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Supplemental Material

Sociodemographic Patterns of Exposure to Civil Aircraft Noise in the United States

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Figure S1. Mean-difference plots for socially vulnerable groups: A) non-Hispanic Black, B) non-Hispanic Asian, C) Hispanic, D) non-Hispanic Other, E) no high school diploma or GED, F) high school diploma or GED only, G) annual household income $< \$25,000$, H) annual household income $\$25,000$ to $< \$50,000$, and I) annual household income $\$50,000$ to $< \$75,000$. In plots A-I, each airport-specific relationship is represented by a point ($n_{\text{airport}}=86$), where the x-axis is the mean of the percent socially vulnerable group for all block groups within the maximum extent and the y-axis is the mean difference between the percent exposed for the socially vulnerable group and the airport mean. Airports above the zero line were those found to have block groups with a *greater* percentage of socially vulnerable groups within the 45-dB(A) noise contour than the mean of all block groups around that airport (i.e., more exposed). Airports below the zero line were those found to have block groups with a *lower* percentage of socially vulnerable groups within the 45-dB(A) noise contour than the mean of all block groups around that airport (i.e., less exposed). Points along the zero line are airports where there is no difference in percent socially vulnerable groups within the DNL 45-dB(A) contour (i.e., exposed) relative to the airport mean. Dashed lines are the mean of the mean differences across all airports.

Figure S2. Mean-difference plots for socially vulnerable groups: A) non-Hispanic Black, B) non-Hispanic Asian, C) Hispanic, D) non-Hispanic Other, E) no high school diploma or GED, F) high school diploma or GED only, G) annual household income $< \$25,000$, H) annual household income $\$25,000$ to $< \$50,000$, and I) annual household income $\$50,000$ to $< \$75,000$. In plots A-I, each airport-specific relationship is represented by a point ($n_{\text{airport}}=14$), where the x-axis is the mean of the percent socially vulnerable group for all block groups within the maximum extent and the y-axis is the mean difference between the percent exposed for the socially vulnerable group and the airport mean. Airports above the zero line were those found to have block groups with a *greater* percentage of socially vulnerable groups within the 65-dB(A) noise contour than the mean of all block groups around that airport (i.e., more exposed). Airports below the zero line were those found to have block groups with a *lower* percentage of socially vulnerable groups within the 65-dB(A) noise contour than the mean of all block groups around that airport (i.e., less exposed). Points along the zero line are airports where there is no difference in percent socially vulnerable groups within the DNL-65 dB(A) contour (i.e., exposed) relative to the airport mean. Dashed lines are the mean of the mean differences across all airports.

Table S1. Within airport odds ratios for block group exposure to three different day-night average sound level (DNL) thresholds (i.e., three different models) for a 10% increase in percent of block group with characteristic using multivariable hybrid mixed effect logistic model with random intercept by airport and adjustment for distance to airport.

	DNL 45 dB(A) Model (n=86 airports; 74,170 block groups; 21,296 exposed)	DNL 55 dB(A) Model (n=61 airports; 34,283 block groups; 3,476 exposed)	DNL 65 dB(A) Model (n=15 airports; 4,031 block groups; 158 exposed)
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity			
Non-Hispanic Black	1.01 (1.00, 1.02)	0.97 (0.95, 0.99)	0.99 (0.90, 1.07)
Non-Hispanic Asian	1.09 (1.07, 1.11)	1.04 (1.01, 1.08)	0.51 (0.34, 0.77)
Hispanic	1.10 (1.09, 1.12)	1.00 (0.98, 1.03)	1.08 (0.96, 1.23)
Non-Hispanic Other	0.98 (0.93, 1.03)	0.86 (0.78, 0.94)	0.88 (0.57, 1.35)
Non-Hispanic White	Reference	Reference	Reference
% Education			
< High school diploma or GED	1.04 (1.01, 1.06)	1.13 (1.08, 1.18)	1.10 (0.91, 1.33)
High school diploma or GED	1.10 (1.08, 1.12)	1.13 (1.09, 1.18)	1.15 (0.96, 1.38)
> High school diploma or GED	Reference	Reference	Reference
% Household Income			
<\$25k	0.93 (0.92, 0.95)	0.99 (0.95, 1.02)	1.01 (0.86, 1.18)
\$25k to <\$50k	0.98 (0.96, 1.00)	1.01 (0.97, 1.05)	1.13 (0.94, 1.34)
\$50k to <\$75k	1.00 (0.98, 1.02)	1.02 (0.97, 1.07)	1.20 (0.97, 1.49)
≥\$75k	Reference	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, airport, and distance to airport.

Table S2. Multivariable-adjusted odds ratio for block group exposure to day-night average sound level (DNL) ≥ 45 dB(A) (86 airports with ≥ 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with adjustment for airport and in second model additionally adjusting for distance to airport.

DNL 45 dB(A) (n=74,170 block groups; 21,296 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	1.04 (1.03, 1.05)	1.01 (1.00, 1.02)
Non-Hispanic Asian	1.11 (1.09, 1.12)	1.09 (1.07, 1.11)
Hispanic	1.13 (1.11, 1.14)	1.10 (1.09, 1.12)
Non-Hispanic Other	1.09 (1.05, 1.14)	0.98 (0.93, 1.03)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.02 (1.00, 1.04)	1.04 (1.01, 1.06)
High school diploma or GED	1.07 (1.05, 1.09)	1.10 (1.08, 1.12)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	1.02 (1.00, 1.03)	0.93 (0.92, 0.95)
\$25k to <\$50k	1.06 (1.04, 1.08)	0.98 (0.96, 1.00)
\$50k to <\$75k	1.06 (1.04, 1.08)	1.00 (0.98, 1.02)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport.

Table S3. Multivariable-adjusted odds ratio and confidence interval (CI) for block group exposure to day-night average sound level (DNL) \geq 55 dB(A) (61 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with adjustment for airport and in second model additionally adjusting for distance to airport.

DNL 55 dB(A) (n=34,283 block groups; 3,476 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	0.98 (0.97, 1.00)	0.97 (0.95, 0.99)
Non-Hispanic Asian	1.04 (1.00, 1.07)	1.04 (1.01, 1.08)
Hispanic	1.05 (1.02, 1.07)	1.00 (0.97, 1.03)
Non-Hispanic Other	1.03 (0.94, 1.12)	0.85 (0.78, 0.94)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.08 (1.04, 1.13)	1.13 (1.08, 1.18)
High school diploma or GED	1.21 (1.17, 1.26)	1.13 (1.09, 1.18)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.96 (0.93, 0.99)	0.99 (0.95, 1.02)
\$25k to <\$50k	1.01 (0.97, 1.05)	1.01 (0.97, 1.05)
\$50k to <\$75k	1.02 (0.98, 1.07)	1.02 (0.97, 1.07)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport.

Table S4. Multivariable-adjusted odds ratio for block group exposure to day-night average sound level (DNL) \geq 65 dB(A) (15 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with adjustment for airport and in a second model additionally adjusting for distance to airport.

DNL 65 dB(A) (n=4,031 block groups; 158 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	0.96 (0.89, 1.04)	0.99 (0.91, 1.09)
Non-Hispanic Asian	0.44 (0.29, 0.64)	0.50 (0.32, 0.74)
Hispanic	1.08 (0.96, 1.23)	1.09 (0.96, 1.24)
Non-Hispanic Other	0.83 (0.52, 1.22)	0.88 (0.55, 1.32)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.09 (0.90, 1.32)	1.08 (0.89, 1.30)
High school diploma or GED	1.12 (0.94, 1.34)	1.14 (0.95, 1.38)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.98 (0.84, 1.15)	1.00 (0.85, 1.18)
\$25k to <\$50k	1.09 (0.92, 1.30)	1.13 (0.94, 1.35)
\$50k to <\$75k	1.17 (0.95, 1.44)	1.20 (0.97, 1.49)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport.

Table S5. Bayesian approach multivariable-adjusted odds ratio and confidence interval (CI) for block group exposure to day-night average sound level (DNL) \geq 45 dB(A) (61 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with airport random effect and in second model additionally adjusting for distance to airport.

DNL 45 dB(A) (n=74,170 block groups; 21,296 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	1.04 (1.03, 1.05)	1.01 (1.00, 1.02)
Non-Hispanic Asian	1.11 (1.09, 1.12)	1.09 (1.07, 1.11)
Hispanic	1.13 (1.11, 1.14)	1.10 (1.09, 1.12)
Non-Hispanic Other	1.09 (1.05, 1.14)	0.98 (0.93, 1.03)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.02 (1.00, 1.04)	1.04 (1.01, 1.06)
High school diploma or GED	1.07 (1.05, 1.09)	1.10 (1.08, 1.12)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	1.02 (1.00, 1.03)	0.93 (0.92, 0.95)
\$25k to <\$50k	1.06 (1.04, 1.08)	0.98 (0.96, 1.00)
\$50k to <\$75k	1.06 (1.04, 1.08)	1.00 (0.98, 1.02)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport. Specific inputs to the Bayesian models included using four Markov chains, each with 4,000 iterations (including 1,000 burn-in iterations), setting the sampler controls for adapt delta to 0.99 and maximum tree depth to 15, and setting the random number generator seed to '617'.

Table S6. Bayesian approach multivariable-adjusted odds ratio and confidence interval (CI) for block group exposure to day-night average sound level (DNL) \geq 55 dB(A) (61 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with airport random effect and in second model additionally adjusting for distance to airport.

DNL 55 dB(A) (n=34,283 block groups; 3,476 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	0.98 (0.97, 1.00)	0.97 (0.95, 0.99)
Non-Hispanic Asian	1.03 (1.00, 1.07)	1.04 (1.01, 1.08)
Hispanic	1.05 (1.02, 1.07)	1.00 (0.98, 1.03)
Non-Hispanic Other	1.02 (0.94, 1.11)	0.85 (0.78, 0.94)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.09 (1.04, 1.13)	1.13 (1.08, 1.18)
High school diploma or GED	1.21 (1.17, 1.26)	1.13 (1.09, 1.18)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.96 (0.93, 0.99)	0.98 (0.95, 1.02)
\$25k to <\$50k	1.01 (0.98, 1.05)	1.00 (0.97, 1.04)
\$50k to <\$75k	1.02 (0.98, 1.07)	1.02 (0.97, 1.07)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport. Specific inputs to the Bayesian models included using four Markov chains, each with 4,000 iterations (including 1,000 burn-in iterations), setting the sampler controls for adapt delta to 0.99 and maximum tree depth to 15, and setting the random number generator seed to '617'.

Table S7. Bayesian approach multivariable-adjusted odds ratio and confidence interval (CI) for block group exposure to day-night average sound level (DNL) \geq 65 dB(A) (61 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with airport random effect and in second model additionally adjusting for distance to airport.

DNL 65 dB(A) (n=4,031 block groups; 158 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	0.98 (0.90, 1.06)	1.01 (0.93, 1.10)
Non-Hispanic Asian	0.44 (0.29, 0.63)	0.48 (0.31, 0.71)
Hispanic	1.08 (0.96, 1.21)	1.08 (0.96, 1.22)
Non-Hispanic Other	0.83 (0.52, 1.23)	0.88 (0.55, 1.34)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.10 (0.91, 1.33)	1.08 (0.90, 1.31)
High school diploma or GED	1.10 (0.92, 1.31)	1.12 (0.93, 1.34)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.96 (0.82, 1.13)	1.00 (0.85, 1.17)
\$25k to <\$50k	1.08 (0.91, 1.29)	1.12 (0.93, 1.33)
\$50k to <\$75k	1.17 (0.95, 1.43)	1.19 (0.96, 1.48)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport. Specific inputs to the Bayesian models included using four Markov chains, each with 4,000 iterations (including 1,000 burn-in iterations), setting the sampler controls for adapt delta to 0.99 and maximum tree depth to 15, and setting the random number generator seed to '617'.

Table S8. Multivariable-adjusted odds ratio for block group exposure to nighttime average sound level (LAeqN) \geq 45 dB(A) (54 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with adjustment for airport and in a second model additionally adjusting for distance to airport.

LAeqN 45 dB(A) (n=25,970 block groups; 1,837 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	0.98 (0.96, 1.01)	0.96 (0.94, 0.99)
Non-Hispanic Asian	0.99 (0.94, 1.03)	0.99 (0.94, 1.04)
Hispanic	1.02 (0.99, 1.06)	0.97 (0.93, 1.01)
Non-Hispanic Other	0.92 (0.82, 1.03)	0.74 (0.65, 0.83)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.14 (1.08, 1.20)	1.22 (1.16, 1.30)
High school diploma or GED	1.27 (1.21, 1.33)	1.20 (1.14, 1.26)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.96 (0.92, 1.00)	1.01 (0.96, 1.05)
\$25k to <\$50k	1.03 (0.98, 1.08)	1.04 (0.99, 1.10)
\$50k to <\$75k	1.05 (0.99, 1.11)	1.07 (1.00, 1.14)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport.

Table S9. Multivariable-adjusted odds ratio for block group exposure to nighttime average sound level (LAeqN) \geq 55 dB(A) (10 airports with \geq 100 block groups within the buffer area) for a 10% increase in percent of block group with characteristic, in the main model controlling for all variables with adjustment for airport and in a second model additionally adjusting for distance to airport.

LAeqN 55(A) (n=2,151 block groups; 58 exposed)	Main Model	Main Model + adjustment for distance to airport
Variables	Odds Ratio (95% CI)	Odds Ratio (95% CI)
% Race/Ethnicity		
Non-Hispanic Black	1.03 (0.89, 1.20)	1.04 (0.89, 1.23)
Non-Hispanic Asian	0.31 (0.10, 0.72)	0.35 (0.11, 0.83)
Hispanic	1.26 (1.02, 1.57)	1.25 (1.01, 1.58)
Non-Hispanic Other	0.85 (0.36, 1.64)	0.87 (0.36, 1.75)
Non-Hispanic White	Reference	Reference
% Education		
< High school diploma or GED	1.01 (0.73, 1.39)	1.02 (0.74, 1.40)
High school diploma or GED	1.16 (0.85, 1.57)	1.16 (0.84, 1.60)
> High school diploma or GED	Reference	Reference
% Household Income		
<\$25k	0.95 (0.73, 1.25)	0.97 (0.74, 1.29)
\$25k to <\$50k	1.11 (0.81, 1.52)	1.17 (0.85, 1.61)
\$50k to <\$75k	1.33 (0.95, 1.87)	1.42 (1.00, 2.03)
\geq \$75k	Reference	Reference

Note: The main model adjusted for variables on race/ethnicity, education, household income, and airport.

Table S10. Univariable odds ratio for block group exposure to day-night average sound level (DNL) ≥ 45 dB(A) (86 airports with ≥ 100 block groups within the buffer area) for a 10% increase in percent of block group with each characteristic. N=74,170 block groups (21,296 exposed).

Variables	Odds Ratio (95% CI)
% Race/Ethnicity	
Non-Hispanic Black	1.03 (1.02, 1.03)
Non-Hispanic Asian	1.04 (1.03, 1.06)
Hispanic	1.08 (1.07, 1.08)
Non-Hispanic Other	0.98 (0.94, 1.01)
Non-Hispanic White	0.93 (0.93, 0.93)
% Education	
< High school diploma or GED	1.14 (1.13, 1.15)
High school diploma or GED	1.14 (1.13, 1.15)
> High school diploma or GED	0.90 (0.89, 0.90)
% Household Income	
<\$25k	1.05 (1.04, 1.06)
\$25k to <\$50k	1.09 (1.07, 1.10)
\$50k to <\$75k	1.04 (1.02, 1.06)
\geq \$75k	0.94 (0.93, 0.95)
Proximity	
Distance to airport (km)	0.84 (0.83, 0.84)

Table S11. Univariable odds ratio for block group exposure to day-night average sound level (DNL) ≥ 55 dB(A) (61 airports with ≥ 100 block groups within the buffer area) for a 10% increase in percent of block group with each characteristic. N=34,283 block groups (3,476 exposed).

Variables	Odds Ratio (95% CI)
% Race/Ethnicity	
Non-Hispanic Black	1.00 (0.99, 1.01)
Non-Hispanic Asian	0.96 (0.93, 0.99)
Hispanic	1.07 (1.06, 1.09)
Non-Hispanic Other	0.92 (0.85, 0.99)
Non-Hispanic White	0.96 (0.95, 0.97)
% Education	
< High school diploma or GED	1.12 (1.10, 1.15)
High school diploma or GED	1.20 (1.17, 1.24)
> High school diploma or GED	0.88 (0.87, 0.90)
% Household Income	
<\$25k	1.03 (1.01, 1.05)
\$25k to <\$50k	1.12 (1.09, 1.16)
\$50k to <\$75k	1.07 (1.03, 1.11)
\geq \$75k	0.93 (0.92, 0.95)
Proximity	
Distance to airport (km)	0.77 (0.76, 0.77)

Table S12. Univariable odds ratio for block group exposure to day-night average sound level (DNL) ≥ 65 dB(A) (15 airports with ≥ 100 block groups within the buffer area) for a 10% increase in percent of block group with each characteristic. N=4,031 block groups (158 exposed).

Variables	Odds Ratio (95% CI)
% Race/Ethnicity	
Non-Hispanic Black	1.04 (1.00, 1.09)
Non-Hispanic Asian	0.45 (0.31, 0.61)
Hispanic	1.05 (1.00, 1.11)
Non-Hispanic Other	0.81 (0.54, 1.14)
Non-Hispanic White	0.96 (0.90, 1.01)
% Education	
< High school diploma or GED	1.15 (1.03, 1.28)
High school diploma or GED	1.15 (1.01, 1.30)
> High school diploma or GED	0.88 (0.81, 0.95)
% Household Income	
<\$25k	0.97 (0.88, 1.07)
\$25k to <\$50k	1.11 (0.96, 1.26)
\$50k to <\$75k	1.17 (0.98, 1.39)
\geq \$75k	0.95 (0.87, 1.03)
Proximity	
Distance to airport (km)	0.58 (0.53, 0.64)

Table S13. Univariable odds ratio for block group exposure to nighttime average sound level (L_{AeqN}) ≥45 dB(A) (54 airports with ≥100 block groups within the buffer area) for a 10% increase in percent of block group with each characteristic. N=25,970 block groups (1,837 exposed).

Variables	Odds Ratio (95% CI)
% Race/Ethnicity	
Non-Hispanic Black	1.02 (1.01, 1.04)
Non-Hispanic Asian	0.89 (0.86, 0.93)
Hispanic	1.08 (1.06, 1.09)
Non-Hispanic Other	0.90 (0.81, 0.99)
Non-Hispanic White	0.94 (0.93, 0.96)
% Education	
< High school diploma or GED	1.16 (1.13, 1.19)
High school diploma or GED	1.26 (1.21, 1.30)
> High school diploma or GED	0.85 (0.83, 0.87)
% Household Income	
<\$25k	1.06 (1.03, 1.09)
\$25k to <\$50k	1.17 (1.13, 1.22)
\$50k to <\$75k	1.09 (1.03, 1.14)
≥\$75k	0.90 (0.87, 0.92)
Proximity	
Distance to airport (km)	0.73 (0.71, 0.74)

Table S14. Univariable odds ratio for block group exposure to nighttime average sound level (L_{AeqN}) ≥55 dB(A) (10 airports with ≥100 block groups within the buffer area) for a 10% increase in percent of block group with each characteristic. N=2,151 block groups (58 exposed).

Variables	Odds Ratio (95% CI)
% Race/Ethnicity	
Non-Hispanic Black	1.05 (0.97, 1.13)
Non-Hispanic Asian	0.26 (0.10, 0.53)
Hispanic	1.06 (0.97, 1.15)
Non-Hispanic Other	0.70 (0.31, 1.25)
Non-Hispanic White	0.93 (0.83, 1.03)
% Education	
< High school diploma or GED	1.19 (0.99, 1.43)
High school diploma or GED	1.28 (1.03, 1.58)
> High school diploma or GED	0.82 (0.71, 0.95)
% Household Income	
<\$25k	0.96 (0.80, 1.13)
\$25k to <\$50k	1.14 (0.90, 1.45)
\$50k to <\$75k	1.39 (1.05, 1.83)
≥\$75k	0.91 (0.78, 1.05)
Proximity	
Distance to airport (km)	0.58 (0.49, 0.69)

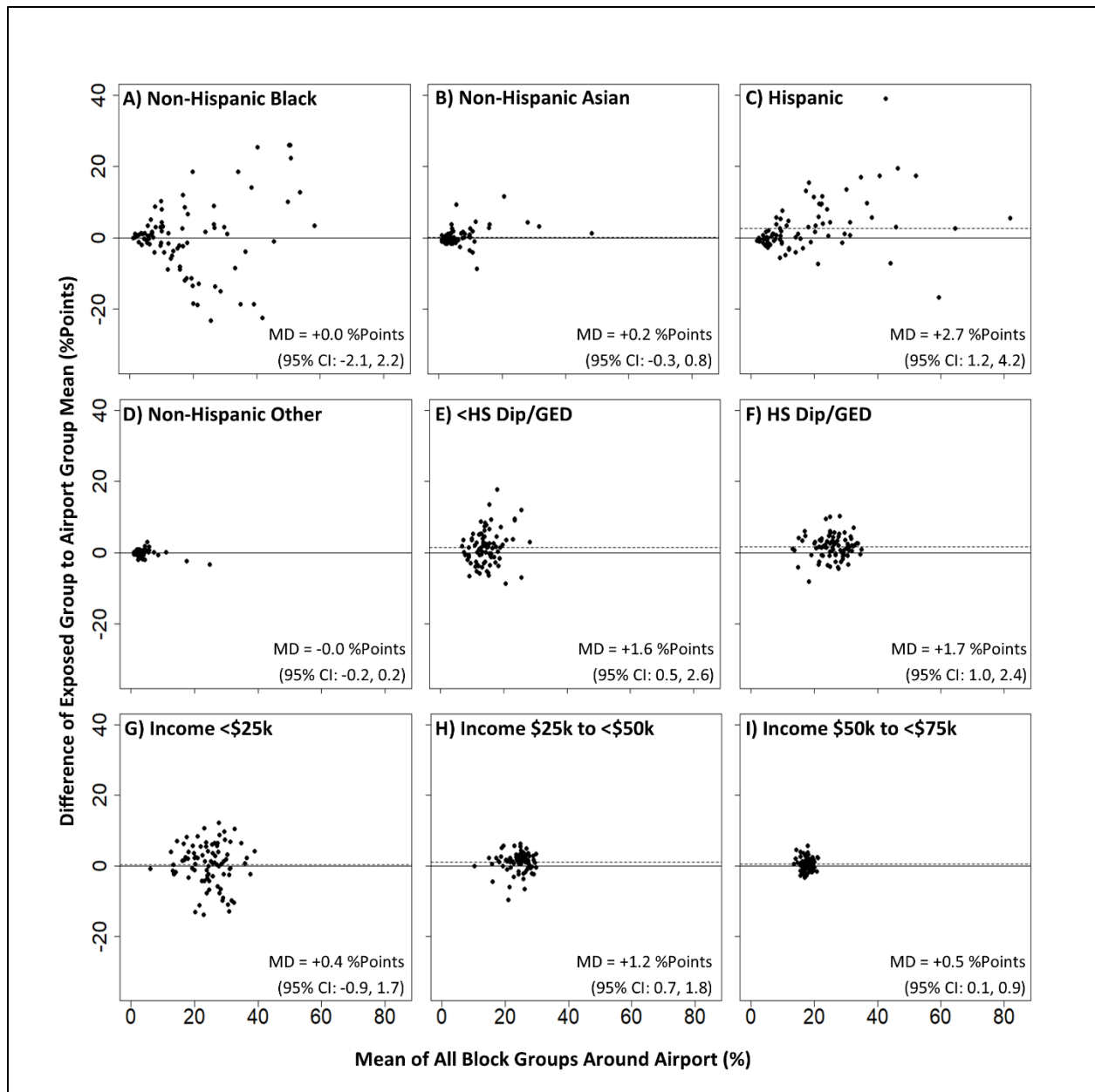


Figure S1. Mean-difference plots for socially vulnerable groups: A) non-Hispanic Black, B) non-Hispanic Asian, C) Hispanic, D) non-Hispanic Other, E) no high school diploma or GED, F) high school diploma or GED only, G) annual household income <\$25,000, H) annual household income \$25,000 to <\$50,000, and I) annual household income \$50,000 to <\$75,000. In plots A-I, each airport-specific relationship is represented by a point ($n_{\text{airport}}=86$), where the x-axis is the mean of the percent socially vulnerable group for all block groups within the maximum extent and the y-axis is the mean difference between the

percent exposed for the socially vulnerable group and the airport mean. Airports above the zero line were those found to have block groups with a *greater* percentage of socially vulnerable groups within the 45-dB(A) noise contour than the mean of all block groups around that airport (i.e., more exposed). Airports below the zero line were those found to have block groups with a *lower* percentage of socially vulnerable groups within the 45-dB(A) noise contour than the mean of all block groups around that airport (i.e., less exposed). Points along the zero line are airports where there is no difference in percent socially vulnerable groups within the DNL 45-dB(A) contour (i.e., exposed) relative to the airport mean. Dashed lines are the mean of the mean differences across all airports.

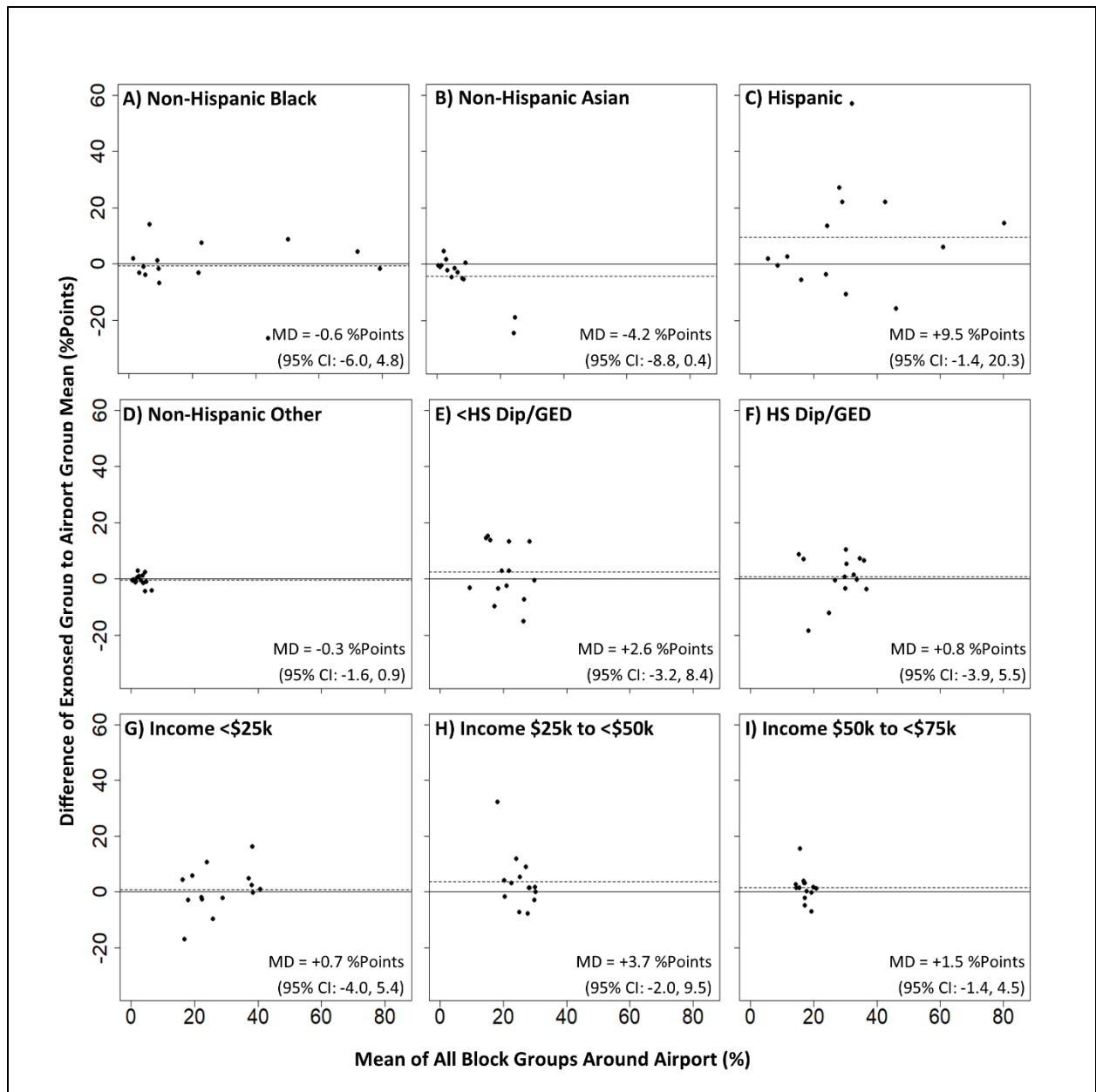


Figure S2. Mean-difference plots for socially vulnerable groups: A) non-Hispanic Black, B) non-Hispanic Asian, C) Hispanic, D) non-Hispanic Other, E) no high school diploma or GED, F) high school diploma or GED only, G) annual household income <\$25,000, H) annual household income \$25,000 to <\$50,000, and I) annual household income \$50,000 to <\$75,000. In plots A-I, each airport-specific relationship is represented by a point ($n_{\text{airport}}=14$), where the x-axis is the mean of the percent socially vulnerable group for all block groups within the maximum extent and the y-axis is the mean difference between the

percent exposed for the socially vulnerable group and the airport mean. Airports above the zero line were those found to have block groups with a *greater* percentage of socially vulnerable groups within the 65-dB(A) noise contour than the mean of all block groups around that airport (i.e., more exposed). Airports below the zero line were those found to have block groups with a *lower* percentage of socially vulnerable groups within the 65-dB(A) noise contour than the mean of all block groups around that airport (i.e., less exposed). Points along the zero line are airports where there is no difference in percent socially vulnerable groups within the DNL-65 dB(A) contour (i.e., exposed) relative to the airport mean. Dashed lines are the mean of the mean differences across all airports.