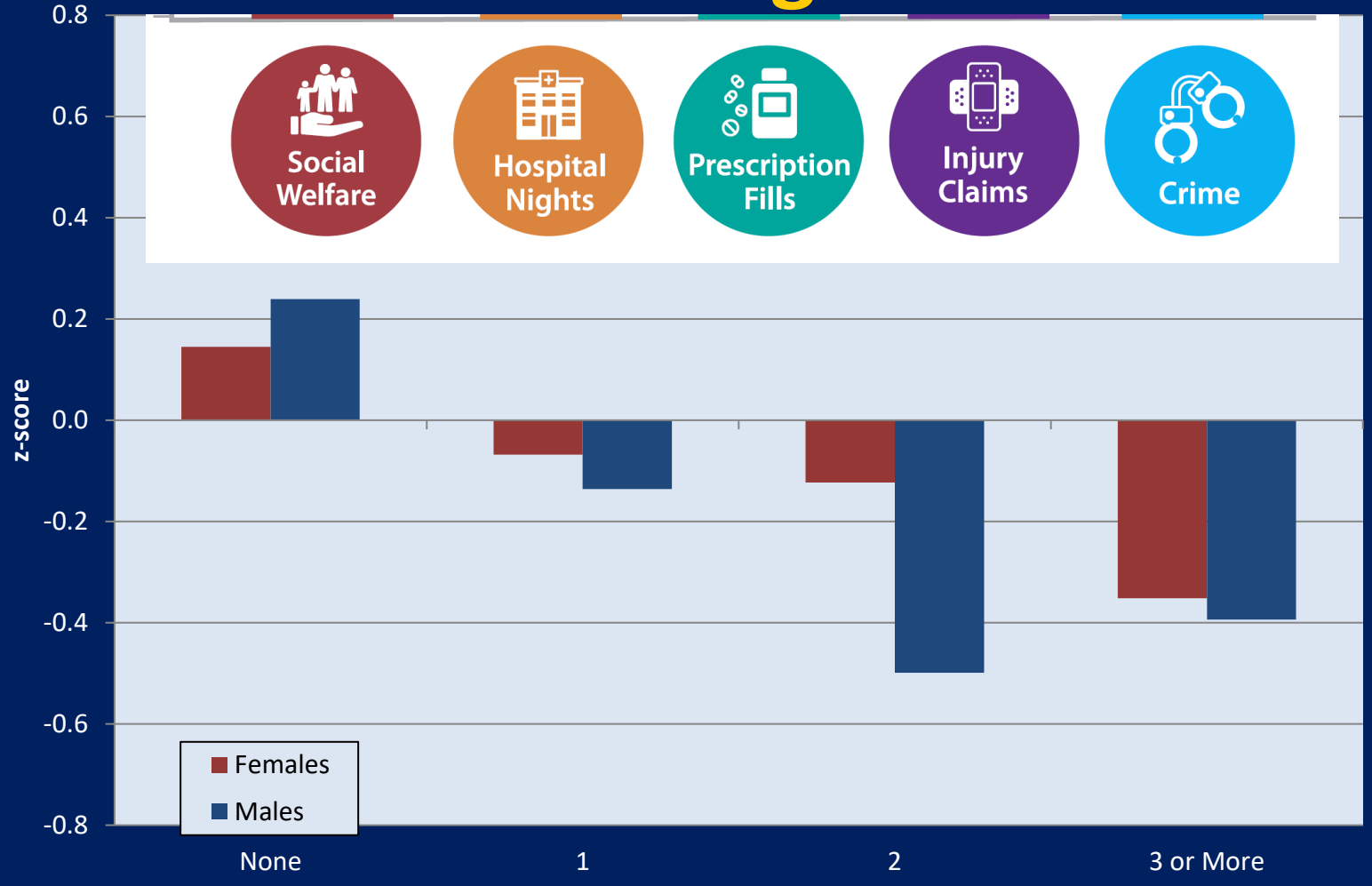
- Child protective services register for….
- 628,000 grandchildren born 1988-2016 (G3)

Andersen, Moffitt et al. PNAS, 2021

Replicated in New Zealand National Registers, Moffitt et al. Nature Human Behaviour, 2016; 2020

Dunedin cohort: self-control and national registers

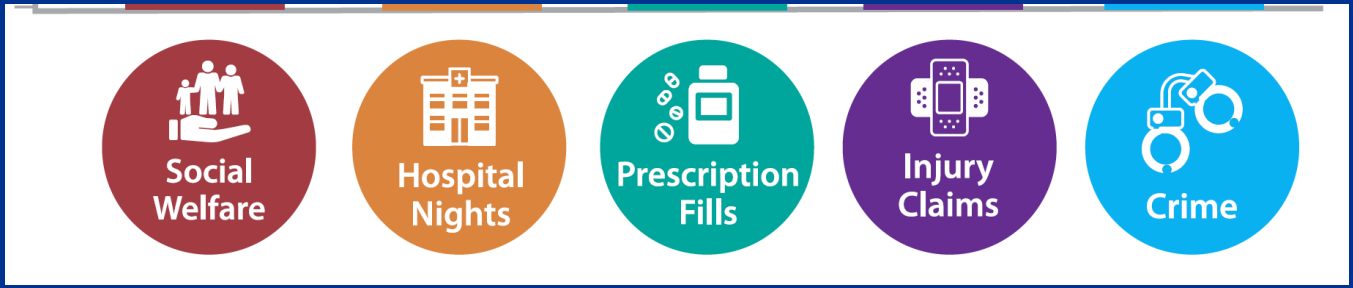
Early-years childhood Self-control



Adulthood number of "High Cost" users on linked NZ national registers

Strong intergenerational Continuity of Health and Social Disadvantage in Denmark

- If a grandparent was high-rate on health & social registers, the parent was 9 times more likely to be high-rate too (G1➡G2)
- If a parent was high-rate on registers, grandchild was 4 times more often found on child-protection register (G2➡G3)
- If grandparent was high-rate, grandchild was 2 times more often on child-protection register (G1➡G3)



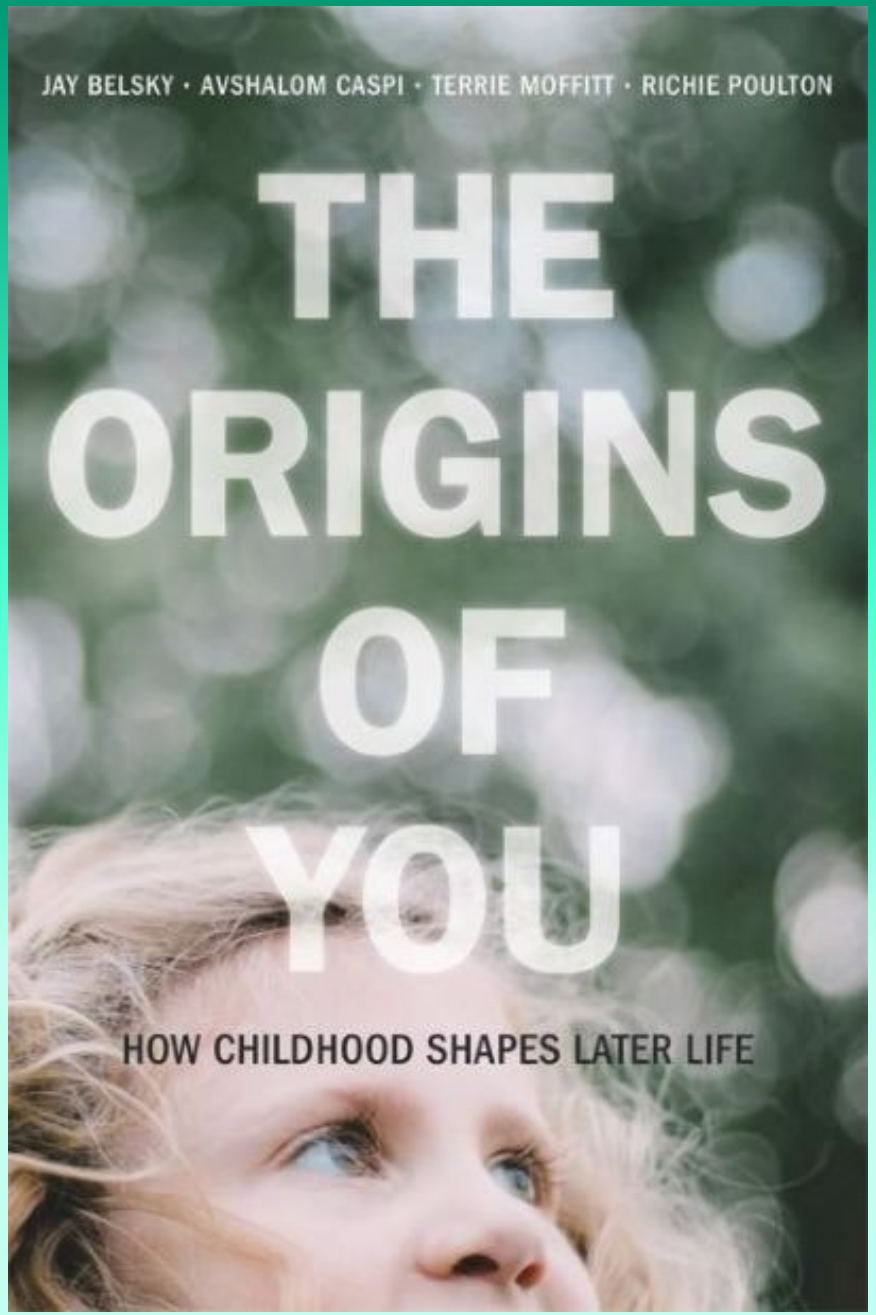
Comparing Danish Gen2 siblings who are both parents, but who differ on education

- 25% of Gen2 did not complete secondary school
- Gen2 parents who completed secondary school, compared to their Gen2 sib who left school early…
- Educated Gen2 parents were 3 times less often high-rate on health, social welfare, and crime registers
- Their Gen3 grandchild was 3 times less often on child-protection register

Andersen, Moffitt et al. PNAS, 2021

Discussion

- Young children's problem behaviours may be more amenable to change than their IQ or family social class
- For some people, childhood problem behaviours left unaddressed can have consequences that last across the entire life course
- Problem behaviours can also lead to continuity in excess use of public services across generations of a family
- Even within the same family, this continuity can be disrupted and child outcomes can be improved through education for parents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