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**eAppendix 1: Linkage Methodology**

We linked birth records of female infants born between 1971 and 1995 (mother generation or G2) to birth records of infants born between 1989 and 2015 (child generation or G3). The infant’s date of birth, first name, middle name and last name in the 1971 – 1995 records are linked to the mother’s date of birth, first name, middle name, and maiden name in the 1989 – 2015 records.

Birth records from 1989 onwards include the mother’s date of birth, so the child generation must begin in 1989 or later. We allow the mother and child generations to overlap to capture as many mother-child dyads as possible. We end the mother generation in the year 1995 so that all potential mothers have at least 20 years to give birth.

Birth records were linked between the two generations using *fastLink*, a probabilistic matching package in R designed to quickly link records without unique identifiers.1 All linking was done in R version 3.4.3.

Before linkage, the birth records of the infants born between 1989 and 2015 were restricted to ones whose mothers would be in our records, specifically those whose mothers were born in Florida between 1971 and 1995. Because Florida birth records contain information on year of death, we restricted records in the mother generation to infants who survived to at least age 15 and thus had a chance to give birth between 1989 and 2015. Lastly, before linkage, all names were stripped of any punctuation (dashes, apostrophes, etc.). Records missing either a first name or last name were excluded. This resulted in a total of 1,800,093 potential mothers and 1,435,676 potential children. Of the 1,435,676 infants with a mother born in Florida between 1971 and 1995, 1,372,288 (95.6%) were linked to their mothers’ birth records.

Matching variables included birthdate (YYMMDD), first name, middle name, and last name. Year of birth was used as a blocking variable, such that birth records from year *y* in the mother generation were only considered potential matches for birth records in the child generation whose mother’s year of birth was the same year *y*. This reduces the computation time substantially by reducing the number of pairwise comparisons for which the software must evaluate.

We considered several linkage specifications and examined their accuracy on a subset of the data. The linkage specification we ultimately chose included exact matching for date of birth, and string distance matching for first name, middle name, and last name, using the Jaro-Winkler measure of distance. The Jaro distance is a commonly used measure of string distance in the record linkage literature. It measures the degree to which two strings have characters in common; it slightly penalizes transpositions and more heavily penalizes distinct characters.2 The Jaro-Winkler string distance is a variation on the Jaro distance that gives more weight to the beginning characters in a string.2

We used fastLink’s built-in option to reweight the likelihood of matches by the frequency of the first name so that very common first names have a lower probability of match than do uncommon first names. The deduplication argument was set to false to allow one mother to match to multiple children in the next generation. However, this meant that we allowed for each child to match to multiple mothers. This was rare, and in cases where a child matched to multiple mothers, the match with the highest posterior probability was retained.

When running the linkage, we set the threshold for matches to be probabilities above 0.75. The posterior probabilities returned from the software ranged from 0.93 to 0.999.

Of the pairs that were determined to be matches using these parameters:

* 80% are exact matches on first name, middle name, last name, and date of birth
* 8.4 % are exact matches on first name, last name, and date of birth but are missing middle name on one or both of the records.
* 1.9% are exact matches on first name, last name, and date of birth but have one record that reports only middle initial while the other reports the full middle name
* 5.9 % have disagreements in middle name only
* 1.1% have disagreements in last name only
* 1.5% have disagreements in first name only
* 1.6% have disagreements in two or more fields

For each of these categories of disagreements, we visually inspected a sample of the pairs and determined that the vast majority were likely to be true matches with only minor disagreements between the two records.

Examples of these minor disagreements include:

* One record contains several middle names while the other record contains only one of these middle names
* One record contains two last names or a hyphenated name while the other record contains only one of these last names
* Alternate spellings or misspellings of names that sound phonetically similar (“Sara” and “Sarah” or “Anderson” and “Andersen”)

**eAppendix 2: Supplementary Information on Immigrants in Florida**

Florida birth records do not routinely collect information on the mother’s birth country until 2004. We are able to determine foreign-born status from 1971 onwards because these records contain a variable for the mother’s state of birth that includes categories for major sending countries and territories and a category for the remainder of the world. For the purposes of our analyses, we consider women born in Puerto Rico and the Virgin Islands to be US-born. External data from the census reveals that the majority of black immigrants living in Florida at this time period were from the West Indies or Caribbean. In the decadal censuses from 1970-1990, between 74-90% of the foreign-born black residents reported a West Indies or Caribbean birthplace while less than 2% reported a birthplace in Africa.3 In the same time period, between 40-60% of foreign-born white residents reported a Latin American birthplace.3 Current Population Survey (CPS) data from these years identify Jamaica and Haiti as the most common origin countries for black immigrants and Cuba and Mexico as the most common origin countries for white immigrants.4

**eAppendix 3: Supplementary Information on Hispanic Ethnicity Imputation**

Hispanic origin of the mother became routinely collected in Florida birth records in 1989, so we were not able to directly ascertain G1 Hispanic ethnicity. For every surname appearing at least 100 times in the census, the Census Bureau releases tabulations of the percent of individuals with that surname who report each race/ethnicity. We imputed Hispanic ethnicity from G1 maiden name based on the frequency of surnames by race and ethnicity in the 2010 census using the *wru* package in R.5 For each surname that matched to a surname in the 2010 census, a probability of Hispanic ethnicity was returned. We assigned individuals to be Hispanic when the probability of Hispanic ethnicity was 0.5 or greater. Very few cases were near this 0.5 threshold; the distribution of these probabilities was bimodal, such that 96% of G1 women had a surname with either a low probability of being Hispanic (less than 0.15) or a high probability of being Hispanic (greater than 0.85), and less than 1% of G1 women had a probability of being Hispanic that fell between 0.4 and 0.6. Hispanic ethnicity was not imputed for black women because foreign-born black women often had maiden names that were too rare to appear in the census surname tabulations. External data from the census and CPS data suggest that the majority of both US-born and foreign-born black residents of Florida were non-Hispanic.3,4 We internally validated this imputation procedure for the years of data in which mothers self-reported Hispanic ethnicity (1989-2015). In these years, 90% of women who self-reported a Hispanic ethnicity and a white race were correctly identified as Hispanic based on their surnames. Only 3% of women identifying as white who did not self-report as Hispanic were incorrectly identified as Hispanic based on their surnames.

**eFigure 1: Intergenerational Analytic Sample Creation**

**Births without recorded death before age 15**

n = 1,800,093

**Florida Births**

**1989 - 2015**

n = 2,701,910

**Florida Female Births**

**1971 - 1995**

n = 1,823,890

**Births to mothers born in Florida between 1971 – 1995**

n = 1,435,676

**Linkage with *fastLink***

**Successfully linked**

n = 684,838 mothers, 1,372,288 children

**Complete birth outcome data and sociodemographic covariates1**

n = 330,343 mothers, 454,468 daughters

**Grandmother reported white or black race**

n = 449,135 mothers, 635,823 daughters

**Both generations singleton births**

n = 453,406 mothers, 643,478 daughters

**G3 births with mother age at birth ≥ 15**

n = 452,246 mothers, 640,208 daughters

**Restricted to female births**

n = 465,770 mothers, 670,138 daughters

**US-born black**

n =111,052 mothers,

164,563 daughters

**Foreign-born black**

n = 8,479 mothers, 11,136 daughters

**US-born non-Hispanic white**

n =171,701 mothers,

227,331 daughters

**Foreign-born non-Hispanic white**

n = 6,210 mothers,

8,015 daughters

**US-born Hispanic white**

n = 13,267 mothers,

18,030 daughters

**Foreign-born Hispanic white**

n = 19,634 mothers,

25,393 daughters

Sample size by grandmother race/ethnicity and foreign-born status

1Variables from mother’s birth records: grandmother characteristics: foreign-born status, education, receipt of prenatal care during pregnancy with mother, parity at mother’s birth, mailing zip code; mother characteristics: year of birth and birthweight. Variables from child’s birth records: mother characteristics: education, receipt of prenatal care during pregnancy with child, parity at child’s birth, risk factors during child’s pregnancy (diabetes, chronic hypertension, pregnancy-related hypertension); child characteristics: year of birth, and birthweight. We also excluded 14 daughters and 4 mothers with complete data but implausible values of birthweight (less than 125 grams or greater than 6000 grams). Women born in Puerto Rico and the Virgin Islands are considered US-born in our analyses.

1Variables from mother’s birth records: grandmother characteristics: imputed Hispanic ethnicity, nativity, education, receipt of prenatal care and number of visits during pregnancy with mother, parity at mother’s birth, mailing zip code; mother characteristics: year of birth and birthweight. Variables from child’s birth records: mother characteristics: education, receipt of prenatal care and number of visits during pregnancy with child, parity at child’s birth, risk factors during child’s pregnancy (diabetes, chronic hypertension, pregnancy-related hypertension); child characteristics: year of birth, and birthweight. We also excluded 7 daughters and 3 mothers with complete data but implausible values of birthweight (less than 125 grams or greater than 6000 grams). Women born in Puerto Rico and the Virgin Islands are considered US-born in our analyses.

**eFigure 2: Predicted Probability of Low Birthweight by Mother’s Education in A) G2 births and B) G3 births**

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Note: Base models in both G2 and G3 include only year fixed effects. G2 full model includes year fixed effects, G1 marital status, G1 parity at G2 birth (0, 1, 2, 3, 4 or more), G1 receipt of prenatal care, and the following G1 zip code characteristics: logged median household income, percent below poverty line, and percent foreign born. G3 full model includes year fixed effects, G2 marital status, G2 parity at G3 birth (0, 1, 2, 3, 4 or more), G2 receipt of prenatal care, and the following G2 zip code characteristics: logged median household income, percent below poverty line, and percent foreign born. Predictions are generated by holding covariates other than G1 race/ethnicity and foreign-born status and education at their mean values for the entire sample.

**eTable 1: Multivariate Results Predicting G2 Birthweight Outcomes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Birthweight (g)  Coefficient (SE) | | Low Birthweight  Odds Ratio (95% CI) | |
|  | Base Model | Full Model | Base Model | Full Model |
| G1 race/ethnicity and foreign-born status (Ref = US-born White) |  |  |  |  |
| US-born Hispanic | -73.41\*\*\* | -70.81\*\*\* | 1.19\*\*\* | 1.21\*\* |
|  | (4.75) | (8.35) | (1.12, 1.27) | (1.07, 1.34) |
| US-born Black | -257.92\*\*\* | -222.25\*\*\* | 2.43\*\*\* | 2.05\*\*\* |
|  | (2.03) | (3.44) | (2.40, 2.45) | (2.00, 2.10) |
| Foreign-born White | -17.67\*\* | -24.70\* | 1.01 | 1.03 |
|  | (6.79) | (10.09) | (0.90, 1.13) | (0.85, 1.20) |
| Foreign-born Hispanic | -19.92\*\*\* | 0.81 | 0.86\*\*\* | 0.78\*\*\* |
|  | (3.97) | (7.12) | (0.78, 0.93) | (0.65, 0.91) |
| Foreign-born Black | -143.36\*\*\* | -127.75\*\*\* | 1.53\*\*\* | 1.38\*\*\* |
|  | (5.89) | (11.19) | (1.45, 1.61) | (1.22, 1.55) |
| G1 characteristics at G2 birth |  |  |  |  |
| Not married |  | -70.49\*\*\* |  | 1.31\*\*\* |
|  |  | (2.41) |  | (1.27, 1.34) |
| Parity 1 |  | 49.09\*\*\* |  | 0.88\*\*\* |
|  |  | (2.19) |  | (0.85, 0.91) |
| Parity 2 |  | 68.16\*\*\* |  | 0.92\*\*\* |
|  |  | (2.71) |  | (0.88, 0.96) |
| Parity 3 |  | 75.13\*\*\* |  | 0.96 |
|  |  | (3.79) |  | (0.91, 1.01) |
| Parity 4 or more |  | 111.79\*\*\* |  | 0.97 |
|  |  | (4.10) |  | (0.92, 1.03) |
| No prenatal care |  | -209.03\*\*\* |  | 2.27\*\*\* |
|  |  | (5.51) |  | (2.21, 2.32) |
| G1 zip code characteristics |  |  |  |  |
| Logged median household income  (2015 dollars) |  | 32.44\*\*\*  (5.36) |  | 0.89\*\*  (0.82, 0.96) |
|  |  |  |  |  |
| Percent below poverty line |  | 0.63\*\*\*  (0.17) |  | 0.999  (0.997, 1.001) |
|  |  |  |  |  |
| Percent foreign-born |  | -0.62\*\*\* |  | 1.002\*\*\* |
|  |  | (0.08) |  | (1.001, 1.004) |
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| eTable 1 Continued |  |  |  |  |
| G1 education (ref = High School) |  |  |  |  |
| Less than High School |  | -81.35\*\*\* |  | 1.46\*\*\* |
|  |  | (2.98) |  | (1.41, 1.51) |
| Some College |  | 29.42\*\*\* |  | 0.86\*\*\* |
|  |  | (3.61) |  | (0.79, 0.93) |
| College |  | 48.26\*\*\* |  | 0.70\*\*\* |
|  |  | (4.98) |  | (0.59, 0.80) |
| Less than HS\*US-born Hispanic |  | 55.69\*\*\* |  | 0.75\*\*\* |
|  |  | (10.65) |  | (0.58, 0.91) |
| Less than HS\*US-born Black |  | 33.40\*\*\* |  | 0.81\*\*\* |
|  |  | (4.46) |  | (0.75, 0.87) |
| Less than HS\*Foreign-born White |  | 34.73\* |  | 0.88 |
|  |  | (17.34) |  | (0.61, 1.16) |
| Less than HS\*Foreign-born Hispanic |  | 40.13\*\*\* |  | 0.86 |
|  |  | (9.00) |  | (0.70, 1.02) |
| Less than HS\*Foreign-born Black |  | 65.65\*\*\* |  | 0.69\*\*\* |
|  |  | (13.44) |  | (0.49, 0.88) |
| Some College\*US-born Hispanic |  | 26.09 |  | 0.78 |
|  |  | (15.29) |  | (0.49, 1.06) |
| Some College\*US-born Black |  | -2.71 |  | 1.11\* |
|  |  | (6.57) |  | (1.01, 1.21) |
| Some College\*Foreign-born White |  | -12.21 |  | 1.19 |
|  |  | (17.41) |  | (0.88, 1.49) |
| Some College\*Foreign-born Hispanic |  | -34.43\*\* |  | 1.19 |
|  |  | (11.60) |  | (0.97, 1.42) |
| Some College\*Foreign-born Black |  | -15.49 |  | 1.25 |
|  |  | (21.20) |  | (0.94, 1.56) |
| College\*US-born Hispanic |  | -37.32 |  | 1.26 |
|  |  | (24.91) |  | (0.82, 1.69) |
| College\*US-born Black |  | -4.29 |  | 1.19\* |
|  |  | (11.73) |  | (1.01, 1.37) |
| College\*Foreign-born White |  | -24.26 |  | 1.35 |
|  |  | (23.50) |  | (0.92, 1.78) |
| College\*Foreign-born Hispanic |  | -56.93\*\*\* |  | 1.08 |
|  |  | (17.01) |  | (0.71, 1.45) |
| College\*Foreign-born Black |  | -48.15 |  | 2.28\*\*\* |
|  |  | (35.67) |  | (1.82, 2.75) |
| Constant | 3,319.19\*\*\* | 3,303.08\*\*\* | 0.06 | 0.05 |
|  | (4.79) | (5.67) | (-0.01, 0.13) | (-0.03, 0.13) |
| Includes G2 birth year fixed effects? | Y | Y | Y | Y |
| Observations | 330,343 | 330,343 | 330,343 | 330,343 |

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

**eTable 2: Multivariate Results Predicting G3 Birthweight Outcomes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Birthweight (g)  Coefficient (SE) | | Low Birthweight  Odds Ratio (95% CI) | |
|  | Base Model | Full Model | Base Model | Full Model |
| G1 race/ethnicity and foreign-born status  (Ref = US-born White) |  |  |  |  |
| US-born Hispanic | -70.12\*\*\* | -36.40\*\*\* | 1.24\*\*\* | 1.09 |
|  | (4.16) | (6.78) | (1.18, 1.30) | (0.99, 1.19) |
| US-born Black | -214.72\*\*\* | -180.75\*\*\* | 2.32\*\*\* | 1.95\*\*\* |
|  | (1.79) | (3.17) | (2.29, 2.34) | (1.91, 1.99) |
| Foreign-born White | -10.19 | 6.98 | 1.01 | 1.01 |
|  | (6.11) | (11.09) | (0.91, 1.11) | (0.84, 1.18) |
| Foreign-born Hispanic | -56.98\*\*\* | -37.41\*\*\* | 1.03 | 0.98 |
|  | (3.56) | (6.58) | (0.97, 1.09) | (0.88, 1.09) |
| Foreign-born Black | -219.73\*\*\* | -188.87\*\*\* | 2.23\*\*\* | 1.98\*\*\* |
|  | (5.23) | (8.59) | (2.16, 2.29) | (1.88, 2.09) |
| G2 birthweight outcome |  |  |  |  |
| G2 birthweight (centered, in 100 grams) | 20.36\*\*\* | 20.04\*\*\* |  |  |
|  | (0.15) | (0.15) |  |  |
| G2 low birthweight |  |  | 2.07\*\*\* | 1.93\*\*\* |
|  |  |  | (2.01, 2.13) | (1.87, 1.99) |
| US-born Hispanic\*G2 low birthweight |  |  | 0.88 | 0.94 |
|  |  |  | (0.68, 1.08) | (0.74, 1.14) |
| US-born Black\*G2 low birthweight |  |  | 0.86\*\*\* | 0.91\*\*\* |
|  |  |  | (0.79, 0.93) | (0.83, 0.98) |
| Foreign-born White\*G2 low birthweight |  |  | 1.16 | 1.13 |
|  |  |  | (0.85, 1.46) | (0.81, 1.44) |
| Foreign-born Hispanic\*G2 low birthweight |  |  | 1.17  (0.98, 1.36) | 1.21\*  (1.02, 1.41) |
|  |  |  |  |  |
| Foreign-born Black\*G2 low birthweight |  |  | 0.76\*\* | 0.80\* |
|  |  |  | (0.56, 0.95) | (0.60, 0.99) |
| G2 characteristics at G3 birth |  |  |  |  |
| Age (centered) |  | 1.62\*\*\* |  | 1.01\*\*\* |
|  |  | (0.28) | (1.005, 1.012) | |
| Age (centered) squared |  | -0.18\*\*\* |  | 1.001\*\*\* |
|  |  | (0.03) | (1.001, 1.001) | |
| Not married |  | -46.57\*\*\* |  | 1.21\*\*\* |
|  |  | (1.99) |  | (1.18, 1.24) |
| Parity 1 |  | 54.99\*\*\* |  | 0.73\*\*\* |
|  |  | (1.97) |  | (0.71, 0.76) |
| Parity 2 |  | 51.38\*\*\* |  | 0.75\*\*\* |
|  |  | (2.65) |  | (0.71, 0.78) |
| Parity 3 |  | 48.26\*\*\* |  | 0.80\*\*\* |
|  |  | (3.87) |  | (0.75, 0.85) |
| Parity 4 or more |  | 54.32\*\*\* |  | 0.80\*\*\* |
|  |  | (4.85) |  | (0.74, 0.86) |
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| eTable 2 Continued |  |  |  |  |
| No prenatal care |  | -230.75\*\*\* |  | 2.38\*\*\* |
|  |  | (6.88) |  | (2.31, 2.44) |
| Diabetes |  | 112.19\*\*\* |  | 0.96 |
|  |  | (4.45) |  | (0.90, 1.02) |
| Chronic hypertension |  | -193.84\*\*\* |  | 2.61\*\*\* |
|  |  | (7.26) |  | (2.54, 2.68) |
| Pregnancy-related hypertension |  | -235.61\*\*\* |  | 3.36\*\*\* |
|  |  | (3.57) |  | (3.32, 3.39) |
| Other risk factors |  | -64.19\*\*\* |  | 1.54\*\*\* |
|  |  | (1.95) |  | (1.51, 1.56) |
| G2 zip code characteristics |  |  |  |  |
| Logged median household income (2015 dollars) |  | -3.80 |  | 0.94 |
|  |  | (5.62) |  | (0.86, 1.02) |
| Percent below poverty line |  | -0.69\*\*\* |  | 1.002 |
|  |  | (0.19) |  | (0.999, 1.004) |
| Percent foreign-born |  | -0.21\*\* |  | 1.001 |
|  |  | (0.07) |  | (1.00, 1.002) |
| G2 education (ref = High School) |  |  |  |  |
| Less than High School |  | -57.88\*\*\* |  | 1.27\*\*\* |
|  |  | (3.24) |  | (1.23, 1.32) |
| Some College |  | 37.36\*\*\* |  | 0.79\*\*\* |
|  |  | (2.91) |  | (0.74, 0.84) |
| College |  | 51.92\*\*\* |  | 0.65\*\*\* |
|  |  | (3.77) |  | (0.59, 0.72) |
| Less than HS\*US-born Hispanic |  | 18.50 |  | 0.88 |
|  |  | (10.16) |  | (0.74, 1.02) |
| Less than HS\*US-born Black |  | 35.03\*\*\* |  | 0.84\*\*\* |
|  |  | (4.39) |  | (0.78, 0.89) |
| Less than HS\*Foreign-born White |  | 7.23 |  | 1.13 |
|  |  | (19.55) |  | (0.86, 1.39) |
| Less than HS\*Foreign-born Hispanic |  | 40.95\*\*\* |  | 0.83\* |
|  |  | (10.31) |  | (0.68, 0.99) |
| Less than HS\*Foreign-born Black |  | 62.86\*\*\* |  | 0.80\*\* |
|  |  | (15.23) |  | (0.63, 0.97) |
| Some College\*US-born Hispanic |  | -29.64\*\* |  | 1.23\* |
|  |  | (10.75) |  | (1.07, 1.39) |
| Some College\*US-born Black |  | -15.44\*\*\* |  | 1.13\*\*\* |
|  |  | (4.48) |  | (1.07, 1.19) |
| Some College\*Foreign-born White |  | -42.41\*\* |  | 1.26\* |
|  |  | (15.47) |  | (1.03, 1.50) |
| Some College\*Foreign-born Hispanic |  | -30.21\*\*\* |  | 1.22\*\* |
|  |  | (8.97) |  | (1.09, 1.36) |
| Some College\*Foreign-born Black |  | -19.12 |  | 1.12 |
|  |  | (12.07) |  | (0.98, 1.27) |
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| eTable 2 Continued |  |  |  |  |
| College\*US-born Hispanic |  | -50.92\*\*\* |  | 1.46\*\*\* |
|  |  | (15.14) |  | (1.22, 1.69) |
| College\*US-born Black |  | -2.48 |  | 1.25\*\*\* |
|  |  | (7.25) |  | (1.15, 1.35) |
| College\*Foreign-born White |  | -48.04\*\* |  | 0.89 |
|  |  | (16.35) |  | (0.60, 1.18) |
| College\*Foreign-born Hispanic |  | -36.22\*\*\* |  | 1.32\*\*\* |
|  |  | (9.97) |  | (1.16, 1.48) |
| College\*Foreign-born Black |  | 35.95\* |  | 1.11 |
|  |  | (18.00) |  | (0.88, 1.33) |
| G1 Characteristics at G2 birth |  |  |  |  |
| No prenatal care |  | 25.68\*\*\* |  | 1.01 |
|  |  | (4.65) |  | (0.95, 1.06) |
| Not married |  | 10.42\*\*\* |  | 1.00 |
|  |  | (2.09) |  | (0.97, 1.03) |
| Parity 1 |  | -12.64\*\*\* |  | 1.02 |
|  |  | (1.91) |  | (0.99, 1.04) |
| Parity 2 |  | -14.78\*\*\* |  | 1.01 |
|  |  | (2.36) |  | (0.98, 1.04) |
| Parity 3 |  | -18.68\*\*\* |  | 1.02 |
|  |  | (3.26) |  | (0.98, 1.06) |
| Parity 4 or more |  | -20.12\*\*\* |  | 0.98 |
|  |  | (3.49) |  | (0.94, 1.03) |
| G1 education (ref = High School) |  |  |  |  |
| Less than High School |  | -3.23 |  | 1.04\*\* |
|  |  | (1.86) |  | (1.01, 1.06) |
| Some College |  | 6.66\*\* |  | 0.95\*\* |
|  |  | (2.51) |  | (0.91, 0.98) |
| College |  | 1.34 |  | 0.97 |
|  |  | (3.90) |  | (0.91, 1.03) |
| G1 zip code characteristics |  |  |  |  |
| Logged median household income (2015 dollars) |  | -6.68 |  | 1.04 |
|  |  | (4.65) |  | (0.97, 1.10) |
| Percent below poverty line |  | -0.60\*\*\* |  | 1.003\*\* |
|  |  | (0.15) |  | (1.00, 1.01) |
| Percent foreign-born |  | -0.05 |  | 1.00 |
|  |  | (0.07) |  | (0.999, 1.001) |
| Constant | 3,251.52\*\*\* | 3,297.89\*\*\* | 0.06\*\* | 0.05 |
|  | (3.41) | (5.55) | (0.02, 0.11) | (-0.03, 0.12) |
| Includes G3 birth year fixed effects? | Y | Y | Y | Y |
| Observations | 454,468 | 454,468 | 454,468 | 454,468 |
| \*p<0.05; \*\*p<0.01; \*\*\*p<0.001 | | | | |

**eTable 3: Intergenerational Birth Outcomes by G1 Race, Ethnicity and Foreign-Born Status with Alternative Maternal Age Specifications**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a) Restricted to G2 mothers at least 20 years of age at G3 births | | | | | | | | | | | | |
|  | **G1 Race** | **White** | | | | | | **Black** | | | | |
|  | **G1 Ethnicity** | **Non-Hispanic** | | | **Hispanic** | | |  | | | |
|  | **G1 Foreign-Born Status** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** |
| G2  births | Mean birthweight (g) | 3,347 | 3,328 | -19  (-33, -5) | 3,269 | 3,320 | 51  (39, 64) | 3,082 | 3,194 | 112  (99,126) |
| Low birthweight  (% <2,500g) | 5.1 | 5.4 | 0.3  (-0.3, 0.9) | 6.1 | 4.5 | -1.6  (-2.1, -1.1) | 12.0 | 7.9 | -4.1  (-4.9, -3.3) |
|  | N | 149,258 | 5,529 |  | 10,775 | 16,692 |  | 89,466 | 6,954 |  |
| G3  births | Mean birthweight (g) | 3,298 | 3,278 | -20  (-33, -8) | 3,217 | 3,233 | 16  (6, 28) | 3,034 | 3,043 | 9  (-3, 22) |
| Low birthweight  (% < 2,500g) | 5.6 | 5.8 | 0.2  (-0.4, 0.7) | 6.8 | 5.9 | -0.9  (-1.4, -0.4) | 12.6 | 11.8 | -0.8  (-1.6, -0.1) |
|  | N | 188,772 | 6,916 |  | 13,612 | 20,693 |  | 120,313 | 8,632 |  |
| G2 to G3  Change | Mean birthweight (g) | -47 | -48 | -1  (-20, 18) | -52 | -87 | -35  (-51, -18) | -48 | -151 | -103  (-121, -84) |
| Low birthweight (percentage point) | 0.5 | 0.4 | -0.1  (-1, 0.7) | 0.7 | 1.4 | 0.7  (-0.1, 1.4) | 0.6 | 3.9 | 3.3  (2.2, 4.3) |
| b) Restricted to G2 mothers at least 25 years of age at G3 births | | | | | | | | | | | | |
| G2  births | Mean birthweight (g) | 3,354 | 3,333 | -21  (-38, -3) | 3,273 | 3,322 | 49  (32, 65) | 3,084 | 3,184 | 100  (81, 119) |
|  | Low birthweight  (% <2,500g) | 4.9 | 5.0 | 0.1  (-0.6, 0.9) | 6.1 | 4.4 | -1.7  (-2.4, -1.0) | 12.0 | 8.0 | -4  (-5.1, -2.9) |
|  | N | 88,675 | 3,560 |  | 5,441 | 10,016 |  | 43,841 | 3,458 |  |
| G3  births | Mean birthweight (g) | 3,318 | 3,291 | -27  (-44, -12) | 3,241 | 3,251 | 10  (-5, 26) | 3,044 | 3,057 | 13  (-7, 33) |
|  | Low birthweight  (% < 2,500g) | 5.3 | 5.4 | 0.1  (-0.5, 0.8) | 6.7 | 5.6 | -1.1  (-1.9, -0.4) | 12.9 | 12.0 | -0.9  (-2.1, 0.1) |
|  | N | 105,766 | 4,249 |  | 6,383 | 11,778 |  | 52,749 | 3,941 |  |
| G2 to G3  Change | Mean birthweight (g) | -36 | -42 | -6  (-31, 17) | -32 | -71 | -39  (-61, -15) | -40 | -127 | -87  (-115, -59) | |
|  | Low birthweight (percentage point) | 0.4 | 0.4 | 0  (-1.0, 1.0) | 0.6 | 1.2 | 0.6  (-0.4, 1.6) | 0.9 | 4.0 | 3.1  (1.4, 4.5) | |

Note: Data are from Florida birth records 1971-2015. G1 refers to women giving birth in 1971-1995; G2 refers to female infants born 1971-1995 who later give birth in Florida in 1989-2015; G3 refers to female infants born 1989-2015 to G2. Difference refers to the difference between foreign-born and US-born women in each racial/ethnic group.

**eTable 4: Intergenerational Birth Outcomes by G1 Race, Ethnicity and Foreign-Born Status Excluding Women Born in Puerto Rico and the Virgin Islands**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **G1 Race** | **White** | | | | | | **Black** | | | | |
|  | **G1 Ethnicity** | **Non-Hispanic** | | | **Hispanic** | | |  | | | |
|  | **G1 Foreign-Born Status** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** |
| G2  births | Mean birthweight (g) | 3,342 | 3,325 | -17  (-30, -4) | 3,275 | 3,322 | 47  (35, 58) | 3,083 | 3,199 | 116  (104, 128) |
| Low birthweight  (% <2,500g) | 5.2 | 5.3 | 0.1  (-0.5, 0.6) | 6.0 | 4.5 | -1.5  (-2, -1) | 11.8 | 7.8 | -4.0  (-4.7, -3.3) |
|  | N | 171,479 | 6,210 |  | 10,610 | 19,634 |  | 110,809 | 8,479 |  |
| G3  births | Mean birthweight (g) | 3,286 | 3,271 | -15  (-27, -3) | 3,205 | 3,222 | 17  (7, 27) | 3,020 | 3,032 | 12  (1, 23) |
| Low birthweight  (% < 2,500g) | 5.9 | 6.1 | 0.2  (-0.4, 0.7) | 7.2 | 6.1 | -1.1  (-1.6, -0.6) | 13.1 | 12.2 | -0.9  (-1.5, -0.2) |
|  | N | 227,030 | 8,015 |  | 14,493 | 25,393 |  | 164,223 | 11,136 |  |
| G2 to G3  Change | Mean birthweight (g) | -56 | -54 | 2  (-16, 20) | -70 | -100 | -30  (-45, -14) | -63 | -167 | -104  (-120, -87) |
| Low birthweight (percentage point) | 0.7 | 0.8 | 0.1  (-0.7, 0.9) | 1.2 | 1.6 | 0.4  (-0.3, 1.2) | 1.3 | 4.4 | 3.1  (2.2, 4.1) |

Note: Data are from Florida birth records 1971-2015. G1 refers to women giving birth in 1971-1995; G2 refers to female infants born 1971-1995 who later give birth in Florida in 1989-2015; G3 refers to female infants born 1989-2015 to G2. Difference refers to the difference between foreign-born and US-born women in each racial/ethnic group.

**eTable 5: Multilevel Models Predicting G3 Birth Outcomes with Mother Random Effect**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Birthweight (g)  Coefficient (SE) | | Low Birthweight  Odds Ratio (95% CI) | |
|  | Base Model | Full Model | Base Model | Full Model |
| G1 race/ethnicity and foreign-born status |  |  |  |  |
| (Ref = US-born White) |  |  |  |  |
| US-born Hispanic | -70.19\*\*\* | -37.29\*\*\* | 1.31\*\*\* | 1.12 |
|  | (4.52) | (7.04) | (1.21, 1.41) | (0.99, 1.27) |
| US-born Black | -213.76\*\*\* | -182.14\*\*\* | 2.86\*\*\* | 2.29\*\*\* |
|  | (1.97) | (3.34) | (2.76, 2.96) | (2.17, 2.42) |
| Foreign-born White | -11.87 | 6.1 | 1.03 | 1.04 |
|  | (6.55) | (11.42) | (0.91, 1.16) | (0.84, 1.28) |
| Foreign-born Hispanic | -58.04\*\*\* | -36.03\*\*\* | 1.05 | 0.98 |
|  | (3.82) | (6.81) | (0.97, 1.12) | (0.87, 1.11) |
| Foreign-born Black | -220.76\*\*\* | -189.42\*\*\* | 2.73\*\*\* | 2.34\*\*\* |
|  | (5.64) | (8.89) | (2.51, 2.98) | (2.05, 2.68) |
| G2 birthweight outcome |  |  |  |  |
| G2 birthweight (centered, in 100 grams) | 20.36\*\*\* | 20.07\*\*\* |  |  |
|  | (0.17) | (0.17) |  |  |
| G2 low birthweight |  |  | 2.45\*\*\* | 2.25\*\*\* |
|  |  |  | (2.25, 2.65) | (2.07, 2.44) |
| US-born Hispanic\*G2 low birthweight |  |  | 0.87 | 0.94 |
|  |  |  | (0.67, 1.15) | (0.72, 1.23) |
| US-born Black\*G2 low birthweight |  |  | 0.88\* | 0.93 |
|  |  |  | (0.8, 0.98) | (0.84, 1.03) |
| Foreign-born White\*G2 low birthweight |  |  | 1.18 | 1.17 |
|  |  |  | (0.78, 1.8) | (0.77, 1.78) |
| Foreign-born Hispanic\*G2 low birthweight |  |  | 1.21 | 1.25 |
|  |  |  | (0.93, 1.56) | (0.96, 1.61) |
| Foreign-born Black\*G2 low birthweight |  |  | 0.72\* | 0.76 |
|  |  |  | (0.55, 0.95) | (0.58, 1) |
| G2 characteristics at G3 birth |  |  |  |  |
| Age (centered) |  | 1.45\*\*\* |  | 1.01\*\*\* |
|  |  | (0.28) |  | (1.01, 1.02) |
| Age (centered) squared |  | -0.15\*\*\* |  | 1.001\*\*\* |
|  |  | (0.03) |  | (1.000, 1.002) |
| Not married |  | -43.83\*\*\* |  | 1.26\*\*\* |
|  |  | (2.01) |  | (1.22, 1.31) |
| Parity 1 |  | 55.49\*\*\* |  | 0.68\*\*\* |
|  |  | (1.83) |  | (0.66, 0.7) |
| Parity 2 |  | 52.28\*\*\* |  | 0.69\*\*\* |
|  |  | (2.54) |  | (0.66, 0.73) |
| Parity 3 |  | 52.87\*\*\* |  | 0.75\*\*\* |
|  |  | (3.7) |  | (0.71, 0.8) |
| Parity 4 or more |  | 57.61\*\*\* |  | 0.75\*\*\* |
|  |  | (4.79) |  | (0.7, 0.81) |
| Continues on next page |  |  |  |  |
|  |  |  |  |  |
| eTable 5 Continued |  |  |  |  |
| No prenatal care |  | -221.97\*\*\* |  | 3.04\*\*\* |
|  |  | (6.6) |  | (2.79, 3.32) |
| Diabetes |  | 94.33\*\*\* |  | 0.97 |
|  |  | (4.39) |  | (0.90, 1.04) |
| Chronic hypertension |  | -176.85\*\*\* |  | 3.24\*\*\* |
|  |  | (7.05) |  | (2.95, 3.57) |
| Pregnancy-related hypertension |  | -224.44\*\*\* |  | 4.61\*\*\* |
|  |  | (3.5) |  | (4.39, 4.84) |
| Other risk factors |  | -57.88\*\*\* |  | 1.66\*\*\* |
|  |  | (1.9) |  | (1.61, 1.71) |
| G2 zip code characteristics |  |  |  |  |
| Logged median household income (2015 dollars) |  | -3.13 |  | 0.92 |
|  |  | (5.73) |  | (0.83, 1.02) |
| Percent below poverty line |  | -0.69\*\*\* |  | 1.00 |
|  |  | (0.19) |  | (0.999, 1.01) |
| Percent foreign-born |  | 25.38\*\*\* |  | 1.00 |
|  |  | (5.16) |  | (0.999, 1.002) |
| G2 education (ref = High School) |  |  |  |  |
| Less than High School |  | -52.59\*\*\* |  | 1.33\*\*\* |
|  |  | (3.3) |  | (1.26, 1.41) |
| Some College |  | 35.07\*\*\* |  | 0.76\*\*\* |
|  |  | (2.94) |  | (0.72, 0.8) |
| College |  | 50.62\*\*\* |  | 0.61\*\*\* |
|  |  | (3.92) |  | (0.56, 0.66) |
| Less than HS\*US-born Hispanic |  | 17.21 |  | 0.85 |
|  |  | (10.34) |  | (0.71, 1.01) |
| Some College\*US-born Hispanic |  | -26.54\* |  | 1.25\* |
|  |  | (10.81) |  | (1.03, 1.52) |
| College\*US-born Hispanic |  | -49.45\*\* |  | 1.53\*\* |
|  |  | (15.7) |  | (1.15, 2.03) |
| Less than HS\*US-born Black |  | 30.46\*\*\* |  | 0.81\*\*\* |
|  |  | (4.45) |  | (0.76, 0.87) |
| Some College\*US-born Black |  | -12.69\*\* |  | 1.14\*\* |
|  |  | (4.5) |  | (1.06, 1.23) |
| College\*US-born Black |  | -1.19 |  | 1.28\*\*\* |
|  |  | (7.46) |  | (1.13, 1.45) |
| Less than HS\*Foreign-born White |  | 4.74 |  | 1.14 |
|  |  | (19.77) |  | (0.82, 1.59) |
| Some College\* Foreign-born White |  | -40.53\*\* |  | 1.28 |
|  |  | (15.52) |  | (0.96, 1.71) |
| College\* Foreign-born White |  | -44.73\*\* |  | 0.85 |
|  |  | (16.96) |  | (0.6, 1.21) |
| Continues on next page |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| eTable 5 Continued |  |  |  |  |
| Less than HS\*Foreign-born Hispanic |  | 36.24\*\*\* |  | 0.81\* |
|  |  | (10.37) |  | (0.67, 0.97) |
| Some College\* Foreign-born Hispanic |  | -28.48\*\* |  | 1.27\*\* |
|  |  | (9.04) |  | (1.07, 1.5) |
| College\* Foreign-born Hispanic |  | -36.11\*\*\* |  | 1.39\*\* |
|  |  | (10.31) |  | (1.14, 1.69) |
| Less than HS\*Foreign-born Black |  | 55.72\*\*\* |  | 0.78\* |
|  |  | (15.1) |  | (0.63, 0.98) |
| Some College\* Foreign-born Black |  | -13.92 |  | 1.12 |
|  |  | (12.07) |  | (0.93, 1.34) |
| College\* Foreign-born Black |  | 38.86\* |  | 1.1 |
|  |  | (18.39) |  | (0.82, 1.47) |
| G1 Characteristics at G2 birth |  |  |  |  |
| No prenatal care |  | 25.38\*\*\* |  | 1.02 |
|  |  | (5.16) |  | (0.95, 1.1) |
| Not married |  | 10.59\*\*\* |  | 1.00 |
|  |  | (2.29) |  | (0.97, 1.04) |
| Parity 1 |  | -13.29\*\*\* |  | 1.02 |
|  |  | (2.08) |  | (0.99, 1.06) |
| Parity 2 |  | -15.68\*\*\* |  | 1.02 |
|  |  | (2.58) |  | (0.98, 1.06) |
| Parity 3 |  | -19.53\*\*\* |  | 1.03 |
|  |  | (3.58) |  | (0.98, 1.09) |
| Parity 4 or more |  | -22.76\*\*\* |  | 1.00 |
|  |  | (3.85) |  | (0.94, 1.06) |
| G1 education (ref = High School) |  |  |  |  |
| Less than High School |  | -5.35\*\* |  | 1.06\*\* |
|  |  | (2.04) |  | (1.02, 1.09) |
| Some College |  | 6.01\* |  | 0.94\*\* |
|  |  | (2.71) |  | (0.9, 0.98) |
| College |  | 0.45 |  | 0.96 |
|  |  | (4.18) |  | (0.89, 1.04) |
| G1 zip code characteristics |  |  |  |  |
| Logged median household income (2015 dollars) |  | -5.35 |  | 1.04 |
|  |  | (5.09) |  | (0.95, 1.13) |
| Percent below poverty line |  | -0.55\*\* |  | 1.003\*\* |
|  |  | (0.17) |  | (0.998, 1.006) |
| Percent foreign-born |  | -0.05 |  | 0.999 |
|  |  | (0.07) |  | (0.998, 1.001) |
| Constant | 3247.73\*\*\* | 3291.51\*\*\* | 0.02\*\*\* | 0.02\*\*\* |
|  | (3.29) | (5.62) | (0.02, 0.02) | (0.02, 0.02) |
| Includes G3 birth year fixed effects? | Y | Y | Y | Y |
| Observations | 454,468 | 454,468 | 454,468 | 454,468 |
| Number of mothers | 330,343 | 330,343 | 330,343 | 330,343 |
| Intraclass correlation | 0.37 | 0.37 | 0.44 | 0.43 |
| \*p<0.05; \*\*p<0.01; \*\*\*p<0.001  Note: The intraclass correlation is the proportion of the variance in the outcome that is between mothers. | | | | |

**eTable 6: Birth Outcomes by Match Status**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **G1 Race** | **White** | | | | | | **Black** | | |
|  | **G1 Ethnicity** | **Non-Hispanic** | | | **Hispanic** | | |  | | |
|  | **G1 Foreign-Born Status** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** |
| All  1971 – 1995 female records | Mean birthweight (g) | 3,320 | 3,305 | -15  (-20, -10) | 3,254 | 3,298 | 44  (39, 50) | 3,043 | 3,165 | 122  (117, 128) |
| % Low birthweight (<2,500g) | 6.6 | 6.3 | -0.3  (-0.5, -0.1) | 7.3 | 5.9 | -1.4  (-1.6, -1.1) | 14.2 | 10.0 | -4.2  (-4.6, -3.9) |
|  | N | 1,007,940 | 50,019 |  | 73,527 | 117,674 |  | 385,112 | 54,223 |  |
| 1971 – 1995 female records that matched to children | Mean birthweight (g) | 3,327 | 3,315 | -12  (-21, -2) | 3,258 | 3,313 | 55  (47, 64) | 3,071 | 3,193 | 122  (113, 131) |
| % Low birthweight (<2,500g) | 5.9 | 5.8 | -0.1  (-0.5, 0.3) | 6.7 | 5.0 | -0.3  (-2.1, -1.3) | 12.6 | 8.2 | -4.4  (-4.9, -3.9) |
|  | N  (% of all records) | 344,176 (34.2%) | 12,370 (24.7%) |  | 24,953 (33.9%) | 38,539  (32.8%) |  | 210,356 (54.6%) | 16,708  (30.8%) |  |
| 1971 – 1995 female records that did not match to children | Mean birthweight (g) | 3,317 | 3,302 | -15  (-21, -9) | 3,252 | 3,291 | 39  (33, 46) | 3,008 | 3,153 | 145  (136, 152) |
| % Low birthweight (<2,500g) | 6.9 | 6.4 | -0.5  (-0.8, -0.2) | 7.6 | 6.3 | -1.3  (-1.5, -1.0) | 16.1 | 10.7 | -5.4  (-5.8, -4.9) |
|  | N  (% of all records) | 663,764  (65.9%) | 37,649  (75.3%) |  | 48,574  (66.1%) | 79,135  (67.3%) |  | 174,756  (45.4%) | 37,515  (69.2%) |  |

Note: The sample sizes are larger than those in the analytic sample because these observations are not restricted to singleton births with non-missing covariates in either generation or female births in the third generation. Difference refers to the difference between foreign-born and US-born women in each racial/ethnic group.

**eTable 7: Birth Outcomes for Male Births in Study Period**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **G1 Race** | **White** | | | | | | **Black** | | |
|  | **G1 Ethnicity** | **Non-Hispanic** | | | **Hispanic** | | |  | | |
|  | **G1 Foreign-Born Status** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** | **US-born** | **Foreign-born** | **Difference (95% CI)** |
| All  1971 – 1995 male records | Mean birthweight (g) | 3,447 | 3,431 | -16  (-21, -11) | 3,366 | 3,415 | 49  (44, 55) | 3,155 | 3,281 | 126  (120, 132) |
| % Low birthweight (<2,500g) | 5.7 | 5.4 | -0.3  (-0.5, -0.1) | 6.5 | 5.2 | -1.3  (-1.5, -1.1) | 11.8 | 8.3 | -3.5  (-3.7, -3.2) |
|  | N | 1,066,359 | 53,144 |  | 77,104 | 124,393 |  | 397,080 | 56,300 |  |
| 1989 – 2015 male records that matched to mothers born 1971-1995 | Mean birthweight (g) | 3,374 | 3,364 | -10  (-20, 2) | 3,288 | 3,307 | 19  (11, 29) | 3,100 | 3,120 | 20  (9, 29) |
| % Low birthweight (<2,500g) | 6.4 | 6.0 | -0.4  (-0.9, 0.1) | 7.1 | 6.6 | -0.5  (-0.9, -0.1) | 12.3 | 11.4 | -0.9  (-1.5, -0.4) |
|  | N | 332,326 | 11,231 |  | 25,441 | 36,175 |  | 250,999 | 15,619 |  |

Note: These birth outcomes refer to all male births without restrictions to singleton births with non-missing covariates. Difference refers to the difference between foreign-born and US-born women in each racial/ethnic group.

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