

Article

Supplementary Materials: Prenatal Household Air Pollution Exposure, Cord Blood Mono-nuclear Cell Telomere Length and Age Four Blood Pressure: Evidence from A Ghanaian Pregnancy Cohort

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Table S1. Participant Characteristics of larger telomere cohort.

Continuous Variables (Median, Interquartile Range)	All (<i>n</i> = 138)	Male (<i>n</i> = 68)	Female (<i>n</i> = 70)
Cord blood mononuclear cell (CBMC) telomere length*	0.68 0.56, 0.87	0.66 0.49, 0.81	0.69 0.59, 0.99
CBMC storage time (years)	2.6 2.41, 2.83	2.63 2.41, 2.84	2.57 2.41, 2.78
Prenatal household air pollution exposure**			
Carbon monoxide (CO), ppm	0.85 0.51, 1.45	0.79 0.41, 1.34	1.01 0.68, 1.54
Fine particulate matter (PM _{2.5}), ug/m ³	57 38.4, 83.4	50.6 37.3, 82.2	61.3 42.2, 84
Gestational Age at Delivery (weeks)	39.7 39, 40.7	39.7 39, 40.5	39.7 39, 40.7
Maternal Characteristics			
Age (years)	25 22, 33	24 20, 32	27 23, 33
Body Mass Index (kg/m ²)	22.7 21.1, 24.2	23.1 21.6, 24.6	22.3 20.8, 23.8
Categorical Variables (<i>n</i> , %)			
Cookstove intervention arm			
Control	63 45.7%	30 44.1%	33 47.1%
Improved Biomass	39 28.3%	20 29.4%	19 27.1%
Liquefied Petroleum Gas	36 26.1%	18 26.5%	18 25.7%
Maternal education			
None	52 37.7%	24 35.3%	28 40%
Primary school or higher	86 62.3%	44 64.7%	42 60%
Ethnicity			
1	36 26.1%	20 29.4%	16 22.9%
2	24 17.4%	12 17.6%	12 17.1%
3	40 29.0%	19 27.9%	21 30%
4 (other)	38 27.6%	17 25%	21 30%

*T/S ratio normalized against plate pool average, **Personal exposure to household air pollution assessed by CO (*n* = 138) in parts per million and PM_{2.5} (*n* = 81, Male *n* = 44, Female *n* = 37) in ug/m³.

Table S2. Sensitivity models examining the association between prenatal household air pollution measures as indexed by maternal personal CO and PM_{2.5} measurements and GRAPHs study arm, considered separately, and log-transformed cord blood leukocyte telomere length: linear regression.

HAP Exposure	Multipollutant Model		+ Second-Hand Smoke		+ Household SES	
	β (95% CI)	<i>p</i> -Value	β (95% CI)	<i>p</i> -Value	β (95% CI)	<i>p</i> -Value
Average prenatal CO	−9.5 (−30.2, 16.2)	0.41	−1.0 (−18.9, 22.1)	0.92	0.1 (−19.7, 19.7)	0.99
Average prenatal PM _{2.5}	−3.9 (−8.6, −0.10)	0.048	−5.8 (−9.5, −1.0)	0.02	−5.8 (−9.5, −1.0)	0.02
Cookstove Intervention Arm						
Control (open fire)	–	–	Ref	–	Ref	–
Improved biomass stove	–	–	13.9 (−12.2, 49.2)	0.32	18.5 (−9.5, 56.8)	0.21
LPG	–	–	58.1 (15.6, 216)	0.003	71.6 (31.0, 124.8)	<.001

*All models are adjusted for child sex, maternal education, maternal BMI, maternal age, ethnicity and CBMC storage time. CO models are interpreted as per 1ppm change. PM_{2.5} models are interpreted as per 10ug/m³ change.

Table S3. Larger cohort (*n* = 138) association between prenatal household measure as indexed by maternal personal CO and PM_{2.5} measurements and GRAPHs study arm, considered separately, and log-transformed cord blood leukocyte telomere length: linear regression

HAP Exposure	<i>n</i>	Univariate Model		Multivariable Model	
		β (95% CI)	<i>p</i> -Value	β (95% CI)	<i>p</i> -Value
Average prenatal CO	138	−1.0 (−7.6, 5.1)	0.70	−2.0 (−8.6, 4.1)	0.47
Average prenatal PM _{2.5}	81	−3.9 (−6.8, 0.1)	0.054	−3.9 (−7.7, −0.70)	0.02
Sex-specific Associations					
Boys					
Average prenatal CO	68	−0.7 (−11.3, 11.1)	0.90	−3.7 (−14.7, 8.7)	0.53
Average prenatal PM _{2.5}	44	−4.2 (−9.3, 1.2)	0.12	−5.4 (−11.5, 1.1)	0.10
Girls					
Average prenatal CO	70	−2.3 (−10, 6)	0.57	−4.6 (−12.4, 3.9)	0.27
Average prenatal PM _{2.5}	37	−4.1 (−9.2, 1.3)	0.13	−3.3 (8.9, 2.7)	0.26
Cookstove Intervention Arm					
Control (open fire)	63	Ref	--	Ref	--
Improved biomass stove	39	10.5 (−12.2, 39.1)	0.37	9.4 (−13.1, 37.7)	0.46
LPG	36	29.7 (2.0, 63.2)	0.03	36.3 (7.3, 75.1)	0.01

*Models are adjusted for child sex, maternal education, maternal BMI, maternal age, ethnicity and CBMC storage time. CO models are interpreted as percent change in CBMC telomere length per 1ppm increase in CO. PM_{2.5} models are interpreted as percent change in relative telomere length per 10ug/m³ increase in PM_{2.5}.