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SUPPLEMENTARY FILE 1 : SAMPLE SEARCH STRATEGY

Outcome terms AND longitudinal design terms AND (geographic context terms AND (social environment exposure terms OR physical environment exposure terms))

Terms		Type*
Outcome		
1	Obesity	MeSH:noexp, TIAB
2	Obesity, Morbid	MeSH
3	Body Mass Index	MeSH, TIAB
4	BMI	TIAB
5	Overweight	MeSH:noexp, TIAB
6	Weight	TIAB
7	Adiposity	TIAB
Longitudinal design		
8	Cohort studies	MeSH
9	Prospective studies	MeSH
10	Cohort*	TIAB
11	Follow up	TIAB
12	Longitudinal	TIAB
13	Retrospective	TIAB
14	Life course	TIAB
15	Randomized	TIAB
16	Change	TIAB
17	Experimental	TIAB
18	History	TIAB
Geographic context		
19	Environment	MeSH:noexp
20	Residence characteristics	MeSH:noexp
21	Neighborhood*	TIAB
22	Neighbourhood*	TIAB
23	Catchment Area (Health)	MeSH
24	Residential	TIAB
25	Residence	TIAB
26	Context	TIAB
27	Composition	TIAB
28	Urban	TIAB
Social environment exposure		
29	Sociological Factors	MeSH:noexp, TIAB
30	Socioeconomic Factors	MeSH
31	Low-income	TIAB
32	Education	TIAB
33	Poverty	TIAB
34	Socioeconomic	TIAB
35	Income	TIAB
36	Social conditions	TIAB
Physical environment exposure		

37	Environment Design	MeSH
38	City Planning	MeSH, TIAB
39	Food service	MeSH
40	Urban planning	TIAB
41	Built Environment	TIAB
42	Physical environment	TIAB
43	Urban form	TIAB
44	Obesogenic environment	TIAB

** "Type" refers to the tags complementing search terms in queries. "MeSH" (Medical Subject Heading) terms will be searched in the controlled vocabulary assigned by U.S National Library of medicine to index scientific articles in its database. "MeSH:noexp" terms have the same function as MeSH, except that the search will be limited to the exact term not including subordinate terms generally linked to MeSH terms. "TIAB" terms will be searched in the title and abstract of the citations.*

SUPPLEMENTARY FILE 2 : CHARACTERISTICS OF SELECTED STUDIES

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Albrecht, 2015 [1]	United States	Migrants	Waist circumference	Euclidean Buffer	1	5	Both	No	Multilevel model	Null	Food environment 0/4 Walkability 0/2 Physical activity establishment 0/2
Arcaya, 2013 [2]	United States	Adults	BMI	Euclidean Buffer	3.8	3.8	Both	Yes	Multilevel model	Expected	Foreclosure 1/1
Auchincloss, 2012 [3]	United States	Older adults	BMI	Self-reported	1	4	Both	No	Proportional hazards regression	Mixed	Food environment 1/1 Walkability 0/1
Auerbach, 2017 [4]	United States	African American women	BMI	Self-reported	1	2	Both	No	Poisson regression analysis	Expected	Physical activity establishment 1/1 Food environment 0/1 Security 1/1
Barrientos-Gutierrez, 2017 [5]	United States	Older adults	BMI	Euclidean Buffer	4	5	Both	Yes	Fixed effects model	Null	Food environment 0/2 Physical activity establishment 0/1 Walkability 0/1
Berry, 2010 [6]	Canada	Adults	BMI	Census limits	1	2	Both	No	Linear regression	Mixed	Composite index socioeconomic 1/1 Walkability 0/1
Berry, 2010 [7]	Canada	Adults	BMI	Administrative limits	1	2	Stayers	No	Ordinal regression	Null	Composite index socioeconomic 0/1 Walkability 0/1
Block, 2011 [8]	United States	Adults	BMI	Other	7	7	Both	Yes	Multilevel model	Null	Food environment 5/36
Blok, 2013 [9]	Netherlands	Adults	BMI	Administrative limits	1	2	Both	No	Multilevel model	Expected	Prevalence of health behavior 1/1
Boone-Heinonen, 2013 [10]	United States	Young adults	BMI	Euclidean Buffer	4	4	Both	Yes	Fixed effects model	Null	Food environment 1/3 Density 0/1 Deprivation 1/1 Physical activity establishment 0/2

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Braun, 2016 [11]	United States	Older adults	Waist circumference	Other	2	2	Movers	No	Fixed effects model	Null	Walkability 0/1
Braun, 2016 [12]	United States	Young adults	BMI and waist ratio	Other	2	2	Movers	Yes	Multiple	Null	Walkability 0/1
Brown, 2015 [13]	United States	Adults	BMI	Euclidean Buffer	2	2	Stayers	Yes	Linear regression	Expected	Transportation infrastructure 1/1
Burdette, 2012 [14]	United States	Young adults	BMI	Other	1	3	Both	No	Structural equations	Null	Composite index socioeconomic 1/1 Perceived environment 0/2
Christine, 2017 [15]	United States	Adults	BMI	Euclidean Buffer	2	2	Both	Yes	Multiple	Null	Foreclosure 0/1
Colchero, 2008 [16]	Philippines	Women	BMI	Administrative limits	1	7	Both	No	Multilevel model	Expected	Other 1/1 Density 1/1
Coogan, 2010 [17]	United States	African american women	BMI	Administrative limits	6	6	Both	No	Multilevel model	Expected	Composite socioeconomic index 2/2
Coogan, 2011 [18]	United States	African american women	BMI	Network buffer	3	4	Both	No	Multilevel model	Expected	Composite index built environment 2/2
Cummins, 2014 [19]	United States	Adults	BMI	Administrative limits	2	2	Stayers	Yes	Difference in difference	Null	Food environment 0/1
Do, 2017 [20]	United States	Adults	BMI	Administrative limits	6	6	Both	Yes	Multiple	Null	Deprivation 4/32
Eid, 2008 [21]	United States	Young adults	BMI	Euclidean Buffer	4.1	4.1	Both	No	First difference	Null	Sprawl 0/2 Land use 0/2
Feng, 2015 [22]	Australia	Adults	BMI	Census limits	1	2.9	Stayers	No	Multilevel model	Expected	Composite index socioeconomic 1/1
Gebel, 2011 [23]	Australia	Adults	BMI	Other	1	2	Stayers	No	Linear regression	Expected	Perceived environment 1/1
Gibson, 2011 [24]	United States	Adults	BMI	Administrative limits	3.3	3.3	Both	Yes	Fixed effects model	Mixed	Food environment 4/10

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Halonen, 2014 [25]	Finland	Profession	BMI	Other	2	2	Stratified	No	Multilevel model	Mixed	Blue and green area 3/8
Hirsch, 2014 [26]	United States	Older adults	BMI and waist ratio	Euclidean Buffer	5	5	Both	Yes	Fixed effects model	Null	Composite built environment 2/6
Jones, 2014 [27]	United States	Adults	BMI and waist ratio	Census limits	1	2	Both	No	Multilevel model	Mixed	Composite index socioeconomic 1/2
Joost, 2016 [28]	Switzerland	Adults	BMI	Census limits	2	2	Both	No	Spatial analysis	Expected	Deprivation 1/1
Kapinos, 2014 [29]	United States	Students	BMI	Other	1	2	Both	No	Linear regression	Mixed	Food environment ¼ Physical activity establishment 2/2
Kimbro, 2017 [30]	United States	Adults	BMI	Census limits	2	2	Both	Yes	Multilevel model	Null	Deprivation 0/2 Food environment 0/6
Kwarteng, 2017 [31]	United States	Adults	Waist circumference	Census limits	1	2	Both	No	Multilevel model	Expected	Deprivation 1/1
Kwarteng, 2016 [32]	United States	Adults	Waist circumference	Census limits	1	2	Both	No	Multilevel model	Expected	Deprivation 1/1
Lamb, 2017 [33]	Australia	Women	BMI	Network buffer	2	3	Stayers	Yes	Multilevel model	Null	Food environment 0/1
Laraia, 2017[34]	United States	Diabetes	BMI	Census limits	5	17	Stratified	Yes	Fixed effects model	Mixed	Food environment 2/4
Lee, 2017 [35]	United States	Adults	Other	Census limits	1	2	Both	No	Linear and logistic regression	Expected	Transportation 1/1 Greenspace 1/1 Inverse Land use 0/1 Food environment 5/5
Leonard, 2017 [36]	United States	Adults	BMI	Euclidean Buffer	2	2	Stratified	Yes	Multilevel model	Expected	Composite index socioeconomic 3/3
Li, 2009 [37]	United States	Older adults	BMI and waist ratio	Census limits	1	2	Both	No	Multilevel model	Null	Food environment 0/1 Walkability 0/1
Lippert, 2017 [38]	United States	Young adults	BMI and waist ratio	Census limits	2	1	Both	Yes	Logistic regression	Null	Deprivation 3/12

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Ludwig, 2011 [39]	United States	Women	BMI	Census limits	2	1	Both	No	Logistic regression	Expected	Deprivation 1/1
Mendez, 2016 [40]	United States	Participants in weightloss program	Weight	Census limits	1	2	Both	No	Fixed effects model	Null	Food environment 0/2 Racial composition 1/1 Deprivation 0/4
Meyer, 2015 [41]	United States	Adults	BMI	Network buffer	4	4	Both	Yes	Multilevel model	Mixed	Composite index built environment 1/2
Mujahid, 2005 [42]	United States	Older adults	BMI	Census limits	1	4	Both	No	Multilevel model	Null	Composite index socioeconomic 0/4
Murray, 2010 [43]	United States	Older adults	BMI	Census limits	20	1	Both	Yes	Linear regression	Expected	Deprivation 1/1
Picavet, 2016 [44]	Netherlands	Adults	BMI	Euclidean Buffer	4	4	Both	Yes	Multiple	Null	Green space 4/30
Pitts, 2017 [45]	United States	Rural adults	Weight	Other	1	2	Both	No	Linear regression	Null	Food environment 1/10 Physical activity establishment 0/6 Walkability 0/1 Security 0/1 Perceived 0/1
Powell-Wiley, 2014 [46]	United States	Adults	Weight	Census limits	2	2	Stayers	No	Multilevel model	Mixed	Composite index socioeconomic 1/2
Powell-Wiley, 2015 [47]	United States	Adults	BMI	Census limits	2	2	Stratified	No	Multilevel model	Expected	Composite index socioeconomic 3/3
Powell-Wiley, 2017 [48]	United States	Older adults	BMI and waist ratio	Other	5	5	Both	Yes	Multiple	Null	Perceived environment 2/18 Security 0/18
Rachele, 2017 [49]	Australia	Older adults	BMI	Census limits	1	4	Stayers	No	Multilevel model	Null	Composite index socioeconomic 0/2
Richardson, 2015 [50]	United States	Adults	BMI	Other	3	3	Both	Yes	Structural equation	Mixed	Food environment ½
Richardson, 2017 [51]	United States	African american	BMI	Euclidean Buffer	1	1	Both	Yes	Structural equation	Expected	Perceived environment 1/1 Security 1/1

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Ruel, 2010 [52]	United States	Women	BMI	Census limits	1	4	Both	No	Multilevel model	Mixed	Composite index socioeconomic 0/1 Racial composition 1/1 Inverse
Rummo, 2017 [53]	United States	Adults	BMI	Network buffer	6	6	Both	Yes	Multiple	Null	Food environment 2/7
Sarkar, 2013 [54]	United Kingdom	Older adults	BMI	Network buffer	1	3	Both	No	Multilevel model	Mixed	Land use 2/6 Green space 0/1 Physical activity establishment 1/1 Transportation infrastructure 2/4 Other 1/1 Density 1/1
Sheehan, 2017 [55]	United States	Women	BMI	Census limits	2	1	Both	Yes	Logistic regression	Expected	Deprivation 1/1
Stafford, 2010 [56]	United Kingdom	Profession	BMI	Census limits	1	3	Stratified	No	Multilevel model	Null	Composite index socioeconomic ¼
Stoddard, 2013 [57]	United States	Patients with diabetes	BMI	Census limits	1	2	Both	No	Linear and logistic regression	Expected	Composite index socioeconomic 3/3
Sugiyama, 2016 [58]	Australia	Adults	Waist circumference	Network buffer	1	2	Stayers	No	Multilevel model	Expected	Distance to landmark 2/2 Walkability 0/1
Sund, 2010 [59]	Norway	Adults	BMI	Census limits	1	2	Stayers	No	Multilevel model	Null	Deprivation 0/1
Wasfi, 2016 [60]	Canada	Adults	BMI	Administrative limits	7	7	Both	No	Multiple	Expected	Walkability 1/1
Xiao, 2017 [61]	United States	Older adults	BMI	Census limits	1	2	Both	No	Logistic regression	Expected	Composite index socioeconomic 4/4
Xu, 2013 [62]	China	Adults	BMI and waist ratio	Administrative limits	4	4	Both	Yes	Multilevel model	Null	Food environment 13/48
Zenk, 2017 [63]	United States	Adults	BMI	Euclidean Buffer	2	2	Stayers	Yes	Multilevel model	Null	Food environment 1/6
Zenk, 2017 [64]	United States	Veterans	BMI	Euclidean Buffer	6	6	Stratified	Yes	Fixed effects model	Mixed	Food environment 17/48

Author, year of publication	Country	Target group	Outcome	Geographic unit	Number of contextual measures	Number of outcome measures	Residential mobility	Change in neighborhood characteristics	Statistical analysis	Result (summary)	Statistically significant associations by indicator type
Zhang, 2016 [65]	United States	Diabetes	BMI	Network buffer	1	2	Stayers	Yes	First difference	Null	Food environment 0/1
Zhao, 2014 [66]	United States	Afircan-American and Hispanic women	BMI	Census limits	2	1	Both	No	Linear regression	Null	Food environment 0/20 Racial composition 0/2 Deprivation 4/8 Security 0/4 Density 0/2

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