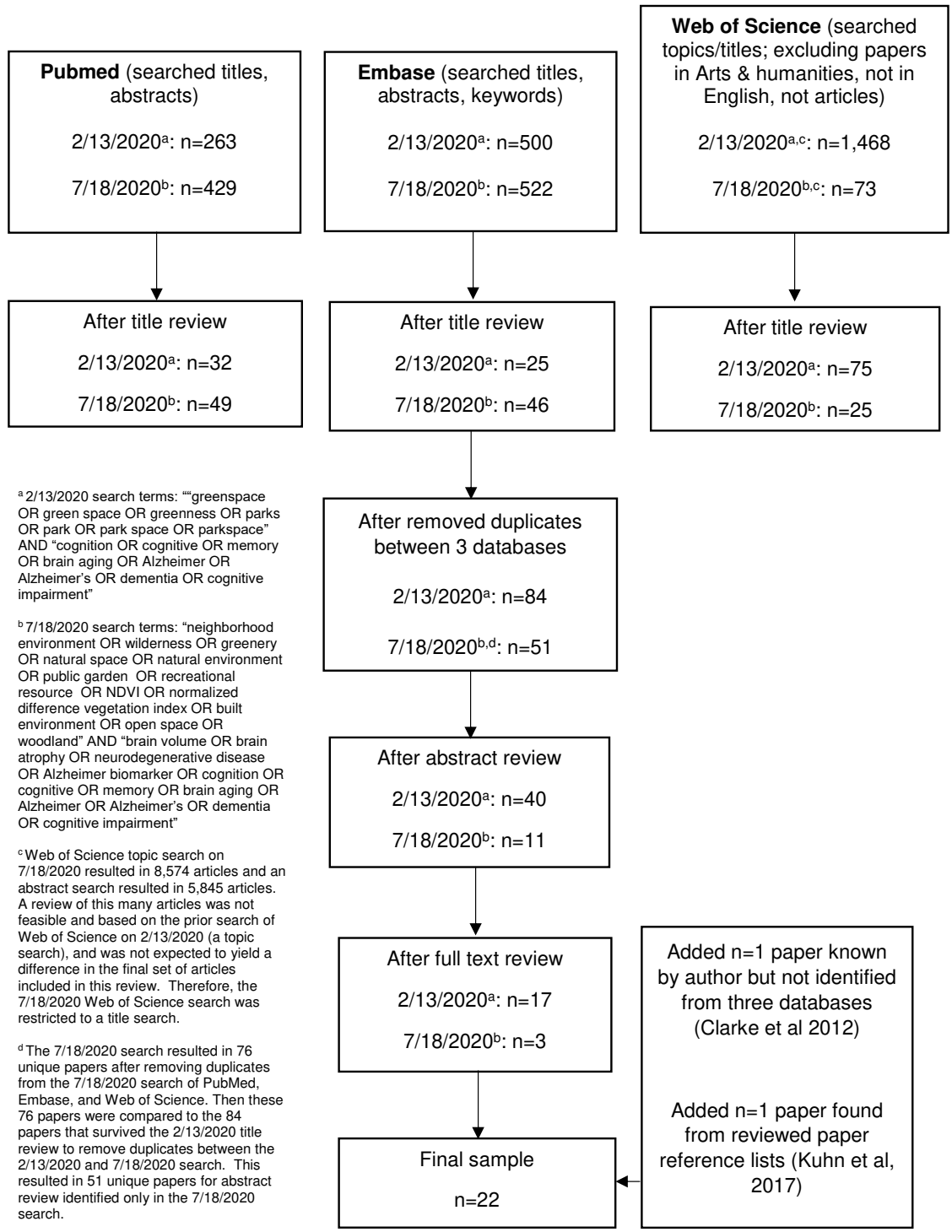
Supplemental Figure 1. Detailed diagram of literature search strategy



[a] 2/13/2020 search terms: ""greenspace OR green space OR greenness OR parks OR park OR park space OR parkspace" AND "cognition OR cognitive OR memory OR brain aging OR Alzheimer OR Alzheimer's OR dementia OR cognitive impairment"

[b] 7/18/2020 search terms: "neighborhood environment OR wilderness OR greenery OR natural space OR natural environment OR public garden OR recreational resource OR NDVI OR normalized difference vegetation index OR built environment OR open space OR woodland" AND "brain volume OR brain atrophy OR neurodegenerative disease OR Alzheimer biomarker OR cognition OR cognitive OR memory OR brain aging OR Alzheimer OR Alzheimer's OR dementia OR cognitive impairment"

[c] Web of Science topic search on 7/18/2020 resulted in 8,574 articles and an abstract search resulted in 5,845 articles. A review of this many articles was not feasible and based on the prior search of Web of Science on 2/13/2020 (a topic search), and was not expected to yield a difference in the final set of articles included in this review. Therefore, the 7/18/2020 Web of Science search was restricted to a title search.

[d] The 7/18/2020 search resulted in 76 unique papers after removing duplicates from the 7/18/2020 search of PubMed, Embase, and Web of Science. Then these 76 papers were compared to the 84 papers that survived the 2/13/2020 title review to remove duplicates between the 2/13/2020 and 7/18/2020 search. This resulted in 51 unique papers for abstract review identified only in the 7/18/2020 search.

Supplemental Text 1. List of 22 papers included in systematic review

Brown SC et al. (2018) Health Disparities in the Relationship of Neighborhood Greenness to Mental Health Outcomes in 249,405 U.S. Medicare Beneficiaries Int J Environ Res Public Health 15 doi:10.3390/ijerph15030430

Cherrie MPC et al. (2018) Green space and cognitive ageing: A retrospective life course analysis in the Lothian Birth Cohort 1936 Soc Sci Med 196:56-65 doi:10.1016/j.socscimed.2017.10.038

Cherrie MPC, Shortt NK, Ward Thompson C, Deary IJ, Pearce JR (2019) Association Between the Activity Space Exposure to Parks in Childhood and Adolescence and Cognitive Aging in Later Life Int J Environ Res Public Health 16 doi:10.3390/ijerph16040632

Clarke PJ, Ailshire JA, House JS, Morenoff JD, King K, Melendez R, Langa KM (2012) Cognitive function in the community setting: the neighbourhood as a source of 'cognitive reserve'? J Epidemiol Community Health 66:730-736 doi:10.1136/jech.2010.128116

Dadvand P et al. (2015) Green spaces and cognitive development in primary schoolchildren Proc Natl Acad Sci U S A 112:7937-7942 doi:10.1073/pnas.1503402112

Dadvand P et al. (2018) The Association between Lifelong Greenspace Exposure and 3-Dimensional Brain Magnetic Resonance Imaging in Barcelona Schoolchildren Environ Health Perspect 126:027012 doi:10.1289/EHP1876

Dadvand P et al. (2017) Lifelong Residential Exposure to Green Space and Attention: A Population-based Prospective Study Environ Health Perspect 125:097016 doi:10.1289/EHP694

Dzhambov AM, Bahchevanov KM, Chompalov KA, Atanassova PA (2019) A feasibility study on the association between residential greenness and neurocognitive function in middle-aged Bulgarians Arh Hig Rada Toksiko 70:173-185 doi:10.2478/aiht-2019-70-3326

de Keijzer C et al. (2018) Residential Surrounding Greenness and Cognitive Decline: A 10-Year Follow-up of the Whitehall II Cohort Environ Health Perspect 126:077003 doi:10.1289/EHP2875

Flouri E, Papachristou E, Midouhas E (2019) The role of neighbourhood greenspace in children's spatial working memory The British journal of educational psychology 89:359-373 doi:10.1111/bjep.12243

Hystad P PY, Noisel N, Boileau C (2019) Green space associations with mental health and cognitive function: Results from the Quebec CARTaGENE cohort Environmental Epidemiology 3:e040

Kuhn S et al. (2017) In search of features that constitute an "enriched environment" in humans: Associations between geographical properties and brain structure Scientific reports 7 doi:ARTN 11920

Liao J et al. (2019) Residential exposure to green space and early childhood neurodevelopment Environment international 128:70-76 doi:10.1016/j.envint.2019.03.070

Reuben A et al. (2019) Residential neighborhood greenery and children's cognitive development Social science & medicine (1982) 230:271-279 doi:10.1016/j.socscimed.2019.04.029

Wang D, Lau KK, Yu R, Wong SYS, Kwok TTY, Woo J (2017) Neighbouring green space and mortality in community-dwelling elderly Hong Kong Chinese: a cohort study BMJ open 7:e015794 doi:10.1136/bmjopen-2016-015794

Ward JS, Duncan JS, Jarden A, Stewart T (2016) The impact of children's exposure to greenspace on physical activity, cognitive development, emotional wellbeing, and ability to appraise risk Health Place 40:44-50 doi:10.1016/j.healthplace.2016.04.015

Wu YT, Prina AM, Jones A, Matthews FE, Brayne C, Collaboration MRCCF, Study A (2017) The Built Environment and Cognitive Disorders: Results From the Cognitive Function and Ageing Study II Am J Prev Med doi:10.1016/j.amepre.2016.11.020

Wu YT et al. (2015) Community environment, cognitive impairment and dementia in later life: results from the Cognitive Function and Ageing Study Age Ageing 44:1005-1011 doi:10.1093/ageing/afv137

Yu R, Wang D, Leung J, Lau K, Kwok T, Woo J (2018) Is Neighborhood Green Space Associated With Less Frailty? Evidence From the Mr. and Ms. Os (Hong Kong) Study Journal of the American Medical Directors Association 19:528-534 doi:10.1016/j.jamda.2017.12.015

Yuchi W, Sbihi H, Davies H, Tamburic L, Brauer M (2020) Road proximity, air pollution, noise, green space and neurologic disease incidence: a population-based cohort study Environmental health : a global access science source 19:8 doi:10.1186/s12940-020-0565-4

Zhu A, Yan L, Shu C, Zeng Y, Ji JS (2020) APOE epsilon4 Modifies Effect of Residential Greenness on Cognitive Function among Older Adults: A Longitudinal Analysis in China Scientific reports 10:82 doi:10.1038/s41598-019-57082-7

Zijlema WL et al. (2017) The relationship between natural outdoor environments and cognitive functioning and its mediators Environ Res 155:268-275 doi:10.1016/j.envres.2017.02.017

Supplemental Table 1. Green space and brain health studies including children and adolescents (<18 year olds)

Citation[a], sample size, location	Sample source	Age, sex, race/ethnicity	Green space measure	Brain health measure	Statistical Method (covariates)	Associations (positive, inverse, null)
Cherrie (2018) n=281 Edinburgh, Scotland	Lothian Birth Cohort (P)	11-78 years 48% female Race/ethnicity not specified	Park space (L): % park space (Location: residential; Boundary: 500m, 1000m, 1500m buffer) Time period: childhood, adulthood, older adulthood	Cognition (L): Moray House Test No 12 (domain: intelligence) Time period: childhood, adulthood, older adulthood	Multivariable linear regression (sex, father's occupation, number per room in childhood household, childhood smoking status, adulthood occupation, alcohol consumption, adulthood smoking status)	Positive: Greater neighborhood % park space in childhood and adulthood associated with less cognitive change from 70 to 76 years. Null: Greater neighborhood % park space in childhood, adulthood, and older adulthood not associated with cognitive change from age 11 to 70. No association between % park space in late-life and cognitive change from 70 to 76 years.
Dadvand (2015) n=2,593 Barcelona, Spain	36 primary schools in Barcelona	7-10 years (mean=8.5) 50% female 16% not Spanish, 84% Spanish	Greenness (CS): NDVI (Location: residential, school, school commute; Boundary: residential-250m buffer, school and commute route-50m buffer) Time period: childhood	Cognition (L): Computerized n-back test (domain: working memory); Computerized attentional network test (domain: attention, alerting, orienting, executive processing) Time period: childhood	Multivariable linear mixed effects regression (age, sex, maternal education, residential neighborhood SES)	Positive: Greater school greenness and total greenness (school, home, commute) associated with 12-month enhancement in working memory and attention. Greater commute route greenness associated with 12-month enhancement in working memory. Null: No association between residential greenness and cognition, commute greenness and attention, or any greenness measure and alerting, orienting, executive processing.

Dadvand (2017) n=888 at 4-5 year follow-up; n=987 at 7-year follow-up Sabadell and Valencia, Spain	Infancia y Medio Ambiente (INMA) cohort (P)	4-7 years 49% female Race/ethnicity not specified	Greenness (L): NDVI and Vegetation Continuous Fields (% woody vegetation >5 m high) (Location: residential; Boundary: 100m, 300m, 500m buffer) Time period: childhood	Cognition (L): Conners' Kiddie Continuous Performance Test (4-5 year olds) (domain: attention); Attentional Network Task (7 year olds) (domain: attention) Time period: childhood	Multivariable linear mixed effects regression (age, sex, preterm birth, maternal cognitive performance, maternal smoking during pregnancy, exposure to environmental tobacco smoke, maternal education, neighborhood SES)	Positive: Greater neighborhood greenness (birth to 4-5 years old) associated with attention at 4-5 years and greater greenness (birth to 7 years old) associated with attention at 7 years old. Null: % neighborhood woody vegetation >5m not associated with attention.
Dadvand (2018) n=253 Barcelona, Spain	Brain Development and Air Pollution Ultrafine Particles in School Children (BREATHE)	Mean: 8.4 years 49% female Race/ethnicity not specified	Greenness (L): NDVI (Location: residential; Boundary: 100m, 500m buffer) Time period: childhood	Magnetic Resonance Imaging (CS) of gray and white matter in regional clusters Time period: childhood	Adjusted voxel-wise regression using statistical parametric maps (maternal education, neighborhood SES- included one or the other in the analysis)	Positive: Greater neighborhood greenness exposure since birth associated with left and right prefrontal cortex, left premotor cortex, and white matter. Null: No associations between greenness and other brain regions.
Flouri (2019) n=4,758 UK	UK Millenium Cohort Study (MCS) (P)	Mean: 10.6 years 49% female 74% white 26% non-white	Green space (CS): % green space (Location: residential; Boundary: ward) Time period: childhood	Cognition (CS): Cambridge Neuropsychological Test Automated Battery SWM Test (domain: spatial working memory) Time period: childhood	Multivariable, multilevel linear regression (age in months, gender, family socioeconomic status, ethnicity, sports participation, computer gaming, residential mobility since infancy, neighborhood deprivation)	Positive: Greater % neighborhood green space associated with better spatial working memory.

Liao (2019) n=1,312 Wuhan, China	Women and Children Medical and Healthcare Center of Wuhan	Mean: 39 weeks 46% female Race/ethnicity not specified	Greenness (CS): NDVI (Location: residential; Boundary: 300m buffer) Time period: childhood	Cognition (CS): Bayley Scales of Infant Development – Mental Development Index (Domain: perceptual acuities, memory, learning and problem solving, abstract thinking) Time period: childhood	Multivariable, multiple linear regression (household income, maternal age, maternal education, maternal pre-pregnancy BMI, maternal passive smoking during pregnancy, gestational age, birth weight, residence areas)	Positive: Greater neighborhood greenness at birth associated with better Mental Development Index scores.
Reuben (2019) n=1,658 UK	Environmental Risk (E-Risk) Longitudinal Study (same sex twin study) (P)	Age 5, 12, and 18 52% female Race/ethnicity not specified	Greenness (L): NDVI (Location: residential; Boundary: 1-mile buffer) Time period: childhood	Cognition (L): Wechsler Preschool and Primary Scale of Intelligence-Revised, Wechsler Intelligence Scale for Children-IV, Wechsler Adult Intelligence Scale-IV (domain: crystalized and fluid cognitive ability); Spatial Span test (domain: executive function); Spatial Working Memory test (domain: working memory); Rapid Visual Information Processing test (domain: attention)	Multivariable analysis of covariance model for longitudinal model (sex, polygenic score for educational attainment, family socioeconomic status, neighborhood socioeconomic status) Multivariable information maximum likelihood (FIML) estimated regression, accounting for missing data (same covariates as longitudinal models)	Null: Neighborhood greenness not associated with fluid ability, crystallized ability, executive function, attention, or working memory measured any age.
Ward (2016) n=72 Auckland, New Zealand	Three intermediate schools	11-14 years (mean=12.7) 59% female Race/ethnicity not specified	Time spent in green space from GPS (CS) Time period: childhood	Cognition (CS): CNS Vital Signs (domain: visual memory, verbal memory, processing speed, psychomotor speed, reaction time, cognitive flexibility, executive function) Time period: childhood	Multivariable generalized linear mixed regression (sex, age, school)	Null: % time spent in greenspace not associated with any cognitive domain.

Abbreviations: CS = cross-sectional; L= longitudinal; UK = United Kingdom; P = population-based/random sampling
[a] Full list of papers found in Supplemental Text 1

Supplemental Table 2. Green space and brain health studies including adults aged 18-64 years

Citation[a], sample size, location	Sample source	Age, sex, race/ethnicity	Green space measure	Brain health measure	Statistical Method (covariates)	Associations (positive, inverse, null)
Cherrie (2018)	See Table 1					
Clarke (2012) n = 949 Chicago, US	Chicago Community Adult Health Study (P)	≥50 years 56% female 37% black, 18% Hispanic, 43% white, 3% other race/ethnicity	Park space (CS): Park area in square miles (Location: residential; Boundary: US Census tract) Time period: adulthood, older adulthood	Cognition (CS): Modified Telephone Instrument for Cognitive Status (domain: global cognition) Time period: adulthood, older adulthood	Multivariable, multilevel linear regression (age, gender, marital status, race/ethnicity, employment status, socioeconomic position, index of comorbid conditions, physical activity, social interaction)	Null: neighborhood park area not associated with global cognition.
De Keijzer (2018) n=6,506 UK	The Whitehall II study (P)	45-68 years 29% female 91% white 9% non-white	Greenness (L): NDVI and EVI (Location: residential; Boundary: 500m, 1000m buffer around postcode centroid) Time period: adulthood, older adulthood	Cognition (L): Alice Heim 4 test of intelligence (domain: reasoning); S words, Animal names (domain: phonemic and semantic verbal fluency); Free recall test (domain: short-term memory); Global cognition z-score derived from 4 tests Time period: adulthood, older adulthood	Multivariable linear mixed effects regression (gender, ethnicity, education, time varying: age, marital status, employment grade, neighborhood SSES, diet, alcohol consumption, smoking status)	Positive: Greater neighborhood greenness associated with slower decline in global cognition, reasoning, and fluency. Null: Neighborhood greenness not associated with short-term memory.

Dzhambov (2019) n=112 Plovdiv, Bulgaria	Convenience sample of volunteers	45-55 years (mean: 50) 59% female Race/ethnicity not specified	Greenness (CS): NDVI (Location: residential; Boundary: 100m, 100m, 750m, 1000m buffer around residence) Time period: adulthood	Cognition (CS): Consortium to Establish a Registry for Alzheimer's Disease Neuropsychological Battery (CERAD-NB), including Verbal Fluency test (domain: fluency), modified Boston Naming Test (domain: naming), Word List Memory (domain: memory), Word List Recall (domain: memory), Word List Recognition; Montreal Cognitive Assessment (MoCA) (domain: global cognition); Magnetic Resonance Imaging (CS) of cortical thickness of multiple brain regions of interest Time period: adulthood	Multivariable linear regression (age, sex, education, city, neighborhood population, smoking, alcohol consumption, waist circumference, blood pressure, cholesterol, blood glucose, nitrogen dioxide [NO_2], road traffic noise)	Positive: Greater greenness associated with better global cognition and verbal fluency. Greater greenness associated with greater cortical thickness in both hemispheres in the prefrontal cortex, bilateral fusiform gyrus, left precuneus and insula, and right cuneus. Null: Greater greenness was not associated with scores on the subtests of the CERAD-NB except the Verbal Fluency Test. Greater greenness was not associated with cortical thickness in regions of the brain other than those listed above.
Hystad (2019) n=6,658 Quebec, Canada	CARTaGENE Cohort (P)	40-69 years (mean: 55) 55% female 81% white 19% non-white	Greenness (L): NDVI (Location: residential; Boundary: 100m, 300m, 500m, 1000m buffer around postal codes) Time period: adulthood	Cognition (CS): Reaction time test (domain: reaction time); Paired associates learning (domain: working memory); verbal and numeric reasoning (domain: executive function) Time period: adulthood	Multivariable linear regression (age, sex, household income, race, marital status, city, population density)	Inverse: Five-year change in greenness associated with worse reasoning. Null: Five-year average neighborhood greenness not associated with reaction time, reasoning, or working memory. Five-year change in greenness not associated with reaction time or working memory.

Yuchi (2020) n=678,000 Vancouver, British Columbia, Canada	Medical Services Plan Physician Visit and Hospital Discharge data (P)	45-84 years Sex not provided for entire sample Race/ethnicity not specified	Greenness (L): NDVI (Location: residential; Boundary: 100m buffer) Time period: adulthood, older adulthood	Diagnosis (L): Alzheimer's disease, non-Alzheimer's disease; and Parkinson's disease (source: hospital records, physician visits, prescription history) Time period: adulthood, older adulthood	Multivariable Cox proportion hazards model for non-Alzheimer's disease and Parkinson's disease (age, sex, comorbidities, neighborhood household income, neighborhood education, neighborhood ethnicity); Multivariable conditional logistic regression for Alzheimer's disease (comorbidities, neighborhood household income, neighborhood education, neighborhood ethnicity)	Positive: Greater neighborhood greenness associated with lower hazard ratio for non-Alzheimer's disease and Parkinson's disease. Inverse: Greater neighborhood greenness associated with increased odds of Alzheimer's disease.
Zijlema (2017) n=1,628 Barcelona, Spain Doetinchem, Netherlands Stoke-on-Trent, UK	Positive Health Effects of the Natural Outdoor Environment in Typical Populations in Different Regions in Europe (PHENOTYPE) (P)	Mean: 48 years 54% female Race/ethnicity not specified	Greenness (CS): NDVI (Location: residential; Boundary: 100m, 300m, 500m buffer); Other green space measures (CS): Residential distance to natural outdoor environment, self-reported amount of natural outdoor environment; self-reported visits to natural outdoor environment; self-reported time visiting natural outdoor environment Time period: adulthood, later-adulthood	Cognition (CS): Color Trails Test completion time and errors (domain: visual attention/effortful executive processing) Time period: adulthood, older adulthood	Multivariable, multilevel linear and logistic regression (age, sex, education, neighborhood socioeconomic status, time spent away from home, Color Trails Test quality)	Positive: Greater residential distance to natural outdoor environments associated with greater cognitive test completion time. Null: Residential greenness, percentage residential natural environment, self-reported natural environment visits, and self-reported time spent visiting natural environment not associated with cognition.

Abbreviations: CS = cross-sectional; L = Longitudinal; P = population-based/random sampling; EVI = Enhanced Vegetation Index; UK = United Kingdom
[a] Full list of papers found in Supplemental Text 1

Supplemental Table 3. Green space and brain health studies including older adults aged ≥65 years

Citation[a], sample size, location	Sample source	Age, sex, race/ethnicity	Green space measure	Brain health measure	Statistical Method (covariates)	Associations (positive, inverse, null)
Brown (2018) n=249,405 Florida, US	US Medicare Beneficiaries from Miami-Dade County, Florida (P)	Age: 65-111 years (mean: 76) 58% female 77% non-white 23% white	Greenness (CS): NDVI (Location: residential; Boundary: US Census block) Time period: older adulthood	Diagnosis (CS): Alzheimer's disease (source: US Centers for Medicare and Medicaid Services) Time period: older adulthood	Multivariable, multilevel logistic regression (age, sex, race/ethnicity, neighborhood income)	Positive: Greater neighborhood greenness associated with lower odds of Alzheimer's disease.
Cherrie (2018)	See Table 1					
Cherrie (2019) n=281 Edinburgh, UK	Lothian Birth Cohort (P)	Age: 70-76 years Female: 48% Race/ethnicity not specified	Park space (L): % park space (Location: residential, school, school route; Boundary: 1000m buffer around home, school, school route) Time period: childhood	Cognition (L): Moray House Test No 12 (domain: intelligence) Time period: older adulthood (sex, father's occupation, number per room in childhood household, childhood smoking status, adulthood occupation, alcohol consumption, adulthood smoking status)	Multivariable, multilevel linear regression	Positive: % park space at ages 11-18 near home, school, and school route associated with less cognitive change from 70 to 76 years. Null: No association between % park space measures at ages 4-11 and cognitive change from 70 to 76 years.
Clarke (2012)	See Table 2					
De Keijzer (2018)	See Table 2					
Kuhn (2017) n=341 Berlin, Germany	Berlin Aging Study II	61-82 years (mean: 70) 38% female Race/ethnicity not specified	Green space (CS): Amount of forest and urban green (Location: residential; Boundary: 1km surrounding residence) Time period: older adulthood	Magnetic Resonance Imaging (CS) of integrity of amygdala, pregunual anterior cingulate cortex (pACC), and dorsolateral prefrontal cortext (DLPFC) determined from	Structural Equation Modeling (SEM) (age, sex, years of education)	Positive: Greater amount of forest in neighborhood associated with greater amydala integrity. Null: No association between amount of forest and pACC or DLPFC integrity, or between amount

				indicators of brain structural integrity (grey matter volume, magnetization transfer ratio, mean diffusivity) Time period: Older adulthood		of urban green and any brain measure.
Wang (2017) n=3,544 Hong Kong, China	Community based-cohort	≥65 years (median: 72) 50% female Race/ethnicity not specified	Greenness (CS): NDVI (Location: residential; boundary: 300m buffer) Time period: older adulthood	Cognition (CS): Mini Mental State Exam (domain: global cognition) Time period: older adulthood	Spearman's correlation coefficients (unadjusted analysis)	Null: no correlation between neighborhood greenness and global cognition.
Wu (2015) n=2,424 UK	Medical Research Council Cognitive Function and Ageing Study (P)	Age ≥74 years (Mean: 82) 60.7% female Race/ethnicity not specified	Green space (CS): % green space/private gardens (Location: residential; Boundary: Lower – Layer Super Output Area for postcode) Time period: older adulthood	Cognitive status (CS): Cognitive impairment (source: Mini Mental State Exam ≤25) Diagnosis (CS): dementia (source: Geriatric Mental Status and Automatic Geriatric Examination for Computer Assisting Taxonomy) Time period: older adulthood	Multivariable, multilevel logistic regression (age, gender, education, social class, number chronic illnesses, area deprivation)	Inverse: Individuals living with highest quartile of neighborhood green space (versus lowest) had increased odds of cognitive impairment and dementia.
Wu (2017) n=7,505 UK	Medical Research Council Cognitive Function and Ageing Study II (P)	Median: 74 years 54% female Race/ethnicity not specified	Green space (CS): % green space/private gardens (Location: residential; Boundary: Lower – Layer Super Output Area for postcode) Time period: older adulthood	Cognitive status (CS): Cognitive impairment (source: Mini Mental State Exam ≤25) Diagnosis (CS): dementia (source: Geriatric Mental Status and Automatic Geriatric Examination for Computer Assisting Taxonomy) Time period: older adulthood	Multivariable, multilevel logistic regression (age gender, education, number chronic illnesses, area deprivation)	Inverse: Individuals living with highest quintile of neighborhood green space/private gardens (versus lowest) had increased odds of cognitive impairment. Null: No associations between neighborhood green space and odds of dementia.

Yu (2018) n=3,240 Hong Kong, China	Mr. and Ms. Os (Hong Kong) study	Mean: 72 years 49% female Race/ethnicity not specified	Greenness (CS): NDVI (Location: residential; Boundary: 300m buffer) Time period: older adulthood	Cognition (CS): Mini Mental State Exam (domain: global cognition) Time period: older adulthood	Multivariable regression path analysis (age, sex, marital status, socioeconomic status, alcohol intake, diet quality, baseline frailty status)	Null: Greater neighborhood greenness not directly associated with cognition.
Yuchi (2020)	See Table 2					
Zhu (2020) n=6,994 China	Chinese Longitudinal Healthy Longevity Survey (CLHLS) (P)	Mean: 80 years 51% female Race/ethnicity not specified	Greenness (L): NDVI (Longitudinal: no; Location: residential; Boundary: 500m buffer) Time period: older adulthood	Cognitive status (L): Cognitive impairment (source: Mini Mental State Exam <24) Time period: older adulthood	Multivariable logistic regression using generalized estimating equations (age, gender, marital status, urban/rural residence, education, occupation, financial support, social and leisure activity, smoking status, alcohol consumption, and physical activity)	Positive: Individuals living in highest quartile of neighborhood greenness had lower odds of cognitive impairment.
Zijlema (2017)	See Table 2					

Abbreviations: CS = cross-sectional; L = longitudinal; P = population-based/random sampling; UK = United Kingdom

[a] Full list of papers found in Supplemental Text 1

Supplemental Table 4. Studies examining effect modification and mediation

Citation[a]	Effect modifier examined	Effect modification findings	Mediator examined	Mediation findings
Brown (2018)	Neighborhood income level	No effect modification	None	N/A
Cherrie (2018)	Sex APOE ε4 allele Adult occupational class Adulthood park availability	Association between greater childhood park availability and slower cognitive decline from 70-76 years strongest in those with greater adulthood park availability, and these associations were stronger for women, APOE ε4 non-carriers, and individuals who had skilled/unskilled jobs (versus professional).	None	N/A
Cherrie (2019)	Sex Traffic Accident Density	No effect modification by sex. Association between childhood park activity space was not associated with cognitive aging differentially by traffic accident density; however, association between greater adolescent park activity space and better cognitive aging was restricted to those with lower traffic accident density (versus higher).	None	N/A
Clarke (2012)	None	N/A	Physical activity Social interaction	No mediation
Dadvand (2015)	Maternal education Neighborhood SES	Not effect modification	Traffic Related Air Pollution (elemental carbon, residential indoors)	Elemental carbon explained 20-65% of associations between school greenness and cognitive changes and resulted in changed (no longer significant) associations between school greenness and working memory and attentiveness.
Dadvand (2017)	Cohort location (Sabadell versus Valencia)	No effect modification	None	N/A

De Keijzer (2018)	Sex Education Area level deprivation	Association between greater greenness and slower decline in global cognition found for women but not men, stronger in those with higher education (versus lower), and stronger among those with higher area deprivation (versus lower).	Physical activity Air pollution Social support	No mediation
Dzhambov (2019)	None	N/A	Waist circumference Systolic blood pressure Total cholesterol Glucose Air pollution (NO_2)	Lower waist circumference mediated association between greater greenness and higher CERAD-NB score (global cognition).
Flouri (2019)	Neighborhood deprivation Residential stability	No effect modification	None	N/A
Hystad (2019)	Education Sex Age Household income Race Marital status Years in current residence City	Adjusted models were stratified but no statistical tests for differences between strata (i.e., no interaction terms used). Associations appeared to vary by sex, age, and education.	None	N/A
Liao (2019)	Household income Pre-pregnancy body mass index Infant sex	Greater greenness associated with better cognition among children of mothers with pre-pregnancy BMI<24 $kg/m^{2.}$	Traffic related air pollution (PM2.5) Physical outdoor activities	No mediation
Wu (2017)	Urbanicity	Among those living conurbation areas with higher % green space, lower odds of cognitive impairment. Among those living in rural areas, those with higher % green space associated with greater odds of cognitive impairment.	None	N/A
Yu (2018)	None	N/A	Physical activity Depression	Physical activity mediated association between greater greenness and global cognition.

Zhu (2020)	Age (65-79 years; 80+ years) APOE genotype (ε4 carriers vs. non-carriers)	Greater greenspace associated with lower odds of cognitive impairment among 65-79 year olds but not 80+ year olds, and among APOE ε4 non-carriers but not ε4 carriers. These are stratified results, no interaction terms had p<0.05.	None	N/A
Zijlema (2017)	None	N/A	Physical activity Social interaction Loneliness Neighborhood social cohesion Perceived mental health Traffic noise annoyance Worry about air pollution	No mediation

Abbreviations: APOE = apolipoprotein E; BMI = body mass index; PM = particulate matter

[a] Full list of papers found in Supplemental Text 1