



Question: What is the relationship between neighborhood and community food access in food retail settings and weight status?

Overview Table: Summary of studies examining the relationship between food access and weight status

Author, Year Study Design Location Risk of Bias*	Sample Size Age Gender Race/Ethnicity SES	Food Access Variables	Results
Longitudinal Studies			
Block, 2011 Prospective longitudinal cohort study US Risk of bias: 1/26	N=3,113 50.8y Women provided 52.5% of the observations Race N: Not reported Education: ~50% high school or less	1) Distance to nearest food store 2) Mean distance to the 5 closest food stores	Change in BMI <i>Distance to closest food establishment:</i> Non-significant (NS) Mean distance to closest 5 food establishments: <ul style="list-style-type: none"> • <i>Total sample:</i> NS • <i>Women:</i> $\beta=-0.11$ (95% CI: -0.21, -0.01) • <i>Men:</i> NS
Gibson, 2011 Prospective longitudinal cohort study US Risk of bias: 8/26	N=8,287 33-48y (at follow-up) 49.5% female Race: Not reported SES: Not reported	Density per square mile for supermarkets, small grocery store, or convenience and specialty store	Cross-sectional probability of obesity <i>Small grocery store density:</i> $\beta=0.0022$ (SE=0.0013; P=0.05) <i>Supermarket density:</i> NS <i>Convenience/specialty store density:</i> NS Prospective change in BMI: NS
Lee, 2012 Prospective longitudinal cohort study US Risk of bias: 3/26	N=7,730 6.2y (SD=0.36) 50.0% female Non-Hispanic White 62.5%, Non-Hispanic Black 9.7%, Hispanic 17.8%, Asian 6.0%, Other/multi-racial 4.0%	Grocery store/restaurant density by type	Change in BMI percentile: NS (for any food outlet type)



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	<p>Maternal education: Less than high school (11.3%), high school/GED (27.8%), some college (32.1%), Bachelor's degree or higher (28.8%)</p> <p>Household income: <\$50,000 (54.5%); \$50,000-\$100,000 (35.8%), >\$100,000 (9.7%)</p>		
<p>Leung, 2011</p> <p>Prospective longitudinal cohort study</p> <p>US</p> <p>Risk of bias: 4/26</p>	<p>N=353</p> <p>7.4y (S=0.4)</p> <p>100.0% female</p> <p>White 47.6%, African American 13.3%, Latino 21.5%, Asian/Mixed/Other 17.6%</p> <p>Caregiver's education: Less than high school (16.7%), college or associate degree (27.8%), Bachelor's degree (31.7%), any graduate school (22.7%), missing (1.1%)</p> <p>Household income: <\$100,000 (52.7%), ≥\$100,000 (46.2%), missing (1.1%)</p>	<p>Food stores within 0.25 miles and 1.0 mile</p>	<p>Risk of overweight/obesity</p> <p>Food store density within 0.25 miles:</p> <ul style="list-style-type: none"> • <i>Convenience stores:</i> OR=3.38 (95% CI: 1.07, 10.68; P<0.05) • <i>Other store types:</i> Drug stores, Produce vendors/farmers' markets, Small grocery stores, Specialty stores, Specific food store venues, or Supermarkets: NS <p>Food store density within 1 mile:</p> <ul style="list-style-type: none"> • <i>Produce vendors/farmers' markets:</i> OR=0.22 (95% CI: 0.05, 1.06; P<0.01) • <i>Other store types:</i> Convenience stores, Drug stores, Small grocery stores, Specialty stores, Specific food store venues, Supercenters, Supermarkets: NS <p>BMI z-score</p> <p>Food store density within 0.25 miles:</p>



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			<ul style="list-style-type: none"> Convenience stores: $\beta=0.13$ (95% CI: 0.00, 0.25; $P<0.05$) Drug stores: $\beta=0.21$ (95% CI: 0.00, 0.43; $P < 0.01$) Other store types: Small grocery stores, Produce vendors/farmers' markets, Specialty stores, Specific food store venues, and Supermarkets: NS <p>Food store density within 1 mile: NS (for all store types)</p>
Rossen, 2013 Prospective longitudinal cohort study US Risk of bias: 3/26	N=237 9.6y (SD=1.03), 8-13y 53.6% female Black 86.83%, Other 13.17% Free/reduced price lunch: 85.44%	Mean Healthy Food Availability Index (HFAI) scores at food outlets within defined distance (100, 400, 800m) of school route HFAI assessed by modified NEMS	<p>BMI change</p> <p>HFAI: $\beta=-0.15$ (95% CI: -0.26, -0.03; P for trend=0.015).</p> <p>Waist circumference change</p> <p>HFAI: $\beta=-0.47$ (95% CI: -0.91, -0.03, P for trend=0.037)</p>
Shier, 2012 Prospective longitudinal cohort study US Risk of bias: 4/26	N=6,260 14.25y (SD=2.36) (at follow-up) 50.0% female Non-Hispanic White 60.2%, Non-Hispanic Black 15.1%, Non-Hispanic Asian 2.9%, Hispanic 17.8%, Other 3.9% Mother's education: Less than high school (9.8%), high school graduate (22.4%), some college (36.6%), college graduate or higher (31.2%)	1) Food outlet density 2) Food environment indices [Retail Food Environment Index (RFEI); Physical Food Environment Index (PFEI)] 3) Types of food stores	<p>BMI percentile in 8th grade</p> <p>Convenience store density: $\beta=6.99$ (SE=1.88; $P<0.01$)</p> <p><i>All other: Food outlets, RFEI, PFEI, Ratio of convenience stores to all food stores, and Ratio of fast food outlets to all restaurants: NS</i></p> <p>Change in BMI percentile (5TH to 8TH grade)</p> <p><i>All variables: NS</i></p>



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	Household income: \$0-\$25,000 (18.3%), \$25,001-\$40,000 (17.8%), \$40,001-\$75,000 (26.6%), \$75,001-\$100,000 (17.4%), ≥\$100,001 (19.9%)		
Sturm, 2005 Prospective longitudinal cohort study US Risk of bias: 3/26	N=6,916 6.2y (SD=0.36) 50.0% female White 59.3%, Black 12.8%, Hispanic 18.4%, Asian 5.8%, Other/multi-racial 3.7% Maternal education: Less than high school (11.3%), high school/GED (33.3%), some college (26.9%), Bachelor's degree or higher (28.5%) Household income: Less than \$15,000 (11.9%), \$15,000-\$25,000 (11.4%), \$25,000-\$35,000 (11.4%), \$35,000-\$50,000 (15.1%), \$50,000-\$75,000 (22.6%), \$75,000 or more (27.6%)	1) Food store/restaurant density 2) Food cost in Metropolitan Statistical Area (MSA)	Change in BMI percentile from kindergarten to first grade or third grade <i>Food outlet density:</i> NS (for total outlets of by type) Fruit/vegetable cost in MSA: <i>Kindergarten to 1st grade:</i> $\beta=0.054$ (SE=0.022; P=0.016) <i>Kindergarten to 3rd grade:</i> $\beta=0.114$ (SE=0.033; P<0.001) Meat cost in MSA: NS
Cross-sectional Studies			
Ahern, 2011 Cross-sectional study US	N=3,128 >20y 50.2% female	1) Grocery store density 2) Convenience store density	Obesity rate Grocery density: • <i>Full sample:</i> $\beta=0.62$ (SE=0.20; P<0.01)



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<p>Risk of bias: 6/26</p>	<p>Non-Hispanic Black 9.0%, Native American 1.9%, Hispanic 6.5%, Asian American 0.9%, Non-Hispanic White 81.1%</p> <p>Education: Less than high school (22.6%), with college education (16.5%)</p>	<p>3) Per capita direct sales from local farms</p> <p>4) Percent of households with no car living more than 1 mile from a grocery store</p>	<ul style="list-style-type: none"> • <i>Non-metro subsample:</i> $\beta=0.53$ (SE=0.21; $P<0.05$) • <i>Metro subsample:</i> NS <p>Convenience density: $\beta=0.30$ (SE=0.14; $P<0.05$)</p> <ul style="list-style-type: none"> • <i>Full sample:</i> $\beta=0.30$ (SE=0.14; $P<0.05$) • <i>Non-metro subsample:</i> NS • <i>Metro subsample:</i> $\beta=0.85$ (SE=0.43; $P<0.05$) <p>Direct farm sales per capita:</p> <ul style="list-style-type: none"> • <i>Full sample:</i> $\beta=-0.01$ (SE=0.003; $P<0.01$) • <i>Non-metro subsample:</i> $\beta=-0.01$ (SE=0.004; $P<0.05$) • <i>Metro subsample:</i> NS <p>Percent households with no car living more than 1 mile from a grocery store:</p> <ul style="list-style-type: none"> • <i>Full sample:</i> NS • <i>Non-metro subsample:</i> $\beta -0.05$ (SE=0.03; $P<0.05$) • <i>Metro subsample:</i> $\beta=0.15$ (SE=0.05; $P<0.01$)
<p>An, 2012</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 2/26</p>	<p>N=13,462</p> <p>8.3y (SD=2.0); 5-11y (Children); 14.5y (SD=1.7); 12-17y (Adolescents)</p> <p>49.0% female</p> <p>Children: White (46.0%), Black (8.0%), Asian or Pacific Islander (11.0%), Native-American (1.0%), Other or Multi-race</p>	<p>1) Convenience store density</p> <p>2) Food store types within a 0.1-mile, 0.5-mile, 1.0-mile and 1.5-mile radius</p>	<p>BMI</p> <p>Children: All store type density and ranges: NS</p> <p>Adolescents:</p> <ul style="list-style-type: none"> • <i>Mid-size grocery stores within 0.5 miles:</i> $\beta=-0.0164$ (SE=0.0170; $P<0.05$) • <i>Large supermarkets within 1.0 mile:</i> $\beta=0.0094$ (SE=0.0040; $P<0.05$)



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	<p>(6.0%), Hispanic (27%)</p> <p>Adolescents: White (39.0%), Black (8.0%), Asian or Pacific Islander (11.0%), Native-American (1.0%), Other or Multi-race (10.0%), Hispanic (31%)</p> <p>Parent's education</p> <p><i>Children:</i> Less than high school (12.0%), high school graduate (23.0%), more than high school (51%); <i>Adolescents:</i> Less than high school (21.0%), high school graduate (21.0%), more than high school (46%)</p> <p>Mean household income</p> <p><i>Children:</i> \$51,534; <i>Adolescents:</i> \$46,166</p>		<ul style="list-style-type: none"> All other store types/ranges: NS
<p>Bodor, 2010</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 4/26</p>	<p>N=3,925</p> <p>8-50y (52.6%), >50y (47.4%)</p> <p>66% female</p> <p>Non-Hispanic White 35.5%, Non-Hispanic Black 57.9%, Hispanic/Latino 3.0%, Other 3.6%</p> <p>Education: Less than high school (11.5%), high school graduate (26.2%), attend some college (24.4%), college graduate or higher (37.9%)</p>	<p>1) Food retailer type stores</p> <p>2) Food retailer density</p>	<p>Obesity risk</p> <p>Supermarket density: OR=0.936 (95% CI: 0.882, 0.994; P<0.05)</p> <p>Convenience store density: OR=1.013 (95% CI: 1.001, 1.024; P < 0.05)</p>



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	<p>Poverty index ratio: Below 1.00 (18.7%), 1.00-1.85 (21.7%), >1.85 (59.6%)</p>		
<p>Brown, 2008</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 6/26</p>	<p>N=2,536</p> <p>~40y (SD~14y)</p> <p>59.2% female</p> <p>Very Deprived Group: Non-Hispanic White (9.0%), Hispanic/Latino (77.2%), Non-Hispanic Black (11.9%), Asian or Pacific Islander (2.0%)</p> <p>Deprived Group: Non-Hispanic White (29.7%), Hispanic/Latino (50.6%), Non-Hispanic Black (6.8%), Asian or Pacific Islander (12.9%)</p> <p>Non-Deprived Group: Non-Hispanic White (66.5%), Hispanic/Latino (15.2%), Non-Hispanic Black (5.7%), Asian or Pacific Islander (12.6%)</p> <p>Education</p> <p><i>Very Deprived:</i> High school graduate (42.8%), college graduate (4.6%); <i>Deprived:</i> high school graduate (57.1%), college graduate (16.3%); <i>Non-Deprived:</i> High school graduate (44.3%), college graduate (49.4%)</p>	<p>Food store density</p>	<p>BMI</p> <p>With chronic condition subsample: Large supermarket density: $\beta=2.91$ (95% CI: 1.28, 4.53, $P\leq 0.001$)</p> <p>All other subsamples and food store types: NS</p>



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	<p>Income</p> <p><i>Very Deprived:</i> <\$40,000 (63.9%), >\$40,000 (12.8%); <i>Deprived:</i> <\$40,000 (70.1%), >\$40,000 (29.9%); <i>Non-Deprived:</i> <\$40,000 (48.0%), >\$40,000 (52.0%)</p>		
<p>Carroll-Scott, 2013</p> <p>Cross-sectional study</p> <p>US</p> <p>0/26</p>	<p>N=719</p> <p>10.9y (SD=0.8)</p> <p>52.4% female</p> <p>White 10.5%, Black 40.7%, Latino 48.9%</p> <p>Free/reduced lunch eligibility: Eligible (76.9%), not eligible (12.0%)</p> <p>Food secure (self-report): Yes (76.7%), no (10.5%)</p>	<p>Distance to food outlet</p>	<p>BMI</p> <p>Nearest grocery store >0.5mi: $\beta=1.484$ (SE=0.493; P<0.01)</p>
<p>Drewnowski, 2012</p> <p>Cross-sectional study</p> <p>US</p> <p>6/26</p>	<p>N=1,304</p> <p>18-54y (50%), >54y (50%)</p> <p>63% female</p> <p>White 84%, Black 7%, Asian 7%</p> <p>Education: Less than high school (19%), some college (26%), college graduate or more (55%)</p>	<p>1) Distance to nearest supermarket</p> <p>2) Average market basket price at primary supermarket</p>	<p>Odds of obesity</p> <p>Distance to primary supermarket: NS</p> <p>High-price supermarket (ref: low-price supermarket): RR=0.36 (95% CI: 0.20, 0.67; P=0.001)</p>



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	Household income: >\$100,000 (26%)		
Fiechtner, 2013 Cross-sectional study US Risk of bias: 1/26	N=438 4.9y (SD=1.2) 48.2% female White 57.1%, Black 18.7%, Latino 16.4%, Other 7.8% Parent education: Some college or below (38.1%), college graduate (61.9%) Annual household income: ≤\$50,001 (71.8%)	Proximity to type of food outlet	BMI Large supermarkets ≤1 mile (ref: >2mi): OR=0.77 (95% CI: 0.03, 1.51; P<0.05) Proximity to all other food outlets: NS
Ford, 2010 Cross-sectional study US Risk of bias: 3/26	N=21,166 24.8y (SD=5.07) 100% female White 85.0%, Black 11.8%, Other 4.2% Ethnicity: Non-Hispanic (72.0%), Hispanic (28.0%) Education: 11.46 y (SD=2.67) Monthly household income: \$1,328 (SD=\$1,611)	Density of food stores within a 1-, 3-, and 5- mile radius	Obesity risk Supermarkets within 1 mile: <ul style="list-style-type: none"> • <i>Micropolitan:</i> OR=1.07 (95% CI: 1.01, 1.14; P<0.01) • <i>Metropolitan or Rural subsamples:</i> NS Supermarkets within 3 miles: <ul style="list-style-type: none"> • <i>Micropolitan or Rural subsamples:</i> NS • <i>Metropolitan:</i> OR=0.99 (95% CI: 0.97, -0.99; P<0.05) Supermarkets within 5 miles: <ul style="list-style-type: none"> • <i>Micropolitan or Rural subsamples:</i> NS



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			<ul style="list-style-type: none"> • <i>Metropolitan</i>: OR=0.99 (95% CI: 0.99, 0.99; P<0.05) <p>Grocery within 1 mile:</p> <ul style="list-style-type: none"> • <i>Metropolitan</i>: OR=1.05 (95% CI: 1.01, 1.09; P<0.05) • <i>Metropolitan or Rural subsamples</i>: NS <p>Grocery within 3 miles: <i>Metropolitan, Metropolitan, or Rural subsample</i>: NS</p> <p>Grocery within 5 miles: <i>Metropolitan, Metropolitan, or Rural subsamples</i>: NS</p> <p>Convenience within 1 mile:</p> <ul style="list-style-type: none"> • <i>Metropolitan</i>: OR=1.03 (95% CI: 1.01, 1.05; P<0.05) • <i>Metropolitan or Rural subsamples</i>: NS <p>Convenience within 3 or 5 miles: <i>Metropolitan, Metropolitan, or Rural subsample</i>: NS</p>
<p>Galvez, 2009</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 1/26</p>	<p>N=323</p> <p>6-8y</p> <p>71% female</p> <p>Hispanic/Latino 67.0%, Non-Hispanic Black 3.0%</p> <p>Income: <\$12,000 (20.0%), \$12,000-\$24,999 (40.0%), \$25,000-\$49,999 (31.0%),</p>	<p>Food store density</p>	<p>Risk of BMI in highest tertile</p> <p>Convenience stores ≥1 (Ref: 0): OR=1.90 (95% CI: 1.15, 3.15; P=0.01)</p> <p>Other food store types: <i>Specialty stores, grocery stores, supermarkets</i>: NS</p>



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	\$50,000-\$74,999 (5.0%), \$75,000-\$99,999 (3.0%), >\$100,000 (1.0%)		
Jillcott Pitts, 2013 Cross-sectional study US Risk of bias: 2/26	N=400 26.3y (SD=6.3) 100% female Black (63.8%) Education: 43.6% below high-school graduate Income: 100% low-income Car owners: 68%	1) Distance to nearest food outlet 2) Space and time accessibility to farmers markets	No associations with weight outcomes
Laska, 2010 Cross-sectional study US Risk of bias: 1/26	N=334 (residential-level GIS-derived independent variables); 277 (school-level GIS-derived independent variables) 15.4y (SD=1.7) 50.9% female Caucasian 93.4% Parental education: 64.4% college education Median household income: \$76,790	Food outlet proximity	BMI z-score Convenience stores within 1,600m: $\beta=0.26$ (95% CI: 0.05, 0.48; $P<0.01$) Other variables: <i>Distance to nearest food outlet (per 100m), presence within 800m, or presence within 3,000m:</i> NS Percent body fat Convenience stores within 1,600m: $\beta=2.17$ (95% CI: 0.44, 3.91; $P<0.01$) Other variables: <i>Distance to nearest food outlet (per</i>



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<p>Liu, 2007</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 3/26</p>	<p>N=7334</p> <p>8.1y (SD=3.8)</p> <p>48.9% female</p> <p>Higher population townships: Non-Hispanic White (22.8%), Non-Hispanic Black (60.7%), Hispanic (14.9%), Other (1.7%)</p> <p>Lower population townships: Non-Hispanic White (21.1%), Non-Hispanic Black (45.1%), Hispanic (28.2%), Other (5.7%)</p> <p>Mean family income</p> <p><i>Higher population townships:</i> \$40,200 (SD=\$10,029); <i>Lower population townships:</i> \$52,700 (SD=\$8,550)</p>	<p>Nearest food outlet</p>	<p><i>100m), presence within 800m, presence within 3000m: NS</i></p> <p>Overweight risk</p> <p>Distance to nearest supermarket:</p> <ul style="list-style-type: none"> • <i>Low population township subsample:</i> Odds=1.038 (SE=0.019, P=0.03) • <i>High population township subsample:</i> NS <p>All other food outlet types and township types: NS</p>
<p>Morland, 2006</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 3/26</p>	<p>N=10,763</p> <p>49-73y</p> <p>56% female</p> <p>White 77%, Black American 23%</p> <p>Education: Less than high school graduate</p>	<p>1) Food outlet density by type</p> <p>2) Food access environment</p>	<p>Prevalence of overweight</p> <p>Supermarket density: PR=0.94 (95% CI: 0.90, 0.98)</p> <p>Convenience store density: PR=1.06 (95% CI: 1.02, 1.10)</p> <p>Grocery store density: NS</p>



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	<p>(20.9%), high school graduate (31.9%), some college (10.4%), advanced degree (36.8%)</p> <p>Income: ≥\$40,000 (25.4%)</p>		<p>Food outlet access environment (ref: only has access to supermarket)</p> <ul style="list-style-type: none"> • <i>Grocery store access:</i> PR=1.14 (95% CI: 1.01, 1.27) • <i>Convenience store access:</i> PR=1.12 (95% CI: 1.02, 1.23) • <i>Grocery store and convenience store access:</i> PR=1.18 (95% CI: 1.08, 1.30) • <i>Other access types:</i> Supermarkets and grocery stores, Supermarkets and convenience stores, Supermarkets, grocery stores and convenience stores, or No stores: NS <p>Prevalence of obesity</p> <p>Supermarket density: PR=0.83 (95% CI: 0.75, 0.92)</p> <p>Convenience store density: PR=1.16 (95% CI: 1.05, 1.27)</p> <p>Grocery store density: NS</p> <p>Food outlet access environment (ref: only has access to supermarket):</p> <ul style="list-style-type: none"> • <i>Supermarket and convenience stores:</i> PR=1.35 (95% CI: 1.05, 1.3) • <i>Grocery stores:</i> PR=1.48 (95% CI: 1.12, 1.94) • <i>Convenience stores:</i> PR=1.45 (95% CI: 1.16, 1.82) • <i>Grocery stores and convenience stores:</i> PR=1.60 (95% CI: 1.28, 2.00)



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			<ul style="list-style-type: none"> • <i>Other access types:</i> Supermarkets and grocery stores, Supermarkets, grocery stores and convenience stores, or No stores: NS
<p>Morland, 2009</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 3/26</p>	<p>N=1,295</p> <p>48y (SD=17)</p> <p>64.7% female</p> <p>White 61.5%, Black 38.5%</p> <p>Education: Less than high school (8.7%), high school grad/GED (23.5%), some tech school/college (25.5%), college graduated (42.3%)</p>	<p>1) Food outlet/restaurant presence in an area</p> <p>2) Nearest food outlet/restaurant</p>	<p>Prevalence of obesity</p> <p>Chain supermarket presence: PR=0.78 (95% CI: 0.63,0.95)</p> <p>Grocery Store presence: PR=1.31 (95% CI: 1.05, 1.62)</p> <p>Other variables: <i>Convenience store, Convenience store with gas station, Specialty food stores, Unknown sore, Distance to nearest supermarket, or Distance to nearest fast food:</i> NS</p>
<p>Rundle, 2009</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 2/26</p>	<p>N=13,102</p> <p>46.2y (SD=10.6)</p> <p>64% female</p> <p>Caucasian 47%, African American 14%, Caribbean 5%, Hispanic/Latino 20%, Asian 12%, Other 2%</p> <p>Education: Some high school or less (13%), high school graduate (22%), vocational school (2%), some college (21%), college graduate (24%), graduate school (18%)</p>	<p>Food outlet/restaurant density by type</p> <p><i>“BMI-healthy”:</i> Supermarkets/large grocery stores, fruit and vegetable markets and natural food stores</p> <p><i>“BMI-intermediate”:</i> Non-fast food restaurants, medium-sized grocery stores, specialty stores and</p>	<p>BMI</p> <p>Food outlet density:</p> <ul style="list-style-type: none"> • <i>BMI-healthy density:</i> Quintile 5 mean BMI=27.26 vs. Quintile 1 mean BMI=28.06; P=0.003 • <i>BMI-intermediate density:</i> Q5 vs. Q1=NS • <i>BMI-unhealthy density:</i> Q5 vs. Q1=NS <p>Prevalence of overweight: Density of BMI-healthy outlets (ref: Quintile 1+2): <i>Quintile 5:</i> NS</p> <p>Prevalence of overweight: Density of BMI-healthy outlets (ref: Quintile 1+2): <i>Quintile 5:</i> PR=0.87 (96% CI: 0.78, 0.97, P<0.05)</p>



Question: What is the relationship between neighborhood and community food access in food retail settings and weight status?

Overview Table: Summary of studies examining the relationship between food access and weight status

Author, Year Study Design Location Risk of Bias*	Sample Size Age Gender Race/Ethnicity SES	Food Access Variables	Results
		fish markets <i>"BMI-unhealthy"</i> : Fast-food restaurants, convenience stores, meat markets, pizzerias, bodegas, bakeries, candy stores and nut stores	
Salois, 2012 Cross-sectional study US Risk of bias: 3/26	N=3,051 >20y Gender NR White 79.5%, Black 9.0%, Asian 0.98% Median household income of counties: \$44,034 (SD=\$11,376) Mean poverty rate for counties: 15.3% Percent residents without a car and >1mi to store: 4% Percent low income and >1mi to store: 22.8%	1) Grocery store density 2) Percent of farms with direct-sales to consumers 3) Value of direct farm sales per capita 4) Farmers market density	Obesity risk Percent low income and >1mi to store: $\beta=0.027$ (P<0.01) Supercenters/club stores density: $\beta=8.737$ (P<0.01) Percent of farms with direct sales: $\beta=-0.032$ (P<0.01) Direct farm sales per capita (dollars): $\beta=-0.011$ (P<0.01) Other variables: <i>Percent of households no car and >1mi to store, supermarket/grocery store density, convenience stores (no gas) density, convenience stores (with gas) density, farmers market density: NS</i>
Stark, 2013 Cross-sectional study	N=44,282 18-24y (8.5%), 25-44y (40.2%), 45-64y (32.5%), $\geq 65y$ (18.8%)	1) Food outlet density 2) Diversity of food outlets	BMI Proportion of BMI-unhealthy food outlets:



Question: What is the relationship between neighborhood and community food access in food retail settings and weight status?

Overview Table: Summary of studies examining the relationship between food access and weight status

Author, Year Study Design Location Risk of Bias*	Sample Size Age Gender Race/Ethnicity SES	Food Access Variables	Results
<p>US</p> <p>Risk of bias: 3/26</p>	<p>58.45% female</p> <p>Non-Hispanic White 40.8%, Non-Hispanic Black 24.9%, Non-Hispanic Asian 6.9%, Hispanic/Latino 24.7%, Other 2.8%</p> <p>Education: Less than high school (16.0%), high school graduate (25.2%), some college (22.3%), college graduates (36.5%)</p> <p>Income to poverty ratio: >600 (21.4%)</p>	<p>3) The proportion of food outlets classified as “BMI-unhealthy”*; “BMI-intermediate”*; “BMI-healthy”*</p> <p>* see Rundle, 2009</p>	<ul style="list-style-type: none"> • <i>Total sample:</i> $\beta=0.261$ (95% CI: 0.093,0.429; $P<0.01$) • <i>Low-percent poor zip code subsample:</i> $\beta=0.507$ (95% CI: 0.284, 0.731; $P<0.001$) • <i>High-percent poor zip code subsample:</i> NS <p>Food store density:</p> <ul style="list-style-type: none"> • <i>Total sample:</i> $\beta=-0.324$ (95% CI: -0.446, -0.202; $P<0.001$) • <i>Low-percent poor zip code subsample:</i> $\beta=-0.273$ (95% CI: -0.444, -0.102; $P<0.01$) • <i>High-percent poor zip code subsample:</i> $\beta=-0.305$ (95% CI: -0.496, -0.113; $P<0.01$) <p>Food outlet diversity:</p> <ul style="list-style-type: none"> • <i>Total sample:</i> NS • <i>Low-percent poor zip code subsample:</i> NS • <i>High-percent poor zip code subsample:</i> NS
<p>Viola, 2013</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 2/26</p>	<p>N=48,014</p> <p>>18y</p> <p>53% female</p> <p>Non-Hispanic White 38%, Non-Hispanic Black 24%, Hispanic 25%, Non-Hispanic Other 14%</p> <p>Income: Or=200% federal poverty limit (63%)</p>	<p>Supermarket and fast-food density</p>	<p>Overweight risk</p> <p><i>Total supermarkets:</i> $\beta=-0.09$ (95% CI: -0.12, -0.03)</p> <p>Obesity risk</p> <p><i>Total supermarkets:</i> $\beta=-0.11$ (95% CI: -0.17, -0.03)</p>



Question: What is the relationship between neighborhood and community food access in food retail settings and weight status?

Overview Table: Summary of studies examining the relationship between food access and weight status

Author, Year Study Design Location Risk of Bias*	Sample Size Age Gender Race/Ethnicity SES	Food Access Variables	Results
	<p>Education: Less than or equal to high school diploma or GED (52%), some college or beyond (48%)</p>		
<p>Wang, 2007</p> <p>Cross-sectional study</p> <p>US</p> <p>Risk of bias: 2/26</p>	<p>N=7,595</p> <p>~44.8y (SD~14.2)</p> <p>55% female</p> <p>High SES Neighborhood: Non-Hispanic white (95.6%), Hispanic (4.4%)</p> <p>Middle SES Neighborhood: Non-Hispanic white (89.3%), Hispanic (10.7%)</p> <p>Low SES Neighborhood: Non-Hispanic white (65.8%), Hispanic (34.2%)</p> <p>Mean education (years): High SES (14.4), Middle SES (13.3), Low SES (10.3)</p> <p>Mean income: High SES >\$50,000 (17.7%), Middle SES >\$50,000 (8.5%), Low SES >\$50,000 (4.9%)</p>	<p>1) Nearest food store</p> <p>2) Food store density</p> <p>3) Food store type</p>	<p>BMI, low SES neighborhoods (ref: High SES):</p> <ul style="list-style-type: none"> • <i>Convenience store proximity:</i> $\beta=0.684$ (SE=0.197; P<0.01) • <i>Convenience store density:</i> $\beta=0.624$ (SE=0.198; P<0.05) • <i>Small grocery store proximity:</i> $\beta=0.706$ (SE=0.204; P<0.01) • <i>Small grocery store density:</i> $\beta=0.574$ (SE=0.206; P<0.05) • <i>Ethnic market proximity:</i> $\beta=0.639$ (SE=0.196; P<0.05) • <i>Ethnic market density:</i> $\beta=0.631$ (SE=0.200; P<0.05) • <i>Supermarket proximity:</i> $\beta=0.621$ (SE=0.196; P<0.05) • <i>Supermarket density:</i> $\beta=0.619$ (SE=0.199; P<0.05) <p>BMI, middle SES neighborhoods (ref: High SES): <i>All store type, density, and proximity variables:</i> NS</p>

*Risk of bias as determined using the Nutrition Evidence Library Bias Assessment Tool (NEL BAT)