

Appendix For Online Publication

GermS in the Family: The Short- and Long-Term Consequences of Intra-Household Disease Spread

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A Additional Details About Data Sources and Outcomes

This section provides additional details about our data sources and specific diagnosis codes.

Acute respiratory hospitalizations. We classify inpatient visits with the following primary diagnosis codes as acute respiratory disease-related: ICD-8 codes starting with “46,” “47,” “48,” “490,” “079,” and “783”; and ICD-10 codes starting with “B974” or “J” (excluding “J4”). ICD-10 codes starting with “J4” refer to chronic respiratory conditions, which we examine separately as discussed below.

Denmark used the International Classification of Disease version 8 (ICD-8) coding system until 1994, and then switched to the ICD-10 system for all years going forward. In some analyses, we use data on cohorts born in 1994 and later and examine hospitalizations for RSV specifically, which we identify with ICD-10 codes J12.1 (respiratory syncytial virus pneumonia), J20.5 (acute bronchitis due to respiratory syncytial virus), J21.0 (acute bronchiolitis due to respiratory syncytial virus), and B97.4 (respiratory syncytial virus as the cause of diseases classified elsewhere). We can only measure RSV from 1994 onward, when ICD-10 began to be used in Denmark. The ICD-8 system did not have any codes specific to RSV.

Chronic respiratory hospitalizations. We classify inpatient visits with the following primary diagnosis codes as chronic respiratory disease-related: ICD-8 codes 491–493 and ICD-10 code J4.

Mental healthcare outcomes. In Denmark, mental health care is structured through a stepped care approach, with treatment tailored to the severity of the condition. Primary care providers (PCPs) serve as the initial point of contact for most individuals seeking mental healthcare. PCPs may assess symptoms and use psychometric tests to establish a diagnosis. PCPs may prescribe medications to adults and/or refer them to specialists.³⁴ (i) psychologists in private practice, (ii) psychiatrists in private practice, and (iii) psychiatric hospitals. Indi-

³⁴PCPs generally cannot prescribe mental health medications to children. Instead, children must see specialists for their mental healthcare.

viduals with mild symptoms who meet specific criteria (e.g., experiencing particular events) typically get referred to private practice psychologists. The national health insurance system covers around 60 percent of the costs of psychotherapy treatments by psychologists. Psychiatrists in private practices typically manage moderate cases, primarily through a combination of therapy and medication treatments. Patients with severe symptoms can be treated in psychiatric hospitals, which include both specialized psychiatric facilities and psychiatric wards within general (public and private) hospitals. Treatment in these settings includes various medications, counseling, psychotherapy, and social services. The national health insurance covers all psychiatric costs.³⁵

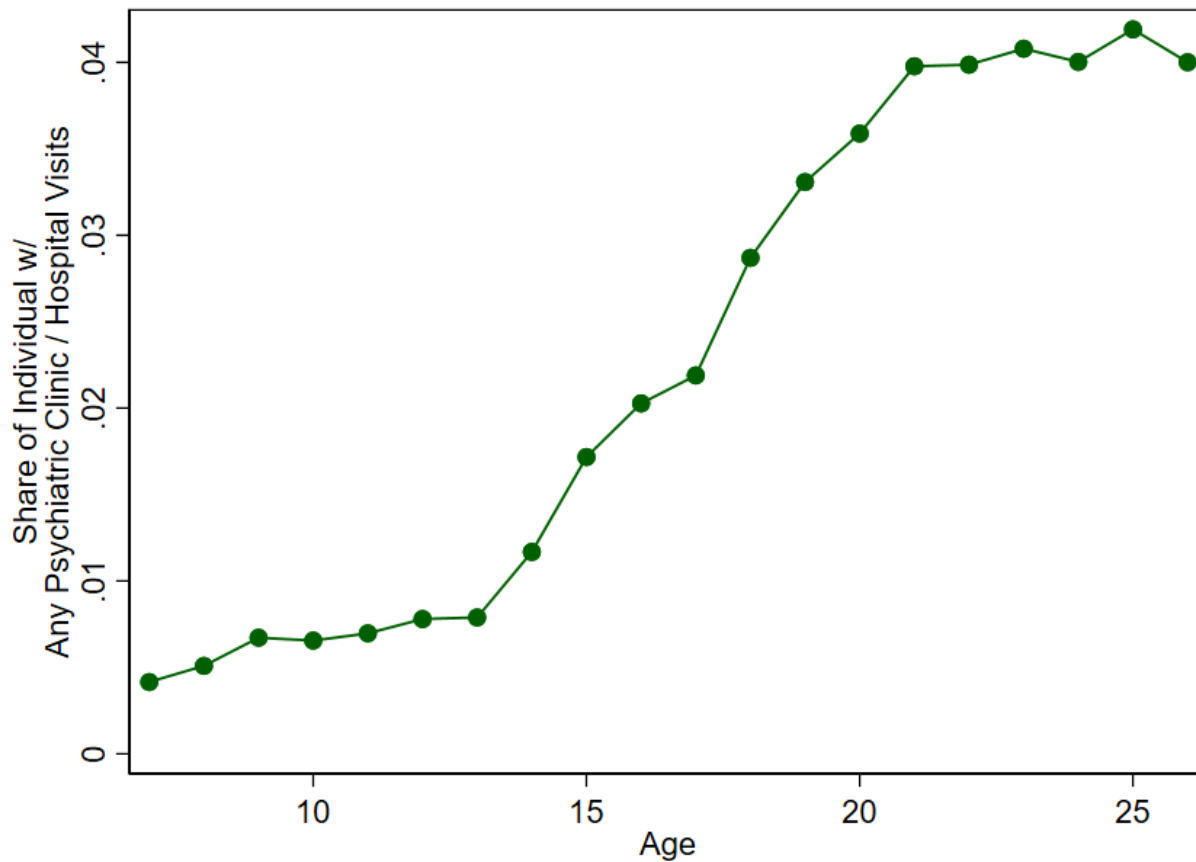
We use the *Psychiatric Central Research Register* and the *Health Insurance Register* to measure mental healthcare utilization. The former is a dataset containing all inpatient admissions, outpatient visits, and emergency department (ED) visits to psychiatric units in public and private hospitals. The latter dataset provides information on reimbursements to private practices—both general practitioners and specialists—for all health services covered by the national health insurance system.

We measure visits to psychiatric hospitals and to private psychiatric clinics using physicians' specialty codes ("24" or "26"), both at the extensive and intensive margins.

³⁵Patients can also seek care from specialists outside the national health insurance network without a referral, but in this case, they must pay the costs out of pocket. There are no data on contacts with specialists outside the national insurance network.

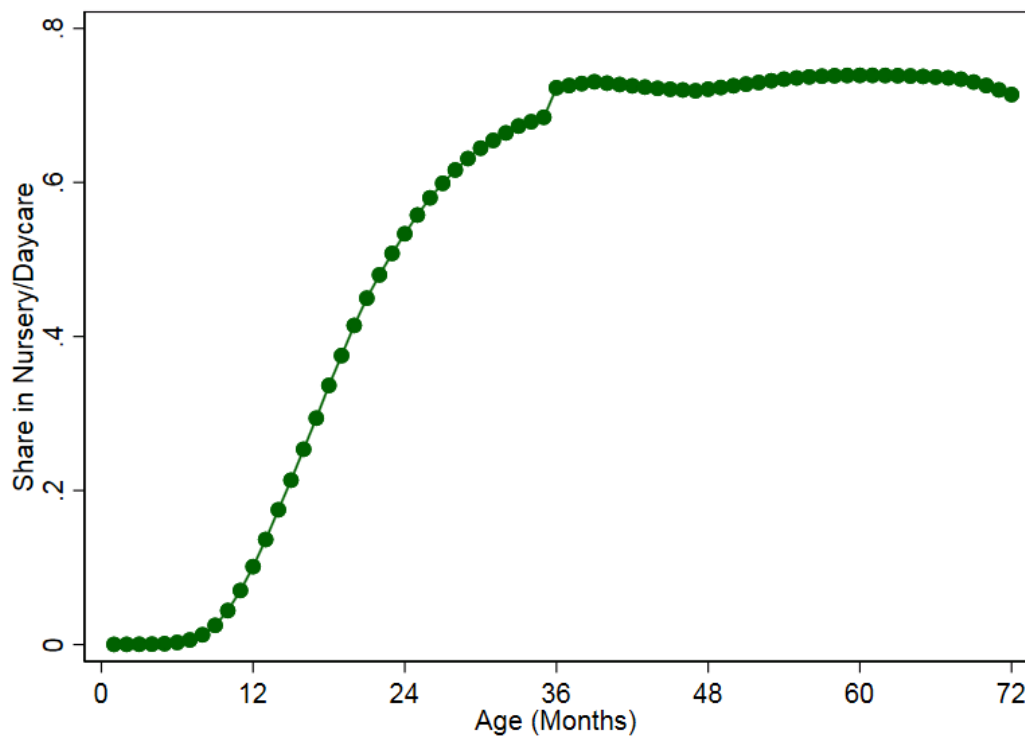
B Appendix Figures

Figure B1: Share with Any Mental Health Care Visit over Age



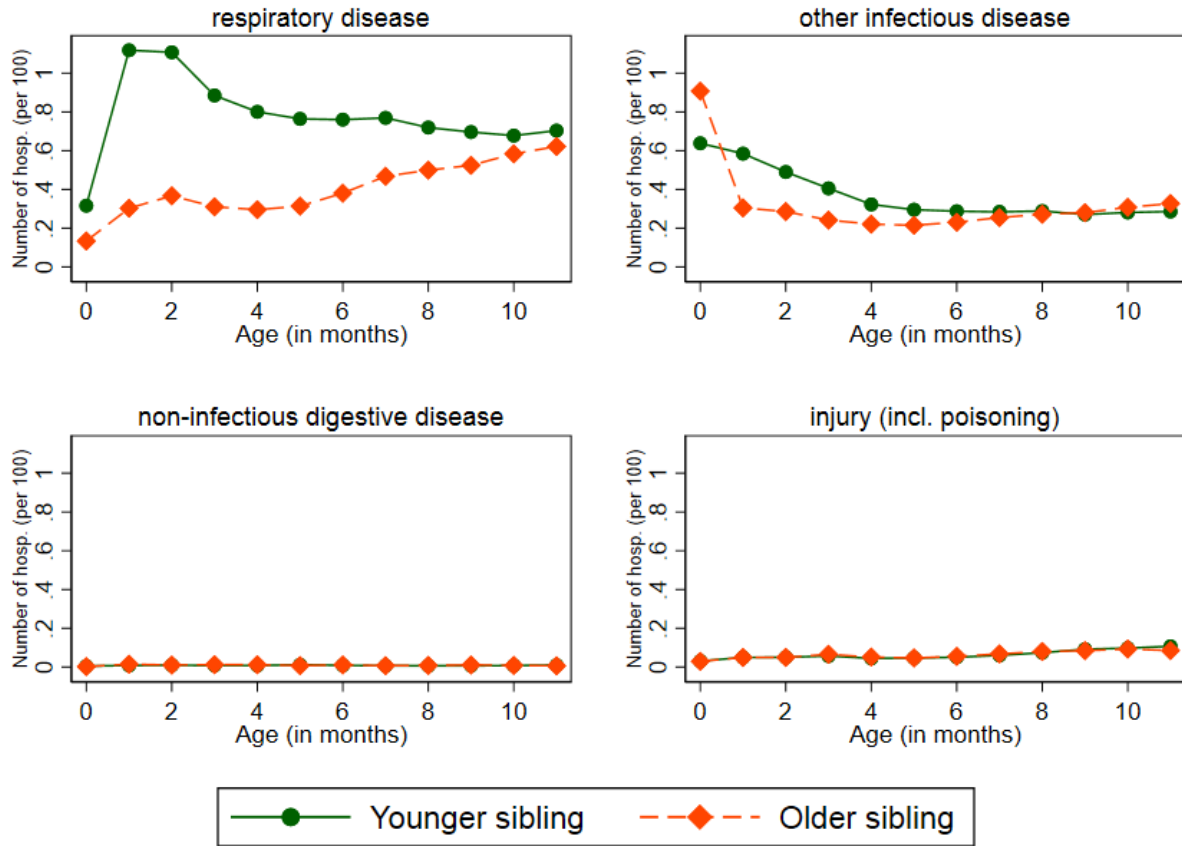
Notes: This figure shows the share of individuals in our sample with any psychiatric clinic or psychiatric hospital visit over age among cohort born in 1990.

Figure B2: Share of Children Attending Group Childcare by Child Age in Months



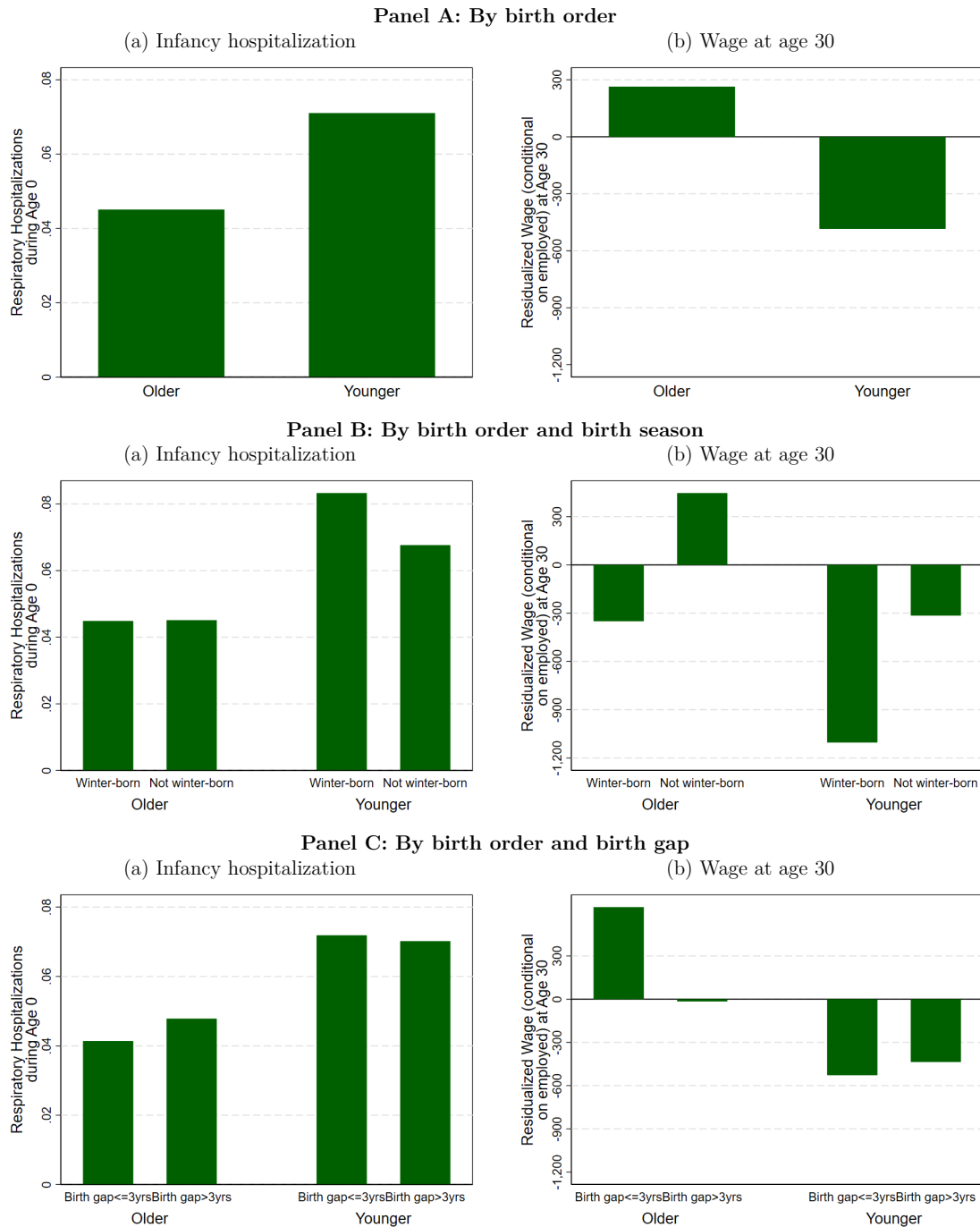
Notes: This graph shows the share of children who are attending childcare by age in months. We use data on enrollment in Danish childcare centers, which is reported annually in September of each year. This information is available to us over the period of September 1995 to September 2013.

Figure B3: Number of Hospitalizations per 100 Children, by Disease Type, Child Age in Months, Older versus Younger Siblings



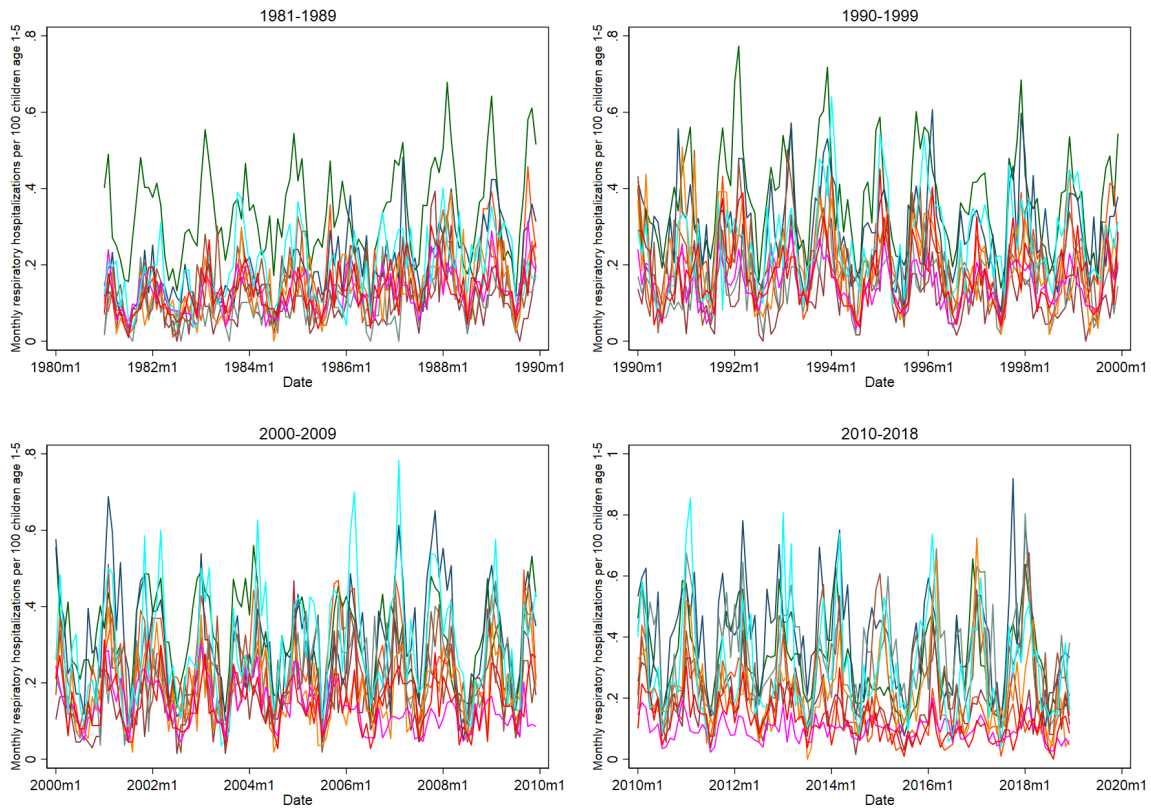
Notes: These figures plot the number of hospitalizations with different types of diagnoses (per 100 children) by month of age, separately for older and younger siblings in our data. Acute respiratory diseases are identified using ICD-8 code starting with "46", "47", "48", "490", "079", "783", and ICD-10 code starting with "J" (excluding "J4") or "B974". Intestinal infectious diseases include ICD-8 codes starting with "00" and ICD-10 codes starting with "A0". Other infectious diseases include ICD-8 codes starting with "0" (excluding "00" and "079"), "10", "11", "12", "13", "320", "323", "710", and ICD-10 codes starting with "A" (excluding "A0"), "B" (excluding "B974"), "G00"-"G05", "M00"-"M02", "P23", "P35"-"P37". Due to lack of corresponding codes in ICD-8, non-infectious digestive diseases are only identified using ICD-10 codes starting with "K50"-"K52", and injury (including poisoning) hospitalizations are identified using ICD-10 codes starting with "S" or "T". For these two types of conditions, hospitalization rates are calculated using cohorts born in or after 1993 when the diagnosis system switched to ICD-10 version.

Figure B4: Acute Respiratory Hospitalizations during the First Year of Life and Residualized Wages at Age 30



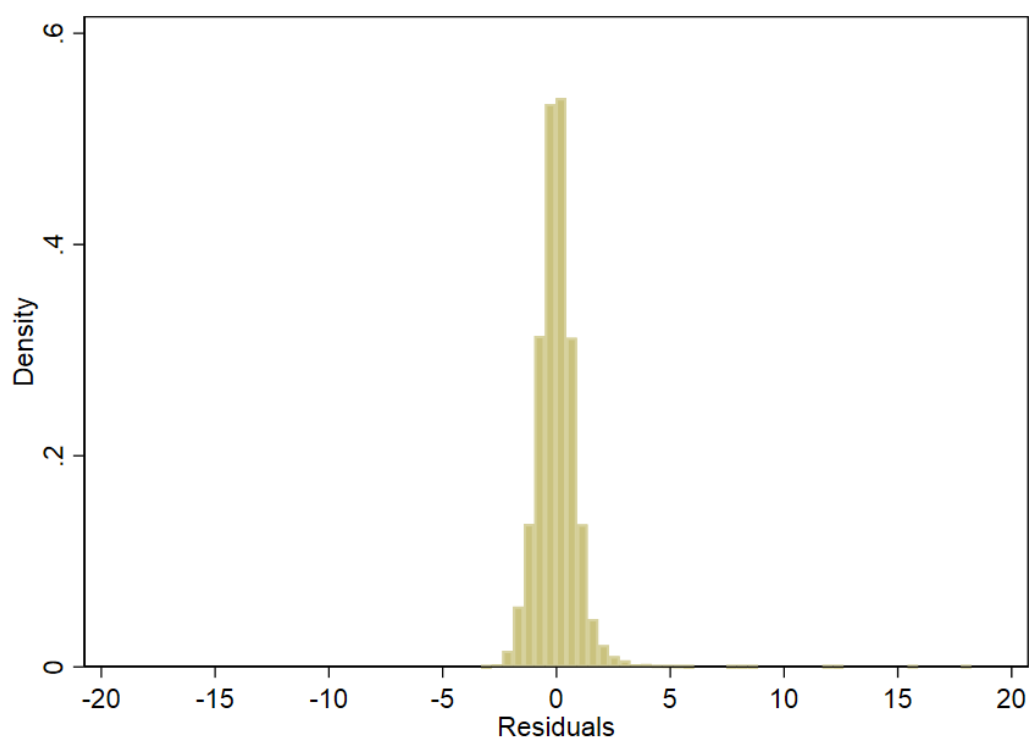
Notes: These figures plot the number of hospitalizations with acute respiratory illness diagnoses during age 0 and residualized wage income (conditional on employment) at age 30, by birth order, birth season, and birth gap. The sample includes first- and second-born sibling pairs born from 1981 to 1989. Wage income is measured at age 30 and residualized after controlling for year fixed effect. "Winter-born" refers to children born in November, December, and January.

Figure B5: Variation in the Respiratory Disease Index Over Time, 10 Largest Municipalities



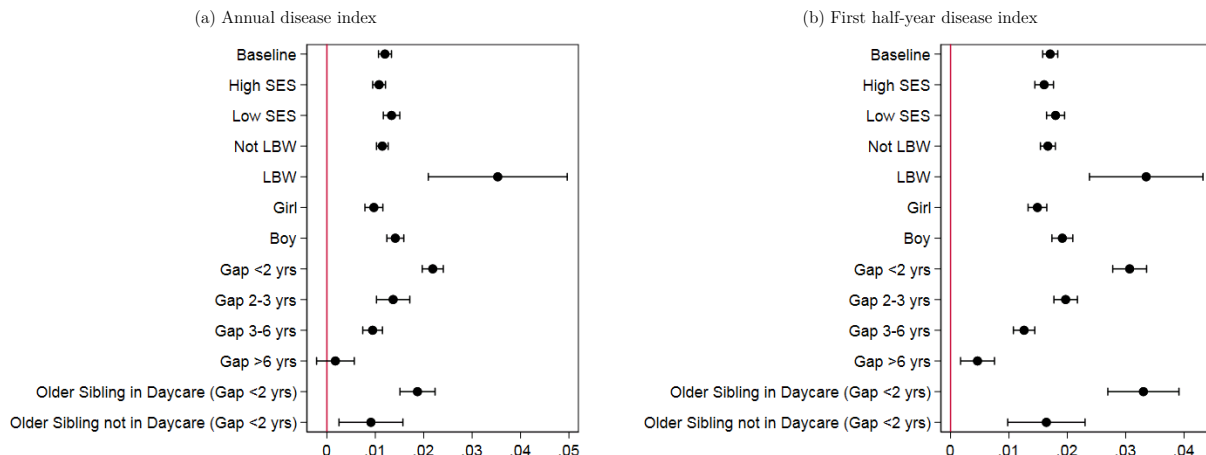
Notes: This figure shows the monthly variation in the respiratory disease index over time for each of the 10 largest municipalities (in terms of population size) in Denmark, separately for time periods of 1981-1989, 1990-1999, 2000-2009, and 2010-2018. The respiratory disease index refers to the number of acute respiratory disease hospitalizations per 100 children aged 13 to 71 months in each calendar year-month.

Figure B6: Distribution of Respiratory Disease Index Residuals from Municipality and Year-Month Fixed Effects



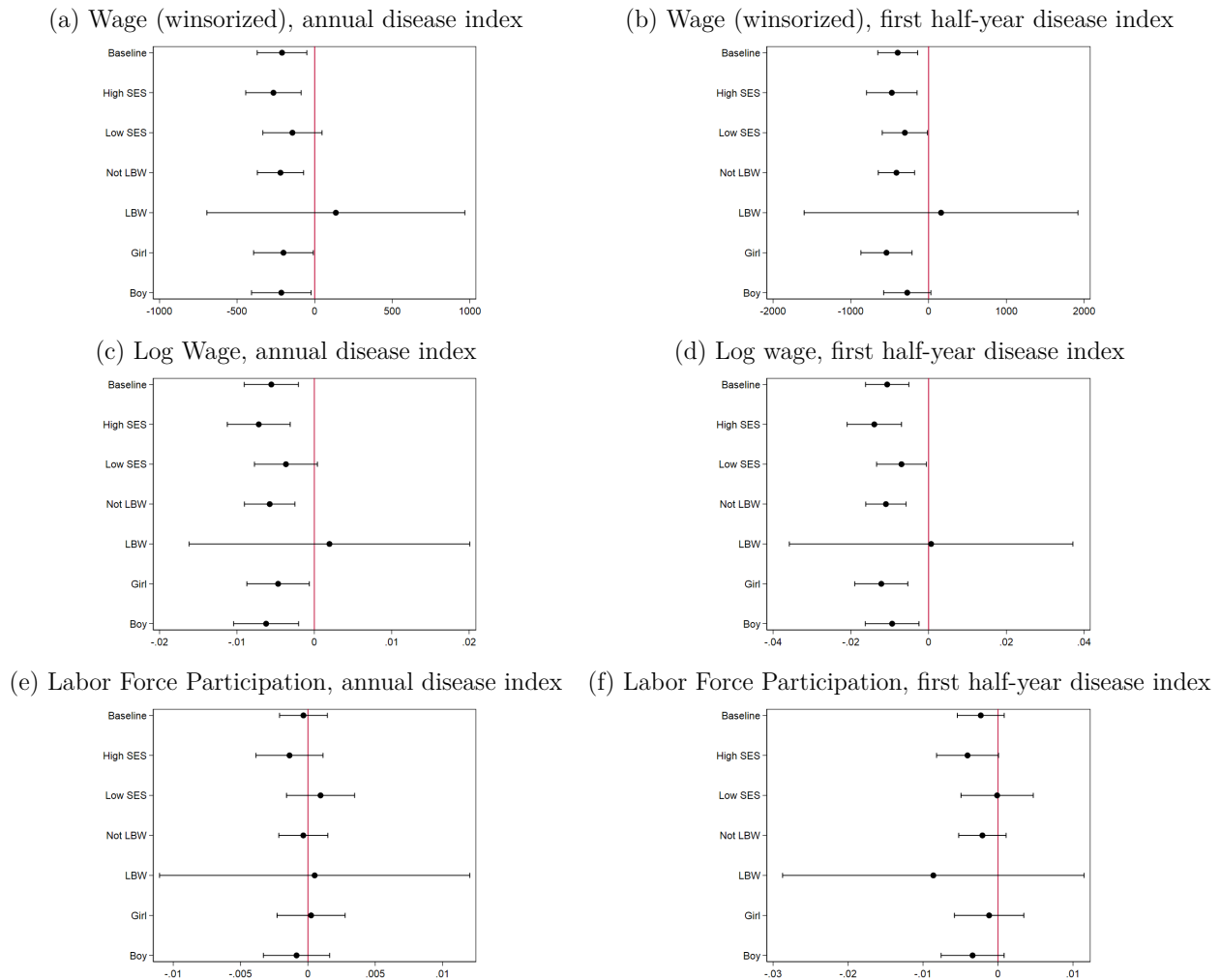
Notes: This histogram plots the residuals after regressing the respiratory disease index on municipality and year-month fixed effects. The respiratory disease index refers to the number of acute respiratory disease hospitalizations per 100 children aged 13 to 71 months in each calendar year-month.

Figure B7: Heterogeneous Effects of Respiratory Disease Exposure on the Younger Siblings' Acute Respiratory Hospitalizations



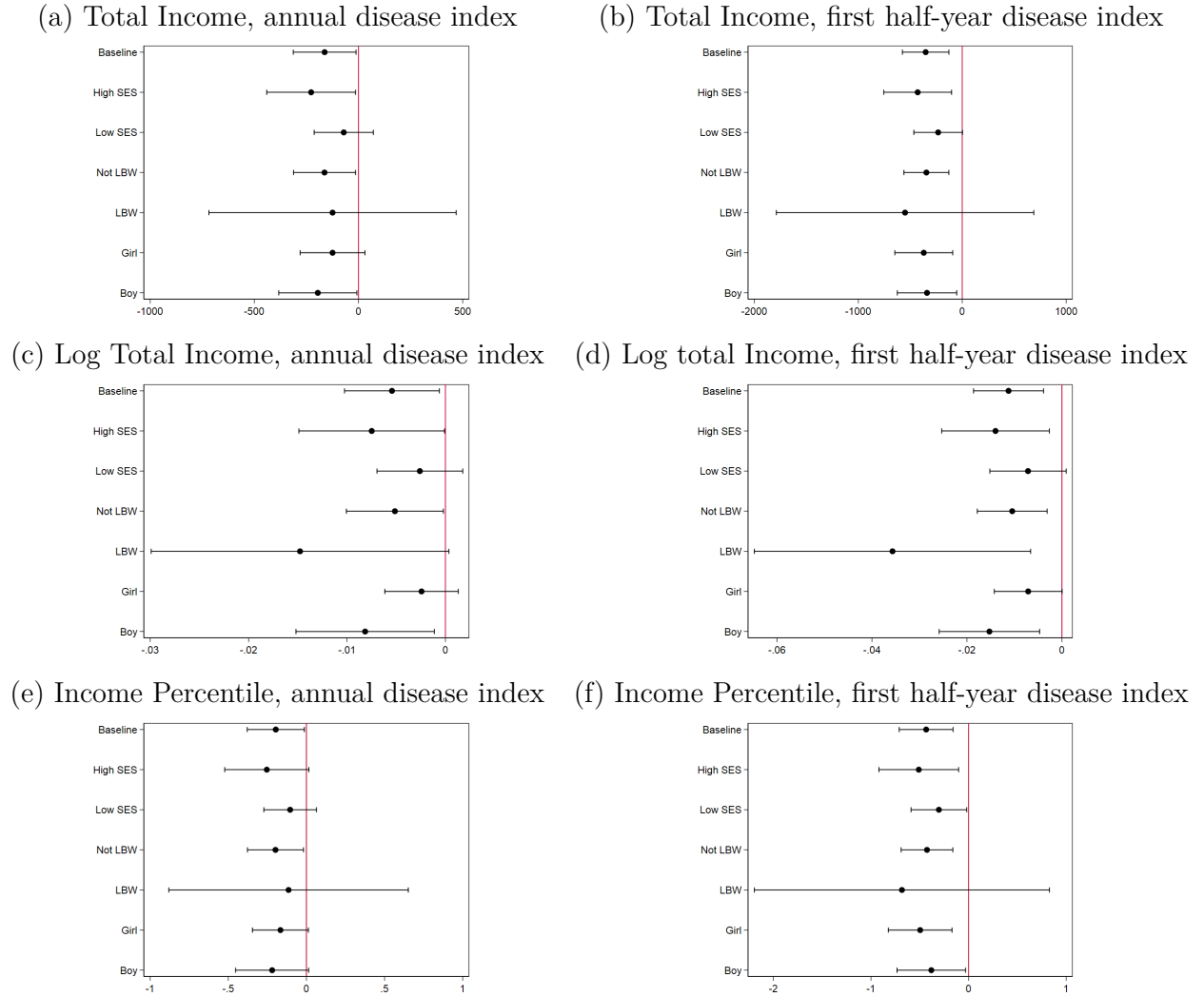
Notes: These figures explore effect heterogeneity across different sub-populations. The baseline coefficient and 95% confidence intervals are from the interaction term between the respiratory disease index and the younger sibling indicator as reported in Table 2. The respiratory disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13-71 months per 100 children in each child's municipality of birth during either the first year or first 6 months of life, excluding any hospitalizations of an older sibling. Effects by sub-groups are from 5 separate regressions: 1) high vs. low socioeconomic status, based on the mother's education level in the year of birth being above or below the median level among mothers in the same year; 2) low birth weight (LBW) status; 3) second-born child's gender; 4) birth spacing; and 5) whether the older child is in a childcare center during the first year of life of the younger child, restricting to sibling pairs born within 2 years of each other, and between September 1995 and September 2013 (the period of time covered by our childcare enrollment data). In each regression, the full set of sub-group indicators are interacted with the younger sibling indicator, the disease index, and the younger sibling indicator x disease index interaction. Coefficients and 95% confidence intervals of the triple interaction term are plotted accordingly. All regressions include municipality and birth year-month fixed effects, and family background controls. Confidence intervals are constructed from standard errors clustered on the child's municipality of birth.

Figure B8: Heterogeneous Effects of Respiratory Disease Exposure on Younger Siblings' Wage and Labor Market Participation



Notes: These figures explore effect heterogeneity across different sub-populations. The baseline coefficient and 95% confidence intervals are from the interaction term between the respiratory disease index and the younger sibling indicator as reported in Table 3. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. Outcome variables are wage income (conditional on employment, winsorized at the 1st-99th percentile) for panels (a)-(b), log wage income (conditional on employment) for panels (c)-(d), and labor force participation for panels (e)-(f). Disease index is constructed as the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13-71 months per 100 children in the municipality of birth during the first year of life in the left panel and during the first half-year of life in the right panel. Effects by subgroups are from 3 separate regressions: 1) high vs. low socioeconomic status; 2) low birth weight (LBW) status; and 3) second-born child's gender. In each regression, the full set of subgroup indicators are interacted with the younger sibling indicator, the disease index, and the younger sibling indicator $\times$ disease index interaction. Coefficients and 95% confidence intervals of the triple interaction term are plotted accordingly. All regressions include municipality, year-month of birth, and age fixed effects, and family background controls. See notes under Appendix Figure B7 for more details about the definition of each subgroups and variables used in the specification. Confidence intervals are constructed from two-way clustered standard errors at the individual and municipality of birth levels.

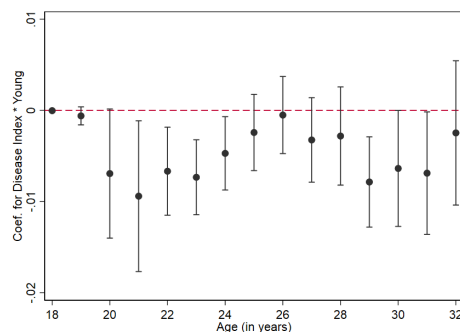
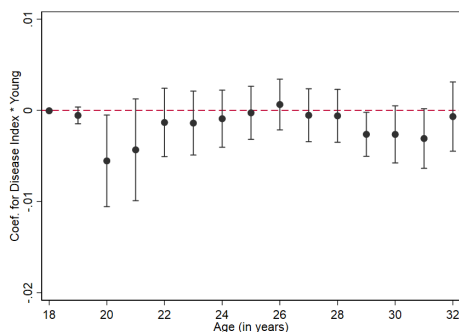
Figure B9: Heterogeneous Effects of Respiratory Disease Exposure on Younger Siblings' Income



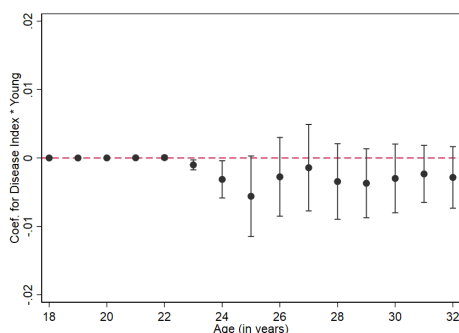
Notes: These figures explore effect heterogeneity across different sub-populations. The baseline coefficient and 95% confidence intervals are from the interaction term between the respiratory disease index and the younger sibling indicator as reported in Table 4. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. Outcome variables are total income (winsorized at the 1st-99th percentile) for panels (a)-(b), log total income for panels (c)-(d), and income percentile within in the year-age cell for panels (e)-(f). Disease index is constructed as the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13-71 months per 100 children in the municipality of birth during the first year of life in the left panel and during the first half-year of life in the right panel. Effects by subgroups are from 3 separate regressions: 1) high vs. low socioeconomic status; 2) low birth weight (LBW) status; and 3) second-born child's gender. In each regression, the full set of sub-group indicators are interacted with the younger sibling indicator, the disease index, and the younger sibling indicator $\times$ disease index interaction. Coefficients and 95% confidence intervals of the triple interaction term are plotted accordingly. All regressions include municipality, year-month of birth, and age fixed effects, and family background controls. See notes under Appendix Figure B7 for more details about the definition of each subgroups and variables used in the specification. Confidence intervals are constructed from two-way clustered standard errors at the individual and municipality of birth levels.

Figure B10: Effects of the Respiratory Disease Exposure Index on Younger Siblings' Education Outcomes, by Age of Observation

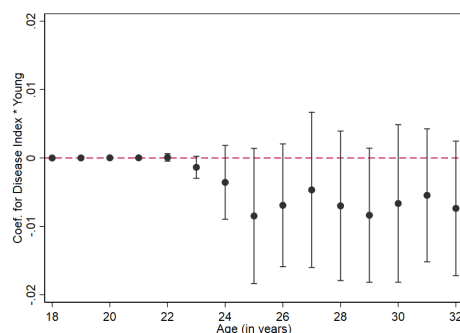
(a) High School Graduation, annual disease index (b) High School Graduation, first half-year disease index



(c) College Graduation, annual disease index

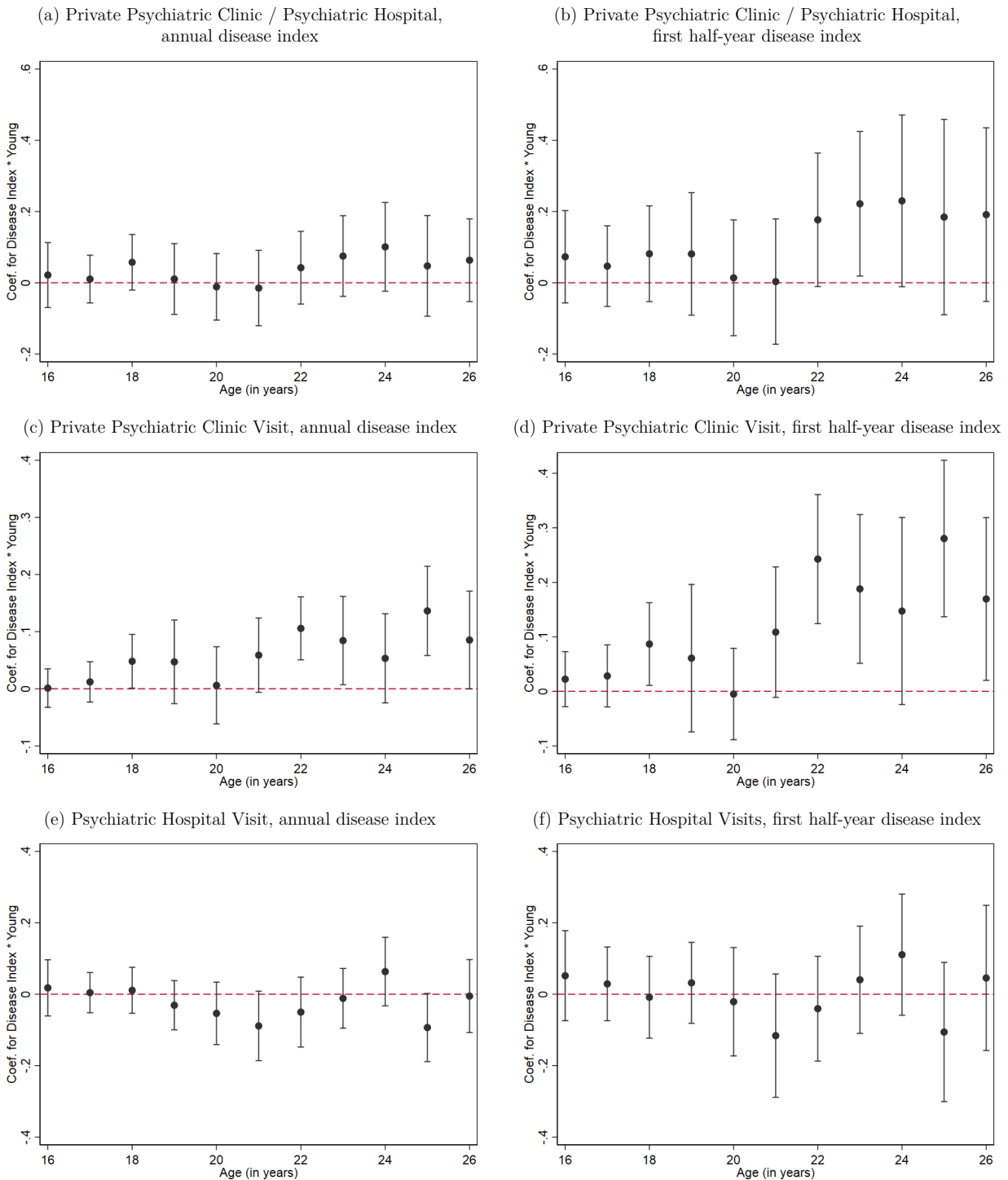


(d) College Graduation, first half-year disease index



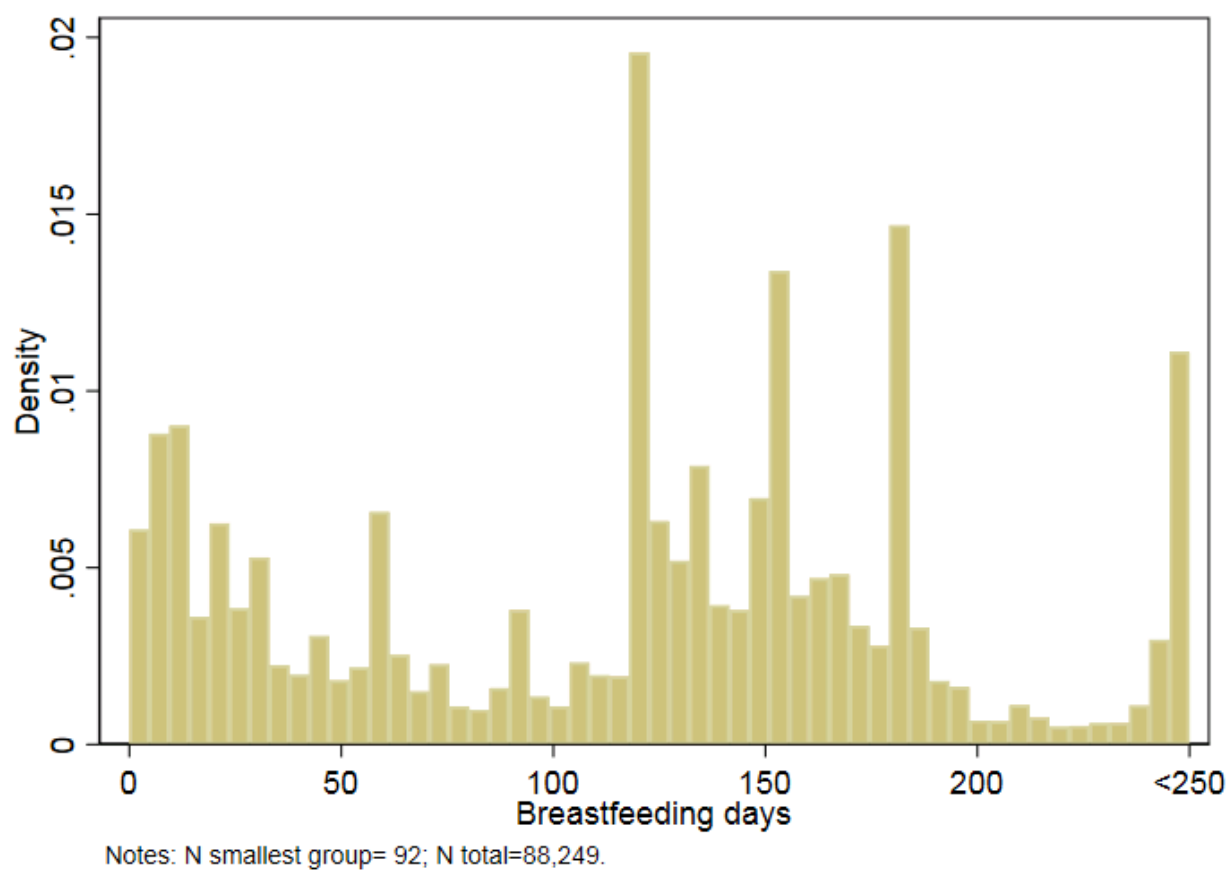
Notes: These figures plot the coefficients and 95% confidence intervals on the interaction term between the disease index and the younger sibling indicator from model (1), using outcomes measured at ages specified on the x-axes. Outcome variables are indicators for high school graduation for panels (a)-(b) and college graduation for panels (c)-(d). At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effects, and family background controls. See notes under Figure 8 for more details about the specifications and variables. Confidence intervals are constructed from standard errors clustered on the child's municipality of birth.

Figure B11: Effects of the Respiratory Disease Exposure on Younger Siblings' Mental Health Care Visits (Any Visit / Binary Outcome), by Age of Observation



Notes: These figures plot the coefficients and 95% confidence intervals on the interaction term between the disease index and the younger sibling indicator from model (1), using the mental health care outcomes measured at ages specified on the x-axes. Outcome variables are indicators for whether having any private psychiatric clinic or psychiatric hospital visit for panels (a)-(b), any private psychiatric clinic visit for panels (c)-(d), and any psychiatric hospital visit for panels (e)-(f), all per 100 individual. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effects, and family background controls. See notes under Figure 8 for more details about the specifications and variables. Confidence intervals are constructed from standard errors clustered on the child's municipality of birth.

Figure B12: Distribution of Breastfeeding Duration



Notes: This figure shows the distribution of breastfeeding duration among sample children who are matched to data on breastfeeding duration (N=88,249).

Appendix Tables

C Sample description and identification checks

Table C1: Sample Construction

Sample Restriction	Observations
Birth cohort 1981-2015	2,278,868
Singleton first and second-born	1,409,984
Birth spacing gap at least 11 months	1,406,506
Drop sibling pairs with missing municipality of birth information, or born in municipalities with less than 1,000 children aged 13-71 months on average	1,368,208
Drop sibling pairs with missing parental control variables	1,230,180

Notes: This table shows how our sample size changes as we make various restrictions to arrive at our final analysis sample.

Table C2: Variable Means for Outcomes

	Older Siblings	Younger Siblings
<i>Acute Respiratory Disease Hospitalizations by Age 1 (*100)</i>		
Number of Acute Respiratory Disease Hospitalizations by Age 1	4.710	9.280
Number of Acute Respiratory Disease Hospitalizations by Age 1 (post-1993 cohorts)	4.584	10.332
Number of RSV Hospitalizations by Age 1 (post-1993 cohorts)	0.876	2.816
<i>Respiratory Disease Hospitalizations, Age 1-26 (*100)</i>		
Number of Acute Respiratory Disease Hospitalizations Age 1-2	4.725	4.867
Number of Acute Respiratory Disease Hospitalizations Age 3-4	2.081	1.851
Number of Acute Respiratory Disease Hospitalizations Age 5-15	0.698	0.614
Number of Acute Respiratory Disease Hospitalizations Age 16-26	0.567	0.629
Number of Chronic Respiratory Disease Hospitalizations Age 1-2	0.986	1.043
Number of Chronic Respiratory Disease Hospitalizations Age 3-4	0.453	0.403
Number of Chronic Respiratory Disease Hospitalizations Age 5-15	0.189	0.170
Number of Chronic Respiratory Disease Hospitalizations Age 16-26	0.074	0.088
<i>Labor Market Outcomes</i>		
In Labor Force, Age 25-32	0.654	0.651
Wage (conditional on employed, winsorized 1-99pct), Age 25-32	53715.843	54274.257
Log Wage (conditional on employed), Age 25-32	10.800	10.812
Total Income (winsorized 1-99pct), Age 25-32	46100.638	46084.730
Log Total Income, Age 25-32	10.576	10.563
Income Percentile, Age 25-32	56.601	56.085
<i>Educational Outcomes</i>		
High School Degree, Age 25-32	0.826	0.822
College Degree, Age 25-32	0.328	0.311
Danish Test Score, Grade 9	0.150	0.047
Math Test Score, Grade 9	0.204	0.075
<i>Mental Health Outcomes, Ages 16-26 (*100)</i>		
Number of Psychiatric Clinic / Hospital Visits, Age 16-26	11.552	14.229
Number of Psychiatric Clinic Visits, Age 16-26	6.970	8.373
Number of Psychiatric Hospital Visits, Age 16-26	4.582	5.856
Observations	615,090	615,090

Notes: This table presents the means of outcome variables in our analysis separately for older and younger siblings. Average labor market outcomes are calculated from siblings pairs at age 25-32. At each age, we require both of the siblings are observed. Income is winsorized at the 1st and 99th percentiles and reported in 2010 \$USD. Income percentile is calculated among each year-age group. Test scores are converted into z -scores, which are standardized within each subject and test year. Test score data are only available for children born in 1986–2003. Average long-term health outcomes are calculated from siblings pairs at age 16-26. At each age, we also require both of the siblings are observed.

Table C3: Disease Exposure Index and Family Background Characteristics

	(1) Male	(2) Birth Weight	(3) LBW	(4) VLBW	(5) Mother's Age	(6) Mother Foreign-Born	(7) Mother HS Graduated	(8) Mother College Graduated	(9) Parents Married /Cohabiting	(10) Father Log Income	(11) Mother Log Income	(12) Household Log Income	(13) Father Employed	(14) Mother Employed
Panel A (Baseline): Full Year Disease Index; Municipality FEs and Year-month of birth FEs														
Younger	-.00138 (.00278)	153*** (3.87)	-.0169*** (.0012)	-.00218*** (.000271)	2.81*** (.0353)	-.00687* (.00373)	.00756 (.00939)	.0365*** (.00462)	.0148*** (.00375)	.135*** (.0259)	.164*** (.0175)	.131*** (.0196)	.0508*** (.0146)	.0147 (.0155)
Disease index	-.00152* (.000826)	.856 (2.12)	-.000272 (.000332)	-.0000859 (.000114)	-.153*** (.0398)	.00022 (.00138)	.000541 (.00238)	-.0174*** (.00563)	-.00277** (.00113)	-.0175*** (.0045)	-.014*** (.003)	-.0158*** (.00394)	-.00804*** (.00261)	-.00349 (.0026)
Younger x disease index	.000238 (.000917)	-1.62 (1.87)	.000429 (.000493)	.0000712 (.0000985)	.111*** (.0233)	.000766 (.00185)	.00059 (.00452)	.00366*** (.0012)	-.00154 (.00164)	.00663 (.00672)	.00648 (.00572)	.00573 (.00522)	-.00108 (.00375)	-.000307 (.00404)
25th to 75th pctile effect size	0.000	-2.996	0.001	0.000	0.204	0.001	0.001	0.007	-0.003	0.012	0.012	0.011	-0.002	-0.001
Panel B: First Half-Year Disease Index; Municipality FEs and Year-month of birth FEs														
Younger	.000979 (.00236)	152*** (2.79)	-.0168*** (.000999)	-.00237*** (.000235)	2.91*** (.0348)	-.0102*** (.0032)	.00904 (.00719)	.0375*** (.00346)	.0112*** (.0026)	.139*** (.0206)	.166*** (.0144)	.134*** (.0157)	.0499*** (.012)	.0157 (.0127)
Disease index (1st half)	-.000592 (.00156)	2.03 (3.29)	-.000765 (.00058)	-.000173 (.000194)	-.204*** (.0486)	-.00175 (.00266)	.00173 (.00414)	-.0254*** (.00745)	-.00495*** (.00149)	-.0246*** (.00572)	-.0201*** (.00434)	-.022*** (.00496)	-.0112*** (.00367)	-.00456 (.00406)
Younger x disease index (1st half)	-.00118 (.00152)	-3.11 (2.84)	.000781 (.000787)	.000271 (.000166)	.152*** (.0456)	.00391 (.00324)	.000143 (.00746)	.00663*** (.00223)	-.000577 (.00239)	.0101 (.01)	.0119 (.00984)	.00935 (.00806)	-.00158 (.00568)	-.00132 (.00623)
25th to 75th pctile effect size	-0.001	-2.885	0.001	0.000	0.141	0.004	0.000	0.006	-0.001	0.009	0.011	0.009	-0.001	-0.001
Panel C: Full Year Disease Index; Municipality FEs, Year-month of birth FEs, and Municipality Quadratic Trend														
Younger	-.00175 (.00284)	154*** (4.69)	-.0175*** (.00135)	-.00234*** (.000293)	2.91*** (.0799)	-.00436 (.00374)	.00206 (.0107)	.045*** (.00506)	.0182*** (.00559)	.14*** (.0254)	.167*** (.0183)	.137*** (.0194)	.054*** (.0136)	.0114 (.0157)
Disease index	-.00173* (.000954)	.548 (1.96)	-.00055 (.000452)	-.000139 (.000149)	-.0477* (.0242)	-.000317 (.00113)	-.000616 (.00311)	-.0000688 (.00153)	.00244 (.00171)	.000198 (.00432)	-.00027 (.00363)	-.000669 (.00341)	.00103 (.00176)	.0000654 (.00227)
Younger x disease index	.000358 (.000927)	-2.12 (2.16)	.000642 (.000564)	.000127 (.000108)	.0737* (.0416)	-.0000834 (.00191)	.00254 (.00522)	.000651 (.00271)	-.00271 (.00238)	.00481 (.00676)	.00524 (.00651)	.00338 (.00558)	-.0023 (.00338)	.000672 (.0041)
25th to 75th pctile effect size	0.001	-3.918	0.001	0.000	0.136	-0.000	0.005	0.001	-0.005	0.009	0.010	0.006	-0.004	0.001
Panel D: First Half-Year Disease Index; Municipality FEs, Year-month of birth FEs, and Municipality Quadratic Trend														
Younger	.000742 (.0024)	154*** (3.24)	-.0172*** (.00105)	-.00248*** (.000247)	2.98*** (.0674)	-.0084** (.00323)	.0051 (.0081)	.0431*** (.00414)	.0134*** (.00354)	.142*** (.0204)	.167*** (.015)	.138*** (.0156)	.0519*** (.0112)	.0129 (.0128)
Disease index (1st half)	-.000138 (.0017)	1.84 (3.12)	-.00123* (.000662)	-.000213 (.000244)	-.0449 (.0468)	-.00255 (.0026)	-.000124 (.00574)	-.000614 (.00302)	.00223 (.00238)	.000127 (.00722)	-.00316 (.00755)	-.000157 (.00627)	.00207 (.0032)	.000421 (.00384)
Younger x disease index (1st half)	-.00103 (.00152)	-3.88 (3.22)	.0011 (.000874)	.000357* (.000178)	.0988 (.072)	.00268 (.00335)	.00297 (.00851)	.00265 (.00484)	-.00213 (.00339)	.00777 (.0103)	.0105 (.0111)	.00624 (.00887)	-.0031 (.00512)	.000243 (.00627)
25th to 75th pctile effect size	-0.001	-3.603	0.001	0.000	0.092	0.002	0.003	0.002	-0.002	0.007	0.010	0.006	-0.003	0.000
Observations	1,230,180	1,230,110	1,230,110	1,230,110	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180
Mean	0.514	3,510.799	0.032	0.004	28.613	0.047	0.771	0.342	0.942	10.914	10.622	11.529	0.869	0.753

Notes: Each column in the table presents results from estimating model (1), separately for each of the dependent variables listed at the top. We report the coefficients on the indicator variable denoting the younger sibling (“Younger”), the respiratory disease exposure index (“Disease index”), and the interaction of these two variables. The disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13–71 months per 100 children in each child’s municipality of birth either during the first year or first 6 months of life, excluding any hospitalizations of an older sibling. Panels A-B control for municipality and year-month of birth fixed effects. Panels C-D further control for municipality-specific quadratic time trends. See notes under Table 2 for more details about the specifications. Standard errors are clustered on the child’s municipality of birth in all models. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table C4: First-Born Child's Disease Exposure and Subsequent Fertility, Birth Spacing, and Birth Timing

	(1) Having 2nd Child	(2) Birth Spacing	(3) 2nd Child Born in 11/12/1	(4) 2nd Child Born in 2/3/4	(5) 2nd Child Born in 5/6/7	(6) 2nd Child Born in 8/9/10
Panel A (Baseline): Full Year Disease Index; Municipality FEs and Year-month of birth FEs						
Disease index	-.00703** (.00306)	.0495 (.0761)	.000599 (.000889)	-.000623 (.000913)	.000404 (.000907)	-.000379 (.000802)
Panel B: First Half Year Disease Index; Municipality FEs and Year-month of birth FEs						
Disease index (1st half)	-.00941** (.00436)	-.0949 (.111)	.0000426 (.00145)	-.0000845 (.00142)	.00119 (.00139)	-.00115 (.00144)
Panel C: Full Year Disease Index; Municipality FEs, Year-month of birth FEs, and Municipality Quadratic Trend						
Disease index	.000112 (.00104)	.0211 (.0847)	.000271 (.00126)	-.00159 (.00123)	.00163 (.00116)	-.000315 (.00125)
Panel D: First Half Year Disease Index; Municipality FEs, Year-month of birth FEs, and Municipality Quadratic Trend						
Disease index (1st half)	.00134 (.00145)	-.012 (.0926)	-.000839 (.00187)	-.000584 (.00164)	.00277* (.00163)	-.00135 (.00186)
Observations	886,603	671,615	671,615	671,615	671,615	671,615
Mean	0.758	51.787	0.231	0.249	0.263	0.256

Notes: This table presents the correlation between the disease exposure faced by the first child and family's decision on whether and when to have a second child. The full sample is constructed by all first-born child during years 1981-2016. The disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13-71 months per 100 children in each child's municipality of birth either during the first year or first 6 months of life. The outcome variable used in column (1) is an indicator for the same mother having another child during the sample period. Conditional on having another child, column (2) uses the birth spacing (in months) between the first- and second-born as the outcome variable, and columns (3)-(6) use indicators for the birth season of the second-born as outcome variables. All regressions include family background controls listed in Table 2 except excluding birth spacing. Panels A-B control for municipality and year-month of birth fixed effects. Panels C-D further control for municipality-specific quadratic time trends. Standard errors are clustered on the child's municipality of birth in all models. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table C5: Effect of Non-Infectious Digestive Disease Exposure on Non-Infectious Digestive Disease Hospitalizations, Younger versus Older Siblings

	Number of Non-infectious Digestive Disease (NIDD) Hospitalizations (*1000)						
	First Year					1st Half Year	2nd Half Year
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Younger	-0.271*** (0.102)		-0.270*** (0.102)	-0.157 (0.110)	-0.049 (0.112)	-0.057 (0.097)	-0.010 (0.074)
NIDD index		2.190** (1.057)	2.181** (1.056)	3.406** (1.622)	3.443** (1.637)		
Younger x NIDD index				-2.196 (1.922)	-2.214 (1.915)		
NIDD index (1st half)						3.053 (2.795)	
Younger x NIDD index (1st half)						-2.083 (3.084)	
NIDD index (2nd half)							2.866 (1.785)
Younger x NIDD index (2nd half)							-1.623 (1.703)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	No	No	No	No	Yes	Yes	Yes
Observations	752,232	752,232	752,232	752,232	752,232	752,232	752,232
Mean	1.083	1.083	1.083	1.083	1.083	0.558	0.525
25th to 75th pctile effect size				-0.146	-0.148	-0.078	-0.061

Notes: See notes under Table 2 for more details about the specifications and variables. The outcome is the number of hospitalizations with any non-infectious digestive disease primary diagnosis during the first year of the child's life (only available for children born after 1993). Standard errors are clustered on the child's municipality of birth in all models. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table C6: Effect of Injury Exposure on Injury (incl. Poisoning) Hospitalizations, Younger versus Older Siblings

	Number of Injury (incl. Poisonings) Hospitalizations (*1000)						
	First Year					1st Half Year	2nd Half Year
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Younger	-0.258 (0.255)		-0.271 (0.256)	-1.415 (1.010)	-0.374 (1.012)	-0.305 (0.484)	0.143 (0.674)
Injury index		3.987*** (0.563)	3.990*** (0.563)	3.432*** (0.743)	3.347*** (0.745)		
Younger x injury index				0.990 (0.944)	1.040 (0.956)		
Injury index (1st half)						1.041* (0.625)	
Younger x injury index (1st half)						0.895 (0.795)	
Injury index (2nd half)							2.958*** (0.811)
Younger x injury index (2nd half)							0.827 (1.282)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	No	No	No	No	Yes	Yes	Yes
Observations	752,232	752,232	752,232	752,232	752,232	752,232	752,232
Mean	7.550	7.550	7.550	7.550	7.550	2.844	4.706
25th to 75th pctl effect size				0.399	0.419	0.227	0.208

Notes: See notes under Table 2 for more details about the specifications and variables. The outcome is the number of hospitalizations with any injury (incl. poisoning) primary diagnosis during the first year of the child's life (only available for children born after 1993). Standard errors are clustered on the child's municipality of birth in all models. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

D Additional outcomes

Table D1: Effect of Respiratory Disease Exposure on Acute Respiratory Disease Hospitalizations, Ages 0–26, Younger versus Older Siblings

	Number of Acute Respiratory Hospitalizations (*100)				
	(1)	(2)	(3)	(4)	(5)
	Age 0	Age 1-2	Age 3-4	Age 5-15	Age 16-26
Annual Disease Index					
Younger	1.684*** (0.256)	0.156* (0.092)	0.030 (0.064)	0.003 (0.022)	0.065** (0.027)
Disease index	1.080*** (0.104)	0.901*** (0.063)	0.224*** (0.032)	0.002 (0.013)	-0.019 (0.017)
Younger x disease index	1.245*** (0.080)	0.051 (0.032)	-0.070*** (0.023)	-0.011 (0.008)	0.013 (0.009)
Observations	1,230,180	2,406,447	2,311,160	10,282,199	5,645,172
Mean	6.995	4.743	1.961	0.612	0.567
25th to 75th pctl effect size	2.303	0.094	-0.129	-0.020	0.021
First 6-month Disease Index					
Younger	1.433*** (0.205)	0.057 (0.093)	-0.039 (0.053)	-0.000 (0.019)	0.074** (0.029)
Disease index (1st half)	1.048*** (0.181)	1.189*** (0.110)	0.302*** (0.044)	0.011 (0.017)	-0.030 (0.024)
Younger x disease index (1st half)	2.687*** (0.132)	0.176*** (0.062)	-0.092** (0.036)	-0.020 (0.013)	0.020 (0.020)
Observations	1,230,180	2,406,447	2,311,160	10,282,199	5,645,172
Mean	6.995	4.743	1.961	0.612	0.567
25th to 75th pctl effect size	2.491	0.163	-0.085	-0.019	0.017
Municipality FEs	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes

Notes: See notes under Table 2 for more details about the specifications and variables. The disease index is the number of hospitalizations with an acute respiratory disease primary diagnosis during the first year (Panel A) or the first 6 months (Panel B) of the child's life. The outcome variable is the number of hospitalization with an acute respiratory disease primary diagnosis during each age. The sample includes sibling pairs at ages 0–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table D2: Effect of Respiratory Disease Exposure on Chronic Respiratory Disease Hospitalizations, Ages 0–26, Younger versus Older Siblings

	Number of Chronic Respiratory Hospitalizations (*100)				
	(1)	(2)	(3)	(4)	(5)
	Age 0	Age 1-2	Age 3-4	Age 5-15	Age 16-26
Annual Disease Index					
Younger	0.842***	-0.054	-0.031	-0.000	-0.015
	(0.110)	(0.061)	(0.034)	(0.017)	(0.017)
Disease index	0.127**	0.103***	0.030**	0.003	-0.010
	(0.051)	(0.031)	(0.014)	(0.006)	(0.007)
Younger x disease index	-0.022	0.036*	0.003	0.001	0.010**
	(0.047)	(0.020)	(0.011)	(0.005)	(0.004)
Observations	1,230,180	2,406,447	2,311,160	10,282,199	5,645,172
Mean	0.875	1.008	0.426	0.169	0.080
25th to 75th pctl effect size	-0.040	0.058	0.005	0.001	0.016
First 6-month Disease Index					
Younger	0.803***	-0.059	-0.027	0.002	-0.011
	(0.087)	(0.052)	(0.028)	(0.015)	(0.015)
Disease index (1st half)	0.165**	0.118**	0.036*	0.003	-0.024**
	(0.077)	(0.046)	(0.021)	(0.009)	(0.011)
Younger x disease index (1st half)	-0.016	0.077**	0.003	-0.000	0.018**
	(0.078)	(0.033)	(0.019)	(0.009)	(0.008)
Observations	1,230,180	2,406,447	2,311,160	10,282,199	5,645,172
Mean	0.875	1.008	0.426	0.169	0.080
25th to 75th pctl effect size	-0.015	0.064	0.003	0.000	0.015
Municipality FEs	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes

Notes: See notes under Table 2 for more details about the specifications and variables. The disease index is the number of hospitalizations with an acute respiratory disease primary diagnosis during the first year (Panel A) or the first 6 months (Panel B) of the child's life. The outcome variable is the number of hospitalization with a chronic respiratory disease primary diagnosis during each age. The sample includes sibling pairs at ages 0–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table D3: Effect of Respiratory Disease Exposure in the First Year of Life on Test Scores, Younger versus Older Siblings

	Danish Test Score				Math Test Score			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.185*** (0.005)	-0.159*** (0.014)	-0.160*** (0.011)	-0.171*** (0.012)	-0.231*** (0.009)	-0.216*** (0.014)	-0.210*** (0.011)	-0.230*** (0.010)
Disease index		0.002 (0.005)				0.003 (0.004)		
Younger x disease index		-0.009* (0.005)				-0.005 (0.006)		
Disease index (1st half)			0.003 (0.008)				0.005 (0.007)	
Younger x disease index (1st half)			-0.017** (0.007)				-0.015 (0.009)	
Disease index (2nd half)				0.004 (0.007)				0.004 (0.005)
Younger x disease index (2nd half)				-0.010 (0.007)				-0.001 (0.008)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	470,848	470,848	470,848	470,848	472,582	472,582	472,582	472,582
Mean	0.099	0.099	0.099	0.099	0.139	0.139	0.139	0.139
25th to 75th pctile effect size		-0.015	-0.015	-0.008		-0.009	-0.013	-0.001

Notes: See notes under Table 2 for more details about the specifications and variables. The outcome variable is the standardized Danish and Math test score in the 9th grade. Standard errors are clustered on the municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table D4: Effect of Respiratory Disease Exposure on Mental Health Visit at Ages 16-26, Younger versus Older Siblings

	All Mental Health Visits (*100)				Psychiatric Clinic Visit (*100)				Psychiatric Hospital Visit (*100)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Younger	0.819*** (0.179)	-0.186 (0.387)	-0.333 (0.386)	0.449 (0.330)	0.120 (0.160)	-0.712** (0.281)	-0.789*** (0.279)	-0.224 (0.262)	0.699*** (0.094)	0.526** (0.221)	0.456** (0.195)	0.673*** (0.178)
Disease index		-0.134 (0.234)				-0.247 (0.202)				0.113 (0.082)		
Younger x Disease Index		0.378** (0.153)				0.313** (0.120)				0.065 (0.084)		
Disease index (1st half)			-0.102 (0.377)				-0.229 (0.302)				0.127 (0.128)	
Younger x Disease Index (1st half)			0.875*** (0.276)				0.691*** (0.203)				0.184 (0.139)	
Disease index (2nd half)				-0.307 (0.387)				-0.442 (0.359)				0.135 (0.124)
Younger x Disease Index (2nd half)				0.277 (0.265)				0.257 (0.220)				0.019 (0.137)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,067,930	6,067,930	6,067,930	6,067,930	6,487,930	6,487,930	6,487,930	6,487,930	6,067,930	6,067,930	6,067,930	6,067,930
Mean	13.623	13.623	13.623	13.623	8.324	8.324	8.324	8.324	5.299	5.299	5.299	5.299
25th to 75th pctile effect size		0.608	0.734	0.232		0.504	0.579	0.216		0.104	0.155	0.016

Notes: See notes under Table 2 for more details about the specifications and variables. The sample includes sibling pairs at ages 16–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Outcome variables are the number of private psychiatric clinic and psychiatric hospital visits for columns (1)–(4), number of private psychiatric clinic visits for columns (5)–(8), and number of psychiatric hospital visits for columns (9)–(12), all per 100 individual. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table D5: Effect of Respiratory Disease Exposure on Any Mental Health Visit at Ages 16-26, Younger versus Older Siblings

	All Mental Health Visits (*100)				Psychiatric Clinic Visit (*100)				Psychiatric Hospital Visit (*100)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Younger	0.355*** (0.030)	0.308*** (0.070)	0.253*** (0.065)	0.384*** (0.060)	0.041** (0.016)	-0.046 (0.031)	-0.062** (0.031)	0.012 (0.030)	0.324*** (0.025)	0.366*** (0.060)	0.318*** (0.055)	0.391*** (0.051)
Disease index		0.036 (0.038)				-0.028 (0.021)				0.057** (0.027)		
Younger x Disease Index		0.018 (0.024)				0.033*** (0.011)				-0.016 (0.019)		
Disease index (1st half)			0.058 (0.052)				-0.034 (0.029)				0.087** (0.038)	
Younger x Disease Index (1st half)			0.078*** (0.043)				0.076*** (0.021)				0.005 (0.034)	
Disease index (2nd half)				0.027 (0.063)				-0.042 (0.036)				0.058 (0.045)
Younger x Disease Index (2nd half)				-0.021 (0.040)				0.026 (0.020)				-0.050 (0.031)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930
Mean	3.490	3.490	3.490	3.490	1.175	1.175	1.175	1.175	2.535	2.535	2.535	2.535
25th to 75th pctile effect size		0.028	0.065	-0.018		0.053	0.065	0.018		-0.025	0.004	-0.042

Notes: See notes under Table 2 for more details about the specifications and variables. The sample includes sibling pairs at ages 16–26, with each observation at the person-by-age level. Outcome variables are indicators for whether having any private psychiatric clinic or psychiatric hospital visit for columns (1)–(4), any private psychiatric clinic visit for columns (5)–(8), and any psychiatric hospital visit for columns (9)–(12), all per 100 individual. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table D6: Breastfeeding Duration (BF) Modeled as an Interaction Effect and as an Outcome of the Respiratory Disease Exposure Index

	Respiratory disease hospitalizations during first year of life				Breast- feeding	Log Brest- feeding
	(1)	(2)	(3)	(4)	(5)	(6)
Younger	0.0411*** (0.0068)	0.0419*** (0.0067)	0.0422*** (0.0066)	0.0420*** (0.0065)	-0.0207 (0.1305)	-0.0250 (0.0501)
Disease index	0.0045 (0.0037)	0.0074* (0.0039)	0.0063* (0.0036)	0.0017 (0.0049)	-0.1682 (0.1513)	-0.0536 (0.0529)
Younger x disease index	0.0130*** (0.0021)	0.0176*** (0.0027)	0.0158*** (0.0023)	0.0105*** (0.0029)	0.0698 (0.0506)	0.0259 (0.0192)
Disease index x BF		-0.0010* (0.0005)				
Younger x disease index x BF		-0.0012** (0.0004)				
Disease index x log(BF)			-0.0022* (0.0012)			
Younger x disease index x log(BF)			-0.0028*** (0.0007)			
Disease index x [BF < .5 months]				0.0072 (0.0046)		
Disease index x [BF .5-3 months]				0.0038 (0.0040)		
Disease index x [BF 3-6 months]				0.0014 (0.0034)		
Younger x disease index x [BF < .5 months]				0.0081** (0.0031)		
Younger x disease index x [BF .5-3 months]				0.0066** (0.0026)		
Younger x disease index x [BF 3-6 months]				0.0001 (0.0021)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	88,249	88,249	87,875	88,249	88,249	87,875
Mean	0.09	0.09	0.09	0.09	4.01	1.05

Notes: Each column in the table presents results from estimating different versions of model (1). The outcome in the first four columns is the number of hospitalizations with any acute respiratory disease primary diagnosis during the first year of the child's life. The outcomes in the last two columns is the child's breastfeeding duration in months (BF). Column (1) shows baseline regression results in the subsample of children with information on BF. Column (2) adds BF main effects (coefficient omitted), the interaction of BF with the disease index, and the triple interaction of BF with the disease index and a dummy for the younger sibling. Columns (3) and (4) replicate the specification of column (2) using the natural logarithm of BF (column 3) and dummy variables for different breastfeeding durations (column 4). The omitted category in column (4) is breastfeeding durations longer than six months. Columns (5) and (6) shows baseline regression results with BF and the natural logarithm of BF as dependent variable. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

E Robustness checks

Alternative controls. Appendix Table E1 reports results from sensitivity analyses of short-term effects on acute respiratory hospitalizations before age one, while Appendix Tables E2–E7 present sensitivity results for the long-run labor market and income outcomes. For tractability, we study average adult outcomes pooled across ages 25–32. Column (1) of each table presents the baseline model in which we include municipality and birth year-month fixed effects, and family background controls. In Column (2), we show that the baseline results are robust to the addition of maternal fixed effects that eliminate a potential bias from unobserved genetic and family characteristics common among siblings.

Columns (3) and (4) assess the possibility that our results could be driven by differential (possibly non-linear) trends in outcomes across municipalities. We estimate models controlling for municipality-specific linear and quadratic time trends, respectively. Additionally, Columns (5) and (6) show results for exposure in the first and second six months of life, respectively, when including municipality-specific quadratic trends. The results on acute respiratory disease hospitalizations in Appendix Table E1 show that adding municipality-specific quadratic trends substantially reduces the “main effect” of the disease index coefficient: the magnitude is half as large for the annual measure of disease index and is attenuated by 40 percent when using exposure in the second six months of life (the economically small and statistically insignificant main impact of the disease index for the first six months still holds). In contrast to the change in the direct effects of the disease index, the coefficients on the interaction term between the disease index and the younger sibling indicator changes very little compared to the baseline results for acute respiratory disease hospitalizations.

Columns (3)–(6) of Appendix Tables E2–E7 show results for long-term labor market outcomes from regression models that include municipality-specific linear and quadratic trends. The main effect of the disease index, which is positive and weakly significant in the baseline specifications for some labor market outcomes, becomes insignificant once municipality-specific quadratic trends are included. The key interaction effects, while somewhat attenuated (possibly due to reduced variation and an increased role of measurement error), remain statistically significant for most of the specifications. The results are particularly robust when we measure exposure in the first six months of life.

Alternative disease index construction. The remaining columns in Appendix Tables E1–E7 assess the robustness of the results to alternative ways of constructing the disease index. In our baseline analysis, the respiratory disease index is based on the number of hospitalizations with a primary diagnosis of an acute respiratory condition. Column (7) calculates the disease index based on the number of hospitalizations including both primary and non-primary diagnoses for acute respiratory conditions. In Column (8), we construct the disease index based on the number of children with at least one primary acute respiratory disease diagnosis (i.e., we count the number of children rather than the total number of hospitalizations). Our results are robust across these different modeling choices.

In Appendix Table E13, we use an RSV-specific index instead of an index capturing all acute respiratory-related hospitalizations to explore the extent to which RSV contributes to the overall impact of respiratory disease. We estimate that an additional RSV hospitalization per 100 children aged 13–71 months in a municipality increases a younger child’s number of RSV hospitalizations in the first year of life by an average of 0.046 more than their older sibling’s RSV hospitalizations at the same age. Moving from the 25th to the 75th percentile of the RSV index distribution amounts to a 0.005 differential increase in the number of RSV hospitalizations, or 27.8 percent at the sample mean. Thus, the effects on infancy hospitalizations are in part driven by early-life exposure to RSV.

Higher order births. While nearly three-quarters of families in Denmark have at most two children, our results replicate for third and higher-order births. Appendix Tables E14–E16 show the baseline model extended to include additional interaction terms for higher-order births which increase the sample size by about 14 percent (174,341 observations). Both the short- and long-term impacts are similar between second and higher-order births. The long-term impacts on labor market outcomes are if anything even stronger for higher-order births but these differences are not significant as indicated by the p-values that are reported in the last row of these tables.

Table E1: Robustness of Results on Acute Respiratory Disease Hospitalizations in First Year of Life

Respiratory Disease Hospitalizations in First Year of Life								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	0.017*** (0.003)	0.037*** (0.005)	0.016*** (0.002)	0.017*** (0.002)	0.004*** (0.001)	0.003** (0.001)	0.014*** (0.003)	0.016*** (0.003)
Disease index	0.011*** (0.001)	0.004** (0.002)	0.007*** (0.001)	0.005*** (0.001)			0.006*** (0.001)	0.012*** (0.001)
Younger x disease index	0.012*** (0.001)	0.014*** (0.002)	0.013*** (0.001)	0.012*** (0.001)			0.009*** (0.001)	0.013*** (0.001)
Disease index (1st half)					-0.001 (0.001)			
Younger x disease index (1st half)					0.022*** (0.001)			
Disease index (2nd half)						0.009*** (0.001)		
Younger x disease index (2nd half)						0.010*** (0.001)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180	1,230,180
Mean	0.070	0.070	0.070	0.070	0.033	0.037	0.070	0.070
25th to 75th pctile effect size	0.023	0.026	0.024	0.023	0.021	0.009	0.024	0.023

Notes: Each column in the table presents results from estimating different versions of model (1). The outcome is the number of hospitalizations with an acute respiratory disease primary diagnosis. Column (1) presents results using the baseline model. Column (2) adds maternal fixed effects, Column (3) adds municipality-specific linear time trends, and Column (4) adds municipality-specific quadratic trends. Columns (5)-(6) examines the robustness of the impact of disease exposure during the first and second 6 months of life to controlling for municipality-specific quadratic trends. Column (7) uses a disease index in which we count number of diagnoses for respiratory conditions in hospitalizations including both primary and non-primary diagnoses. Column (8) uses a disease index in which we calculate the number of children with at least one respiratory disease diagnosis (i.e., counting the number of children and not the total number of diagnoses). See notes under Table 2 for more details about our baseline model and control variables. Standard errors are clustered on the child's municipality of birth in all models. The "25th to 75th pctile effect size" row reports the magnitude of the differential effect of an increase in the disease exposure index from the 25th to the 75th percentile of the distribution for younger siblings. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E2: Robustness of Results on Wage (conditional on employment, winsorized) at Ages 25–32

	Wage Income (conditional on employment, winsorized) at Age 25-32							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-656.85*** (217.77)	-87.53 (224.79)	-919.85*** (160.84)	-861.99*** (170.92)	-847.58*** (143.57)	-1,022.07*** (157.15)	-691.68*** (223.65)	-656.57*** (219.49)
Disease index	92.51 (89.91)	297.46*** (105.14)	7.95 (82.20)	-64.69 (80.68)			110.50 (71.38)	87.83 (96.99)
Younger x disease index	-210.53** (80.53)	-349.79*** (72.55)	-107.87* (62.57)	-128.73* (65.97)			-142.00** (59.45)	-220.61** (85.06)
Disease index (1st half)					-104.49 (108.87)			
Younger x disease index (1st half)					-273.65** (104.27)			
Disease index (2nd half)						36.45 (120.92)		
Younger x disease index (2nd half)						-122.60 (125.03)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	1,616,792	1,593,028	1,616,792	1,616,792	1,616,792	1,616,792	1,616,792	1,616,792
Mean	56,118.26	56,318.59	56,118.26	56,118.26	56,118.26	56,118.26	56,118.26	56,118.26
25th to 75th pctl effect size	-295.74	-489.60	-151.53	-180.83	-204.52	-93.3	-274.51	-295.73

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the wage income (conditional on employment, winsorized at the 1st-99th percentile). Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E3: Robustness of Results on Log Wage (conditional on employment) at Ages 25–32

	Log Wage Income (conditional on employment) at Age 25-32							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.006 (0.005)	0.002 (0.005)	-0.011*** (0.003)	-0.010*** (0.004)	-0.010*** (0.003)	-0.015*** (0.003)	-0.007 (0.005)	-0.006 (0.005)
Disease index	0.002 (0.002)	0.007*** (0.002)	0.000 (0.002)	-0.001 (0.002)			0.002 (0.001)	0.002 (0.002)
Younger x disease index	-0.006*** (0.002)	-0.009*** (0.002)	-0.003** (0.001)	-0.004** (0.001)			-0.004*** (0.001)	-0.006*** (0.002)
Disease index (1st half)					-0.002 (0.002)			
Younger x disease index (1st half)					-0.008*** (0.002)			
Disease index (2nd half)						0.001 (0.003)		
Younger x disease index (2nd half)						-0.003 (0.003)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	1,612,736	1,588,915	1,612,736	1,612,736	1,612,736	1,612,736	1,612,736	1,612,736
Mean	10.856	10.860	10.856	10.856	10.856	10.856	10.856	10.856
25th to 75th pctl effect size	-0.008	-0.013	-0.005	-0.005	-0.006	-0.003	-0.007	-0.008

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the natural log of the wage income (conditional on employment). Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E4: Robustness of Results on Labor Force Participation at Ages 25–32

Labor Force Participation at Age 25-32								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	0.006*	-0.004	0.005**	0.006**	0.008***	0.003	0.006*	0.005*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Disease index	0.005***	0.005**	0.003*	0.002			0.004***	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)			(0.001)	(0.002)
Younger x disease index	-0.000	-0.001	-0.000	-0.001			-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)			(0.001)	(0.001)
Disease index (1st half)					0.002			
					(0.002)			
Younger x disease index (1st half)					-0.003*			
					(0.002)			
Disease index (2nd half)						0.001		
						(0.002)		
Younger x disease index (2nd half)						0.001		
						(0.002)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,377,733	2,357,933	2,377,733	2,377,733	2,377,733	2,377,733	2,377,733	2,377,733
Mean	0.698	0.699	0.698	0.698	0.698	0.698	0.698	0.698
25th to 75th pctl effect size	-0.000	-0.001	-0.001	-0.001	-0.002	0.001	-0.001	-0.000

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is an indicator for being in the labor force. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E5: Robustness of Results on Total Income (winsorized) at Ages 25–32

	Total Income (winsorized) at Age 25–32							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-3.75 (203.29)	-121.57 (161.70)	-136.13 (172.63)	-119.53 (174.56)	-61.61 (139.41)	-317.61* (165.09)	10.68 (204.50)	-0.68 (205.90)
Disease index	198.37* (101.76)	332.82*** (101.73)	69.69 (91.63)	0.09 (93.70)			165.38** (76.12)	197.87* (109.73)
Younger x disease index	-162.62** (75.80)	-239.73*** (63.51)	-114.49* (64.80)	-119.75* (65.96)			-122.16** (54.14)	-171.68** (80.70)
Disease index (1st half)					46.75 (117.40)			
Younger x disease index (1st half)					-290.66*** (99.71)			
Disease index (2nd half)						6.36 (124.96)		
Younger x disease index (2nd half)						-76.18 (126.06)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,377,733	2,357,933	2,377,733	2,377,733	2,377,733	2,377,733	2,377,733	2,377,733
Mean	49,345.56	49,438.88	49,345.56	49,345.56	49,345.56	49,345.56	49,345.56	49,345.56
25th to 75th pctl effect size	-233.39	-343.71	-164.31	-171.87	-222.30	-59.10	-243.36	-236.59

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the gross income (winsorized at the 1st–99th percentile). Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E6: Robustness of Results on Log Total Income at Ages 25–32

Log Total Income at Age 25-32								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	0.013*	0.009*	0.010	0.010*	0.011**	0.004	0.014**	0.013*
	(0.007)	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)
Disease index	0.005*	0.009***	0.002	-0.000			0.004*	0.005
	(0.003)	(0.003)	(0.003)	(0.003)			(0.002)	(0.003)
Younger x disease index	-0.005**	-0.007***	-0.004*	-0.004*			-0.004**	-0.006**
	(0.002)	(0.002)	(0.002)	(0.002)			(0.002)	(0.003)
Disease index (1st half)					0.005			
					(0.004)			
Younger x disease index (1st half)					-0.010***			
					(0.003)			
Disease index (2nd half)						-0.003		
						(0.004)		
Younger x disease index (2nd half)						-0.004		
						(0.004)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,372,145	2,352,321	2,372,145	2,372,145	2,372,145	2,372,145	2,372,145	2,372,145
Mean	10.652	10.654	10.652	10.652	10.652	10.652	10.652	10.652
25th to 75th pctl effect size	-0.008	-0.010	-0.006	-0.006	-0.007	-0.003	-0.008	-0.008

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the natural log of the gross income. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E7: Robustness of Results on Income Percentile at Ages 25–32

	Income Percentile at Age 25-32							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	0.143 (0.253)	-0.086 (0.197)	-0.028 (0.215)	-0.007 (0.218)	0.079 (0.175)	-0.259 (0.205)	0.163 (0.255)	0.145 (0.256)
Disease index	0.272** (0.124)	0.418*** (0.120)	0.106 (0.108)	0.029 (0.112)			0.224** (0.093)	0.274** (0.134)
Younger x disease index	-0.196** (0.092)	-0.307*** (0.078)	-0.134* (0.078)	-0.140* (0.080)			-0.148** (0.066)	-0.207** (0.098)
Disease index (1st half)					0.078 (0.142)			
Younger x disease index (1st half)					-0.356*** (0.122)			
Disease index (2nd half)						0.038 (0.149)		
Younger x disease index (2nd half)						-0.073 (0.151)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,377,726	2,357,926	2,377,726	2,377,726	2,377,726	2,377,726	2,377,726	2,377,726
Mean	56.566	56.580	56.566	56.566	56.566	56.566	56.566	56.566
25th to 75th pctl effect size	-0.282	-0.441	-0.192	-0.201	-0.272	-0.057	-0.295	-0.285

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the income percentile (calculated using the population of the same age in each year). Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E8: Robustness of Results on High School Graduation at Ages 25–32

High School Graduation at Age 25-32								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.047*** (0.003)	-0.021*** (0.003)	-0.045*** (0.004)	-0.045*** (0.004)	-0.043*** (0.003)	-0.050*** (0.003)	-0.047*** (0.003)	-0.047*** (0.003)
Disease index	0.002 (0.002)	0.006** (0.002)	0.005*** (0.002)	0.005*** (0.002)			0.002 (0.001)	0.002 (0.002)
Younger x disease index	-0.003* (0.001)	-0.003** (0.001)	-0.003** (0.002)	-0.003* (0.002)			-0.002** (0.001)	-0.003** (0.001)
Disease index (1st half)					0.005** (0.002)			
Younger x disease index (1st half)					-0.008*** (0.003)			
Disease index (2nd half)						0.007*** (0.002)		
Younger x disease index (2nd half)						-0.002 (0.003)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,256,693	2,236,022	2,256,693	2,256,693	2,256,693	2,256,693	2,256,693	2,256,693
Mean	0.824	0.824	0.824	0.824	0.824	0.824	0.824	0.824
25th to 75th pctl effect size	-0.004	-0.004	-0.005	-0.005	-0.006	-0.002	-0.004	-0.004

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the indicator for high school graduation. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E9: Robustness of Results on College Graduation at Ages 25–32

	College Graduation at Age 25-32							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.074*** (0.006)	-0.048*** (0.006)	-0.073*** (0.006)	-0.073*** (0.006)	-0.073*** (0.005)	-0.078*** (0.005)	-0.074*** (0.006)	-0.074*** (0.006)
Disease index	0.003 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)			0.003** (0.001)	0.002 (0.002)
Younger x disease index	-0.004* (0.002)	-0.001 (0.002)	-0.005** (0.002)	-0.005** (0.002)			-0.003* (0.002)	-0.004* (0.003)
Disease index (1st half)					-0.002 (0.003)			
Younger x disease index (1st half)					-0.009** (0.004)			
Disease index (2nd half)						0.005* (0.003)		
Younger x disease index (2nd half)						-0.005 (0.004)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	2,256,693	2,236,022	2,256,693	2,256,693	2,256,693	2,256,693	2,256,693	2,256,693
Mean	0.353	0.354	0.353	0.353	0.353	0.353	0.353	0.353
25th to 75th pctl effect size	-0.006	-0.002	-0.007	-0.007	-0.007	-0.006	-0.004	-0.006

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 25–32, with each observation at the person-by-age level. The outcome is the indicator for college graduation. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E10: Robustness of Results on Number of Private Psychiatric Clinic / Psychiatric Hospital Visits at Ages 16–26

	Number of Private Psychiatric Clinic / Psychiatric Hospital Visits (*100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.186 (0.387)	-2.026*** (0.564)	0.149 (0.391)	0.279 (0.392)	0.013 (0.374)	0.809** (0.344)	-0.198 (0.391)	-0.260 (0.390)
Disease index	-0.134 (0.234)	-0.245 (0.254)	0.156 (0.270)	0.159 (0.263)			-0.172 (0.157)	-0.132 (0.262)
Younger x disease index	0.378** (0.153)	0.549*** (0.157)	0.250 (0.158)	0.203 (0.160)			0.277** (0.110)	0.426** (0.164)
Disease index (1st half)					0.292 (0.346)			
Younger x disease index (1st half)					0.612** (0.282)			
Disease index (2nd half)						-0.053 (0.481)		
Younger x disease index (2nd half)						0.007 (0.279)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	6,067,930	6,049,359	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930
Mean	13.623	13.629	13.623	13.623	13.623	13.623	13.623	13.623
25th to 75th pctl effect size	0.608	0.883	0.401	0.327	0.513	0.006	0.630	0.652

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 16–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E11: Robustness of Results on Number of Private Psychiatric Clinic Visits at Ages 16–26

	Number of Private Psychiatric Clinic Visits (*100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	-0.712** (0.281)	-1.811*** (0.411)	-0.402 (0.303)	-0.286 (0.312)	-0.473* (0.276)	0.100 (0.292)	-0.812*** (0.274)	-0.770*** (0.281)
Disease index	-0.247 (0.202)	-0.156 (0.211)	0.110 (0.244)	0.125 (0.236)			-0.264* (0.145)	-0.267 (0.223)
Younger x disease index	0.313** (0.120)	0.485*** (0.110)	0.196 (0.132)	0.154 (0.136)			0.254*** (0.083)	0.352*** (0.129)
Disease index (1st half)					0.262 (0.264)			
Younger x disease index (1st half)					0.453** (0.219)			
Disease index (2nd half)						-0.072 (0.451)		
Younger x disease index (2nd half)						0.017 (0.247)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	6,067,930	6,049,359	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930
Mean	8.324	8.332	8.324	8.324	8.324	8.324	8.324	8.324
25th to 75th pctl effect size	0.504	0.778	0.315	0.247	0.380	0.014	0.577	0.537

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 16–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E12: Robustness of Results on Number of Psychiatric Hospital Visits at Ages 16–26

	Number of Psychiatric Hospital Visits (*100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Younger	0.526** (0.221)	-0.215 (0.285)	0.550** (0.226)	0.565** (0.220)	0.486** (0.196)	0.709*** (0.177)	0.614*** (0.224)	0.509** (0.225)
Disease index	0.113 (0.082)	-0.090 (0.121)	0.046 (0.102)	0.034 (0.099)			0.093* (0.047)	0.135 (0.093)
Younger x disease index	0.065 (0.084)	0.065 (0.084)	0.054 (0.085)	0.049 (0.083)			0.023 (0.062)	0.075 (0.089)
Disease index (1st half)					0.030 (0.130)			
Younger x disease index (1st half)					0.159 (0.139)			
Disease index (2nd half)						0.018 (0.146)		
Younger x disease index (2nd half)						-0.010 (0.136)		
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother FEs	No	Yes	No	No	No	No	No	No
Municipality Linear Trend	No	No	Yes	No	No	No	No	No
Municipality Quadratic Trend	No	No	No	Yes	Yes	Yes	No	No
Index incl. non-primary diagnosis	No	No	No	No	No	No	Yes	No
Index based on #kids	No	No	No	No	No	No	No	Yes
Observations	6,067,930	6,049,359	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930	6,067,930
Mean	5.299	5.298	5.299	5.299	5.299	5.299	5.299	5.299
25th to 75th pctl effect size	0.104	0.104	0.087	0.079	0.134	-0.008	0.052	0.114

Notes: See notes under Appendix Table E1 for more details about the specifications and variables. The sample includes sibling pairs at ages 16–26, with each observation at the person-by-age level. Age fixed effects are included in all regressions. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E13: Effect of RSV Exposure on RSV Hospitalizations, Younger versus Older Siblings

	Number of RSV Hospitalizations						
	First Year					1st Half Year	2nd Half Year
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Younger	0.019*** (0.001)		0.019*** (0.001)	0.014*** (0.001)	0.017*** (0.001)	0.011*** (0.001)	0.002*** (0.000)
RSV index		0.042*** (0.004)	0.042*** (0.004)	0.017*** (0.003)	0.018*** (0.003)		
Younger x RSV index				0.048*** (0.004)	0.046*** (0.004)		
RSV index (1st half)						-0.014** (0.006)	
Younger x RSV index (1st half)						0.108*** (0.013)	
RSV index (2nd half)							0.023*** (0.003)
Younger x RSV index (2nd half)							0.046*** (0.004)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	No	No	No	No	Yes	Yes	Yes
Observations	752,232	752,232	752,232	752,232	752,232	752,232	752,232
Mean	0.018	0.018	0.018	0.018	0.018	0.013	0.005
25th to 75th pctile effect size				0.005	0.005	0.007	0.003

Notes: See notes under Table 2 for more details about the specifications and variables. The outcome is the number of hospitalizations with an RSV primary diagnosis during the first year of the child's life (only available for children born after 1993). The disease index is constructed using hospitalizations for RSV only (rather than all acute hospitalizations for respiratory conditions). Columns (6) and (7) use "RSV index" constructed during the first and second 6 months of the child's life, respectively, with the outcomes similarly adjusted to reflect RSV hospitalizations in the first and second 6 months. Standard errors are clustered on the child's municipality of birth in all models. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table E14: Effect of Respiratory Disease Exposure on Acute Respiratory Disease Hospitalization in the First Year of Life, Including Higher Order Births

	All Respiratory Hospitalizations in First Year of Life						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2nd born	0.041*** (0.002)		0.041*** (0.002)	0.006*** (0.002)	0.017*** (0.003)	0.015*** (0.002)	0.037*** (0.004)
3rd+ born	0.039*** (0.003)		0.039*** (0.003)	0.004 (0.002)	0.025*** (0.004)	0.022*** (0.003)	0.044*** (0.005)
Disease index		0.019*** (0.001)	0.019*** (0.001)	0.011*** (0.001)	0.010*** (0.001)		
2nd born x disease index				0.012*** (0.001)	0.013*** (0.001)		
3rd+ born x disease index				0.012*** (0.001)	0.012*** (0.001)		
Disease index (1st half)						0.009*** (0.002)	
2nd born x disease index (1st half)						0.027*** (0.001)	
3rd+ born x disease index (1st half)						0.027*** (0.002)	
Disease index (2nd half)							0.018*** (0.002)
2nd born x disease index (2nd half)							0.011*** (0.002)
3rd+ born x disease index (2nd half)							0.011*** (0.002)
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth YM FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Background Controls	No	No	No	No	Yes	Yes	Yes
Observations	1,404,521	1,404,521	1,404,521	1,404,521	1,404,521	1,404,521	1,404,521
Mean	0.073	0.073	0.073	0.073	0.073	0.073	0.073
p-value				0.936	0.859	0.951	0.907

Notes: The sample includes children of all birth order from families with multiple children. The respiratory disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13–71 months per 100 children in each child’s municipality of birth during the first year of life, excluding any hospitalizations of older sibling(s) in this age range. Municipality fixed effects, birth year-month fixed effects, and family background controls are included in all regressions. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E15: Effect of Respiratory Disease Exposure in the First Year of Life on Wage and Labor Force Participation at Ages 25–32, Including Higher Order Births

	Wage Income (winsorized) at Age 25-32				Log Wage Income at Age 25-32				Labor Force Participation at Age 25-32			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2nd born	-1,213.11*** (59.69)	-704.52*** (219.68)	-729.74*** (187.32)	-912.86*** (190.98)	-0.020*** (0.001)	-0.007 (0.005)	-0.007* (0.004)	-0.012*** (0.004)	0.004*** (0.001)	0.005 (0.003)	0.007** (0.003)	0.002 (0.003)
3rd+ born	-1,872.68*** (133.11)	-1,007.11** (441.30)	-1,059.74*** (348.21)	-1,402.79*** (432.78)	-0.034*** (0.003)	-0.016* (0.009)	-0.016** (0.008)	-0.026*** (0.009)	-0.004 (0.004)	0.001 (0.007)	0.001 (0.006)	-0.003 (0.007)
Disease index		126.59 (87.91)				0.003 (0.002)				0.005*** (0.002)		
2nd born x Disease Index		-211.43** (81.81)				-0.006*** (0.002)				-0.000 (0.001)		
3rd+ born x Disease Index		-356.57** (155.41)				-0.007** (0.003)				-0.002 (0.003)		
Disease index (1st half)			133.33 (120.41)				0.004 (0.003)				0.005** (0.002)	
2nd born x Disease Index (1st half)			-407.79*** (133.96)				-0.011*** (0.003)				-0.002 (0.002)	
3rd+ born x Disease Index (1st half)			-676.85*** (237.59)				-0.015*** (0.005)				-0.004 (0.004)	
Disease index (2nd half)				216.13 (130.74)				0.005* (0.003)				0.006*** (0.002)
2nd born x Disease Index (2nd half)				-246.13* (147.03)				-0.006* (0.003)				0.002 (0.002)
3rd+ born x Disease Index (2nd half)				-383.76 (303.85)				-0.006 (0.006)				-0.001 (0.005)
Observations	1,650,795	1,650,795	1,650,795	1,650,795	1,646,857	1,646,857	1,646,857	1,646,857	2,437,790	2,437,790	2,437,790	2,437,790
Mean	55,999.77	55,999.77	55,999.77	55,999.77	10.854	10.854	10.854	10.854	0.695	0.695	0.695	0.695
p-value		0.244	0.219	0.573		0.514	0.327	0.998		0.524	0.623	0.621

Notes: The sample includes children of all birth order from families with multiple children. The observation is at the person-by-age level, during ages 25-32. The respiratory disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13–71 months per 100 children in each child's municipality of birth during the first year of life, excluding any hospitalizations of older sibling(s) in this age range. Outcome variables are wage income (conditional on employment, winsorized at the 1st-99th percentile) for columns (1)–(4), log wage income (conditional on employment) for columns (5)–(8), and labor force participation for columns (9)–(12). Municipality fixed effects, birth year-month fixed effects, age fixed effects, and family background controls are included in all regressions. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table E16: Effect of Respiratory Disease Exposure in the First Year of Life on Income at Ages 25–32, Including Higher Order Births

	Total Income (winsorized) at Age 25-32				Log Total Income at Age 25-32				Income Percentile at Age 25-32			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2nd born	-457.23*** (76.81)	-62.56 (207.97)	-27.81 (164.20)	-288.01 (192.06)	-0.001 (0.002)	0.012* (0.007)	0.012** (0.005)	0.006 (0.007)	-0.409*** (0.094)	0.070 (0.258)	0.124 (0.206)	-0.218 (0.238)
3rd+ born	-756.59*** (160.56)	-171.45 (371.42)	-169.49 (309.46)	-497.55 (359.59)	-0.004 (0.005)	0.018 (0.013)	0.019* (0.010)	0.005 (0.012)	-0.771*** (0.207)	-0.061 (0.457)	-0.090 (0.383)	-0.430 (0.443)
Disease index		222.09** (100.40)				0.006* (0.003)				0.300** (0.123)		
2nd born x Disease Index		-161.90** (78.03)				-0.006** (0.003)				-0.196** (0.094)		
3rd+ born x Disease Index		-237.94* (131.42)				-0.009** (0.004)				-0.289* (0.159)		
Disease index (1st half)			284.19** (129.82)				0.010*** (0.004)				0.374** (0.159)	
2nd born x Disease Index (1st half)			-356.52*** (118.58)				-0.011*** (0.004)				-0.443*** (0.145)	
3rd+ born x Disease Index (1st half)			-481.38** (205.68)				-0.019*** (0.007)				-0.559** (0.251)	
Disease index (2nd half)				257.58* (131.56)				0.005 (0.004)				0.350** (0.158)
2nd born x Disease Index (2nd half)				-137.24 (145.73)				-0.006 (0.005)				-0.155 (0.175)
3rd+ born x Disease Index (2nd half)				-209.28 (250.96)				-0.007 (0.008)				-0.275 (0.302)
Observations	2,437,790	2,437,790	2,437,790	2,437,790	2,432,328	2,432,328	2,432,328	2,432,328	2,437,783	2,437,783	2,437,783	2,437,783
Mean	49,149.14	49,149.14	49,149.14	49,149.14	10.648	10.648	10.648	10.648	56.544	56.544	56.544	56.544
p-value		0.532	0.525	0.753		0.416	0.277	0.825		0.536	0.626	0.667

Notes: The sample includes children of all birth order from families with multiple children. The observation is at the person-by-age level, during ages 25-32. The respiratory disease exposure index is the number of inpatient admissions with an acute respiratory disease primary diagnosis among children aged 13–71 months per 100 children in each child’s municipality of birth during the first year of life, excluding any hospitalizations of older sibling(s) in this age range. Outcome variables are total income (winsorized at the 1st-99th percentile) for columns (1)-(4), log total income for columns (5)-(8), and income percentile within in the year-age cell for panels (9)-(12). Municipality fixed effects, birth year-month fixed effects, age fixed effects, and family background controls are included in all regressions. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the individual and municipality of birth level. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

F Effects by age

Table F1: Effect of Respiratory Disease Exposure (Annual Disease Index) on Wage and Labor Force Participation, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: Wage (conditional on employment, winsorized)															
Younger	495.12*	1,053.16***	836.35***	955.53***	858.45***	782.03**	101.98	-156.83	-74.45	-146.31	-721.15**	-509.83	-718.33***	-1,104.65***	-1,007.47***
	(273.82)	(247.87)	(161.97)	(188.98)	(283.40)	(351.93)	(262.68)	(300.75)	(329.89)	(326.23)	(335.63)	(332.36)	(269.82)	(325.51)	(301.59)
Disease index	81.85	105.25	230.89***	244.70**	267.76**	273.07*	146.86	-4.42	65.40	123.89	170.14	193.27	202.58	332.91	99.02
	(120.44)	(104.90)	(82.27)	(95.93)	(118.56)	(148.04)	(129.92)	(125.03)	(138.53)	(146.26)	(159.93)	(168.06)	(182.43)	(203.98)	(283.40)
Younger x disease index	-22.66	-117.53	-110.55	-95.00	-81.55	-93.68	29.40	-30.48	-194.07*	-379.05***	-372.41***	-508.47***	-484.15***	-393.24***	-248.22**
	(83.74)	(82.77)	(68.12)	(82.85)	(87.41)	(132.51)	(96.58)	(99.84)	(112.70)	(112.17)	(119.12)	(123.32)	(103.03)	(133.55)	(111.70)
	[0.460]	[0.190]	[0.139]	[0.255]	[0.291]	[0.361]	[0.460]	[0.460]	[0.129]	[0.005]	[0.008]	[0.001]	[0.001]	[0.010]	[0.051]
Observations	21,286	45,920	106,684	142,762	117,884	108,348	110,310	115,366	123,702	129,606	127,150	118,344	104,176	86,112	67,126
Mean	24,307.57	28,973.30	31,939.37	35,325.23	39,854.85	43,459.13	46,166.17	48,890.84	51,793.21	54,509.53	57,000.44	59,183.07	61,035.16	62,920.02	64,673.24
Panel B: Log Wage (conditional on employed)															
Younger	0.023**	0.036***	0.025***	0.027***	0.024***	0.030***	0.006	-0.006	0.005	0.003	-0.007	0.002	-0.006	-0.014*	-0.016**
	(0.011)	(0.009)	(0.006)	(0.005)	(0.008)	(0.010)	(0.007)	(0.008)	(0.009)	(0.009)	(0.008)	(0.007)	(0.006)	(0.008)	(0.006)
Disease index	0.006	0.002	0.007**	0.006**	0.007**	0.010***	0.004	-0.002	0.001	0.001	0.003	0.005	0.006	0.010**	0.004
	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)
Younger x disease index	-0.003	-0.004	-0.003	-0.002	-0.002	-0.006	0.000	0.001	-0.004	-0.009***	-0.008***	-0.014***	-0.012***	-0.010***	-0.006***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
	[0.332]	[0.187]	[0.176]	[0.319]	[0.332]	[0.176]	[0.492]	[0.412]	[0.187]	[0.017]	[0.017]	[0.001]	[0.001]	[0.014]	[0.014]
Observations	21,260	45,834	106,540	142,502	117,576	107,960	109,854	114,828	123,116	128,918	126,526	117,754	103,674	85,652	66,794
Mean	10.047	10.217	10.307	10.395	10.505	10.587	10.649	10.711	10.774	10.831	10.881	10.923	10.959	10.994	11.028
Panel C: Labor Force Participation															
Younger	0.035***	0.045***	0.044***	0.044***	0.052***	0.052***	0.046***	0.034***	0.018***	0.005	0.002	-0.002	-0.012*	-0.018***	-0.015***
	(0.002)	(0.003)	(0.004)	(0.006)	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.006)	(0.005)	(0.006)
Disease index	-0.002*	-0.003	-0.003*	-0.006***	-0.004	0.000	0.002	0.001	0.003	0.002	0.002	0.003	0.002	0.000	0.009**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)
Younger x disease index	0.001	0.002	0.002	0.003	0.003	0.001	0.000	0.001	0.002	0.000	-0.002*	-0.003	-0.002	0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
	[1.000]	[0.745]	[0.745]	[0.745]	[0.745]	[1.000]	[1.000]	[1.000]	[0.950]	[1.000]	[0.745]	[0.745]	[1.000]	[1.000]	[1.000]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,556	275,884	234,640	197,428	161,932	128,072	96,620
Mean	0.130	0.223	0.402	0.494	0.461	0.460	0.491	0.544	0.613	0.682	0.738	0.778	0.808	0.829	0.842

Notes: These table presents the regression results from model (1), using labor market outcomes measured at each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F2: Effect of Respiratory Disease Exposure (First half-year Disease Index) on Wage and Labor Force Participation, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: Wage (conditional on employment, winsorized)															
Younger	638.87** (258.75)	1,049.33*** (235.61)	907.35*** (152.86)	929.04*** (170.01)	1,132.28*** (250.24)	894.70*** (268.81)	139.48 (257.04)	-153.13 (268.75)	-77.62 (317.67)	-179.11 (280.93)	-907.23*** (314.20)	-643.97** (300.86)	-876.87*** (242.20)	-1,149.63*** (292.56)	-1,001.34*** (316.89)
Disease index (1st half)	289.52 (184.80)	317.73** (157.50)	438.35*** (124.18)	189.32 (152.51)	265.09 (174.14)	189.90 (211.14)	104.46 (207.78)	-167.56 (191.48)	66.53 (219.65)	219.03 (211.51)	193.80 (249.75)	394.42 (252.82)	168.32 (309.83)	232.32 (307.14)	348.02 (340.66)
Younger x disease index (1st half)	-166.19 (155.08)	-236.99 (145.23)	-281.45** (119.48)	-170.93 (149.28)	-387.95** (151.27)	-283.80 (189.41)	28.82 (196.26)	-65.25 (175.43)	-394.21* (210.82)	-746.12*** (190.10)	-590.78*** (223.91)	-916.79*** (216.57)	-839.32*** (178.90)	-759.94*** (219.00)	-514.19** (252.02)
	[0.153]	[0.091]	[0.031]	[0.147]	[0.023]	[0.096]	[0.309]	[0.255]	[0.062]	[0.001]	[0.023]	[0.001]	[0.001]	[0.003]	[0.047]
Observations	21,286	45,920	106,684	142,762	117,884	108,348	110,310	115,366	123,702	129,606	127,150	118,344	104,176	86,112	67,126
Mean	24,307.57	28,973.30	31,939.37	35,325.23	39,854.85	43,459.13	46,166.17	48,890.84	51,793.21	54,509.53	57,000.44	59,183.07	61,035.16	62,920.02	64,673.24
Panel B: Log Wage (conditional on employed)															
Younger	0.028*** (0.010)	0.036*** (0.009)	0.027*** (0.006)	0.026*** (0.005)	0.030*** (0.007)	0.031*** (0.008)	0.006 (0.007)	-0.005 (0.007)	0.004 (0.009)	0.003 (0.008)	-0.010 (0.008)	-0.002 (0.006)	-0.009* (0.005)	-0.015** (0.007)	-0.015** (0.007)
Disease index (1st half)	0.013* (0.008)	0.009 (0.007)	0.012*** (0.004)	0.004 (0.004)	0.007 (0.005)	0.007 (0.006)	0.001 (0.005)	-0.008 (0.005)	-0.002 (0.007)	0.003 (0.005)	0.005 (0.006)	0.012** (0.006)	0.007 (0.007)	0.006 (0.007)	0.009 (0.007)
Younger x disease index (1st half)	-0.010 (0.006)	-0.008 (0.006)	-0.008** (0.004)	-0.004 (0.004)	-0.010** (0.004)	-0.014** (0.006)	0.000 (0.005)	0.001 (0.005)	-0.009 (0.007)	-0.018*** (0.005)	-0.014** (0.006)	-0.025*** (0.005)	-0.022*** (0.004)	-0.019*** (0.006)	-0.013*** (0.005)
	[0.067]	[0.097]	[0.038]	[0.185]	[0.032]	[0.035]	[0.339]	[0.309]	[0.116]	[0.005]	[0.032]	[0.001]	[0.001]	[0.006]	[0.019]
Observations	21,260	45,834	106,540	142,502	117,576	107,960	109,854	114,828	123,116	128,918	126,526	117,754	103,674	85,652	66,794
Mean	10.047	10.217	10.307	10.395	10.505	10.587	10.649	10.711	10.774	10.831	10.881	10.923	10.959	10.994	11.028
Panel C: Labor Force Participation															
Younger	0.036*** (0.002)	0.047*** (0.002)	0.044*** (0.004)	0.047*** (0.005)	0.054*** (0.006)	0.052*** (0.005)	0.047*** (0.005)	0.038*** (0.005)	0.022*** (0.005)	0.008* (0.005)	0.004 (0.004)	-0.001 (0.004)	-0.011** (0.005)	-0.018*** (0.005)	-0.017*** (0.005)
Disease index (1st half)	-0.002 (0.002)	-0.003 (0.003)	-0.004 (0.003)	-0.006* (0.003)	-0.006* (0.004)	0.001 (0.003)	0.004 (0.003)	0.003 (0.003)	0.002 (0.004)	0.004 (0.004)	0.007* (0.004)	0.003 (0.004)	0.003 (0.005)	0.002 (0.005)	0.010* (0.006)
Younger x disease index (1st half)	0.001 (0.001)	0.002 (0.002)	0.003 (0.002)	0.004 (0.004)	0.004 (0.004)	0.002 (0.004)	-0.000 (0.003)	-0.001 (0.003)	0.000 (0.004)	-0.002 (0.003)	-0.006** (0.003)	-0.006* (0.003)	-0.004 (0.004)	0.001 (0.004)	0.001 (0.004)
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.467]	[0.673]	[1.000]	[1.000]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,556	275,884	234,640	197,428	161,932	128,072	96,620
Mean	0.130	0.223	0.402	0.494	0.461	0.460	0.491	0.544	0.613	0.682	0.738	0.778	0.808	0.829	0.842

Notes: These table presents the regression results from model (1), using labor market outcomes measured at each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F3: Effect of Respiratory Disease Exposure (Annual Disease Index) on Income, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: Total Income (winsorized)															
Younger	1,055.73*** (64.86)	1,446.93*** (79.67)	1,443.90*** (98.69)	1,479.66*** (125.15)	1,679.79*** (124.49)	1,670.98*** (143.40)	1,509.62*** (156.44)	1,195.63*** (147.72)	966.16*** (210.21)	472.65* (277.38)	189.58 (294.12)	-9.23 (367.16)	-580.12* (316.13)	-1,002.95*** (291.87)	-1,200.78*** (333.18)
Disease index	-2.33 (37.80)	76.36 (58.02)	118.44* (60.56)	55.41 (60.89)	70.95 (69.85)	151.19** (75.66)	93.46 (82.23)	42.91 (100.64)	211.84** (95.68)	183.23 (123.01)	266.73** (130.67)	314.96* (175.33)	119.93 (189.64)	212.87 (190.58)	260.19 (240.19)
Younger x disease index	-34.59* (19.52) [0.028]	-112.42*** (23.72) [0.001]	-131.02*** (26.55) [0.001]	-90.00** (36.88) [0.018]	-119.39*** (42.89) [0.014]	-113.85** (43.40) [0.016]	-95.93** (45.46) [0.022]	-82.79* (45.14) [0.026]	-157.08** (69.44) [0.020]	-238.82** (93.84) [0.017]	-384.20*** (111.07) [0.004]	-430.58*** (160.50) [0.016]	-337.80*** (121.82) [0.014]	-379.52*** (129.35) [0.013]	-233.91* (123.29) [0.026]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,556	275,884	234,640	197,428	161,932	128,072	96,620
Mean	9,949.18	16,406.03	22,525.50	27,212.33	29,917.63	32,474.25	35,241.66	38,736.89	42,940.13	47,071.62	50,915.83	54,254.17	57,102.61	59,720.16	61,930.46
Panel B: Log Total Income															
Younger	0.122*** (0.009)	0.096*** (0.007)	0.078*** (0.006)	0.064*** (0.007)	0.067*** (0.005)	0.052*** (0.007)	0.050*** (0.007)	0.038*** (0.006)	0.039*** (0.008)	0.019* (0.010)	0.016 (0.010)	0.013 (0.010)	0.003 (0.010)	-0.013 (0.010)	-0.010 (0.009)
Disease index	0.007 (0.005)	0.011** (0.004)	0.010*** (0.004)	0.007** (0.003)	0.007** (0.003)	0.008*** (0.003)	0.007** (0.003)	0.003 (0.003)	0.009** (0.004)	0.002 (0.004)	0.007* (0.004)	0.006 (0.005)	0.001 (0.005)	0.003 (0.006)	0.012 (0.007)
Younger x disease index	-0.008*** (0.002) [0.003]	-0.011*** (0.002) [0.001]	-0.011*** (0.002) [0.001]	-0.008*** (0.002) [0.001]	-0.010*** (0.002) [0.001]	-0.006*** (0.002) [0.012]	-0.006** (0.002) [0.013]	-0.004** (0.002) [0.024]	-0.007** (0.003) [0.015]	-0.005 (0.003) [0.042]	-0.011*** (0.004) [0.009]	-0.009** (0.005) [0.024]	-0.009** (0.004) [0.015]	-0.009** (0.004) [0.024]	-0.007** (0.004) [0.024]
Observations	637,264	599,874	558,756	517,862	477,416	436,628	397,458	355,900	314,172	274,560	233,500	196,446	161,138	127,414	96,128
Mean	8.797	9.461	9.814	10.023	10.128	10.220	10.304	10.404	10.513	10.609	10.696	10.770	10.833	10.892	10.938
Panel C: Income Percentile															
Younger	3.727*** (0.223)	3.940*** (0.221)	3.246*** (0.221)	2.743*** (0.248)	2.919*** (0.221)	2.780*** (0.236)	2.375*** (0.243)	1.910*** (0.207)	1.457*** (0.278)	0.682* (0.346)	0.209 (0.340)	-0.153 (0.417)	-0.815** (0.362)	-1.325*** (0.328)	-1.586*** (0.376)
Disease index	0.140 (0.136)	0.280* (0.160)	0.291** (0.132)	0.051 (0.115)	0.067 (0.113)	0.260** (0.121)	0.171 (0.123)	0.050 (0.134)	0.275** (0.124)	0.197 (0.146)	0.275* (0.156)	0.361* (0.197)	0.122 (0.212)	0.242 (0.216)	0.278 (0.278)
Younger x disease index	-0.211*** (0.064) [0.004]	-0.369*** (0.067) [0.001]	-0.337*** (0.059) [0.001]	-0.155** (0.072) [0.018]	-0.229*** (0.077) [0.007]	-0.242*** (0.069) [0.003]	-0.188*** (0.070) [0.011]	-0.138** (0.065) [0.018]	-0.195** (0.089) [0.018]	-0.270** (0.111) [0.013]	-0.436*** (0.122) [0.003]	-0.465** (0.180) [0.011]	-0.370** (0.141) [0.011]	-0.425*** (0.147) [0.007]	-0.238 (0.145) [0.029]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,554	275,882	234,638	197,426	161,930	128,070	96,618
Mean	52.102	52.593	53.980	55.053	55.517	55.893	56.155	56.243	56.361	56.539	56.789	56.955	57.045	57.096	57.119

Notes: These table presents the regression results from model (1), using labor market outcomes measured at each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F4: Effect of Respiratory Disease Exposure (First half-year Disease Index) on Income, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: Total Income (winsorized)															
Younger	1,003.06*** (58.19)	1,353.52*** (72.00)	1,364.56*** (88.21)	1,457.95*** (111.44)	1,710.06*** (105.27)	1,654.62*** (124.29)	1,482.22*** (142.90)	1,247.76*** (142.72)	999.43*** (209.38)	568.04** (250.49)	151.98 (261.59)	-59.83 (305.32)	-581.31** (282.92)	-1,026.82*** (291.29)	-1,223.52*** (339.24)
Disease index (1st half)	42.09 (57.53)	103.52 (74.16)	178.23** (75.61)	65.49 (88.46)	116.05 (95.69)	209.30** (104.14)	126.84 (106.93)	103.16 (131.26)	275.38* (139.70)	434.95** (180.56)	517.94** (197.89)	477.06* (280.72)	174.99 (315.84)	352.78 (307.77)	548.70 (334.72)
Younger x disease index (1st half)	-30.18 (31.06) [0.047]	-156.47*** (39.58) [0.001]	-204.45*** (47.45) [0.001]	-165.58** (65.19) [0.009]	-265.95*** (72.10) [0.002]	-218.61*** (75.84) [0.005]	-173.08** (82.15) [0.016]	-212.18** (85.34) [0.009]	-348.46** (132.85) [0.008]	-571.07*** (166.53) [0.003]	-749.41*** (193.11) [0.001]	-833.95*** (267.66) [0.004]	-691.23*** (212.47) [0.003]	-754.02*** (248.11) [0.004]	-453.44* (249.75) [0.019]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,556	275,884	234,640	197,428	161,932	128,072	96,620
Mean	9,949.18	16,406.03	22,525.50	27,212.33	29,917.63	32,474.25	35,241.66	38,736.89	42,940.13	47,071.62	50,915.83	54,254.17	57,102.61	59,720.16	61,930.46
Panel B: Log Total Income															
Younger	0.112*** (0.008)	0.088*** (0.006)	0.071*** (0.005)	0.061*** (0.006)	0.063*** (0.004)	0.049*** (0.006)	0.046*** (0.006)	0.039*** (0.005)	0.037*** (0.007)	0.022** (0.009)	0.017* (0.009)	0.011 (0.009)	0.007 (0.009)	-0.012 (0.010)	-0.013 (0.010)
Disease index (1st half)	0.008 (0.007)	0.014** (0.006)	0.014*** (0.005)	0.010** (0.005)	0.011*** (0.004)	0.012*** (0.005)	0.010** (0.005)	0.007 (0.005)	0.012** (0.005)	0.011** (0.005)	0.017*** (0.006)	0.011 (0.008)	0.005 (0.009)	0.010 (0.009)	0.021** (0.009)
Younger x disease index (1st half)	-0.010** (0.004) [0.018]	-0.016*** (0.004) [0.001]	-0.016*** (0.003) [0.001]	-0.013*** (0.003) [0.001]	-0.017*** (0.003) [0.001]	-0.010** (0.004) [0.021]	-0.010** (0.005) [0.021]	-0.008** (0.004) [0.021]	-0.013*** (0.005) [0.012]	-0.013** (0.006) [0.019]	-0.022*** (0.006) [0.002]	-0.018** (0.008) [0.021]	-0.022*** (0.006) [0.002]	-0.018** (0.008) [0.019]	-0.012 (0.007) [0.036]
Observations	637,264	599,874	558,756	517,862	477,416	436,628	397,458	355,900	314,172	274,560	233,500	196,446	161,138	127,414	96,128
Mean	8.797	9.461	9.814	10.023	10.128	10.220	10.304	10.404	10.513	10.609	10.696	10.770	10.833	10.892	10.938
Panel C: Income Percentile															
Younger	3.312*** (0.199)	3.618*** (0.182)	3.014*** (0.195)	2.684*** (0.220)	2.947*** (0.185)	2.691*** (0.205)	2.269*** (0.221)	2.001*** (0.194)	1.532*** (0.269)	0.826** (0.314)	0.184 (0.306)	-0.184 (0.351)	-0.815** (0.332)	-1.320*** (0.334)	-1.645*** (0.388)
Disease index (1st half)	0.256 (0.186)	0.393* (0.200)	0.419** (0.162)	0.062 (0.171)	0.117 (0.157)	0.378** (0.162)	0.245 (0.160)	0.183 (0.181)	0.373** (0.180)	0.503** (0.216)	0.516** (0.232)	0.537* (0.322)	0.173 (0.363)	0.411 (0.348)	0.564 (0.400)
Younger x disease index (1st half)	-0.112 (0.105) [0.044]	-0.502*** (0.106) [0.001]	-0.505*** (0.105) [0.001]	-0.269** (0.127) [0.012]	-0.487*** (0.130) [0.001]	-0.422*** (0.122) [0.002]	-0.296** (0.127) [0.010]	-0.357*** (0.122) [0.005]	-0.461*** (0.169) [0.006]	-0.678*** (0.202) [0.003]	-0.867*** (0.214) [0.001]	-0.922*** (0.300) [0.004]	-0.759*** (0.255) [0.004]	-0.877*** (0.288) [0.004]	-0.425 (0.299) [0.036]
Observations	639,640	600,958	560,010	519,190	478,768	438,168	399,012	357,380	315,554	275,882	234,638	197,426	161,930	128,070	96,618
Mean	52.102	52.593	53.980	55.053	55.517	55.893	56.155	56.243	56.361	56.539	56.789	56.955	57.045	57.096	57.119

Notes: These table presents the regression results from model (1), using labor market outcomes measured at each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F5: Effect of Respiratory Disease Exposure (Annual Disease Index) on Educational Outcomes, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: High School Graduation															
Younger	0.000	0.003**	-0.036***	-0.077***	-0.078***	-0.069***	-0.063***	-0.059***	-0.057***	-0.051***	-0.049***	-0.045***	-0.040***	-0.039***	-0.042***
	(0.000)	(0.001)	(0.006)	(0.007)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.006)
Disease index	-0.000	0.001*	0.005*	0.004*	-0.000	0.000	0.001	0.002	0.001	0.002	0.002	0.004	0.005*	0.005	0.001
	(0.000)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)
Younger x disease index	-0.000	-0.001	-0.006**	-0.004	-0.001	-0.001	-0.001	-0.000	0.001	-0.001	-0.001	-0.003**	-0.003*	-0.003*	-0.001
	(0.000)	(0.000)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
	[0.812]	[0.637]	[0.332]	[0.467]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.332]	[0.467]	[0.381]	[1.000]
Observations	631,358	593,636	548,484	505,086	466,120	423,458	379,938	333,864	291,574	252,552	213,880	179,486	147,524	117,450	89,542
Mean	0.000	0.010	0.274	0.571	0.687	0.746	0.777	0.795	0.809	0.819	0.828	0.836	0.843	0.850	0.857
Panel B: College Graduation															
Younger	-0.000	-0.000	0.000	-0.000	-0.001*	-0.006***	-0.022***	-0.043***	-0.068***	-0.076***	-0.078***	-0.078***	-0.080***	-0.086***	-0.087***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.003)	(0.007)	(0.008)	(0.008)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)
Disease index	-0.000	-0.000	-0.000	0.000	0.000*	0.001**	0.005***	0.006***	0.003	-0.000	-0.003	-0.000	0.001	0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Younger x disease index	0.000	0.000	0.000	0.000	0.000	-0.001***	-0.003**	-0.006*	-0.003	-0.001	-0.003	-0.004	-0.003	-0.002	-0.003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
	[0.821]	[0.821]	[0.564]	[0.821]	[0.821]	[0.115]	[0.209]	[0.368]	[0.704]	[0.821]	[0.564]	[0.564]	[0.564]	[0.564]	[0.564]
Observations	631,358	593,636	548,484	505,086	466,120	423,458	379,938	333,864	291,574	252,552	213,880	179,486	147,524	117,450	89,542
Mean	0.000	0.000	0.000	0.000	0.004	0.026	0.091	0.189	0.283	0.348	0.389	0.416	0.436	0.451	0.463

Notes: These table presents the regression results from model (1), using whether graduated from high school or college by each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F6: Effect of Respiratory Disease Exposure (First half-year Disease Index) on Educational Outcomes, by Age of Observation

	(1) Age 18	(2) Age 19	(3) Age 20	(4) Age 21	(5) Age 22	(6) Age 23	(7) Age 24	(8) Age 25	(9) Age 26	(10) Age 27	(11) Age 28	(12) Age 29	(13) Age 30	(14) Age 31	(15) Age 32
Panel A: High School Graduation															
Younger	0.000 (0.000)	0.002*** (0.001)	-0.042*** (0.004)	-0.076*** (0.005)	-0.073*** (0.004)	-0.063*** (0.003)	-0.059*** (0.003)	-0.057*** (0.003)	-0.055*** (0.003)	-0.049*** (0.003)	-0.048*** (0.003)	-0.042*** (0.003)	-0.039*** (0.004)	-0.038*** (0.004)	-0.041*** (0.005)
Disease index (1st half)	-0.000 (0.000)	-0.001* (0.001)	0.003 (0.003)	0.006* (0.004)	0.002 (0.003)	0.001 (0.003)	0.000 (0.003)	-0.001 (0.003)	-0.001 (0.003)	0.002 (0.003)	0.001 (0.003)	0.003 (0.003)	0.004 (0.004)	0.006 (0.004)	0.005 (0.005)
Younger x disease index (1st half)	-0.000 (0.000)	-0.001 (0.000)	-0.007* (0.004)	-0.009** (0.004)	-0.007*** (0.002)	-0.007*** (0.002)	-0.005** (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.003 (0.002)	-0.003 (0.003)	-0.008*** (0.002)	-0.006** (0.003)	-0.007** (0.003)	-0.002 (0.004)
	[0.414]	[0.189]	[0.086]	[0.067]	[0.033]	[0.010]	[0.067]	[0.191]	[0.480]	[0.151]	[0.214]	[0.016]	[0.086]	[0.086]	[0.389]
Observations	631,358	593,636	548,484	505,086	466,120	423,458	379,938	333,864	291,574	252,552	213,880	179,486	147,524	117,450	89,542
Mean	0.000	0.010	0.274	0.571	0.687	0.746	0.777	0.795	0.809	0.819	0.828	0.836	0.843	0.850	0.857
Panel B: College Graduation															
Younger	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.001* (0.000)	-0.007*** (0.001)	-0.026*** (0.003)	-0.047*** (0.006)	-0.067*** (0.006)	-0.074*** (0.007)	-0.078*** (0.007)	-0.078*** (0.006)	-0.079*** (0.006)	-0.085*** (0.007)	-0.086*** (0.008)
Disease index (1st half)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	0.004 (0.003)	0.006 (0.004)	0.002 (0.004)	-0.001 (0.005)	-0.005 (0.005)	-0.003 (0.005)	-0.001 (0.006)	-0.002 (0.006)	0.001 (0.007)
Younger x disease index (1st half)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.001* (0.001)	-0.004 (0.003)	-0.008* (0.005)	-0.007 (0.005)	-0.005 (0.006)	-0.007 (0.005)	-0.008* (0.005)	-0.007 (0.006)	-0.005 (0.005)	-0.007 (0.005)
	[0.593]	[0.593]	[0.593]	[0.632]	[0.632]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]	[0.593]
Observations	631,358	593,636	548,484	505,086	466,120	423,458	379,938	333,864	291,574	252,552	213,880	179,486	147,524	117,450	89,542
Mean	0.000	0.000	0.000	0.000	0.004	0.026	0.091	0.189	0.283	0.348	0.389	0.416	0.436	0.451	0.463

Notes: These table presents the regression results from model (1), using whether graduated from high school or college by each age between 18 to 32 as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.

Table F7: Effect of the Respiratory Disease Exposure (Annual Disease Index) on Mental Health Outcomes, by Age of Observation

	(1) Age 16	(2) Age 17	(3) Age 18	(4) Age 19	(5) Age 20	(6) Age 21	(7) Age 22	(8) Age 23	(9) Age 24	(10) Age 25	(11) Age 26
Panel A: Number of Private Psychiatric Clinic / Psychiatric Hospital Visits (*100)											
Younger	-0.276 (0.522)	-0.511 (0.575)	-0.251 (0.684)	-0.273 (1.021)	0.007 (1.148)	0.326 (1.116)	-0.566 (0.874)	-0.901 (0.959)	-2.119* (1.247)	-3.474*** (1.218)	-0.914 (1.235)
Disease index	0.116 (0.287)	-0.246 (0.307)	-0.280 (0.288)	-0.602 (0.429)	-0.003 (0.466)	0.019 (0.484)	0.125 (0.537)	-0.161 (0.473)	-0.465 (0.674)	-0.685 (0.696)	0.562 (0.826)
Younger x disease index	0.369 (0.233) [0.132]	0.476** (0.235) [0.090]	0.321 (0.249) [0.178]	0.540 (0.371) [0.147]	0.330 (0.412) [0.271]	0.286 (0.419) [0.292]	0.591* (0.299) [0.090]	1.110*** (0.329) [0.006]	1.080** (0.441) [0.052]	1.644*** (0.456) [0.006]	0.587 (0.538) [0.228]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	7.380	8.547	10.884	12.929	14.150	14.735	15.226	15.833	16.823	16.861	16.755
Panel B: Number of Private Psychiatric Clinic Visits (*100)											
Younger	-0.068 (0.494)	-1.015* (0.515)	-0.660 (0.602)	-0.980 (0.888)	-0.613 (1.082)	-0.456 (0.815)	-1.167 (0.718)	-1.446 (0.892)	-2.006* (1.125)	-4.405*** (1.000)	-1.272 (1.145)
Disease index	0.183 (0.286)	-0.359 (0.265)	-0.569** (0.257)	-0.689* (0.386)	-0.191 (0.410)	-0.132 (0.426)	0.150 (0.464)	0.147 (0.436)	-0.321 (0.600)	-0.998 (0.620)	0.415 (0.737)
Younger x disease index	0.094 (0.230) [0.331]	0.443** (0.188) [0.076]	0.321 (0.212) [0.145]	0.518 (0.326) [0.145]	0.252 (0.375) [0.267]	0.242 (0.292) [0.267]	0.494* (0.251) [0.102]	0.817** (0.324) [0.073]	0.730* (0.379) [0.102]	1.736*** (0.396) [0.001]	0.549 (0.487) [0.247]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	4.005	4.837	6.506	7.962	8.796	9.099	9.547	9.974	10.890	11.062	11.032
Panel C: Number of Psychiatric Hospital Visits (*100)											
Younger	-0.208 (0.236)	0.505* (0.266)	0.410* (0.237)	0.707** (0.325)	0.620 (0.463)	0.782 (0.545)	0.601 (0.418)	0.545 (0.515)	-0.114 (0.454)	0.931 (0.571)	0.357 (0.700)
Disease index	-0.066 (0.111)	0.114 (0.114)	0.289** (0.117)	0.087 (0.169)	0.188 (0.183)	0.151 (0.230)	-0.025 (0.195)	-0.308 (0.211)	-0.144 (0.199)	0.313 (0.294)	0.147 (0.318)
Younger x disease index	0.275*** (0.090) [0.036]	0.033 (0.086) [1.000]	-0.001 (0.079) [1.000]	0.022 (0.112) [1.000]	0.077 (0.172) [1.000]	0.044 (0.221) [1.000]	0.096 (0.148) [1.000]	0.293 (0.213) [1.000]	0.350** (0.157) [0.163]	-0.092 (0.224) [1.000]	0.039 (0.255) [1.000]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	3.375	3.711	4.378	4.967	5.354	5.636	5.679	5.860	5.933	5.799	5.723

Notes: These table presents the regression results from model (1), using the number of mental health care visits as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table F8: Effect of the Respiratory Disease Exposure (First half-year Disease Index) on Mental Health Outcomes, by Age of Observation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Age 16	Age 17	Age 18	Age 19	Age 20	Age 21	Age 22	Age 23	Age 24	Age 25	Age 26
Panel A: Number of Private Psychiatric Clinic / Psychiatric Hospital Visits (*100)											
Younger	-0.372	-0.402	-0.224	-0.536	-0.059	0.620	-0.877	-0.831	-2.137*	-3.310***	-1.062
	(0.466)	(0.542)	(0.754)	(0.894)	(0.899)	(0.908)	(0.876)	(0.995)	(1.205)	(1.164)	(1.077)
Disease index (1st half)	-0.006	-0.741	-0.621	-0.754	0.030	0.703	0.685	0.223	-0.520	-0.957	0.653
	(0.410)	(0.470)	(0.556)	(0.740)	(0.697)	(0.738)	(0.745)	(0.794)	(1.034)	(0.984)	(1.094)
Younger x disease index (1st half)	0.819**	0.879**	0.628	1.294**	0.719	0.351	1.450**	2.203***	2.217***	3.210***	1.328
	(0.348)	(0.368)	(0.526)	(0.619)	(0.635)	(0.669)	(0.622)	(0.703)	(0.837)	(0.855)	(0.896)
	[0.034]	[0.034]	[0.117]	[0.042]	[0.117]	[0.243]	[0.034]	[0.012]	[0.030]	[0.004]	[0.077]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	7.380	8.547	10.884	12.929	14.150	14.735	15.226	15.833	16.823	16.861	16.755
Panel B: Number of Private Psychiatric Clinic Visits (*100)											
Younger	-0.181	-0.806	-0.588	-0.969	-0.505	-0.277	-1.418*	-1.368	-2.157*	-3.988***	-1.269
	(0.417)	(0.529)	(0.656)	(0.737)	(0.788)	(0.731)	(0.718)	(0.841)	(1.094)	(0.995)	(0.938)
Disease index (1st half)	0.068	-0.651	-0.895*	-0.916	-0.186	0.556	0.717	0.665	-0.403	-1.103	0.482
	(0.394)	(0.434)	(0.485)	(0.658)	(0.662)	(0.651)	(0.677)	(0.643)	(0.938)	(0.877)	(0.960)
Younger x disease index (1st half)	0.276	0.737**	0.596	1.040*	0.428	0.352	1.206**	1.599***	1.614**	3.181***	1.117
	(0.336)	(0.319)	(0.440)	(0.528)	(0.531)	(0.502)	(0.487)	(0.585)	(0.736)	(0.759)	(0.745)
	[0.268]	[0.055]	[0.126]	[0.068]	[0.268]	[0.276]	[0.048]	[0.040]	[0.059]	[0.001]	[0.109]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	4.005	4.837	6.506	7.962	8.796	9.099	9.547	9.974	10.890	11.062	11.032
Panel C: Number of Psychiatric Hospital Visits (*100)											
Younger	-0.191	0.405	0.365	0.434	0.446	0.898**	0.541	0.537	0.020	0.678	0.207
	(0.205)	(0.250)	(0.250)	(0.307)	(0.397)	(0.405)	(0.370)	(0.422)	(0.407)	(0.509)	(0.636)
Disease index (1st half)	-0.073	-0.090	0.275	0.161	0.215	0.146	-0.033	-0.443	-0.117	0.146	0.171
	(0.192)	(0.171)	(0.199)	(0.240)	(0.251)	(0.300)	(0.299)	(0.288)	(0.297)	(0.424)	(0.460)
Younger x disease index (1st half)	0.543***	0.143	0.033	0.254	0.292	-0.001	0.244	0.603*	0.603**	0.029	0.210
	(0.152)	(0.162)	(0.171)	(0.194)	(0.284)	(0.343)	(0.273)	(0.336)	(0.259)	(0.374)	(0.450)
	[0.007]	[0.768]	[1.000]	[0.635]	[0.768]	[1.000]	[0.768]	[0.297]	[0.127]	[1.000]	[1.000]
Observations	676,592	636,598	599,572	559,928	515,674	472,988	435,258	396,194	354,252	312,552	273,620
Mean	3.375	3.711	4.378	4.967	5.354	5.636	5.679	5.860	5.933	5.799	5.723

Notes: These table presents the regression results from model (1), using the number of mental health care visits as outcomes. At each age, we require both of the siblings are observed in the data. All regressions include municipality, year-month of birth fixed effect, and family background controls. See notes under Table 2 for more details about the specifications and variables. Standard errors are clustered on the child's municipality of birth in all models. Anderson's sharpened q-values (Anderson, 2008) for the interaction term are reported in bracket. Significance levels: * p<0.1 ** p<0.05 *** p<0.01.