

Supplemental Material for Chapter 8 of the Integrated Science Assessment for Particulate Matter – Health Criteria

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Table S8-1. Corresponding effect estimates for Figure 8-3

Study	Cohort	Outcome	Years	Mean	RR	LCI	UCI
†{Cacciottolo,2017, 3554274}	WHIMS	3MS, ≥8 points	1999-2010	12.2	1.8 1	1.4 2	2.3 2
†{Loop, 2013, 2333412}	REGARDS	SIS ≤ 4 points	1988-2007	13.6	0.9 8	0.8 5	1.1 4
†{Ailshire,2014,2537693}	ACL	Errors on SPMSQ	2001	13.8	1.2 2	1.0 0	1.4 7
†{Tzivian, 2016, 3361770}	HRS	MCI	2008-2009	18.4	1.6 7	1.1 8	2.2 9

†Studies published since the 2009 PM integrated Science Assessment. Results are standardized to a 5- µg/m3 increase in PM2.5 concentrations. 3MS= Modified Mini-Mental State, ACL=Americans Changing Lives, HRS=Health and Retirement Survey, WHIMS=Women’s Health Initiative Memory Study, REGARDS= Reasons for Geographic and Racial Differences in Stroke,SIS= Six-Item Screener, SPMSQ=Short Portable Mental Status Questionnaire .

Table S8-2. Corresponding effect estimates for Figure 8-4

Study	Cohort	Outcome	Years	Mean	β	LCI	UCI
†{Weuve, 2012, 1255207@@author-year}	NHS, U.S.	TICS Global Score	1988-2007	13.1	-0.01	-0.02	0.00
† {Tonne, 2014, 2347403@@author-year}	Whitehall II, London England	Reasoning	2003-2009	14.9	-0.06	-0.15	0.03
		Memory		14.9	-0.15	-0.36	0.07
†{Ailshire,2014, 2537693@@author-year}	HRS, U.S.	TICS Global Score	2004	11 v 8.9	-0.10	-0.30	0.11
				13 v 8.9	-0.43	-0.63	0.23
†{Gatto, 2014, 2082194@@author-year}	BVAIT, WISH, ELITE, U.S.	Global Cognition	2000-2006	15.4 v <15	-0.26	-0.47	0.05
				17 v <15	-0.15	-0.38	0.08
†{Schikowski, 2015, 3004944@@author-year}	SALIA, Ruhr and Southern Germany	CERAD total	2009-2010	33.3	0.31	-1.11	1.72

†Studies published since the 2009 Integrated Science Assessment for Particulate Matter. Concentrations are in µg/m3. Results are standardized to a 5- µg/m3 increase in PM2.5 concentrations. BVAIT= B-Vitamin Atherosclerosis Intervention Trial, ELITE Early versus Late Intervention Trial with Estradiol, CERAD= Consortium to Establish a Registry for Alzheimer’s Disease, HRS=Health and Retirement Study, NHS=Nurses’ Health Study, SALIA= Study of the Influence of Air Pollution on Lung Function, TICS= Telephone Interview for Cognitive Status, Whitehall II=Study of British Civil Servants, WISH=Women’s Isoflavone Soy Health. Note: {Ailshire,2014,2537693@@author-year} and {Gatto, 2014, 2082194@@author-year} specify exposure categories and compare the categories to a reference group (v=versus).

Table S8-3. Corresponding effect estimates for Figure 8-5

Study	Cohort	Outcome	Years	Mean	RR	LCI	UCI
†{Power,2015, 2823467@@author-year}	NHS	Anxiety	1988-2004	13.75	1.04	1.00	1.09
†{Zijlema,2016, 3074067@@author-year}	ESCAPE-Lifelines	Depressed Mood	2005-2011	NR	1.04	0.32	3.40
	ESCAPE-KORA	Depressed Mood	2005-2011	NR	1.06	0.25	4.51
	ESCAPE-FINRISK	Depressed Mood	2005-2011	NR	1.39	0.64	3.05
† {Oudin, 2016, 3358353@@author-Year}	Swedish Registry	Psychiatric Medication	2005-2010	NR	1.02	1.00	1.04
† {Kim, 2016, 3359504@@author-year}	Medicare	Major Depressive Disorder	2007-2010	26.7	1.21	1.07	1.38

†Studies published since the 2009 Integrated Science Assessment for Particulate Matter.

Mean concentrations in µg/m³. Hazard Ratios are standardized to a 5 µg/m³ increase in PM_{2.5} concentrations. SCAPE=European Study of Cohorts for Air Pollution Effects; KORA= Kooperative Gesundheitsforschung in der Region Augsburg; FINRISK=Finland Risk; NHS=Nurses' Health Study; NR=Not Reported

Table S8-4 Corresponding effect estimates for Figure 8-6

Study	Cohort	Outcome	Years	Mean			
†{Liu, 2016, 3358187@@author-year}	PAGE NIH-AARP	Parkinson Disease	2000	13.1	1.0	0.9	1.1
†{Palacios,2014,2534578@@author-year}	NHS	Parkinson Disease	1988-2007	15	1.0	0.8	1.4
† {Kioumourtoglou, 2015, 3021600@@author-year}	Medicare	Parkinson Disease	1999-2010	12	1.4	1.2	1.7
†{Kerrane, 2015, 2840280@@author-year}	AHS	Parkinson Disease	2002-2005	12.6	1.4	0.9	2.2
†{Cacciottolo,2017, 3554274@@author-year}	WHIMS	All-Cause Dementia	1999-2010	≤12 v >12	1.9	1.3	2.8
†{Jung,2015,2534436@@author-year}	LHID2000	Alzheimer Disease	2000-2010	34.4	1.0	0.9	1.0
† {Kioumourtoglou, 2015, 3021600@@author-year}	Medicare	Alzheimer Disease	1999-2010	12	2.0	1.7	2.3
† {Kioumourtoglou, 2015, 3021600@@author-year}	Medicare	Dementia	1999-2010	12	1.4	1.2	1.6

†Studies published since the 2009 PM ISA. Mean concentrations in µg/m³. Hazard Ratios are standardized to a 5 µg/m³ increase in PM_{2.5} concentrations. AHS=Agricultural Health Study, LHID2000= Longitudinal Health Insurance Database for 2000, NHS=Nurses Health Study, PAGE NIH-AARP= Parkinson's Genes and Environment study, National Institutes of Health, American Association of Retired People, WHIMS= Women's Health Initiative Memory Study. Note: {Cacciottolo,2017, 3554274@@author-year} specifies dichotomous exposure categories (v=versus).

Table S8-5. Corresponding effect estimates for Figure 8-7

Study	Cohort	Test	Years	Mean	%	LCI	UCI
†{Harris, 2015, 3006405@@author- year}	Project Viva	Verbal IQ-KBIT-2	2009-2011	11.2		-0.26	1.45
		Nonverbal IQ-KBIT-2				-0.26	1.84
†{Guxens,2014, 2347398@@author- year}	Generation R	General Cognition	2008-2011	13.4-22.3	0.09	-2.95	3.12
†{Porta, 2015, 3007626@@author- year}	GASP II	FSIQ-WISC III	2002-2011	19.5	-0.95	-3.95	2.05
†{Lertxundi, 2015, 2828330@@author- year}	INMA Project	Mental Score (BSID)	2008-2008	16.98	-1.75	-4.40	0.90

†Studies published since the 2009 Integrated Science Assessment for Particulate Matter.

Concentrations are in $\mu\text{g}/\text{m}^3$. Results are standardized to a 5- $\mu\text{g}/\text{m}^3$ increase in PM2.5 concentrations. BSID=Bayley Scale of Infant Development, FSIQ=Full Scale Intelligence Quotient, GASP=Gene and Environment Prospective Study on Infancy, INMA=Childhood and the Environment Cohort, KBIT-2=Kaufman Brief Intelligence Test Second Edition, WISC=Wechsler Intelligence Scale for Children.