Supplementary Materials: Hemispheric Cortical, Cerebellar and Caudate Atrophy Associated to Cognitive Impairment in Metropolitan Mexico City Young Adults Exposed to Fine Particulate Matter Air Pollution

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Table S1. Summary of MoCA cognition scores in subjects ≥31y and ≤30y in Metropolitan Mexico City MRI and non-MRI subjects and Control City Hermosillo. Adjusted p-value refers to the p-values after removing the linear effects of age, gender, BMI, and education years.

Residency	MoCA Total score Expected: 26-30	Trail Expected: 1	Cube Expected: 1	Clock Expected: 3	ID animals Expected: 3	Memory Expected: 5	Attent 1 Expected: 2	Attent 2 Expected: 1	Attent 3 Expected: 3	Lang 1 Expected: 2	Lang 2 Expected: 1	Abstrac Expected: 2	Orient 6
All MMC ≥31 n:83	20.49±3.42	0.79±0.41	0.15±0.36	1.90±0.94	2.40±1.15	1.48±1.45	1.38±0.66	0.71±0.45	2.10±0.94	1.13±0.77	0.82±0.44	1.58±0.68	5.77±0.45
MRI MMC ≥31 n:14	23.36±2.84	0.93±0.27	0.43±0.51	2.5±0.76	2.79±0.80	**2.07±1.44**	1.64±0.63	0.71±0.47	2.36±0.93	1.50±0.52	0.93±0.27	1.79±0.58	5.79±0.43
HERMOSILLO ≥31y n:13	25.23±2.39	0.92±0.28	0.15±0.38	2.00±0.91	2.92±0.28	3.31±1.75	2.00±0.00	0.92±0.28	2.46±0.78	1.92±0.28	0.92±0.28	1.69±0.48	5.92±0.28
Adjusted p value between NON MRI MMC and controls	**< 0.0001**	0.43	0.53	0.90	0.22	**0.0004**	**0.0090**	**0.0466**	0.49	**0.0024**	0.65	0.62	0.25
Adjusted p value between MRI MMC and controls	**0.06**	0.80	0.25	0.25	0.62	0.08	0.07	0.08	0.92	**0.03**	0.99	0.94	0.33
MMC ≤30y n:150	24.27±2.62	0.93±0.26	0.57±0.50	2.28±0.86	2.97±0.27	2.74±1.42	1.69±0.48	0.94±0.24	2.43±0.84	1.34±0.64	0.86±0.37	1.64±0.61	5.81±0.44
MRI MMC ≤30y n:20	24.50±2.63	0.95±0.22	0.65±0.49	2.45±0.76	3.00±0.00	2.55±1.28	1.65±0.49	0.95±0.22	2.35±0.93	1.45±0.60	0.85±0.37	1.75±0.55	5.75±0.44
HERMOSILLO ≤30y n:22	24.73±2.19	0.95±0.21	0.23±0.43	2.14±0.71	3.00±0.00	3.14±1.39	1.68±0.65	0.95±0.21	2.59±0.85	1.27±0.55	1.00±0.00	1.86±0.35	5.95±0.21
Adjusted p value between NON MRI MMC and controls	0.40	0.82	**0.0002**	0.37	0.33	0.07	0.99	0.43	0.44	0.70	**0.0414**	0.34	**0.17**
Adjusted p value between MRI MMC	0.40	0.88	**0.0009**	0.72	0.62	0.09	0.70	0.42	0.20	0.34	**0.08**	0.20	**0.03**

and
controls

Table S2. Summary of MoCA scores, Cognitive Domain Scores, age, BMI and education years in MMC (MRI and NON-MRI) and Control City Hermosillo ≤30y and ≥31years. Adjusted p-value refers to the p-values after removing the linear effects of age, gender, BMI, and education years.

Residency	MoCA scores	Average age years	BMI	Education years	Memory	EIS Total:13 Cutoff score 10.5	LIS Total:6 Cutoff score 5.5	VIS Total:7 Cutoff score 5.5	AIS Total:18 Cutoff score 16	OIS Total:6 Cutoff score 5.5	Delay recall+EIS +VIS+LIS Total:31 Cutoff score 24
MMC ≥31y N:83	20.49±3.42	46.4±11.8	27.8±3.9	13.2±3.3	1.4±1.4	9.2±2.2	4.3±1.5	4.4±1.71	15.3±1.7	5.7±0.4	19.5±4.8
MRI MMC ≥31y n:14	23.36±2.84	42.7±9.3	28.1±4.3	16.0±2.1	2.0±1.4	10.8±1.4	5.21±1.05	5.71±1.38	17.1±1.2	5.7±0.4	23.8±3.8
Hermosillo ≥31y n:13	25.23±2.39	44.0±7.2	26.9±4.3	15.2±2.8	3.3±1.7	10.9±1.3	5.7±0.4	5.0±1.1	17.3±1.0	5.9±0.2	25.0±3.1
Adjusted p value NON-MRI MMC vs HER	<0.0001	NA	NA	NA	0.0004	0.08	0.0078	0.44	0.0010	0.25	0.0005
Adjusted p value MRI MMC vs HER	0.06	NA	NA	NA	0.08	0.62	0.13	0.34	0.04	0.33	0.29
MMC≤30y n:150	24.2±2.6	21.6±3.5	24.2±3.2	13.6±1.7	2.7±1.4	10.7±1.6	5.1±0.8	5.8±1.1	16.4±1.2	5.8±0.4	24.5±3.2
MRI MMC ≤30y n:20	24.5±2.6	22.0±3.3	23.8±3.8	14.1±1.6	2.5±1.3	10.9±1.8	5.3±0.7	6.1±0.9	17.2±1.7	5.7±0.4	24.9±2.9
Hermosillo ≤30y n:22	24.7±2.2	19.3±1.3	21.9±2.7	13.7±0.7	3.1±1.4	11.1±1.2	5.2±0.5	5.3±0.90	17.5±1.2	5.9±0.2	24.9±2.5
Adjusted p value NON MRI MMC vs HER	0.40	NA	NA	NA	0.07	0.40	0.43	0.03	0.65	0.17	0.48
Adjusted p value MRI MMC vs HER	0.40	NA	NA	NA	0.09	0.64	0.86	0.06	0.50	0.03	0.73

Executive Index Score (EIS) is the sum of Trail making, clock drawing, digit span forward and backward, letter A tapping, serial 7's subtraction, word fluency and abstraction.

Language Index Scores (LIS): animal naming, sentence repetition and word fluency.

Visuospatial Index Score (VIS): cube copy, clock drawing and animal naming.

Attention Index Score (AIS): digit span forward and backward, letter A tapping, serial 7s subtraction, sentence repetition and Words Recalled in Both Immediate Recall Trials.

The Orientation Index Score (OIS) includes all the Orientation items (0–6 points).

Summary Score: Delayed Recall Score plus VIS, EIS, and LIS.