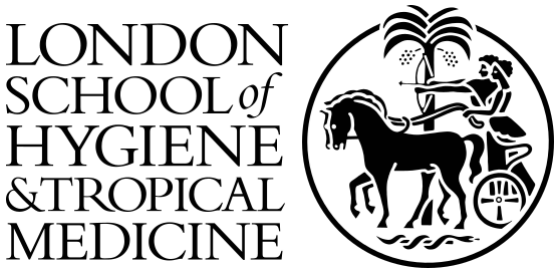


# Appendices

## Table of Contents

# Appendix 1: Supplemental data for chapter 2

### Methods S1.1 Additional detail on statistical methods for multiple imputation and model estimation

We used multiple imputation with chained equations to minimise the potential for bias from missing data in the 2010 mortality registry. Around 20% of mortality records were missing data on education, and 8% were missing data on cause of death (defined by ICD-10 chapter 18 (codes R00-R99), over 96% of which were assigned as generic unknown cause of death codes). This approach produces unbiased effect estimates under the assumption that data were missing at random with respect to the set of covariates included in the imputation model.[1] To improve our imputation model, we included the following additional covariates which might predict cause of death:

- From death certificates: individual-level occupation, race, marital status, whether doctor was present for death, and location of death (accessed through the CIDACS project (https://cidacs.bahia.fiocruz.br).
- From Brazilian government websites[2,3]: municipality-level mean wages, number of doctors, number of health facilities, population size, and urbanisation level.

Using the MICE package on R (version 3.5) we imputed the data five times. We computed rate ratios and interaction terms separately for each of the five imputed datasets and combined them using Rubin's rules.[1]

We conducted statistical modelling using Stata 16. We initially used Stata's inbuilt maximum likelihood function to estimate models, but because of long computation times and numerically similar estimates, we estimated the final models using MLwiN's penalised quasi-likelihood procedure, using the 'runmlwin' package in Stata to call MLwiN v3.04.

References

[1] White IR, Royston P, Wood AM. Multiple imputation using chained equations: Issues and guidance for practice. Stat Med 2011;30:377–99. https://doi.org/10.1002/sim.4067.

[2] DATASUS n.d. http://www2.datasus.gov.br/DATASUS/index.php?area=0205 (accessed December 3, 2018).

[3] IBGE | Portal do IBGE | IBGE n.d. https://www.ibge.gov.br/ (accessed January 16, 2020).

**Table S1.1 Completed STROBE checklist**

| | Item No | Recommendation | Page |
|---|---|---|---|
| **Title and abstract** | 1 | (*a*) Indicate the study's design with a commonly used term in the title or the abstract | 1-2 |
| | | (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | 2 |
| **Introduction** | | | |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 3 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 3/4 |
| **Methods** | | | |
| Study design | 4 | Present key elements of study design early in the paper | 4 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 4 |
| Participants | 6 | (*a*) Give the eligibility criteria, and the sources and methods of selection of participants | 4/5 |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 4/5/6 |
| Data sources/ measurement | 8* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 4 |
| Bias | 9 | Describe any efforts to address potential sources of bias | 5/6 |
| Study size | 10 | Explain how the study size was arrived at | 5 |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 6 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | 5/6 |
| | | (*b*) Describe any methods used to examine subgroups and interactions | 6 |
| | | (*c*) Explain how missing data were addressed | 6 |
| | | (*d*) If applicable, describe analytical methods taking account of sampling strategy | - |
| | | (*e*) Describe any sensitivity analyses | 5/6 |
| **Results** | | | |
| Participants | 13* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 6 |

| | | | |
|---|---|---|---|
| | | (b) Give reasons for non-participation at each stage | 6 |
| | | (c) Consider use of a flow diagram | - |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | 6/7 |
| | | (b) Indicate number of participants with missing data for each variable of interest | 6, Table S1 |
| Outcome data | 15* | Report numbers of outcome events or summary measures | 6 |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | 7 |
| | | (*b*) Report category boundaries when continuous variables were categorized | - |
| | | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | - |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | 7/8 |
| **Discussion** | | | |
| Key results | 18 | Summarise key results with reference to study objectives | 8 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 12/14 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 12 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 11 |
| **Other information** | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | 14 |

*Give information separately for exposed and unexposed groups.

**Table S1.2 Sample size of included and total population of Brazil, overall and by quintile of state-level Human Development Index (HDI), 2010**

| HDI quintile | Included sample | | | Total Brazil | | |
|---|---|---|---|---|---|---|
| | *States* | *Municipalities* | *Population* | *States* | *Municipalities* | *Population* |
| 1 (lowest) | 5 | 218 | 3,708,223 | 5 | 925 | 15,013,344 |
| 2 | 5 | 302 | 10,003,881 | 5 | 960 | 24,176,668 |
| 3 | 5 | 479 | 7,053,599 | 5 | 1352 | 19,370,535 |
| 4 | 4 | 328 | 6,846,469 | 4 | 898 | 15,631,978 |
| 5 (highest) | 4 | 677 | 34,955,882 | 4 | 1430 | 53,634,216 |
| Overall | 23* | 2004 | 62,568,054 | 23* | 5565 | 127,826,740 |

*Some states (3/26) were too small to be analysed separately so were merged with their most similar neighbour for the purpose of this analysis.

**Table S1.3 Differences between included and excluded population based on coverage of municipality mortality registration, 2010**

| | | Included | | Excluded | |
|---|---|---|---|---|---|
| # of municipalities | | 2004 | | 3561 | |
| Crude cardiovascular mortality rate (per 100,000) | | 296.3 | | 258.6 | |
| Total population | | 62,568,054 | | 65,258,686 | |
| *Socio-demographics:* | | *n* | *%* | *n* | *%* |
| Sex | Female | 32,899,916 | 52.6 | 33,454,284 | 51.3 |
| | Male | 29,668,139 | 47.4 | 31,804,402 | 48.7 |
| Age | 20-50 | 42,768,117 | 68.4 | 46,051,614 | 70.6 |
| | 50-70 | 15,045,440 | 24.0 | 14,729,390 | 22.6 |
| | 70+ | 4,754,497 | 7.6 | 4,477,683 | 6.9 |
| Region | Centre-west | 1,938,060 | 3.1 | 7,415,073 | 11.4 |
| | North | 2,529,983 | 4.0 | 6,738,691 | 10.3 |
| | North-east | 12,063,510 | 19.3 | 21,772,305 | 33.4 |
| | South | 7,961,369 | 12.7 | 11,094,052 | 17.0 |
| | South-east | 38,075,133 | 60.9 | 18,238,565 | 27.9 |
| Education | <8 years | 23,953,156 | 38.3 | 30,694,950 | 47.0 |
| | 8+ years | 38,614,899 | 61.7 | 34,563,736 | 53.0 |

**Table S1.4 Associations between education and cardiovascular mortality stratified by quintile of state-level Human Development Index in Brazil, 2010, including the population all 5565 municipalities (N=127,826,740)**

| | Age-adjusted rate ratio for having <8 vs 8+ years education (95% CI) by quintile of state HDI | | | | | p-value trend by quintile | Change in log rate ratio per 0.1 unit change in state HDI (95% CI) | p-value linear trend |
|---|---|---|---|---|---|---|---|---|
| | 1 (lowest) | 2 | 3 | 4 | 5 (highest) | | | |
| *Women, all ages* | | | | | | | | |
| CVD | 3.34 (3.09, 3.61) | 3.17 (3.01, 3.34) | 2.95 (2.80, 3.11) | 3.03 (2.81, 3.27) | 2.83 (2.76, 2.91) | 0.039 | -0.12 (-0.21, -0.02) | 0.014 |
| IHD | 3.21 (2.82, 3.64) | 2.91 (2.65, 3.19) | 2.52 (2.30, 2.77) | 2.79 (2.56, 3.04) | 2.42 (2.32, 2.52) | 0.14 | -0.10 (-0.22, 0.02) | 0.094 |
| Stroke | 3.35 (3.02, 3.71) | 2.97 (2.71, 3.25) | 3.09 (2.78, 3.42) | 2.98 (2.74, 3.26) | 2.88 (2.75, 3.02) | 0.20 | -0.09 (-0.22, 0.03) | 0.15 |
| *Men, all ages* | | | | | | | | |
| CVD | 2.23 (2.12, 2.35) | 2.26 (2.13, 2.38) | 1.91 (1.82, 2.00) | 2.11 (1.99, 2.25) | 2.16 (2.12, 2.21) | 0.92 | -0.03 (-0.12, 0.05) | 0.46 |
| IHD | 1.82 (1.66, 2.00) | 1.75 (1.63, 1.87) | 1.56 (1.45, 1.67) | 1.91 (1.79, 2.03) | 1.77 (1.72, 1.83) | 0.12 | 0.06 (-0.05, 0.17) | 0.31 |
| Stroke | 2.41 (2.18, 2.66) | 2.47 (2.28, 2.68) | 2.40 (2.18, 2.65) | 2.50 (2.32, 2.69) | 2.60 (2.49, 2.72) | 0.49 | 0.03 (-0.10, 0.15) | 0.64 |
| *Women, <70* | | | | | | | | |
| CVD | 3.46 (3.14, 3.81) | 3.40 (3.18, 3.64) | 3.32 (3.06, 3.60) | 3.58 (3.31, 3.88) | 3.33 (3.22, 3.46) | 0.93 | -0.03 (-0.13, 0.07) | 0.59 |
| IHD | 3.81 (3.20, 4.56) | 3.33 (2.92, 3.80) | 2.72 (2.37, 3.13) | 3.31 (2.90, 3.77) | 2.84 (2.69, 3.00) | 0.23 | -0.10 (-0.24, 0.04) | 0.17 |
| Stroke | 3.48 (3.01, 4.03) | 3.33 (2.94, 3.76) | 3.50 (3.06, 4.02) | 3.66 (3.18, 4.21) | 3.26 (3.04, 3.49) | 0.88 | -0.03 (-0.15, 0.10) | 0.68 |
| *Men, <70* | | | | | | | | |
| CVD | 2.44 (2.30, 2.60) | 2.59 (2.44, 2.74) | 2.41 (2.24, 2.59) | 2.54 (2.39, 2.70) | 2.75 (2.68, 2.81) | 0.040 | 0.08 (-0.01, 0.17) | 0.075 |
| IHD | 1.94 (1.74, 2.18) | 1.96 (1.80, 2.15) | 1.74 (1.59, 1.90) | 2.16 (2.00, 2.33) | 2.06 (1.98, 2.14) | 0.045 | 0.09 (-0.03, 0.21) | 0.14 |
| Stroke | 2.53 (2.22, 2.87) | 2.80 (2.52, 3.11) | 2.78 (2.49, 3.11) | 2.98 (2.67, 3.32) | 3.01 (2.84, 3.18) | 0.044 | 0.11 (-0.02, 0.24) | 0.084 |

CI=confidence interval, HDI=Human Development Index, CVD=Cardiovascular disease, IHD=Ischaemic heart disease

**Table S1.5 Associations between education and cardiovascular mortality stratified by region of Brazil, 2010**

| | Age-adjusted rate ratio for having <8 vs 8+ years education (95% CI) by region of Brazil | | | | | Change in log rate ratio per 0.1 unit change in region HDI (95% CI) | p-value linear trend |
|---|---|---|---|---|---|---|---|
| | North-east (lowest HDI) | North | Centre-west | South | South-east (highest HDI) | | |
| *Women, all ages* | | | | | | | |
| CVD | 3.34 (3.12, 3.57) | 3.03 (2.65, 3.48) | 3.93 (3.39, 4.56) | 2.78 (2.52, 3.07) | 2.84 (2.76, 2.93) | -0.16 (-0.28, -0.05) | 0.005 |
| IHD | 3.13 (2.80, 3.51) | 2.40 (1.82, 3.16) | 3.83 (2.72, 5.39) | 2.48 (2.17, 2.84) | 2.41 (2.30, 2.52) | -0.13 (-0.30, 0.05) | 0.15 |
| Stroke | 3.35 (2.98, 3.76) | 2.79 (2.14, 3.64) | 3.32 (2.48, 4.46) | 3.05 (2.73, 3.41) | 2.94 (2.78, 3.11) | -0.11, (-0.30, 0.08) | 0.25 |
| *Men, all ages* | | | | | | | |
| CVD | 2.33 (2.21, 2.45) | 2.19 (1.94, 2.46) | 2.42 (2.15, 2.71) | 2.03 (2.87, 2.21) | 2.23 (2.18, 2.28) | -0.06 (-0.15, 0.04) | 0.27 |
| IHD | 1.81 (1.67, 1.96) | 1.55 (1.23, 1.96) | 2.23 (1.81, 2.76) | 1.85 (1.70, 2.01) | 1.77 (1.71, 1.84) | 0.09 (-0.07, 0.25) | 0.27 |
| Stroke | 2.73 (2.46, 3.02) | 2.41 (1.89, 3.08) | 3.04 (2.34, 3.94) | 2.55 (2.29, 2.83) | 2.66 (2.53, 2.79) | -0.02 (-0.20, 0.15) | 0.79 |
| *Women, <70* | | | | | | | |
| CVD | 3.68 (3.38, 4.00) | 3.04 (2.48, 3.72) | 3.95 (3.25, 4.80) | 3.31 (2.97, 3.69) | 3.38 (3.25, 3.52) | -0.09 (-0.22, 0.04) | 0.20 |
| IHD | 3.75 (3.17, 4.44) | 2.89 (2.02, 4.15) | 4.01 (2.84, 5.67) | 2.77 (2.34, 3.28) | 2.83 (2.66, 3.02) | -0.16 (-0.37, 0.05) | 0.13 |
| Stroke | 3.96 (3.36, 4.68) | 2.98 (2.08, 4.27) | 3.51 (2.46, 5.00) | 3.42 (2.85, 4.09) | 3.36 (3.13, 3.62) | -0.09 (-0.28, 0.11) | 0.40 |
| *Men, <70* | | | | | | | |
| CVD | 2.71 (2.54, 2.89) | 2.41 (2.03, 2.87) | 2.61 (2.20, 3.11) | 2.44 (2.26, 2.64) | 2.92 (2.83, 3.00) | 0.05 (-0.07, 0.16) | 0.44 |
| IHD | 2.11 (1.90, 2.34) | 1.64 (1.28, 2.11) | 2.21 (1.74, 2.81) | 2.10 (1.88, 2.35) | 2.08 (1.99, 2.18) | 0.09 (-0.09, 0.28) | 0.31 |
| Stroke | 3.07 (2.60, 3.62) | 2.74 (2.08, 3.63) | 3.72 (2.69, 5.16) | 3.11 (2.63, 3.67) | 3.17 (2.97, 3.38) | 0.07 (-0.14, 0.27) | 0.52 |

CI=confidence interval, HDI=Human Development Index, CVD=Cardiovascular disease, IHD=Ischaemic heart disease,

**Table S1.6 Age-standardised cardiovascular mortality rates per 100,000 population by years of education and quintile of state-level Human Development Index, Brazil, 2010**

| | Cardiovascular mortality rate (per 100,000 population) | | | | | |
|---|---|---|---|---|---|---|
| Quintile of state HDI | 0-7 years of education | Lower CI | Upper CI | 8+ years of education | Lower CI | Upper CI |
| *Females* | | | | | | |
| 1 (lowest HDI) | 610.6 | 562.7 | 658.6 | 170.5 | 146.9 | 194.1 |
| 2 | 568.6 | 527.9 | 609.3 | 180.4 | 160.3 | 200.5 |
| 3 | 563.1 | 519.1 | 607.2 | 180.4 | 154.3 | 206.4 |
| 4 | 613.7 | 563.1 | 664.3 | 186.1 | 161.8 | 210.4 |
| 5 (highest HDI) | 637.8 | 591.1 | 684.4 | 221.0 | 196.9 | 245.1 |
| *Males* | | | | | | |
| 1 (lowest HDI) | 835.4 | 771.0 | 899.8 | 325.5 | 282.9 | 368.1 |
| 2 | 785.1 | 729.3 | 840.9 | 350.3 | 312.4 | 388.2 |
| 3 | 772.5 | 712.8 | 832.1 | 361.3 | 311.0 | 411.7 |
| 4 | 841.4 | 772.5 | 910.3 | 359.0 | 313.5 | 404.5 |
| 5 (highest HDI) | 973.3 | 902.2 | 1044.4 | 421.3 | 375.7 | 467.0 |

CI=confidence interval, HDI=Human Development Index

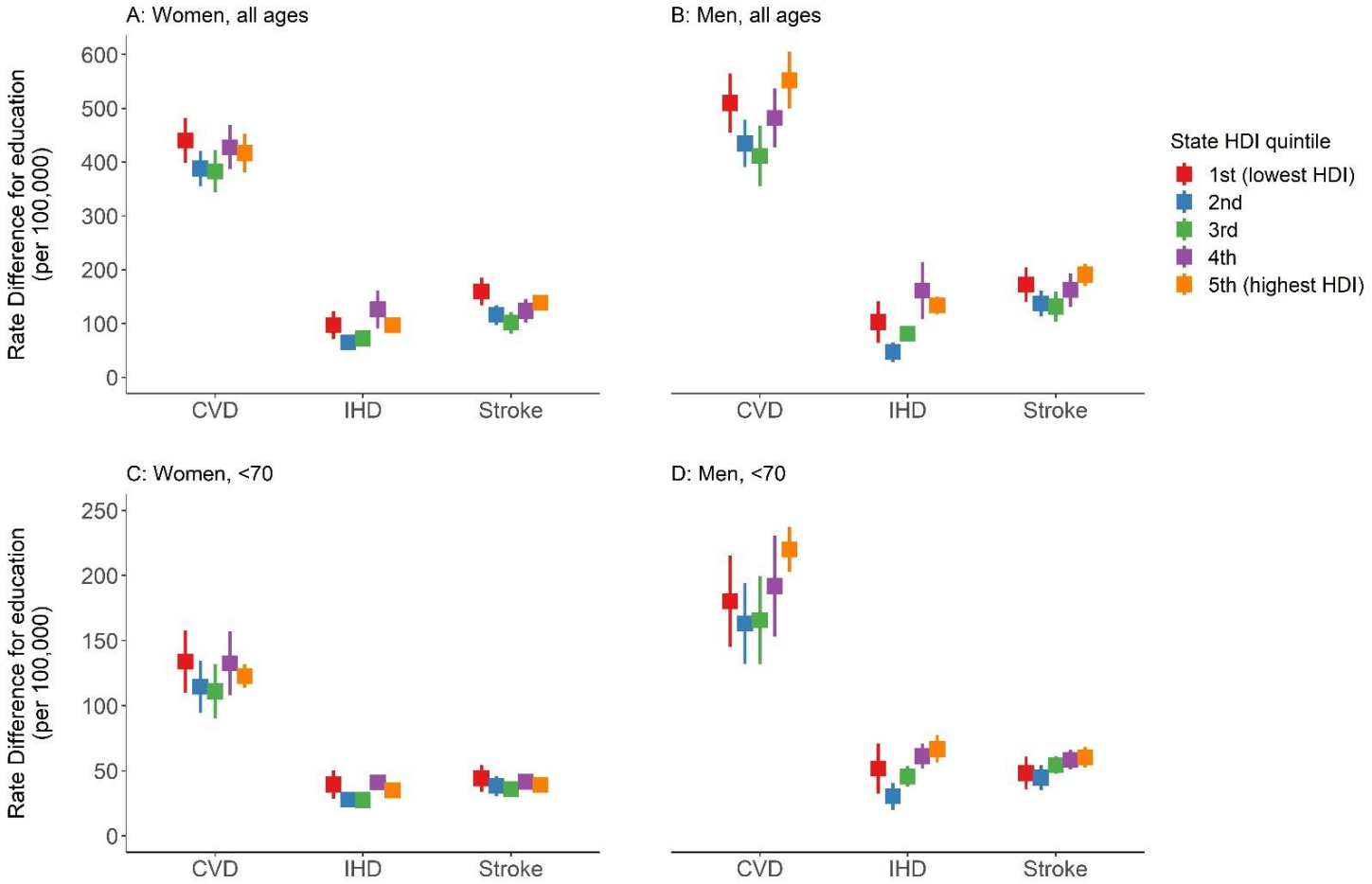
Rates standardised to the age distribution of the overall study population, and calculated using Stata's margins command.

**Table S1.7 Age-adjusted cardiovascular mortality rate differences per 100,000 population for having <8 vs 8+ years of education by quintile of state-level Human Development Index, Brazil, 2010**

| | Age-adjusted rate difference (per 100,000) for having <8 vs 8+ years education (95% CI) by quintile of state HDI | | | | |
|---|---|---|---|---|---|
| | 1 (lowest) | 2 | 3 | 4 | 5 (highest) |
| *Women, all ages* | | | | | |
| CVD | 440.2 (399.0, 481.3) | 388.2 (355.7, 420.7) | 382.8 (343.6, 422.0) | 427.6 (386.5, 468.7) | 416.8 (381.2, 452.4) |
| IHD | 97.1 (70.9, 123.3) | 64.6 (54.8, 74.3) | 72.0 (63.2, 80.8) | 126.4 (91.1, 161.6) | 96.7 (88.4, 105.0) |
| Stroke | 159.5 (133.8, 185.3) | 116.1 (97.7, 134.4) | 101.7 (81.7, 121.6) | 123.6 (101.4, 145.7) | 138.4 (125.0, 151.8) |
| *Men, all ages* | | | | | |
| CVD | 509.9 (455.2, 564.6) | 434.8 (391.3, 478.3) | 411.2 (355.1, 467.2) | 482.4 (427.7, 537.2) | 552.0 (499.1, 604.9) |
| IHD | 102.8 (64.3, 141.4) | 47.1 (28.8, 65.3) | 81.2 (66.4, 96.0) | 161.4 (108.3, 214.5) | 133.6 (117.3, 150.0) |
| Stroke | 172.5 (140.1, 204.9) | 137.6 (113.5, 161.7) | 131.4 (103.4, 159.5) | 162.3 (131.3, 193.2) | 190.7 (170.2, 211.1) |
| *Women, <70* | | | | | |
| CVD | 133.9 (109.8, 157.9) | 114.4 (94.5, 134.4) | 110.9 (90.2, 131.7) | 132.6 (108.0, 157.2) | 122.7 (113.6, 131.7) |
| IHD | 39.4 (28.5, 50.4) | 27.8 (22.4, 33.3) | 27.5 (22.9, 32.1) | 41.0 (35.4, 46.7) | 34.9 (30.5, 39.3) |
| Stroke | 44.2 (33.9, 54.6) | 38.3 (30.5, 46.1) | 36.0 (31.0, 41.0) | 41.5 (36.0, 47.1) | 39.2 (34.2, 44.2) |
| *Men, <70* | | | | | |
| CVD | 180.1 (145.0, 215.2) | 163.2 (132.2, 194.2) | 165.8 (132.0, 199.6) | 191.8 (152.9, 230.7) | 219.8 (202.6, 237.1) |
| IHD | 51.8 (32.5, 71.0) | 30.4 (19.9, 40.8) | 45.5 (37.6, 53.5) | 61.2 (51.5, 70.9) | 66.7 (56.1, 77.3) |
| Stroke | 48.1 (35.6, 60.7) | 44.8 (35.2, 54.4) | 54.5 (47.6, 61.3) | 58.5 (50.9, 66.0) | 60.3 (52.6, 68.0) |

CI=confidence interval, HDI=Human Development Index, CVD=Cardiovascular disease, IHD=Ischaemic heart disease
Adjusted rate differences calculated using Stata's margins command.

**Figure S1.1 Graphs of the age-adjusted cardiovascular mortality rate differences per 100,000 population for having <8 vs 8+ years of education by quintile of state-level Human Development Index, Brazil, 2010**



# Appendix 2: Supplemental data for chapter 3

**Table S2.1 Completed PRISMA 2020 checklist**

| Section and Topic | Item # | Checklist item | Location in article |
|---|---|---|---|
| **TITLE** | 1 | Identify the report as a systematic review. | Title |
| **ABSTRACT** | 2 | See the PRISMA 2020 for Abstracts checklist (Table 2). | |
| **INTRODUCTION** | | | |
| Rationale | 3 | Describe the rationale for the review in the context of existing knowledge. | Intro p1-2 |
| Objectives | 4 | Provide an explicit statement of the objective(s) or question(s) the review addresses. | Intro p2 |
| **METHODS** | | | |
| Eligibility criteria | 5 | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. | Meth p2-6 |
| Information sources | 6 | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted. | Meth p5 |
| Search strategy | 7 | Present the full search strategies for all databases, registers and websites, including any filters and limits used. | Annex 2 |
| Selection process | 8 | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process. | Meth p6 |
| Data collection process | 9 | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. | Meth p6 |
| Data items | 10a | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect. | Meth p3,6, Table 1 |
| | 10b | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | Meth p6, Annex 3 |
| Study risk of bias assessment | 11 | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process. | Meth p7 |
| Effect measures | 12 | Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results. | NA |
| Synthesis methods | 13a | Describe the processes used to decide which studies were eligible for each synthesis. | Meth p6 |
| | 13b | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions. | NA |
| | 13c | Describe any methods used to tabulate or visually display results of individual studies and syntheses. | Meth p6 |

| | | | |
|---|---|---|---|
| | 13d | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used. | Meth p6 |
| | 13e | Describe any methods used to explore possible causes of heterogeneity among study results. | NA |
| | 13f | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | NA |
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | Meth p7 |
| Certainty assessment | 15 | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | NA |
| **RESULTS** | | | |
| Study selection | 16a | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram (see Figure 1). | Results p1 Figure 1 |
| | 16b | Cite studies that met many but not all inclusion criteria ('near-misses') and explain why they were excluded. | NA |
| Study characteristics | 17 | Cite each included study and present its characteristics. | Result p2-8, Table 2 |
| Risk of bias in studies | 18 | Present assessments of risk of bias for each included study. | Figure 2 |
| Results of individual studies | 19 | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots. | Tables 2 & 3, Annex 3 |
| Results of syntheses | 20a | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | Result p9 |
| | 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect) | Result p4-8, Table 3 |
| | 20c | Present results of all investigations of possible causes of heterogeneity among study results. | NA |
| | 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | NA |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | NA |
| Certainty of evidence | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | NA |
| **DISCUSSION** | 23a | Provide a general interpretation of the results in the context of other evidence. | Discuss p1-3 |
| | 23b | Discuss any limitations of the evidence included in the review. | Discuss p4 |
| | 23c | Discuss any limitations of the review processes used. | Discuss p5 |
| | 23d | Discuss implications of the results for practice, policy, and future research. | Discuss p6 |
| **OTHER INFORMATION** | | | |
| Registration and protocol | 24a | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | Method p1 |

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|---|---|---|---|
| | 24b | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | Method p1 |
| | 24c | Describe and explain any amendments to information provided at registration or in the protocol. | NA |
| Support | 25 | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | Funding |
| Competing interests | 26 | Declare any competing interests of review authors. | Interests |
| Availability of data, code and other materials | 27 | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | Data availability |

Table S1 Cont. PRISMA 2020 for Abstracts checklist

| Section and Topic | Item # | Checklist item | Location in abstract |
|---|---|---|---|
| **TITLE** | | Identify the report as a systematic review. | Title |
| Title | 1 | | |
| **BACKGROUND** | | Provide an explicit statement of the main objective(s) or question(s) | Methods |
| Objectives | 2 | the review addresses. | |
| **METHODS** | | | Methods |
| Eligibility criteria | 3 | Specify the inclusion and exclusion criteria for the review. | |
| Information sources | 4 | Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched. | Methods |
| Risk of bias | 5 | Specify the methods used to assess risk of bias in the included studies. | Methods |
| Synthesis of results | 6 | Specify the methods used to present and synthesize results. | Methods |
| **RESULTS** | | | Results |
| Included studies | 7 | Give the total number of included studies and participants and summarise relevant characteristics of studies. | |
| Synthesis of results | 8 | Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured). | Results |
| **DISCUSSION** | | | Results |
| Limitations of evidence | 9 | Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision). | |
| Interpretation | 10 | Provide a general interpretation of the results and important implications. | Conclusion |
| **OTHER** | | | Funding statement |
| Funding | 11 | Specify the primary source of funding for the review. | |
| Registration | 12 | Provide the register name and registration number. | Methods |

**Table S2.2 Search strategy for Ovid databases**

| **Search executed on 19/09/2020** | | |
|---|---|---|
| **Domain** | **No.** | **Terms** |
| Socioeconomic position in childhood | 1 | ((early OR early-life OR child OR childhood OR children* OR adolescents OR adolescent OR adolescence OR fetal OR foetal OR in utero OR uterine OR pregnancy OR pregnant OR prenatal OR perinatal OR neonatal OR postnatal OR gestation* OR infancy OR infant* OR birth OR births OR born OR lifecourse OR life-course OR life course OR lifespan or intergenerational or inter-generational or transgenerational or trans-generational) adj4 (socio-economic* or socioeconomic* or socio-demographic* or sociodemographic* or social class or social status or social position or social circumstances or economic status or poverty or deprivation or deprived or adverse or adversity or disadvantage* or housing conditions or living conditions or material circumstances or material conditions or household assets or household income or standard of living)).tw |
| | 2 | ((parent* OR mother* or father* or maternal or paternal OR grandparent* OR grandfather* OR grandmother*) adj3 (socio-economic* or socioeconomic* or socio-demographic* or sociodemographic* or social class or social status or social position or social circumstances or education* or schooling or occupation* or income* or earning* or wealth* or asset* or possession*)).tw |
| | 3 | ((early or childhood) adj2 (experience* OR condition* OR environment* OR circumstance* OR exposure*)).tw |
| | 4 | (social mobility).tw |
| | 5 | 1 OR 2 OR 3 OR 4 |
| Cardiovascular disease and its risk factors | 6 | (Cardiovascular OR cardio-vascular OR CVD OR heart disease* OR cardiometabolic OR cardio-metabolic OR stroke OR cerebrovasc* OR circulatory disease OR myocardial infarction OR arteriosclero* OR atherosclero* OR CIMT OR (carotid adj2 (intima-media OR intima media OR IMT or plaque)) OR blood pressure or hypertens* or pulse wave velocity or augmentation index or arterial stiffness or arterial stiffening or metabolic syndrome or diabetes or fasting glucose or insulin or cholesterol or lipid profile or lipids or triglyceride*).tw |
| Low- and middle-income countries | 7 | (transitional countr* or global south or lmic or lmics or lamic or lamics or lami countr* or third world or ((developing or less* developed or least developed or under developed or underdeveloped or middle income or low income or low-middle income or lower-middle income or upper-middle income) adj3 (economy or economies or country or countries or population or populations)) or Africa* or asia* or latin America* or south America* or central america* or middle east* or eastern Mediterranean or eastern Europe* or pacific or Micronesia).tw |
| | 8 | (Central African Republic or Ubangi-Shari or Chad or Cameroon* or congo* or Gabon* or zaire or Malawi* or Nyasaland or Mozambi* or Portuguese East Africa or Zimbabwe* or Rhodesia* or Lesotho or Basutoland or Swazi* or Zambia* or Northern Rhodesia* or Angola* or Botswana* or Bechuanaland or Kalahari or Namibia* or South Africa* or sao tome or Benin or Dahomey or Burkina Faso or Burkina Fasso or Upper Volta or Gambia* or Ghan* or Gold Coast or Guinea-Bissau or Portuguese Guinea or Cote d'Ivoire or Ivory Coast or Liberia* or Mali or malian or Mauritania* or Niger or Nigeria* or |

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| | | Senegal* or Sierra Leone* or Togo* or Guinea* or Cape Verde* or Mexic* or Djibouti or Burundi* or Ethiopia* or Kenya* or Rwanda* or Ruanda* or Somali* or Sudan* or Tanzania* or Uganda* or Eritrea* or Egypt* or Algeria* or Libya* or Morocc* or Tunisia* or Bangladesh* or Bhutan* or Nepal* or india* or Pakistan* or Sri Lanka* or Syria* or gaza* or Afghan* or Iran* or Iraq* or jordan* or Leban* or yemen* or Maldiv* or Madagasca* or Malagasy Republic or Seychelles or comoros or comores or Mauriti* or Agalega Islands or Armenia* or georgia* or Azerbaijan* or Haiti or haitian or Cuba* or Dominica* or Antigua or Barbuda or Jamaica* or Grenad* or St Lucia* or Saint Lucia* or Grenadines or Belize or Costa Rica* or El Salvador* or Guatemala* or Hondura* or Nicaragua* or Panama* or Bolivia* or Argentin* or Brazil* or Chile* or Colombia* or Ecuador* or Guyana* or Paraguay or Peru* or Surinam* or Uruguay or Venezuela* or kyrgyzstan or kyrgyz or kirghizia or kirghiz or tajikistan or tadzhik or tadzhikistan or tajikistan or Kazakhstan or kazakh or turk* or Uzbekistan or Albania* or Jugoslavija* or Yugoslavia* or serbo-croat* or macedonia* or sloven* or kosovo or Moldova* or Ukrain* or Bulgaria* or belarus or byelarus or belorussia or bosnia* or Montenegro or Romania* or russia* or ussr or soviet or cccp or serbia* or Latvia* or Lithuania* or korea* or mongolia* or china or chinese or fiji* or Papua New Guinea or Vanuatu or Solomon Islands or Timor-Leste or Melanesia* or Micronesia* or Kiribati or Palau or Belau or Pelew or samoa* or tonga* or tuvalu or ellice islands or cambodia* or Kampuchea or myanmar or burma or burmese or indonesia* or laos or lao democratic republic or lao people* or marshall island* or Malaysia* or Philippin* or filipin* or thai* or Vietnam* or tuvalu or ellice islands).tw |
| | 9 | 7 OR 8 |
| Final search | 10 | 5 AND 6 AND 9 |

**Table S2.3 Extracted results of included articles (N=29)**

| Author, year | Exposure | Outcome | Measure of effect | Model 1: Adjusted for age & sex (or minimally adjusted) | Model 2: Adjusted for adult socioeconomic position | Adjustments |
|---|---|---|---|---|---|---|
| Keetile, 2020 | Composite index of childhood SEP | Self-reported diabetes | Odds ratio | Low: 1.77<br>Middle: 1.96<br>High: 1.00 | Low 2.34<br>Middle 2.31<br>High1.00 | Model 1 is unadjusted. Model 2 is adjusted for age, sex, education, residence, work status, and current wealth status. |
| Keetile, 2020 | Composite index of childhood SEP | Self-reported hypertension | Odds ratio | Low: 0.41***<br>Middle: 0.79<br>High: 1.00 | Low: 1.53***<br>Middle: 1.07<br>High: 1.00 | |
| Camelo, 2015 | Maternal education | CIMT - males | Linear regression beta coefficient | Maternal educ >11: ref<br>Maternal educ 8-10: -0.000 (-0.018, 0.017)<br>Maternal educ 1-7: 0.004 (-0.011, 0.019)<br>Maternal educ 0: -0.005 (-0.025, 0.015) | Not shown | Model 1 adjusted for age and race. Model 2 also adjusted for first and current occupation. |
| Camelo, 2015 | Maternal education | CIMT - females | Linear regression beta coefficient | Maternal educ >11: ref<br>Maternal educ 8-10: 0.004 (-0.009, 0.017)<br>Maternal educ 1-7: 0.003 (-0.008, 0.014)<br>Maternal educ 0: 0.024 (0.009, 0.040) | Maternal educ >11: ref<br>Maternal educ 8-10: -0.002 (-0.015, 0.011)<br>Maternal educ 1-7: -0.006 (-0.018, 0.005)<br>Maternal educ 0: 0.008 (-0.009, 0.025) | |
| Guimaraes, 2016 | Trajectory between parental and own occupational social class (index based on education, occupation and income) | CIMT | Linear regression beta coefficient | - | Stable high: 0 (ref)<br>Upward: 0.006 (0.26)<br>Downward: 0.011 (0.04)<br>Stable low: 0.018 (0.004) | Age, sex, race, centre, marital status, family history of CHD |
| Coelho, 2019 | Maternal education | carotid-femoral pulse wave velocity - whites | Linear regression beta coefficient | high school: 0 (ref)<br>elementary complete: 0.02 (-0.08; 0.12)<br>elementary incomplete: | high school: 0 (ref)<br>elementary complete: -0.06 (-0.15; 0.03)<br>elementary incomplete: 0.05 | Model 1 adjusted for age and sex. Model 2 adjusted for own education, smoking, physical activity, |

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|---|---|---|---|---|---|---|
| | | | | 0.15 (0.06;0.22)**<br>No school: 0.27 (0.14;0.41)*** | (-0.03; 0.13)<br>No school: 0.01 (-0.12; 0.15) | body weight, height, arterial pressure, heart rate, use of anti-hypertensives, diabetes |
| Coelho, 2019 | Maternal education | carotid-femoral pulse wave velocity - browns | Linear regression beta coefficient | high school: 0 (ref)<br>elementary complete: 0.04 (-0.13; 0.21)<br>elementary incomplete: 0.33 (0.19;0.48)***<br>No school: 0.53 (0.36;0.70)*** | high school: 0 (ref)<br>elementary complete: -0.09 (-0.24; 0.06)<br>elementary incomplete: 0.08 (-0.05; 0.21)<br>No school: 0.18 (0.01;0.34)* | |
| Coelho, 2019 | Maternal education | carotid-femoral pulse wave velocity - blacks | Linear regression beta coefficient | high school: 0 (ref)<br>elementary complete: 0.24 (-0.04; 0.53)<br>elementary incomplete: 0.40 (0.15;0.66)**<br>No school: 0.56 (0.28;0.85)*** | high school: 0 (ref)<br>elementary complete: 0.24 (-0.01; 0.49)<br>elementary incomplete: 0.35 (0.13;0.57)**<br>No school: 0.44 (0.18;0.70)** | |
| Camelo, 2016 | Trajectory based on parents' and own education | Diabetes - men | Odds ratio | - | High-stable: 1 (ref)<br>Upwards: 1.11 (0.87-1.41)<br>Downward: 1.58 (1.20-2.08)**<br>low-stable: 1.80 (1.47-2.21)*** | Age and race |
| Camelo, 2016 | Trajectory based on parents' and own education | Diabetes - women | Odds ratio | - | High-stable: 1 (ref)<br>Upwards: 1.15 (0.89, 1.47)<br>Downward: 1.53 (1.14, 2.06)**<br>low-stable: 1.71 (1.36, 2.15)*** | |
| Camelo, 2016 | Trajectory based on parents' and own occupation | Diabetes - men | Odds ratio | - | High-stable: 1 (ref)<br>Upwards: 1.29 (1.03-1.62)*<br>Downward: 1.59 (1.14-2.20)**<br>low-stable: 2.10 (1.70-2.60)*** | |

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|---|---|---|---|---|---|---|
| Camelo, 2016 | Trajectory based on parents' and own occupation | Diabetes - women | Odds ratio | - | High-stable: 1 (ref)<br>Upwards: 1.09 (0.85, 1.41)<br>Downward: 1.28 (0.93, 1.75)<br>low-stable: 1.64 (1.30, 2.06)*** | |
| De Sousa Andrade, 2017 | Maternal education | CVD risk score (arithmetic mean ratio; how much great CVD risk score is compared to reference category) | Linear regression beta coefficient | >11 years: 1 (ref)<br>8-10 years: 1.36 (1.26–1.46)***<br>1-7 years: 1.43 (1.33–1.53)***<br>0 years: 1.88 (1.73–2.03)*** | >11 years: 1 (ref)<br>8-10 years: 1.27 (1.16–1.39)***<br>1-7 years: 1.26 (1.16–1.36)***<br>0 years: 1.40 (1.27–1.54) *** | Model 1 is unadjusted. Model 2 is adjusted for leg length, social class of first occupation and education |
| Lopez, 2017 | Maternal education (high vs low (ref)) | SBP | Linear regression beta coefficient | -1.946 (-2.561, -1.332) | -0.752 (-1.377, -0.126) | Model 1 is adjusted for age, sex, ethnicity and use of antihypertensive medication. Model 2 is also adjusted for own education, smoking and alcohol status, physical activity, waist circumference and change of weight since when 20y |
| Nishida, 2020 | Maternal education (below/above median for age) | Hypertension | Odds ratio | p=0.863 | Low: 1 (ref)<br>High: 1.04 (0.78, 1.39), p=0.775 | Model 1 only presented stratified proportions. Model 2 is from logistic regression models adjusted for adult income tertile. |
| Nishida, 2020 | Paternal education (below/above median for age) | Hypertension | Odds ratio | p=0.888 | Low: 1 (ref)<br>High: 1.09 (0.82, 1.45), p=0.564 | |
| Horta, 2008 | Maternal education | SBP - men | Linear regression beta coefficient | 12+ years: 0 (ref)<br>9-11 years: 0.54 (−1.92;3.00)<br>5-8 years: −0.85 (−2.74;1.03)<br>0-4 years: −0.15 (−2.11;1.80)<br>p value: 0.49 | 12+ years: 0 (ref)<br>9-11 years: 0.29 (−2.37;2.95)<br>5-8 years: −1.23 (−3.56;1.10)<br>0-4 years: −0.64 (−3.15;1.87)<br>p value: 0.45 | Model 1 is unadjusted. Model 2 is adjusted for skin colour and family income at birth |

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|---|---|---|---|---|---|---|
| Horta, 2008 | Maternal education | SBP - women | Linear regression beta coefficient | 12+ years: 0 (ref)<br>9-11 years: −0.41 (−2.66;1.84)<br>5-8 years: −0.72 (−2.46;1.01)<br>0-4 years: −0.92 (−2.71;0.87)<br>p value: 0.30 | 12+ years: 0 (ref)<br>9-11 years: −1.24 (−3.64;1.16)<br>5-8 years: −1.96 (−4.13;0.20)<br>0-4 years: −2.40 (−4.73;-0.07)<br>p value: 0.05 | |
| Horta, 2008 | Maternal education | DBP - men | Linear regression beta coefficient | 12+ years: 0 (ref)<br>9-11 years: 0.21 (−1.79;2.20)<br>5-8 years: −0.68 (−2.21;0.85)<br>0-4 years: −0.30 (−1.88;1.29)<br>p value: 0.57 | 12+ years: 0 (ref)<br>9-11 years: 0.27 (−1.89;2.43)<br>5-8 years: −0.65 (−2.54;1.25)<br>0-4 years: −0.40 (−2.44;1.64)<br>p value: 0.59 | |
| Horta, 2008 | Maternal education | DBP - women | Linear regression beta coefficient | 12+ years: 0 (ref)<br>9-11 years: −0.23 (−2.09;1.63)<br>5-8 years: −0.94 (−2.38;0.50)<br>0-4 years: −1.53 (−3.01;-0.04)<br>p value: 0.02 | 12+ years: 0 (ref)<br>9-11 years: −0.67 (−2.66;1.32)<br>5-8 years: −1.46 (−3.26;0.34)<br>0-4 years: −2.11 (−4.05;-0.18)<br>p value: 0.02 | |
| Horta, 2008 | Family income at birth (minimum wages) | SBP - men | Linear regression beta coefficient | >10: 0 (ref)<br>6.1-10: 1.42 (−2.13;4.98)<br>3.1-6: 0.21 (−2.68;3.11)<br>1.1-3: 0.65 (−2.03;3.34)<br><1: 0.14 (−2.74;3.02)<br>p value: 0.87 | >10: 0 (ref)<br>6.1-10: 1.51 (−2.08;5.09)<br>3.1-6: 0.59 (−2.56;3.75)<br>1.1-3: 0.98 (−2.20;4.16)<br><1: 0.18 (−3.28;3.63)<br>p value: 0.80 | Model 1 is unadjusted. Model 2 is adjusted for skin colour and maternal education |
| Horta, 2008 | Family income at birth (minimum wages) | SBP - women | Linear regression beta coefficient | >10: 0 (ref)<br>6.1-10: −0.25 (−3.53;3.03)<br>3.1-6: 0.52 (−2.14;3.19)<br>1.1-3: 0.70 (−1.76;3.15)<br><1: 0.49 (−2.15;3.13)<br>p value: 0.55 | >10: 0 (ref)<br>6.1-10:0.21 (−3.12;3.54)<br>3.1-6: 1.44 (−1.46;4.35)<br>1.1-3: 2.03 (−0.93;4.99)<br><1: 1.82 (−1.41;5.04)<br>p value: 0.36 | |

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|---|---|---|---|---|---|---|
| Horta, 2008 | Family income at birth (minimum wages) | DBP - men | Linear regression beta coefficient | >10: 0 (ref)<br>6.1-10: 2.89 (0.02;5.77)<br>3.1-6: 0.31 (−2.03;2.66)<br>1.1-3: 0.59 (−1.59;2.76)<br><1: 0.90 (−1.43;3.23)<br>p value: 0.55 | >10: 0 (ref)<br>6.1-10: 2.93 (0.02;5.83)<br>3.1-6: 0.52 (−2.04;3.08)<br>1.1-3: 0.85 (−1.73;3.43)<br><1: 1.07 (−1.73;3.88)<br>p value: 0.27 | |
| Horta, 2008 | Family income at birth (minimum wages) | DBP - women | Linear regression beta coefficient | >10: 0 (ref)<br>6.1-10: −0.41 (−3.13;2.30)<br>3.1-6: 0.88 (−1.33;3.08)<br>1.1-3: −0.29 (−2.32;1.75)<br><1: −0.08 (−2.27;2.11)<br>p value: 0.49 | >10: 0 (ref)<br>6.1-10: −0.04 (−2.80;2.72)<br>3.1-6: 1.68 (−0.72;4.09)<br>1.1-3: 1.02 (−1.43;3.48)<br><1: 1.45 (−1.23;4.13)<br>p value: 0.36 | |
| Figueiredo, 2007 | Household income tertile at birth | Triglycerides - men | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: 2.33 (-10.31, 14.99)<br>Low: -2.06 (-15.00, 10.88)<br>p trend: NS | High: 0 (ref)<br>Intermediate: 6.95 (-6.93, 20.83)<br>Low: 5.46 (-9.30, 20.22)<br>p trend: NS | Model 1 is unadjusted. Model 2 is adjusted for income tertile in adulthood. |
| Figueiredo, 2007 | Household income tertile at birth | Triglycerides - women | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -4.70 (-12.87, 3.47)<br>Low: -4.81 (-12.75, 3.13)<br>p trend: NS | High: 0 (ref)<br>Intermediate: -5.19 (-14.21, 3.82)<br>Low: -2.91 (-12.43, 6.61)<br>p trend: NS | |
| Figueiredo, 2007 | Household income tertile at birth | Total cholesterol - men | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -5.52 (-11.81, 0.78)<br>Low: -11.85 (-18.29, -5.41)<br>p trend: <0.01 | High: 0 (ref)<br>Intermediate: -2.69 (-9.50, 4.11)<br>Low: -8.68 (-15.92, -1.44)<br>p trend: NS | |
| Figueiredo, 2007 | Household income tertile at birth | Total cholesterol - women | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -3.76 (-9.58, 2.05)<br>Low: -4.25 (-9.90, 1.40)<br>p trend: NS | High: 0 (ref)<br>Intermediate: -3.00 (-9.29, 3.29)<br>Low: -1.38 (-8.02, 5.25)<br>p trend: NS | |
| Figueiredo, 2007 | Household income tertile at birth | LDL - men | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -3.02 (-8.46, 2.43) | High: 0 (ref)<br>Intermediate: -1.22 (-7.10, 4.66) | |

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|---|---|---|---|---|---|---|
| | | | | Low: -10.26 (-15.83, -4.70)<br>p trend: <0.01 | Low: -9.23 (-15.49, -2.97)<br>p trend: <0.01 | |
| Figueiredo, 2007 | Household income tertile at birth | LDL - women | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: 2.02 (-2.89, 6.94)<br>Low: 2.15 (-2.62, 6.93)<br>p trend: NS | High: 0 (ref)<br>Intermediate: 1.03 (-4.27, 6.32)<br>Low: 1.68 (-3.91, 7.27)<br>p trend: NS | |
| Figueiredo, 2007 | Household income tertile at birth | HDL - men | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -2.64 (-4.38, -0.90)<br>Low: -0.92 (-2.69, 0.86)<br>p trend: <0.01 | High: 0 (ref)<br>Intermediate: -2.42 (-4.29, -0.56)<br>Low: -0.21 (-2.20, 1.77)<br>p trend: <0.05 | |
| Figueiredo, 2007 | Household income tertile at birth | HDL - women | Linear regression beta coefficient | High: 0 (ref)<br>Intermediate: -4.80 (-7.04, -2.54)<br>Low: -5.52 (-7.70, -3.35)<br>p trend: <0.001 | High: 0 (ref)<br>Intermediate: -2.94 (-5.33, -0.55)<br>Low: -2.59 (-5.11, -0.06)<br>p trend: <0.05 | |
| Elwell-Sutton, 2011 | Household assets in childhood (low vs high base) | Metabolic syndrome - all | Odds ratio | 1.16 (1.07, 1.26)* | 1.06 (0.98, 1.16) | Model 1 is adjusted for age and sex. Model 2 includes 3 other SEP indicators (education, longest occupation, income) |
| Elwell-Sutton, 2011 | Household assets in childhood (low vs high base) | Metabolic syndrome - males | Odds ratio | 0.89 (0.74, 1.07) | 0.92 (0.76, 1.11) | |
| Elwell-Sutton, 2011 | Household assets in childhood (low vs high base) | Metabolic syndrome - females | Odds ratio | 1.23 (1.12, 1.34)* | 1.09 (0.996, 1.20) | |
| Schooling, 2008 | Household assets in childhood | Metabolic syndrome - males | Odds ratio | 0 items: 1<br>1 or 2 items: 1.09 (0.79, 1.52)<br>3 items: 1.21 (0.85, 1.73)<br>p trend: 0.27 | 0 items: 1<br>1 or 2 items: 1.04 (0.75, 1.46)<br>3 items: 1.13 (0.79, 1.62)<br>p trend: 0.52 | Model 1 adjusted for age. Model 2 adjusted for height, smoking, alcohol drinking, physical activity, education and occupation. |
| Schooling, 2008 | Household assets in childhood | Metabolic syndrome - females | Odds ratio | 0 items: 1<br>1 or 2 items: 0.76 (0.64, 0.89) | 0 items: 1<br>1 or 2 items: 0.82 (0.70, 0.97) | |

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| | | | | 3 items: 0.72 (0.60, 0.86)<br>p trend: <0.001 | 3 items: 0.81 (0.67, 0.98)<br>p trend: 0.01 | |
| Schooling, 2008 | Household assets in childhood | SBP - males | Linear regression beta coefficient | p trend: <0.01 (inverse) | 0 items: 0<br>1 or 2 items: 1.17, -0.94 to 3.28<br>3 items: -0.69, -2.87 to 1.48<br>p trend: 0.83 | Model 1 is unadjusted (means not effect sizes given). Model 2 is adjusted for height, smoking, alcohol drinking, physical activity, education and occupation. |
| Schooling, 2008 | Household assets in childhood | SBP - females | Linear regression beta coefficient | p trend: <0.01 (inverse) | 0 items: 0<br>1 or 2 items: -1.13, -2.34 to 0.08<br>3 items: -0.71, -2.01 to 0.60<br>p trend: 0.15 | |
| Schooling, 2008 | Household assets in childhood | DBP - males | Linear regression beta coefficient | p trend: 0.01 (direct) | 0 items: 0<br>1 or 2 items: 0.14, -1.00 to 1.28<br>3 items: 0.82, -0.39 to 2.04<br>p trend: 0.21 | |
| Schooling, 2008 | Household assets in childhood | DBP - females | Linear regression beta coefficient | p trend: 0.82 | 0 items: 0<br>1 or 2 items: -0.52, -1.17 to 0.13<br>3 items: 0.05, -0.63 to 0.74<br>p trend: 0.79 | |
| Schooling, 2008 | Household assets in childhood | Fasting glucose - males | Linear regression beta coefficient | p trend: 0.71 | 0 items: 0<br>1 or 2 items: 0.01, -0.14 to 0.16<br>3 items: 0.04, -0.12 to 0.20<br>p trend: 0.63 | |
| Schooling, 2008 | Household assets in childhood | Fasting glucose - females | Linear regression beta coefficient | p trend: <0.01 (inverse) | 0 items: 0<br>1 or 2 items: -0.04 (-0.14, 0.06)<br>3 items: -0.08 (-0.18, 0.02)<br>p trend: 0.11 | |
| Schooling, 2008 | Household assets in childhood | HDL - males | Linear regression beta coefficient | p trend: <0.01 (inverse) | 0 items: 0<br>1 or 2 items: -0.05, -0.09 to -0.01 | |

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|---|---|---|---|---|---|---|
| | | | | | 3 items: -0.07, -0.12 to -0.03<br>p trend: <0.01 | |
| Schooling, 2008 | Household assets in childhood | HDL - females | Linear regression beta coefficient | p trend: 0.58 | 0 items: 0<br>1 or 2 items: -0.01, -0.04 to 0.02<br>3 items: -0.01, -0.04 to 0.02<br>p trend: 0.38 | |
| Schooling, 2008 | Household assets in childhood | Triglycerides - males | Linear regression beta coefficient | p trend: 0.01 (direct) | 0 items: 0<br>1 or 2 items: 0.01, -0.12 to 0.14<br>3 items: 0.08, -0.07 to 0.22<br>p trend: 0.34 | |
| Schooling, 2008 | Household assets in childhood | Triglycerides - females | Linear regression beta coefficient | p trend: 0.35 | 0 items: 0<br>1 or 2 items: -0.03, -0.11 to 0.05<br>3 items: 0.02, -0.07 to 0.11<br>p trend: 0.77 | |
| Fan, 2010 | Parents' education | Prevalent CHD | Odds ratio | - | ≤ Primary school (ref.): 1<br>Secondary school: 0.629, 0.276–1.431<br>≥ College: 1.074, 0.574–2.011 | Maternal age, birth times, pregnancy times, and gestational duration, birth-weight/birth length, placental weight, milk consumption, regular physical exercise in the 5-year period preceding the study, diabetes, obesity, hypertension, and dyslipidaemia, age, gender, ratio of birth-weight to birth length |
| Fan, 2010 | Father's occupation | Prevalent CHD | Odds ratio | - | Worker (ref): 1<br>Manager: 1.098, 0.473–2.547<br>Academic: 0.782, 0.345–1.773<br>Servant: 1.010, 0.440–2.319 | |
| McEniry, 2019 | Subjective poor SEP in childhood (poor vs not poor (ref)) | Self-reported heart disease | Odds ratio | 1.03 (0.93–1.14) | 1.02 (0.92–1.13) | Model 1 adjusted for age only. Model 2 adjusted for education, wealth, current residence, age at displacement, childhood family violence, childhood |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | rheumatic fever, childhood poor health, childhood hunger |
| Addo, 2009 | Number of household assets in childhood | Hypertension | Odds ratio | 0: 1<br>1-2: 0.9 (0.58, 1.38)<br>3-4: 1.00 (0.7, 1.44)<br>5: 1.38 (0.85, 2.23)<br>p-trend: 0.33 | 0: 1<br>1-2: 0.83 (0.53, 1.29)<br>3-4: 0.86 (0.59, 1.25)<br>5: 1.20 (0.73, 2.00)<br>p-trend: 0.91 | Mode 1 is age and sex adjusted. Model 2 is also adjusted for current assets, employment and education |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | SBP | Linear regression beta coefficient | −0.139 (−0.562, 0.284), p=0.52 | −0.698 (−1.165, −0.232), p=0.003 | Model 1 is adjusted for age, sex and study. Model 2 is also adjusted for current asset index, occupation and urban/rural. |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | DBP | Linear regression beta coefficient | 0.040 (−0.275, 0.355), p=0.805 | −0.564 (−0.912, −0.216), p=0.001 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | Total cholesterol | Linear regression beta coefficient | 0.072 (0.041, 0.102), p<0.001 | 0.006 (−0.026, 0.039), p=0.712 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | LDL cholesterol | Linear regression beta coefficient | 0.055 (0.027, 0.083), p<0.001 | −0.010 (−0.040, 0.020), p=0.525 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | Triglycerides | Linear regression beta coefficient | 0.018 (0.005, 0.032), p=0.009 | −0.009 (−0.024, 0.005), p=0.212 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | Fasting glucose | Linear regression beta coefficient | 0.015 (0.009, 0.020), p<0.001 | 0.004 (−0.002, 0.009), p=0.174 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | Insulin | Linear regression beta coefficient | 0.094 (0.068, 0.120), p<0.001 | 0.021 (−0.006, 0.048), p=0.134 | |
| Mallinson, 2020 | Household assets in childhood (per SD increase) | HOMA | Linear regression beta coefficient | 0.109 (0.082, 0.137), p<0.001 | 0.025 (−0.004, 0.054), p=0.089 | |
| Sovio, 2013 | Household assets in childhood (high vs low) | SBP - males | Linear regression beta coefficient | 1.2 [0.1, 2.2], p=0.027 | 0.8 [−0.2, 1.9], p=0.068 | Model 1 adjusted for age with random effect term for sibling pair and factory |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sovio, 2013 | Household assets in childhood (high vs low) | SBP - females | Linear regression beta coefficient | −1.1 [−2.4, 0.1], p=0.084 | −1.1 [−2.4, 0.2], p=0.62 | site. Model 2 also adjusted for adult SEP (binary asset index) |
| Sovio, 2013 | Household assets in childhood (high vs low) | HOMA (% difference) - males | Linear regression beta coefficient | 19.4 [12.3, 27.0], p<0.001 | 10.4 [3.6, 17.7], p=0.002 | |
| Sovio, 2013 | Household assets in childhood (high vs low) | HOMA (% difference) - females | Linear regression beta coefficient | 5.7 [−1.6, 13.5], p=0.129 | 2.1 [−5.1, 9.9], p=0.57 | |
| Samuel, 2012 | Paternal education | High TC:HDL ratio | Odds ratio | Urban men: p=0.3<br>Urban women: p=0.36<br>Rural men: p=0.02 (direct)<br>Rural women: p=0.96 | None: 1 (ref)<br>1-8 years: 1.0 (0.8, 1.3)<br>9-12 years: 1.2 (0.8, 1.7)<br>12+ years: 0.6 (0.3, 1.4) | Model 1 unadjusted (only stratified prevalences shown). Model 2 adjusted for sex, urban residence, physical activity, occupation, household asset score, education |
| Samuel, 2012 | Paternal education | High triglycerides | Odds ratio | Urban men: p=0.58<br>Urban women: p=0.04 (inverse/U)<br>Rural men: p=0.27<br>Rural women: p=0.13 | None: 1 (ref)<br>1-8 years: 0.9 (0.7, 1.3)<br>9-12 years: 0.9 (0.6, 1.4)<br>12+ years: 0.9 (0.3, 2.3) | |
| Samuel, 2012 | Paternal education | Hypertension | Odds ratio | Urban men: p=0.23<br>Urban women: p=0.76<br>Rural men: p=0.08<br>Rural women: p=0.74 | None: 1 (ref)<br>1-8 years: 1.1 (0.6, 2.3)<br>9-12 years: 1.2 (0.5, 3.1)<br>12+ years: 2.5 (0.5, 10.2) | |
| Samuel, 2012 | Paternal education | Diabetes/IGT/TFG | Odds ratio | Urban men: p=0.69<br>Urban women: p=0.71<br>Rural men: p=0.77<br>Rural women: p=0.01 (direct) | None: 1 (ref)<br>1-8 years: 1.0 (0.8, 1.2)<br>9-12 years: 0.9 (0.6, 1.3)<br>12+ years: 0.8 (0.4, 1.7) | |
| Peele, 2019 | No toilet age 12 | Self-reported hypertension | Odds ratio | 0.91 (0.91, 1.02) | 0.97 (0.86, 1.10) | Model 1 adjusted for age, age squared, sex, marital status, urban residence, childhood hunger and childhood infectious disease. Model 2 also adjusted for education and household expenditure. |
| Peele, 2019 | No books age 12 | Self-reported hypertension | Odds ratio | 1.20 (0.99, 1.45) | 1.29 (1.06, 1.57) | |
| Peele, 2019 | Overcrowding age 12 | Self-reported hypertension | Odds ratio | 1.13 (0.98, 1.31) | 1.16 (1.00, 1.34) | |
| Peele, 2019 | No toilet age 12 | Self-reported diabetes | Odds ratio | 0.88 (0.71, 1.08) | 1.05 (0.84, 1.30) | |

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|---|---|---|---|---|---|---|
| Peele, 2019 | No books age 12 | Self-reported diabetes | Odds ratio | 0.94 (0.69, 1.27) | 1.13 (0.83, 1.55) | |
| Peele, 2019 | Overcrowding age 12 | Self-reported diabetes | Odds ratio | 0.88 (0.67, 1.16) | 0.95 (0.72, 1.25) | |
| Ferguson, 2010 | Parental education | Metabolic syndrome | Odds ratio | No association (data not shown) | - | Model results not shown, just means by parental education group and p trends. Results for metabolic syndrome not shown at all. |
| Ferguson, 2010 | Parental education | High blood pressure | Odds ratio | No association (data not shown) | - | |
| Ferguson, 2010 | Parental education | Impaired fasting glucose | Odds ratio | No association (data not shown) | - | |
| Ferguson, 2010 | Parental education | Low HDL | Odds ratio | No association (data not shown) | - | |
| Ferguson, 2010 | Parental education | High triglycerides | Odds ratio | No association (data not shown) | - | |
| Ferguson, 2015 | Maternal occupation | SBP - males | Linear regression beta coefficient | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 3.14 (-0.40, 6.69)<br>Unemployed: 2.62 (-0.18, 5.43)<br>Housewife: 2.25 (-0.63, 5.13) | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 3.67 (0.49, 6.85)*<br>Unemployed: 4.81 (1.99, 7.64)**<br>Housewife: 3.37 (0.64, 6.11)* | Model 1 is unadjusted. Model 2 is adjusted for age, height, BMI, birth weight, and maternal age at childbirth |
| Ferguson, 2015 | Maternal occupation | SBP - females | Linear regression beta coefficient | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 2.09 (-0.46, 4.64)<br>Unemployed: 2.07 (-0.17, 4.31)<br>Housewife: 2.16 (-0.18, 4.50) | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 1.81 (-0.65, 4.29)<br>Unemployed: 2.10 (-0.37, 4.39)<br>Housewife: 1.85 (-0.57, 4.26) | |
| Ferguson, 2015 | Maternal occupation | DBP - males | Linear regression beta coefficient | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 1.62 (-1.71, 4.96)<br>Unemployed: 0.86 (-1.78, 3.50)<br>Housewife: 3.42 (0.71, 6.13)* | No association (not shown) | |

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|---|---|---|---|---|---|---|
| Ferguson, 2015 | Maternal occupation | DBP - females | Linear regression beta coefficient | Highly skilled/skilled: ref<br>Semiskilled/unskilled: 0.45 (-2.22, 3.13)<br>Unemployed: -0.96 (-3.31, 1.38)<br>Housewife: 1.54 (-0.91, 4.00) | No association (not shown) | |
| Carrillo-Vega, 2019 | No shoes during childhood | Incident self-reported diabetes (vs none) | Odds ratio | - | 1.47 (1.16, 1.86), p<0.01 | Age, sex, marital status, education, perceived economic status, health service provider, local of control, smoking, alcohol drinking, BMI, perceived health, help needed walking, help needed bathing, help needed eating, help needed using toilet, help needed getting into bed, the other childhood SEP measure, not enough money for food in past 2 years, household food shortage, previous diagnosis of: hypertension, cancer, heart attack, respiratory failure, stroke, depression. |
| Carrillo-Vega, 2019 | Went to bed hungry during childhood | Incident self-reported diabetes (vs none) | Odds ratio | - | 0.97 (0.77, 1.22), p=0.81 | |
| Carrillo-Vega, 2019 | No shoes during childhood | Prevalent self-reported diabetes (vs none) | Odds ratio | - | 0.88 (0.76, 1.01), p=0.07 | |
| Carrillo-Vega, 2019 | Went to bed hungry during childhood | Prevalent self-reported diabetes (vs none) | Odds ratio | - | 1.11 (0.98, 1.26), p=0.12 | |
| Kohler, 2005 | Maternal education | Self-reported diabetes | Odds ratio | Some elementary (vs none): 1.082 (se 0.079)<br>Completed elementary (vs not): 0.814* (se 0.094)<br>More than elementary (vs not): 0.581*** (se 0.115) | Some elementary (vs none): 1.008 (se 0.094)<br>Completed elementary (vs not): 0.763* (se 0.121)<br>More than elementary (vs not): 0.594** (se 0.141) | Model 1 adjusted for age, age-squared and sex.<br>Model 2 also adjusted for education, urban residence, marital status, overweight status. |
| Kohler, 2005 | Paternal education | Self-reported diabetes | Odds ratio | Some elementary (vs none): 1.031 (se 0.073)<br>Completed elementary | Some elementary (vs none): 1.024 (se 0.094)<br>Completed elementary (vs | |

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|---|---|---|---|---|---|---|
| | | | | (vs not): 0.943 (se 0.102)<br>More than elementary (vs not): 0.854 (se 0.114) | not): 1.205 (se 0.178)<br>More than elementary (vs not): 1.283 (se 0.229) | |
| Kohler, 2005 | Had toilet before age 10 | Self-reported diabetes | Odds ratio | 0.791** (se 0.062) | 0.803** (se 0.072) | |
| Kohler, 2005 | Slept in kitchen before age 10 | Self-reported diabetes | Odds ratio | 1.005 (se 0.087) | 0.969 (se 0.093) | |
| Kohler, 2005 | Went to bed hungry before age 10 | Self-reported diabetes | Odds ratio | 1.028 (se 0.077) | 0.718*** (se 0.086) | |
| Kohler, 2005 | Dropped out of school for financial reasons before age 10 | Self-reported diabetes | Odds ratio | 1.157** (se 0.079) | 1.125 (se 0.086) | |
| Kohler, 2005 | Wore shoes regularly before age 10 | Self-reported diabetes | Odds ratio | 1.180* (se 0.104) | 1.292*** (se 0.125) | |
| Kohler, 2005 | Family received help because of economic problems before age 10 | Self-reported diabetes | Odds ratio | 0.900 (0.113) | 0.880 (se 0.112) | |
| Beltran-Sanchez, 2011 | Had toilet at age 12 (vs didn't) | Hypertension - males | Odds ratio | 0.89 | 1.04 | Model 1 is unadjusted. Model 2 is adjusted for age, education, born in city, stunted, overweight status |
| Beltran-Sanchez, 2011 | Had toilet at age 12 (vs didn't) | Hypertension - females | Odds ratio | 0.54*** | 0.77** | |
| Palloni, 2006 | Subjective poor SEP in childhood (poor vs not poor (ref)) | Heart disease | Odds ratio | - | Brazil: 1.43, p=0.052<br>Chile: 1.03, p=0.855<br>Cuba: 0.98, p=0.886<br>Mexico: 1.16, p=0.594<br>Uruguay: 1.25, p=0.249 | Gender, age, education, obesity, height and self-reported child health |
| Palloni, 2006 | Subjective poor SEP in childhood (poor vs not poor (ref)) | Self-reported diabetes | Odds ratio | - | Brazil: 1.39, p=0.077<br>Chile: 0.80, p=0.386<br>Cuba: 0.83, p=0.327<br>Mexico: 1.19, p=0.351<br>Uruguay: 0.56, p=0.029 | |

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| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Diabetes reported - men | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 3.12 (1.93-5.02)<br>Increasing: 1.57 (0.28-8.78)<br>Stable high: 4.82 (2.07-11.2) | Age, marital status, country, rural/urban residence, health status and socioeconomic status |
| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Diabetes reported- women | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 1.00 (0.59-1.70)<br>Increasing: 0.85 (0.30-2.43)<br>Stable high: 0.81 (0.34-1.91) | |
| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Hypertension reported - men | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 1.33 (0.99-1.81)<br>Increasing: 0.90 (0.23-3.64)<br>Stable high: 3.42 (1.85-6.32) | |
| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Hypertension reported - women | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 0.99 (0.75-1.33)<br>Increasing: 0.62 (0.34-1.13)<br>Stable high: 0.83 (0.54-1.27) | |
| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Hypertension measured - men | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 0.98 (0.71-1.35)<br>Increasing: 0.42 (0.15-1.18)<br>Stable high: 1.17 (0.72-1.92) | |
| Ogunsina, 2018 | Trajectory mother's and own education (both primary completed or not) | Hypertension measured - women | Odds ratio | - | Stable low: 1 (ref)<br>Declining: 0.92 (0.71-1.19)<br>Increasing: 1.35 (0.55-3.34)<br>Stable high: 0.78 (0.52-1.18) | |
| Vagero, 2005 | Self-reported poverty in childhood (yes vs no) | Symptoms of heart disease - men | Odds ratio | - | 2.06 (1.50–2.83) | Age, education and marital status |
| Vagero, 2005 | Self-reported poverty in childhood (yes vs no) | Symptoms of heart disease - women | Odds ratio | - | 1.78 (1.32–2.39) | |
| Kagura, 2016 | Household asset score in infancy | SBP | Linear regression beta coefficient | - | 0.55, −0.46 to 1.55, p=0.285 | Sex, current height, age, and SEP trajectory between infancy and 16 |
| Kagura, 2016 | Household asset score in infancy | DBP | Linear regression beta coefficient | - | −0.15, −1.01 to 0.70, p=0.726 | |

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|---|---|---|---|---|---|---|
| Kagura, 2016 | Household asset score in infancy | Hypertension | Odds ratio | - | 1.14, 0.86 to 1.52, p=0.359 | SEP trajectory between infancy and 16 |
| Naidoo, 2019 | Maternal education | Elevated blood pressure | Odds ratio | Primary: 1 (ref)<br>Secondary: 1.07, 0.83–1.37, p=0.612<br>Tertiary: 0.95, 0.60–1.51, p=0.826 | Primary: 1 (ref)<br>Secondary: 1.12, 0.86–1.44, 0.403<br>Tertiary: 0.98, 0.62–1.58, 0.958 | Model 1 is adjusted for age, sex, maternal age, and maternal parity. Model 2 is also adjusted for offspring SEP (asset score) |
| SEP is socioeconomic position; CIMT is carotid intima-media thickness; CVD is cardiovascular disease; CHD is coronary heart disease; SBP is systolic blood pressure; DBP is diastolic blood pressure; LDL is low-density lipoprotein; HDL is high-density lipoprotein; TC is total cholesterol; HOMA is homeostasis model assessment; IGT is impaired glucose tolerance; IFG is impaired fasting glucose. | | | | | | |

# Appendix 3: Supplemental data for chapter 4

**Table S3.1 Completed STROBE checklist**

| | Item No. | Recommendation | Page No. |
|---|---|---|---|
| **Title and abstract** | 1 | (*a*) Indicate the study's design with a commonly used term in the title or the abstract | 2 |
| | | (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | 2 |
| **Introduction** | | | |
| Background/ rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 4 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 4 |
| **Methods** | | | |
| Study design | 4 | Present key elements of study design early in the paper | 4 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 4 |
| Participants | 6 | (*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up<br>*Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls<br>*Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants | 4 |
| | | (*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed<br>*Case-control study*—For matched studies, give matching criteria and the number of controls per case | NA |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 5-6 |
| Data sources/ measurement | 8* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 4-5 |
| Bias | 9 | Describe any efforts to address potential sources of bias | 5-6 |
| Study size | 10 | Explain how the study size was arrived at | NA |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 6 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | 6-7 |
| | | (*b*) Describe any methods used to examine subgroups and interactions | 6-7 |
| | | (*c*) Explain how missing data were addressed | 7 |
| | | (*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed<br>*Case-control study*—If applicable, explain how matching of cases and controls was addressed | NA |

| | | | |
|---|---|---|---|
| | | *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy | |
| | | (*e*) Describe any sensitivity analyses | 8 |
| **Results** | | | |
| Participants | 13* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 8/figure 1 |
| | | (b) Give reasons for non-participation at each stage | 8/figure 1 |
| | | (c) Consider use of a flow diagram | Figure 1 |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | 7 |
| | | (b) Indicate number of participants with missing data for each variable of interest | 7, table 1 |
| | | (c) *Cohort study*—Summarise follow-up time (eg, average and total amount) | NA |
| Outcome data | 15* | *Cohort study*—Report numbers of outcome events or summary measures over time | NA |
| | | *Case-control study*—Report numbers in each exposure category, or summary measures of exposure | NA |
| | | *Cross-sectional study*—Report numbers of outcome events or summary measures | Table 1 |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | Table 2, 7-8 |
| | | (*b*) Report category boundaries when continuous variables were categorized | NA |
| | | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | NA |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | 8 |
| **Discussion** | | | |
| Key results | 18 | Summarise key results with reference to study objectives | 11 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 12-13 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 13 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 12-13 |
| **Other information** | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | 14 |

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Table S3.2 Differences between participants with complete and incomplete data on cardiovascular risk factors**

| Sociodemographic characteristics | | N (%) / mean (standard deviation) | | |
|---|---|---|---|---|
| | | Complete data (n=12,852) | Incomplete data (n=1111*) | p-value difference** |
| Study | APCAPS | 6028 (46.9%) | 868 (78.1%) | <0.001 |
| | IMS | 6824 (53.1%) | 243 (21.9%) | |
| Age | | 37.6 (12.7) | 36.6 (14.8) | 0.02 |
| Sex | Male | 7144 (55.6%) | 608 (54.7%) | 0.55 |
| | Female | 5708 (44.4%) | 503 (45.3%) | |
| Childhood household asset score | | 9.7 (5.0) | 9.0 (5.1) | 0.33 |
| Adult household asset score | | 21.1 (6.5) | 19.7 (6.0) | 0.59 |
| Adult occupation | Unskilled labour or unemployed | 2884 (22.4%) | 342 (30.8%) | 0.08 |
| | Student, retired or housewife | 4399 (34.2%) | 396 (35.6%) | |
| | Semi-skilled labour | 1518 (11.8%) | 131 (11.79%) | |
| | Skilled labour | 2110 (16.4%) | 146 (13.1%) | |
| | Professional | 1941 (15.1%) | 96 (8.6%) | |
| Adult residence | Rural | 8622 (67.1%) | 942 (84.8%) | 0.02 |
| | Urban | 4230 (32.9%) | 169 (15.2%) | |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study
*Excluding 48 participants who did not have complete data on sociodemographic characteristics
**P-values based on likelihood ratio tests from logistic regression models adjusting for study (i.e. APCAPS or IMS)

**Table S3.3 Association between standard of living index (SLI) in childhood and cardiovascular risk factors in pooled sample of IMS (2005-7) and APCAPS (2010-12) stratified by standard of living index in adulthood (above or below the median)**

| Cardiovascular risk factor | N | Low standard of living index in adulthood (adjusted for age, sex and urban residence) | | | High standard of living index in adulthood (adjusted for age, sex and urban residence) | | | P-value interaction |
|---|---|---|---|---|---|---|---|---|
| | | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | |
| Systolic blood pressure, mmHg | 13931 | -0.209 | -0.880 | 0.463 | -0.323 | -0.894 | 0.247 | 0.786 |
| Diastolic blood pressure, mmHg | 13950 | -0.445 | -0.947 | 0.058 | -0.214 | -0.640 | 0.211 | 0.466 |
| Total cholesterol, mmol/L | 13592 | 0.047 | 0.001 | 0.094 | 0.019 | -0.021 | 0.058 | 0.324 |
| LDL cholesterol, mmol/L | 12974 | 0.033 | -0.011 | 0.076 | 0.004 | -0.033 | 0.040 | 0.281 |
| Log triglycerides, mmol/L | 13144 | 0.006 | -0.016 | 0.028 | -0.006 | -0.025 | 0.012 | 0.381 |
| Log fasting glucose, mmol/L | 13224 | 0.011 | 0.003 | 0.019 | 0.005 | -0.002 | 0.011 | 0.208 |
| Log insulin, mU/L | 13231 | 0.063 | 0.023 | 0.103 | 0.039 | 0.005 | 0.072 | 0.325 |
| Log HOMA score | 13184 | 0.072 | 0.030 | 0.114 | 0.046 | 0.010 | 0.081 | 0.306 |
| Body mass index, kg/m$^2$ | 13942 | 0.430 | 0.262 | 0.599 | 0.161 | 0.019 | 0.304 | 0.010 |
| Waist circumference, mm | 13918 | 13.80 | 9.431 | 18.18 | 1.623 | -2.001 | 5.246 | <0.001 |
| Height, mm | 13942 | 7.094 | 4.300 | 9.888 | 7.308 | 4.916 | 9.701 | 0.900 |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study, SD=standard deviation, SLI=standard of living index, LDL=low-density lipoprotein, HOMA=homeostasis model assessment

**Table S3.4 Association between standard of living index (SLI) in childhood and cardiovascular risk factors in pooled sample of IMS (2005-7) and APCAPS (2010-12), stratified by sex.**

| Cardiovascular risk factor | N | Females (adjusted for age and adult socioeconomic conditions*) | | | Males (adjusted for age and adult socioeconomic conditions*) | | | P-value interaction |
|---|---|---|---|---|---|---|---|---|
| | | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | |
| Systolic blood pressure, mmHg | 13931 | -0.851 | -1.489 | -0.213 | -0.350 | -0.951 | 0.252 | 0.193 |
| Diastolic blood pressure, mmHg | 13950 | -0.558 | -1.034 | -0.083 | -0.592 | -1.043 | -0.142 | 0.906 |
| Total cholesterol, mmol/L | 13592 | -0.004 | -0.048 | 0.040 | 0.009 | -0.033 | 0.050 | 0.625 |
| LDL cholesterol, mmol/L | 12974 | -0.024 | -0.065 | 0.017 | 0.000 | -0.039 | 0.039 | 0.321 |
| Log triglycerides, mmol/L | 13144 | -0.008 | -0.028 | 0.013 | -0.015 | -0.035 | 0.004 | 0.554 |
| Log fasting glucose, mmol/L | 13224 | -0.001 | -0.008 | 0.007 | 0.004 | -0.003 | 0.011 | 0.289 |
| Log insulin, mU/L | 13231 | -0.021 | -0.058 | 0.016 | 0.043 | 0.008 | 0.078 | 0.005 |
| Log HOMA score | 13184 | -0.020 | -0.059 | 0.019 | 0.046 | 0.009 | 0.083 | 0.006 |
| Body mass index, $kg/m^2$ | 13942 | 0.206 | 0.049 | 0.363 | -0.110 | -0.259 | 0.039 | 0.001 |
| Waist circumference, mm | 13918 | -6.709 | -10.72 | -2.697 | 4.838 | 1.055 | 8.621 | <0.001 |
| Height, mm | 13942 | 5.523 | 2.882 | 8.164 | 5.396 | 2.904 | 7.887 | 0.935 |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study, SD=standard deviation, SLI=standard of living index, LDL=low-density lipoprotein, HOMA=homeostasis model assessment

*Adult standard of living index (linear and quadratic term), adult occupation (categorical) and adult urban or rural residence (binary)

**Table S3.5 Association between standard of living index (SLI) in childhood and cardiovascular risk factors in pooled sample of IMS (2005-7) and APCAPS (2010-12), stratified by study (APCAPS or IMS).**

| Cardiovascular risk factor | N | APCAPS (adjusted for age, sex and adult socioeconomic conditions*) | | | IMS (adjusted for age, sex and adult socioeconomic conditions*) | | | P-value interaction |
|---|---|---|---|---|---|---|---|---|
| | | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | |
| Systolic blood pressure, mmHg | 13931 | -0.199 | -0.961 | 0.564 | -0.938 | -1.718 | -0.158 | 0.224 |
| Diastolic blood pressure, mmHg | 13950 | -0.294 | -0.864 | 0.275 | -0.853 | -1.434 | -0.272 | 0.216 |
| Total cholesterol, mmol/L | 13592 | -0.035 | -0.088 | 0.017 | 0.039 | -0.015 | 0.094 | 0.077 |
| LDL cholesterol, mmol/L | 12974 | -0.030 | -0.079 | 0.020 | 0.006 | -0.043 | 0.055 | 0.364 |
| Log triglycerides, mmol/L | 13144 | -0.028 | -0.054 | -0.003 | 0.003 | -0.021 | 0.027 | 0.108 |
| Log fasting glucose, mmol/L | 13224 | -0.010 | -0.019 | -0.001 | 0.012 | 0.003 | 0.021 | 0.002 |
| Log insulin, mU/L | 13231 | -0.010 | -0.055 | 0.036 | 0.037 | -0.008 | 0.081 | 0.190 |
| Log HOMA score | 13184 | -0.018 | -0.066 | 0.029 | 0.048 | 0.001 | 0.095 | 0.078 |
| Body mass index, $kg/m^2$ | 13942 | -0.317 | -0.506 | -0.128 | 0.368 | 0.173 | 0.564 | <0.001 |
| Waist circumference, mm | 13918 | -9.505 | -14.34 | -4.673 | 8.682 | 3.747 | 13.616 | <0.001 |
| Height, mm | 13942 | 6.328 | 3.204 | 9.452 | 4.599 | 1.297 | 7.900 | 0.494 |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study, SD=standard deviation, SLI=standard of living index, LDL=low-density lipoprotein, HOMA=homeostasis model assessment

*Adult standard of living index (linear and quadratic term), adult occupation (categorical) and adult urban or rural residence (binary)

**Table S3.6 Association between standard of living index (SLI) in childhood and cardiovascular risk factors in pooled sample of IMS (2005-7) and APCAPS (2010-12), not accounting for measurement error in childhood standard of living index.**

| | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + adult socioeconomic conditions* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Cardiovascular risk factor | N | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | p-value | N | β-coefficient for 1 SD change in childhood SLI | Lower confidence limit | Upper confidence limit | p-value |
| Systolic blood pressure, mmHg | 13943 | -0.169 | -0.456 | 0.118 | 0.248 | 13931 | -0.512 | -0.826 | -0.198 | 0.001 |
| Diastolic blood pressure, mmHg | 13962 | -0.049 | -0.263 | 0.165 | 0.653 | 13950 | -0.444 | -0.678 | -0.210 | <0.001 |
| Total cholesterol, mmol/L | 13604 | 0.041 | 0.021 | 0.062 | <0.001 | 13592 | -0.001 | -0.023 | 0.021 | 0.947 |
| LDL cholesterol, mmol/L | 12984 | 0.029 | 0.010 | 0.048 | 0.003 | 12974 | -0.013 | -0.033 | 0.008 | 0.217 |
| Log triglycerides, mmol/L | 13154 | 0.011 | 0.002 | 0.020 | 0.021 | 13144 | -0.007 | -0.018 | 0.003 | 0.146 |
| Log fasting glucose, mmol/L | 13235 | 0.009 | 0.006 | 0.012 | <0.001 | 13224 | 0.002 | -0.001 | 0.006 | 0.196 |
| Log insulin, mU/L | 13242 | 0.060 | 0.042 | 0.077 | <0.001 | 13231 | 0.011 | -0.008 | 0.029 | 0.266 |
| Log HOMA score | 13195 | 0.069 | 0.051 | 0.087 | <0.001 | 13184 | 0.013 | -0.006 | 0.033 | 0.183 |
| Body mass index, kg/m$^2$ | 13954 | 0.515 | 0.440 | 0.590 | <0.001 | 13942 | 0.045 | -0.033 | 0.123 | 0.258 |
| Waist circumference, mm | 13930 | 12.48 | 10.59 | 14.37 | <0.001 | 13918 | -0.034 | -2.017 | 1.948 | 0.973 |
| Height, mm | 13954 | 5.530 | 4.303 | 6.758 | <0.001 | 13942 | 3.060 | 1.757 | 4.364 | <0.001 |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study, SD=standard deviation, SLI=standard of living index, LDL=low-density lipoprotein, HOMA=homeostasis model assessment

*Adult standard of living index (linear and quadratic terms), adult occupation (categorical) and adult urban or rural residence (binary)

**Table S3.7: Association between standard of living index (SLI) in adulthood and cardiovascular risk factors in pooled sample of IMS (2005-7) and APCAPS (2010-12)**

| Cardiovascular risk factor | N | β-coefficient for 1 SD change in adult SLI | Lower confidence limit | Upper confidence limit | p-value |
|---|---|---|---|---|---|
| Systolic blood pressure, mmHg | 13931 | 0.120 | 0.074 | 0.165 | <0.001 |
| Diastolic blood pressure, mmHg | 13950 | 0.133 | 0.099 | 0.167 | <0.001 |
| Total cholesterol, mmol/L | 13592 | 0.015 | 0.012 | 0.018 | <0.001 |
| LDL cholesterol, mmol/L | 12974 | 0.014 | 0.011 | 0.017 | <0.001 |
| Log triglycerides, mmol/L | 13144 | 0.006 | 0.005 | 0.008 | <0.001 |
| Log fasting glucose, mmol/L | 13224 | 0.002 | 0.002 | 0.003 | <0.001 |
| Log insulin, mU/L | 13231 | 0.018 | 0.016 | 0.021 | <0.001 |
| Log HOMA score | 13184 | 0.021 | 0.018 | 0.023 | <0.001 |
| Body mass index, $kg/m^2$ | 13942 | 0.172 | 0.161 | 0.184 | <0.001 |
| Waist circumference, mm | 13918 | 4.405 | 4.116 | 4.693 | <0.001 |
| Height, mm | 13942 | 0.915 | 0.729 | 1.100 | <0.001 |

APCAPS=Andhra Pradesh Children and Parents' Study, IMS=Indian Migration Study, SD=standard deviation, SLI=standard of living index, LDL=low-density lipoprotein, HOMA=homeostasis model assessment
Model adjusted for age, sex, childhood SLI and study, with family-level random intercept.

# Appendix 4: Supplemental data for chapter 5

**Table S4.1 Completed STROBE checklist**

| | Item No | Recommendation | Paragraph |
|---|---|---|---|
| **Title and abstract** | 1 | (*a*) Indicate the study's design with a commonly used term in the title or the abstract | Abstract |
| | | (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | Abstract |
| **Introduction** | | | |
| Background/ rationale | 2 | Explain the scientific background and rationale for the investigation being reported | Introduction Para 1-2 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | Introduction Para 3 |
| **Methods** | | | |
| Study design | 4 | Present key elements of study design early in the paper | Methods Para 1 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | Methods Para 1 |
| Participants | 6 | (*a*) Give the eligibility criteria, and the sources and methods of selection of participants | Methods Para 1 |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | Methods Para 7-8 |
| Data sources/ measurement | 8* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | Methods Para 2-6 |
| Bias | 9 | Describe any efforts to address potential sources of bias | Methods Para 5 and 8 |
| Study size | 10 | Explain how the study size was arrived at | Methods Para 1 and 8 |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | Methods Para 2-4, 6-8 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | Methods Para 7-8 |
| | | (*b*) Describe any methods used to examine subgroups and interactions | Methods Para 8 |
| | | (*c*) Explain how missing data were addressed | Methods Para 8 |
| | | (*d*) If applicable, describe analytical methods taking account of sampling strategy | NA |
| | | (*e*) Describe any sensitivity analyses | Methods Para 8 |
| **Results** | | | |

| | | | |
|---|---|---|---|
| Participants | 13* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | Methods Para 1, Results Para 1 |
| | | (b) Give reasons for non-participation at each stage | Methods Para 1, Results Para 1 |
| | | (c) Consider use of a flow diagram | NA |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | Results Para 1 |
| | | (b) Indicate number of participants with missing data for each variable of interest | Results Para 1 and Table 1 |
| Outcome data | 15* | Report numbers of outcome events or summary measures | Results Para 2 and Table 1 |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | Results Para 3 and Figures 1-3 |
| | | (*b*) Report category boundaries when continuous variables were categorized | NA |
| | | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | NA |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | Results Para 4-5 |
| **Discussion** | | | |
| Key results | 18 | Summarise key results with reference to study objectives | Discussion Para 1 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | Discussion Para 6 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | Discussion Para 2-4, 7-8 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | Discussion Para 6 |
| **Other information** | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | Funding section |

*Give information separately for exposed and unexposed groups.

**Table S4.2 Difference between participants with complete vs incomplete data, Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Socio-demographic characteristics | | Maternal exposures | | | Paternal exposures | | | Additional clinic for subclinical cardiovascular measures | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Complete data (n=2795) | Incomplete data* (n=359) | p-value | Complete data (n=2272) | Incomplete data* (n=882) | p-value | Complete data (n=1286) | Incomplete data (n=1868) | p-value |
| Age | | 24.3 (3.8) | 24.8 (3.9) | 0.02 | 24.2 (3.7) | 24.9 (4.0) | <0.001 | 24.3 (4.0) | 24.4 (3.7) | 0.18 |
| Sex | Male | 1641 (58%) | 193 (54%) | 0.07 | 1351 (59%) | 483 (55%) | 0.02 | 786 (61%) | 1048 (56%) | 0.01 |
| | Female | 1154 (41%) | 166 (46%) | | 921 (41%) | 399 (45%) | | 500 (39%) | 820 (44%) | |
| Childhood Standard of Living Index | | 15.9 (7.6) | 15.9 (8.1) | 0.98 | 16.2 (7.6) | 15.0 (7.6) | <0.001 | 16.0 (7.7) | 15.8 (7.6) | 0.38 |
| Adult Standard of Living Index | | 29.9 (8.4) | 30.4 (9.5) | 0.28 | 30.4 (8.4) | 29.0 (8.7) | <0.001 | 29.9 (8.3) | 30.0 (8.7) | 0.72 |
| Adult occupation | Unskilled labour or unemployed | 699 (25% | 102 (28%) | | 558 (25%) | 243 (28%) | | 367 (29%) | 434 (23%) | |
| | Student, retired or housewife | 1092 (39%) | 135 (38%) | 0.28 | 900 (40%) | 327 (37%) | 0.24 | 493 (38%) | 734 (39%) | 0.001 |
| | Semi-skilled labour | 286 (10%) | 44 (12%) | | 242 (11%) | 88 (10%) | | 143 (11%) | 187 (10%) | |
| | Skilled labour | 468 (17%) | 53 (15%) | | 366 (16%) | 155 (18%) | | 190 (15%) | 331 (18%) | |
| | Professional | 250 (9%) | 25 (7%) | | 206 (9%) | 69 (8%) | | 93 (7%) | 182 (10%) | |

*Incomplete data includes participants with incomplete data for any of the main cardiovascular risk factors. All counts exclude 21 participants with incomplete data on socio-demographic characteristics.

**Table S4.3 Association between mother's childhood standard of living index (SLI) and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1317 | -0.002 | -0.012 | 0.007 | 0.622 | 1312 | 0.001 | -0.009 | 0.011 | 0.887 |
| Pulse wave velocity, m/s | 1310 | -0.012 | -0.053 | 0.030 | 0.581 | 1307 | -0.013 | -0.057 | 0.030 | 0.541 |
| Augmentation index, % | 1230 | -0.399 | -0.862 | 0.064 | 0.091 | 1227 | -0.211 | -0.693 | 0.271 | 0.391 |
| Systolic blood pressure, mmHg | 2751 | -0.088 | -0.512 | 0.335 | 0.682 | 2728 | -0.170 | -0.613 | 0.273 | 0.452 |
| Diastolic blood pressure, mmHg | 2751 | -0.026 | -0.456 | 0.404 | 0.905 | 2728 | -0.175 | -0.623 | 0.272 | 0.443 |
| Total cholesterol, mg/dL | 2666 | 0.080 | -1.427 | 1.587 | 0.917 | 2645 | -0.431 | -2.009 | 1.146 | 0.592 |
| Log HDL cholesterol, mg/dL | 2659 | 0.003 | -0.010 | 0.015 | 0.652 | 2638 | 0.007 | -0.006 | 0.020 | 0.283 |
| Log triglycerides, mg/dL | 2650 | -0.012 | -0.032 | 0.009 | 0.256 | 2629 | -0.014 | -0.036 | 0.007 | 0.193 |
| Log fasting glucose, mmol/dL | 2657 | 0.001 | -0.004 | 0.006 | 0.710 | 2637 | 0.000 | -0.005 | 0.005 | 0.996 |
| Log fasting insulin, mU/L | 2624 | 0.014 | -0.018 | 0.045 | 0.400 | 2603 | -0.002 | -0.035 | 0.031 | 0.918 |
| Log C-reactive protein, mg/L | 2660 | 0.019 | -0.035 | 0.072 | 0.497 | 2639 | 0.008 | -0.048 | 0.064 | 0.772 |
| Body mass index, kg/m$^2$ | 2744 | 0.253 | 0.103 | 0.403 | 0.001* | 2721 | 0.160 | 0.006 | 0.313 | 0.042 |
| Waist circumference, mm | 2737 | 0.534 | 0.166 | 0.901 | 0.004* | 2714 | 0.274 | -0.100 | 0.648 | 0.151 |
| Log abdominal fat mass, kg | 1344 | 0.008 | -0.027 | 0.043 | 0.657 | 1339 | -0.006 | -0.042 | 0.029 | 0.721 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD change in mother's childhood SLI.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.4 Association between father's childhood standard of living index (SLI) and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1098 | 0.004 | -0.006 | 0.014 | 0.418 | 1095 | 0.007 | -0.003 | 0.017 | 0.192 |
| Pulse wave velocity, m/s | 1084 | 0.002 | -0.040 | 0.045 | 0.924 | 1081 | 0.002 | -0.042 | 0.046 | 0.930 |
| Augmentation index, % | 1019 | -0.203 | -0.670 | 0.265 | 0.395 | 1016 | -0.062 | -0.544 | 0.420 | 0.801 |
| Systolic blood pressure, mmHg | 2240 | -0.138 | -0.614 | 0.338 | 0.569 | 2226 | -0.294 | -0.784 | 0.197 | 0.241 |
| Diastolic blood pressure, mmHg | 2240 | -0.153 | -0.633 | 0.326 | 0.531 | 2226 | -0.376 | -0.867 | 0.115 | 0.133 |
| Total cholesterol, mg/dL | 2169 | -0.611 | -2.270 | 1.048 | 0.470 | 2157 | -1.067 | -2.786 | 0.651 | 0.224 |
| Log HDL cholesterol, mg/dL | 2166 | -0.007 | -0.021 | 0.007 | 0.362 | 2154 | -0.002 | -0.017 | 0.012 | 0.744 |
| Log triglycerides, mg/dL | 2158 | -0.013 | -0.036 | 0.009 | 0.253 | 2146 | -0.014 | -0.038 | 0.009 | 0.225 |
| Log fasting glucose, mmol/dL | 2166 | 0.002 | -0.004 | 0.007 | 0.576 | 2154 | 0.001 | -0.005 | 0.007 | 0.786 |
| Log fasting insulin, mU/L | 2138 | 0.024 | -0.012 | 0.059 | 0.192 | 2126 | 0.007 | -0.029 | 0.044 | 0.693 |
| Log C-reactive protein, mg/L | 2163 | 0.037 | -0.024 | 0.097 | 0.231 | 2151 | 0.037 | -0.025 | 0.100 | 0.242 |
| Body mass index, kg/m$^2$ | 2233 | 0.094 | -0.072 | 0.259 | 0.266 | 2219 | -0.022 | -0.189 | 0.145 | 0.795 |
| Waist circumference, mm | 2227 | 0.166 | -0.237 | 0.569 | 0.420 | 2213 | -0.114 | -0.519 | 0.291 | 0.581 |
| Log abdominal fat mass, kg | 1110 | 0.022 | -0.014 | 0.059 | 0.232 | 1107 | 0.009 | -0.027 | 0.046 | 0.618 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD change in father's childhood SLI.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.5 Association between mother's height and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1396 | 0.002 | -0.007 | 0.011 | 0.654 | 1391 | 0.003 | -0.006 | 0.012 | 0.537 |
| Pulse wave velocity, m/s | 1358 | 0.032 | -0.007 | 0.072 | 0.106 | 1353 | 0.028 | -0.011 | 0.068 | 0.159 |
| Augmentation index, % | 1272 | -0.498 | -0.936 | -0.060 | 0.026 | 1267 | -0.423 | -0.863 | 0.016 | 0.059 |
| Systolic blood pressure, mmHg | 3003 | 0.342 | -0.068 | 0.753 | 0.102 | 2990 | 0.300 | -0.111 | 0.711 | 0.153 |
| Diastolic blood pressure, mmHg | 3003 | 0.487 | 0.072 | 0.902 | 0.021 | 2990 | 0.416 | 0.002 | 0.830 | 0.049 |
| Total cholesterol, mg/dL | 2913 | 0.325 | -1.146 | 1.796 | 0.665 | 2900 | 0.011 | -1.472 | 1.493 | 0.989 |
| Log HDL cholesterol, mg/dL | 2906 | 0.003 | -0.008 | 0.015 | 0.572 | 2893 | 0.005 | -0.007 | 0.017 | 0.434 |
| Log triglycerides, mg/dL | 2896 | 0.003 | -0.016 | 0.023 | 0.736 | 2884 | 0.002 | -0.018 | 0.022 | 0.842 |
| Log fasting glucose, mmol/dL | 2903 | -0.001 | -0.006 | 0.004 | 0.708 | 2890 | -0.002 | -0.006 | 0.003 | 0.548 |
| Log fasting insulin, mU/L | 2871 | 0.043 | 0.013 | 0.074 | 0.005* | 2858 | 0.035 | 0.005 | 0.066 | 0.022 |
| Log C-reactive protein, mg/L | 2906 | 0.035 | -0.017 | 0.087 | 0.187 | 2893 | 0.030 | -0.023 | 0.082 | 0.268 |
| Body mass index, kg/m$^2$ | 2996 | 0.185 | 0.041 | 0.330 | 0.012 | 2983 | 0.130 | -0.013 | 0.272 | 0.074 |
| Waist circumference, mm | 2988 | 0.979 | 0.629 | 1.329 | <0.001* | 2975 | 0.852 | 0.507 | 1.196 | <0.001* |
| Log abdominal fat mass, kg | 1428 | 0.018 | -0.015 | 0.050 | 0.286 | 1423 | 0.008 | -0.024 | 0.040 | 0.630 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD (5.4cm) change in mother's height.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.6 Association between father's height and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1165 | 0.000 | -0.009 | 0.010 | 0.932 | 1160 | 0.002 | -0.008 | 0.011 | 0.706 |
| Pulse wave velocity, m/s | 1129 | 0.004 | -0.037 | 0.046 | 0.848 | 1124 | 0.004 | -0.038 | 0.046 | 0.847 |
| Augmentation index, % | 1057 | -0.463 | -0.916 | -0.011 | 0.045 | 1052 | -0.364 | -0.822 | 0.094 | 0.120 |
| Systolic blood pressure, mmHg | 2444 | -0.063 | -0.520 | 0.395 | 0.787 | 2433 | -0.139 | -0.600 | 0.321 | 0.553 |
| Diastolic blood pressure, mmHg | 2444 | -0.025 | -0.486 | 0.435 | 0.914 | 2433 | -0.136 | -0.597 | 0.326 | 0.565 |
| Total cholesterol, mg/dL | 2365 | 2.209 | 0.612 | 3.807 | 0.007* | 2354 | 1.769 | 0.149 | 3.389 | 0.032 |
| Log HDL cholesterol, mg/dL | 2362 | 0.003 | -0.010 | 0.016 | 0.618 | 2351 | 0.005 | -0.008 | 0.018 | 0.455 |
| Log triglycerides, mg/dL | 2353 | 0.013 | -0.008 | 0.034 | 0.231 | 2342 | 0.012 | -0.009 | 0.034 | 0.266 |
| Log fasting glucose, mmol/dL | 2360 | -0.001 | -0.007 | 0.004 | 0.586 | 2349 | -0.002 | -0.007 | 0.003 | 0.428 |
| Log fasting insulin, mU/L | 2334 | 0.052 | 0.019 | 0.086 | 0.002* | 2323 | 0.040 | 0.006 | 0.074 | 0.019 |
| Log C-reactive protein, mg/L | 2358 | -0.010 | -0.068 | 0.049 | 0.748 | 2347 | -0.014 | -0.073 | 0.045 | 0.637 |
| Body mass index, kg/m$^2$ | 2436 | 0.195 | 0.037 | 0.353 | 0.015 | 2425 | 0.120 | -0.037 | 0.276 | 0.134 |
| Waist circumference, mm | 2428 | 0.874 | 0.492 | 1.256 | <0.001* | 2417 | 0.708 | 0.331 | 1.086 | <0.001* |
| Log abdominal fat mass, kg | 1181 | 0.023 | -0.012 | 0.059 | 0.200 | 1176 | 0.009 | -0.026 | 0.044 | 0.618 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD (6.3cm) change in father's height.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.7 Association between mother's leg length and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1393 | 0.004 | -0.005 | 0.013 | 0.376 | 1388 | 0.004 | -0.005 | 0.013 | 0.358 |
| Pulse wave velocity, m/s | 1357 | 0.014 | -0.025 | 0.053 | 0.477 | 1352 | 0.010 | -0.028 | 0.049 | 0.603 |
| Augmentation index, % | 1271 | -0.304 | -0.737 | 0.129 | 0.168 | 1266 | -0.271 | -0.703 | 0.161 | 0.219 |
| Systolic blood pressure, mmHg | 2995 | 0.155 | -0.254 | 0.564 | 0.458 | 2982 | 0.135 | -0.273 | 0.542 | 0.517 |
| Diastolic blood pressure, mmHg | 2995 | 0.177 | -0.236 | 0.591 | 0.400 | 2982 | 0.148 | -0.262 | 0.559 | 0.479 |
| Total cholesterol, mg/dL | 2905 | -0.196 | -1.666 | 1.275 | 0.794 | 2892 | -0.400 | -1.874 | 1.074 | 0.595 |
| Log HDL cholesterol, mg/dL | 2898 | 0.004 | -0.008 | 0.016 | 0.497 | 2885 | 0.004 | -0.008 | 0.016 | 0.481 |
| Log triglycerides, mg/dL | 2888 | -0.005 | -0.025 | 0.014 | 0.590 | 2876 | -0.007 | -0.026 | 0.013 | 0.495 |
| Log fasting glucose, mmol/dL | 2895 | 0.000 | -0.005 | 0.004 | 0.867 | 2882 | -0.001 | -0.006 | 0.004 | 0.773 |
| Log fasting insulin, mU/L | 2863 | 0.015 | -0.016 | 0.045 | 0.349 | 2850 | 0.011 | -0.019 | 0.041 | 0.469 |
| Log C-reactive protein, mg/L | 2898 | 0.006 | -0.046 | 0.058 | 0.822 | 2885 | 0.004 | -0.048 | 0.057 | 0.866 |
| Body mass index, kg/m$^2$ | 2988 | -0.044 | -0.188 | 0.100 | 0.547 | 2975 | -0.066 | -0.207 | 0.075 | 0.359 |
| Waist circumference, mm | 2980 | 0.522 | 0.170 | 0.873 | 0.004* | 2967 | 0.473 | 0.130 | 0.816 | 0.007 |
| Log abdominal fat mass, kg | 1425 | -0.001 | -0.033 | 0.031 | 0.957 | 1420 | -0.006 | -0.038 | 0.025 | 0.688 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD (3.6cm) change in mother's leg length.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.8 Association between father's leg length and cardiovascular risk of the offspring in the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | Model 1: Age- and sex-adjusted | | | | | Model 2: model 1 + offspring's childhood and adult socioeconomic conditions[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | β | Lower CI | Upper CI | p-value | N | β | Lower CI | Upper CI | p-value |
| Carotid IMT, mm | 1165 | -0.001 | -0.010 | 0.009 | 0.917 | 1160 | 0.000 | -0.009 | 0.010 | 0.928 |
| Pulse wave velocity, m/s | 1129 | 0.002 | -0.039 | 0.044 | 0.910 | 1124 | 0.002 | -0.039 | 0.044 | 0.914 |
| Augmentation index, % | 1057 | -0.237 | -0.689 | 0.214 | 0.303 | 1052 | -0.160 | -0.611 | 0.291 | 0.486 |
| Systolic blood pressure, mmHg | 2442 | -0.376 | -0.833 | 0.081 | 0.107 | 2431 | -0.388 | -0.842 | 0.067 | 0.095 |
| Diastolic blood pressure, mmHg | 2442 | -0.354 | -0.814 | 0.107 | 0.133 | 2431 | -0.379 | -0.836 | 0.078 | 0.104 |
| Total cholesterol, mg/dL | 2363 | 1.250 | -0.354 | 2.854 | 0.127 | 2352 | 1.062 | -0.546 | 2.670 | 0.195 |
| Log HDL cholesterol, mg/dL | 2360 | 0.009 | -0.004 | 0.022 | 0.172 | 2349 | 0.010 | -0.003 | 0.023 | 0.145 |
| Log triglycerides, mg/dL | 2351 | 0.001 | -0.021 | 0.022 | 0.940 | 2340 | 0.001 | -0.021 | 0.022 | 0.945 |
| Log fasting glucose, mmol/dL | 2358 | 0.000 | -0.005 | 0.005 | 0.971 | 2347 | 0.000 | -0.005 | 0.005 | 0.954 |
| Log fasting insulin, mU/L | 2332 | 0.016 | -0.017 | 0.050 | 0.342 | 2321 | 0.011 | -0.022 | 0.044 | 0.508 |
| Log C-reactive protein, mg/L | 2356 | -0.032 | -0.091 | 0.026 | 0.278 | 2345 | -0.033 | -0.092 | 0.025 | 0.265 |
| Body mass index, kg/m$^2$ | 2434 | -0.108 | -0.266 | 0.051 | 0.182 | 2423 | -0.137 | -0.292 | 0.018 | 0.083 |
| Waist circumference, mm | 2426 | 0.268 | -0.118 | 0.654 | 0.174 | 2415 | 0.201 | -0.175 | 0.577 | 0.295 |
| Log abdominal fat mass, kg | 1181 | -0.008 | -0.044 | 0.027 | 0.647 | 1176 | -0.016 | -0.051 | 0.018 | 0.348 |

IMT is intima media thickness; HDL is high-density lipoprotein. Beta coefficient represents the effect of a 1-SD (4.1cm) change in father's leg length.
[1]Childhood SLI (linear), adult standard of living index (linear) and adult occupation (categorical)
*P-value significant after accounting for multiple testing (using Benjamini Hochberg method with 5% false discovery rate)

**Table S4.9: Association between standard of living index (SLI) in adulthood and cardiovascular risk among the offspring of the Andhra Pradesh Children and Parents' Study (APCAPS), 2010-2012.**

| Cardiovascular risk factor | N | β | Lower CI | Upper CI | p-value |
|---|---|---|---|---|---|
| Carotid IMT, mm | 1467 | -0.002 | -0.012 | 0.008 | 0.713 |
| Pulse wave velocity, m/s | 1425 | 0.044 | 0.000 | 0.087 | 0.050 |
| Augmentation index, % | 1335 | -0.507 | -0.981 | -0.032 | 0.036 |
| Systolic blood pressure, mmHg | 3152 | 0.740 | 0.331 | 1.149 | <0.001 |
| Diastolic blood pressure, mmHg | 3152 | 1.085 | 0.678 | 1.492 | <0.001 |
| Total cholesterol, mg/dL | 3049 | 3.004 | 1.561 | 4.448 | <0.001 |
| Log HDL cholesterol, mg/dL | 3042 | -0.012 | -0.023 | -0.001 | 0.039 |
| Log triglycerides, mg/dL | 3032 | 0.029 | 0.009 | 0.049 | 0.005 |
| Log fasting glucose, mmol/dL | 3038 | 0.010 | 0.005 | 0.014 | <0.001 |
| Log fasting insulin, mU/L | 3005 | 0.091 | 0.060 | 0.122 | <0.001 |
| Log C-reactive protein, mg/L | 3040 | 0.060 | 0.007 | 0.113 | 0.027 |
| Body mass index, kg/m$^2$ | 3142 | 0.502 | 0.364 | 0.639 | <0.001 |
| Waist circumference, mm | 3134 | 1.402 | 1.060 | 1.744 | <0.001 |
| Log abdominal fat mass, kg | 1499 | 0.107 | 0.073 | 0.140 | <0.001 |

IMT is intima media thickness; HDL is high-density lipoprotein.
Beta coefficient represents the effect of a 1-SD change in offspring's adult SLI.
Model adjusted for offspring's age, sex and childhood SLI, with family-level random intercept.