Appendix A. Supplementary data

Vegetated land cover near residence is associated with reduced allostatic load and improved biomarkers of neuroendocrine, metabolic and immune functions

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Supplementary Table 1. Estimated effects with 95% confidence limits of residential vegetated land cover on biomarkers and allostatic load by land cover weighting scheme: adjusted ORs of potentially unhealthy biomarker values (biomarkers dichotomized at 25th or 75th percentile) and adjusted multiplicative changes in mean allostatic load per IQR increases in residential vegetated land cover.

Outcome (set of covariates)	**Scheme 1: Average within 50 m radius**	**Scheme 2: Exponential decay, distribution with λ = 0.02**	**Scheme 3: Exponential decay, distribution with λ = 0.01**	**Scheme 4: Exponential decay, distribution with λ = 0.005**	**Scheme 5: Exponential decay, distribution with λ = 0.0025**	**Scheme 6: Equal weights for 50 m annuli within 500 m**	**Scheme 7: Average within 500 m radius**
Biomarker [a]							
α-amylase > 75 pctl (1)	0.80 (0.46, 1.41)	0.75 (0.43, 1.28)	0.68 (0.38, 1.22)	0.64 (0.35, 1.19)	0.64 (0.34, 1.19)	0.65 (0.35, 1.20)	0.70 (0.40, 1.23)
CRP > 75 pctl (2)	0.60 (0.35, 1.01)	0.61 (0.37, 1.01)	0.62 (0.35, 1.08)	0.65 (0.36, 1.18)	0.69 (0.38, 1.25)	0.73 (0.40, 1.33)	0.82 (0.47, 1.44)
DHEA < 25 pctl (2)	0.72 (0.46, 1.12)	0.67 (0.44, 1.02)	0.61 (0.39, 0.96)*	0.58 (0.36, 0.93)*	0.57 (0.36, 0.92)*	0.58 (0.36, 0.93)*	0.62 (0.40, 0.96)*
Dopamine < 25 pctl (3)	0.69 (0.45, 1.07)	0.67 (0.45, 1.02)	0.63 (0.40, 0.98)*	0.61 (0.38, 0.98)*	0.62 (0.39, 1.00)*	0.66 (0.41, 1.04)	0.76 (0.50, 1.16)
Epinephrine <25 pctl (2)	1.20 (0.77, 1.85)	1.09 (0.73, 1.65)	1.04 (0.67, 1.61)	0.99 (0.63, 1.57)	0.96 (0.61, 1.53)	0.94 (0.59, 1.49)	0.92 (0.60, 1.40)

Outcome (set of covariates)	Scheme 1: Average within 50 m radius	Scheme 2: Exponential decay, distribution with λ = 0.02	Scheme 3: Exponential decay, distribution with λ = 0.01	Scheme 4: Exponential decay, distribution with λ = 0.005	Scheme 5: Exponential decay, distribution with λ = 0.0025	Scheme 6: Equal weights for 50 m annuli within 500 m	Scheme 7: Average within 500 m radius
Epinephrine >75 pctl (2)	0.58 (0.37, 0.93)*	0.57 (0.36, 0.88)*	0.55 (0.34, 0.88)*	0.57 (0.35, 0.94)*	0.61 (0.37, 0.99)*	0.66 (0.41, 1.07)	0.79 (0.51, 1.22)
Fibrinogen > 75 pctl (2)	0.77 (0.50, 1.20)	0.70 (0.46, 1.07)	0.64 (0.40, 1.01)	0.60 (0.37, 0.98)*	0.60 (0.37, 0.97)*	0.61 (0.38, 0.97)*	0.66 (0.43, 1.01)
HDL < 25 pctl (4)	0.53 (0.30, 0.95)*	0.50 (0.29, 0.87)*	0.45 (0.25, 0.81)*	0.43 (0.23, 0.81)*	0.45 (0.24, 0.84)*	0.48 (0.26, 0.90)*	0.60 (0.34, 1.05)
ICAM-1 > 75 pctl (2)	1.03 (0.66, 1.62)	1.06 (0.69, 1.63)	1.04 (0.65, 1.67)	1.01 (0.62, 1.65)	0.99 (0.60, 1.62)	0.97 (0.60, 1.59)	0.96 (0.61, 1.50)
IL-1beta > 75 pctl (1)	1.19 (0.77, 1.83)	1.10 (0.73, 1.65)	1.07 (0.69, 1.66)	1.02 (0.65, 1.62)	0.97 (0.61, 1.54)	0.87 (0.56, 1.33)	0.81 (0.54, 1.20)
IL-6 > 75 pctl (4)	0.92 (0.58, 1.45)	0.93 (0.60, 1.44)	0.94 (0.59, 1.51)	0.95 (0.58, 1.55)	0.95 (0.58, 1.55)	0.94 (0.58, 1.52)	0.92 (0.59, 1.43)
IL-8 > 75 pctl (5)	0.92 (0.60, 1.41)	0.87 (0.59, 1.30)	0.80 (0.52, 1.23)	0.73 (0.46, 1.15)	0.70 (0.44, 1.10)	0.67 (0.43, 1.06)	0.67 (0.44, 1.01)
LDL > 75 pctl (4)	1.42 (0.86, 2.36)	1.43 (0.88, 2.34)	1.53 (0.90, 2.61)	1.58 (0.91, 2.74)	1.56 (0.90, 2.70)	1.51 (0.88, 2.58)	1.35 (0.83, 2.21)

Outcome (set of covariates)	Scheme 1: Average within 50 m radius	Scheme 2: Exponential decay, distribution with λ = 0.02	Scheme 3: Exponential decay, distribution with λ = 0.01	Scheme 4: Exponential decay, distribution with λ = 0.005	Scheme 5: Exponential decay, distribution with λ = 0.0025	Scheme 6: Equal weights for 50 m annuli within 500 m	Scheme 7: Average within 500 m radius
MPO > 80 pctl (6)	0.83 (0.55, 1.26)	0.79 (0.54, 1.17)	0.75 (0.49, 1.15)	0.74 (0.47, 1.15)	0.74 (0.48, 1.15)	0.75 (0.49, 1.17)	0.80 (0.53, 1.20)
Norepinephrine < 25 pctl (7)	0.55 (0.34, 0.88)*	0.58 (0.37, 0.89)*	0.54 (0.34, 0.88)*	0.51 (0.31, 0.84)*	0.48 (0.29, 0.80)*	0.46 (0.27, 0.77)*	0.50 (0.31, 0.80)*
Norepinephrine > 75 pctl (7)	1.02 (0.65, 1.60)	1.03 (0.67, 1.60)	0.99 (0.62, 1.58)	0.93 (0.57, 1.52)	0.89 (0.55, 1.45)	0.86 (0.53, 1.39)	0.83 (0.54, 1.29)
SAA > 75 pctl (2)	0.92 (0.57, 1.48)	0.92 (0.58, 1.44)	0.92 (0.56, 1.50)	0.96 (0.57, 1.61)	1.01 (0.60, 1.70)	1.08 (0.64, 1.82)	1.21 (0.74, 1.97)
TNF-a > 75 pctl (8)	1.05 (0.68, 1.63)	1.05 (0.70, 1.59)	1.06 (0.68, 1.66)	1.07 (0.67, 1.71)	1.08 (0.67, 1.72)	1.07 (0.68, 1.71)	1.06 (0.69, 1.64)
Uric acid > 75 pctl (2)	0.86 (0.53, 1.40)	0.95 (0.60, 1.52)	1.04 (0.63, 1.72)	1.10 (0.65, 1.88)	1.12 (0.66, 1.90)	1.11 (0.66, 1.87)	1.06 (0.66, 1.70)
VCAM-1 > 75 pctl (2)	0.86 (0.56, 1.33)	0.85 (0.57, 1.28)	0.80 (0.51, 1.24)	0.73 (0.46, 1.16)	0.69 (0.44, 1.10)	0.66 (0.42, 1.04)	0.64 (0.42, 0.97)*

Outcome (set of covariates)	Scheme 1: Average within 50 m radius	Scheme 2: Exponential decay, distribution with λ = 0.02	Scheme 3: Exponential decay, distribution with λ = 0.01	Scheme 4: Exponential decay, distribution with λ = 0.005	Scheme 5: Exponential decay, distribution with λ = 0.0025	Scheme 6: Equal weights for 50 m annuli within 500 m	Scheme 7: Average within 500 m radius
Allostatic load [b]							
AL 3: 18 biomarkers (2)	0.87 (0.76, 0.99)*	0.85 (0.74, 0.96)*	0.82 (0.71, 0.94)*	0.80 (0.69, 0.93)*	0.79 (0.68, 0.92)*	0.79 (0.68, 0.92)*	0.81 (0.71, 0.92)*
AL 4: 15 biomarkers (2)	0.88 (0.80, 0.96)*	0.87 (0.80, 0.95)*	0.85 (0.78, 0.93)*	0.84 (0.76, 0.92)*	0.84 (0.76, 0.92)*	0.84 (0.77, 0.93)*	0.87 (0.80, 0.95)*

[a] Biomarkers dichotomized at 25th percentile (< 25 pctl) or 75th percentile (> 75 pctl)

[b] Allostatic load (AL) indices based on biomarkers dichotomized at 25th or 75th percentile

* 0.0001 =< p < 0.05

** p < 0.0001

Covariate sets:

1. Age, gender, housing density, spline of geographic coordinates

2. Age, gender, race, education, BMI, housing density, spline of geographic coordinates

3. Age, gender, race, education, housing density, spline of geographic coordinates

4. Age (categorical), gender, education, BMI, housing density, spline of geographic coordinates

5. Age, education, BMI, housing density, spline of geographic coordinates

6. Age, race, housing density, spline of geographic coordinates

7. Age, race, education, BMI, housing density, spline of geographic coordinates

8. Age, gender, education, BMI, housing density, spline of geographic coordinates.

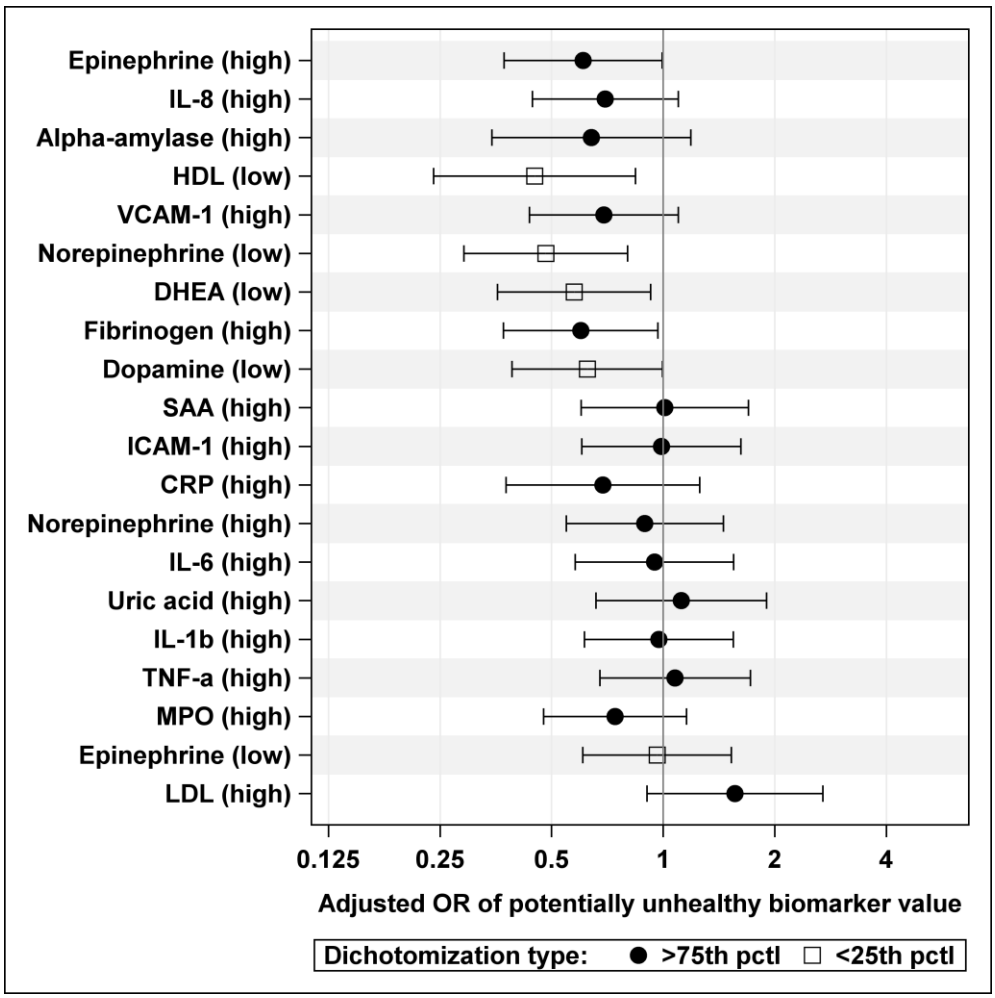
Supplementary Table 2. Associations between vegetated land cover (land cover weighting scheme 5, exponential decay with $\lambda = 0.0025$) and allostatic load (AL2) index based on 15 biomarkers dichotomized at 10^{th} or 90^{th} percentile: results of stratified analyses and analyses of interaction effects.

Stratification factor	**Stratum**	**Adjusted multiplicative change in mean AL (95% CLs) per IQR increase in vegetated land cover**	**P-value for interaction effect**
Place of residence	Durham, NC	0.61 (0.47, 0.79)*	0.55
	Other cities and towns	0.63 (0.52, 0.77)**	
Gender	Male	0.56 (0.41, 0.76)*	0.31
	Female	0.66 (0.55, 0.79)**	
Education	Bachelor's degree or higher	0.60 (0.49, 0.73)**	0.30
	Less than bachelor's degree	0.72 (0.56, 0.92)*	
Race and ethnicity	Non-Hispanic white	0.58 (0.48, 0.70)**	0.15
	Other groups	0.75 (0.58, 0.97)*	
Obesity	Obese	0.43 (0.33, 0.57)**	0.06
	Not obese	0.71 (0.59, 0.86)*	

* $0.0001 \leq p < 0.05$

** $p < 0.0001$

Supplementary Figure 1.



Supplementary Figure 1. Adjusted ORs of potentially unhealthy biomarker values with 95% confidence limits per IQR increase in residential vegetated land cover (weighting scheme 5 based on exponential decay with $\lambda = 0.0025$), plotted on a logarithmic scale; biomarkers are dichotomized at 25th percentile (< 25 pctl) or 75th percentile (> 75 pctl) of their distributions and sorted in the same order as in Figure 1.