SUPPLEMENTAL MATERIAL

Ambient Air Pollution and Stroke

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Table I. Studies of Short-term Air Pollution Exposure and Stroke Mortality: Detailed estimates

Study	Location	Stroke Outcome	Stratification	Pollutant	Averaging Period	%*	95% CI
Chen 2013[1]	8 Chinese cities	Any stroke		PM_{10}	2-day	0.5	(0.3, 0.8)
				NO_2	2-day	0.8	(0.5, 1.1)
				SO_2	2-day	0.3	(0.2, 0.5)
Hoek 2001[2]	Netherlands	Any stroke		PM_{10}	7-day	0.4	(-0.4, 1.2)
				BS	7-day	4.1	(0.7, 7.7)
				CO	7-day	4.8	(2.1, 7.6)
				NO_2	7-day	0.9	(-0.3, 2.1)
				SO_2	7-day	0.4	(0.2, 0.7)
				O_3	Previous day 8-h max	0.2	(0.1, 0.4)
Hong 2002[3]	Seoul, Korea	Ischemic stroke		TSP	Same day	3.0	(0.0, 6.0)
				CO	Same day	0.8	(0.3, 1.2)
				NO_2	Same day	2.9	(0.7, 5.0)
				SO_2	Same day	2.3	(0.6, 4.0)
				O_3	3-day lagged 8-h mean	3.5	(1.2, 5.8)
		Hemorrhagic stroke		TSP	Same day	4.0	(2.0, 7.0)
				CO	Same day	NS	
				NO_2	Same day	NS	
				SO_2	Same day	NS	
				O_3	3-day lagged 8-h mean	NS	
Hong 2002[4]	Seoul, Korea	Any stroke		PM_{10}	Same day	0.7	(0.6, 0.8)
				CO	2-day lag	0.7	(0.1, 1.4)
				NO_2	2-day lag	3.7	(1.3, 6.1)
				SO_2	2-day lag	5.1	(1.4, 8.8)
				O_3	Same day	3.1	(0.3, 5.9)
Kan 2003[5]	Shanghai, China	Any stroke		PM_{10}	Previous day	0.8	(0.0, 1.6)
				NO_2	Previous day	1.5	(0.1, 3.0)
				SO_2	Previous day	0.6	(-0.1, 1.3)
Kettunen 2007[6]	Helsinki, Finland	Any stroke	Cold Season	PM_{10}	Previous day	-0.7	(-2.6, 1.3)
				$PM_{2.5}$	Previous day	-0.3	(-1.9, 1.4)
				PM_{coarse}	Previous day	-2.5	(-7.6, 2.9)
				$PM_{0.1}$	Previous day	-0.8	(-4.9, 3.3)
				CO	Previous day	-0.3	(-1.9, 1.4)
				NO_2	Previous day	-0.7	(-2.7, 1.8)
				O_3	8-h mean previous day	-0.2	(-1.4, 1.2)
		Any stroke	Warm Season	PM_{10}	Previous day	8.7	(-0.9, 19.3)
				$PM_{2.5}$	Previous day	13.0	(2.3, 24.2)
				PM_{coarse}	Previous day	4.4	(-4.3, 13.8)
				$PM_{0.1}$	Previous day	8.5	(-1.2, 19.1)
				CO	Previous day	3.6	(0.3, 7.2)
				NO_2	Previous day	1.5	(-2.0, 5.4)
				O_3	8-h mean previous day	1.3	(-0.4, 3.1)
Li 2011[7]	Tianjin, Taiwan	Any stroke	≤ 20°C	PM_{10}	Same day	0.1	(-0.2, 0.5)
		Any stroke	> 20°C	PM_{10}	Same day	0.7	(0.0, 1.3)
Qian 2007[8]	Wuhan, China	Any stroke		PM_{10}	Same day	0.4	(0.2, 0.7)
Qian 2007[9]	Wuhan, China	Any stroke		NO_2	Same day	0.8	(0.0, 1.3)
				SO_2	Same day	-0.1	(-0.4, 0.2)
				O_3	Same day	-0.1	(-0.3, 0.2)
Qian 2008[10]	Wuhan, China	Any stroke	Hot temperature	PM_{10}	2-day	2.4	(0.0, 4.8)
				NO_2	2-day	2.4	(-3.2, 8.5)
				SO_2	2-day	-0.1	(-3.0, 3.0)
				O_3	2-day	0.5	(-0.4, 1.4)
		Any stroke	Normal temperature	PM_{10}	2 day	0.4	(0.1, 0.7)
				NO_2	2-day	1.0	(0.4, 1.6)
				SO_2	2-day	0.4	(0.0, 0.7)
				O_3	2-day	-0.1	(-0.4, 0.1)
Qian 2010[11]	Wuhan, China	Any stroke	Spring season	PM_{10}	2-day	0.1	(-0.4, 0.7)
				NO_2	2-day	1.8	(0.4, 3.3)
				SO_2	2-day	0.6	(-0.1, 1.4)
		Any stroke	Summer season	PM_{10}	2-day	0.2	(-0.8, 1.1)
				NO_2	2-day	0.9	(-1.0, 2.9)

				SO_2	2-day	-1.1	(-2.3, 0.2)
		Any stroke	Fall season	PM_{10}	2-day	-0.5	(-0.1, 0.0)
				NO_2	2-day	-0.4	(-1.2, 0.5)
				SO_2	2-day	-0.3	(-0.8, 0.2)
		Any stroke	Winter season	PM_{10}	2-day	1.0	(0.6, 1.4)
				NO_2	2-day	2.0	(1.3, 2.9)
				SO_2	2-day	0.9	(0.4, 1.3)
Turin 2012[12]	Takashima, Japan	Any stroke		PM_{10}	Same day	-25†	(-53, 20)
				NO_2	Same day	45†	(-10, 135)
				SO_2	Same day	-15†	(-47, 37)
				O_3	Same day	9†	(-33, 78)
		Ischemic stroke		PM_{10}	Same day	-56†	(-82, 6)
				NO_2	Same day	238†	(41, 713)
				SO_2	Same day	-57†	(-83, 6)
				O_3	Same day	90†	(-19, 346)
		Intracerebral stroke		PM_{10}	Same day	35†	(-40, 202)
				NO_2	Same day	-54†	(-81, 9)
				SO_2	Same day	50†	(-39, 272)
				O_3	Same day	-60†	(-84, 1)
		Subarachnoidal stroke		PM_{10}	Same day	81†	(-36, 412)
				NO_2	Same day	13†	(-64, 2619
				SO_2	Same day	-60†	(-86, 16)
				O_3	Same day	-22†	(-74, 133)
Yorifuji 2011[13]	Tokyo, Japan	Any stroke		$PM_{2.5}$	Same day	1.3	(0.2, 2.4)
				NO_2	Same day	1.5	(0.3, 2.7)
		Ischemic stroke		$PM_{2.5}$	Same day	1.4	(-0.1, 2.8)
				NO_2	Same day	1.3	(-0.2, 2.9)
		Intracerebral stroke		$PM_{2.5}$	Same day	1.2	(-0.9, 3.3)
				NO_2	Same day	2.3	(0.1, 4.6)
		Subarachnoidal stroke		$PM_{2.5}$	Previous day	4.1	(1.1, 7.2)
				NO_2	Previous day	3.4	(0.2, 6.8)
Yorifuji 2013[14]	47 Japanese cities	Any stroke		PM_{10}	Same day	1.4	(-0.03, 2.8)
		Ischemic stroke		PM_{10}	Same day	1.6	(0.05, 3.2)
		Hemorrhagic stroke		PM_{10}	Same day	2.0	(-0.4, 4.4)
		Intracerebral stroke		PM_{10}	Same day	3.0	(-0.1, 6.1)
		Subarachnoidal stroke		PM_{10}	Same day	2.6	(-5.7, 10.9)
Zanobetti 2009[15]	112 US cities	Any stroke		PM_{10}	2-day	1.8	(1.0, 2.6)
				PM_{coarse}	2-day	0.8	(0.07, 1.6)
Maynard 2007[16]	Massachusetts, USA	Any stroke		BC	Previous day	4.4	(0.0, 9.0)
				SO_4	Previous day	2.0	(-1.4, 6.1)
Qian 2013[17]	Shanghai, China	Any stroke		PM_{10}	Same day	0.2	(0.04, 0.4)
				NO_2	Same day	0.4	(0.2, 0.7)
				SO_2	Same day	0.2	(0.0, 0.3)
		Ischemic stroke		PM_{10}	Same day	0.3	(0.02, 0.5)
				NO_2	Same day	0.5	(0.1, 0.8)
				SO_2	Same day	0.2	(0.0, 0.3)
		Hemorrhagic stroke		PM_{10}	Previous day	0.1	(-0.2, 0.5)
				NO_2	Previous day	0.5	(0.1, 1.0)
				SO_2	Previous day	0.3	(0.0, 0.5)
Ren 2010[18]	Massachusetts, USA	Any stroke		O_3	8-h max 4-day	6.5	(1.7, 11.5)
Zeka 2005[19]	20 US cities	Any stroke		PM_{10}	Previous day	0.4	(0.0, 0.8)
Zeka 2006[20]	20 US cities	Any stroke	≥75 years old	PM_{10}	Previous day	0.8	(0.3,1.3)
			65-75 years old	PM_{10}	Previous day	-0.5	(-1.4, 0.5)
			<65 years old	PM_{10}	Previous day	0.1	(-1.1, 0.1)
		Any stroke	Secondary pneumonia	PM_{10}	Previous day	1.7	(0.4, 3.1)
			No pneumonia	PM_{10}	Previous day	0.3	(-0.9, 19)

*Percent differences per: 10μg/cm^3 for PM_{10}, $PM_{2.5}$, PM_{coarse},; 10 ppb for NO_2, SO_2, and O_3; 0.1ppm for CO; 52 μg/cm^3 for TSP; 5000 particles/cm^3 for $PM_{0.1}$; 40μg/cm^3 for BS, unspecified interquartile range for BC.

† Comparing highest to lowest quartile of air pollution

Abbreviatons: BC, Black carbon. BS, Black smoke. CI, Confidence intervals. CO, Carbon monoxide. H, hour. Max, Daily maximum. NO_2, Nitrogen dioxide. NS, Non-significant associations but estimates not provided in publication. O_3, Ozone. $PM_{10,}$ Particles with aerodynamic diameter ≤ 10μm. $PM_{2.5}$, Fine particles with aerodynamic diameter≤ 2.5μm. PM_{coarse}, Coarse particles with aerodynamic diameter between 2.5 and 10 μm in aerodynamic diameter. $PM_{0.1}$, Ultrafine particles with less than 0.1 μm aerodynamic diameter. SO_2, Sulfur dioxide. SO_4, Sulfate. TSP, Total suspended particles.

Table II. Studies of Short-term Air Pollution Exposure and Hospitalization for Stroke: Detailed estimates

Study	Location	Stroke Outcome	Stratification	Pollutant	Averaging Period	%*	95% CI
Ballester 2001[21]	Valencia, Spain	Any stroke		BS	5-day lag	1.6	(-1.4, 4.6)
				CO	1-h same day	-0.1	(-0.3, 0.09)
				NO_2	4-day lag	1.9	(0.4, 3.5)
				SO_2	5-day lag	1.4	(-0.6, 3.5)
				O_3	8-h 2-day lag	-1.2	(-2.6, 0.3)
Burnett 1999[22]	Toronto, Canada	Any stroke		PM_{10}	Same day	NS	
				$PM_{2.5}$	Same day	NS	
				CO	2-day	0.1	(-0.2, 0.4)
				NO_2	Same day	0.8	(-0.4, 2.0)
				SO_2	Same day	0.1	(-36, 45)
Chan 2006[23]	Taipei, Taiwan	Any stroke		PM_{10}	3-day lag	1.2	(0.4, 1.9)
				$PM_{2.5}$	3-day lag	1.1	(0.3, 1.9)
				CO	8-h max same day	0.4	(-0.1, 0.8)
				NO_2	Same day	3.3	(-0.9, 7.7)
				SO_2	Same day	2.6	(-10, 15)
				O_3	1-h max same day	1.0	(0.3, 1.7)
		Ischemic stroke		PM_{10}	3-day lag	1.7	(-0.8, 4.1)
				$PM_{2.5}$	3-day lag	3.0	(-0.8, 6.8)
				CO	8-h max same day	0.7	(-0.2, 1.6)
				NO_2	Same day	2.6	(-4.6, 9.8)
				SO_2	Same day	14	(-11, 40)
				O_3	1-h max same day	1.5	(-0.6, 3.5)
		Hemorrhagic stroke		PM_{10}	3-day lag	-1.0	(-3.9, 1.8)
				$PM_{2.5}$	3-day lag	-4.0	(-8.7, 0.6)
				CO	8-h max same day	-0.2	(-1.5, 1.0)
				NO_2	Same day	-3.9	(-12, 4.4)
				SO_2	Same day	-27	(-60, 6.8)
				O_3	1-h max same day	-0.4	(-3.9, 3.2)
Corea 2012[24]	Mantua, Italy	Any stroke		PM_{10}	Same day	8.0	(0.0, 16)
		Ischemic stroke		PM_{10}	Same day	8.0	(0.0, 17)
		Large vessel stroke		PM_{10}	Same day	20	(0.0, 40)
				CO	Same day	-7.5	(-8.6, 6.7)
				NO_2	Same day	0.0	(-32, 32)
				SO_2	Same day	0.0	(-44, 52)
				O_3	Same day	9.6	(-4.8, 29)
		Cardioembolic stroke		PM_{10}	Same day	-10	(-20, 10)
				CO	Same day	9.3	(-3.1, 48)
				NO_2	Same day	0.0	(-16, 21)
				SO_2	Same day	-11	(-37, 15)
				O_3	Same day	-4.8	(-14, 4.8)
		Small vessel stroke		PM_{10}	Same day	10	(0.0, 20)
				CO	Same day	6.9	(-2.5, 31)
				NO_2	Same day	-11	(-27, 5.3)
				SO_2	Same day	-11	(-33, 7.4)
				O_3	Same day	0.0	(-9.6, 4.8)
Jalaludin 2006[25]	Sydney Australia	Any stroke		PM_{10}	Same day	-2.1	(-4.5, 0.3)
				$PM_{2.5}$	Same day	-1.9	(-5.0, 1.4)
				CO	8-h same day	0.3	(-0.02, 0.6)
				NO_2	1-h same day	-1.8	(-4.1, 0.5)
				SO_2	Same day	-19	(-49, 12)
				O_3	1-h max same day	-1.1	(-2.5, 0.4)
Larrieu 2007[26]	8 French cities	Any stroke		PM_{10}	2-day	0.2	(-1.6, 1.9)
				NO_2	2-day	0.4	(-0.5, 1.3)
				O_3	2-day	-0.2	(-0.6, 0.1)
Le Tertre 2002[27]	8 European cities	Any stroke		PM_{10}	2-day	0.0	(-0.3, 0.3)
				BS	2-day	-0.1	(-0.5, 0.4)
Linn 2000[28]	Los Angeles, USA	Any stroke		PM_{10}	Same day	0.06	(-0.4, 0.6)
				CO	Same day	0.1	(-0.05, 0.2)
				NO_2	Same day	0.4	(-0.4, 1.2)
				O_3	Same day	0.3	(-0.7, 1.3)
Moolgavkar 2000[29]	Los Angeles, USA	Any stroke	Cook County	PM_{10}	Same day	0.6	(0.3, 1.0)
				CO	Same day	0.1	(-0.1, 0.3)

				NO_2	Same day	1.8	(1.0, 2.6)
			Los Angeles	PM_{10}	Same day	0.2	(-0.04, 0.4)
				$PM_{2.5}$	Same day	0.6	(-0.3, 1.5)
				CO	Same day	0.2	(0.16, 0.3)
				NO_2	Same day	1.1	(0.7, 1.5)
				SO_2	Same day	6.5	(3.9, 9.2)
			Maricopa County	PM_{10}	Same day	0.2	(-0.6, 1.1)
Nascimento 2012[30]	Sao Jose Campos, Brazil	Any stroke		PM_{10}	Same day	14	(6, 23)
				SO_2	Same day	11	(0.0, 22)
				O_3	Same day	0.5	(-1.0, 2.4)
Poloniecki 1997[31]	London, UK	Any stroke		CO	Previous day	-0.07	(-0.2, 0.08)
				NO_2	Previous day	-0.5	(-1.1, 0.1)
				SO_2	Previous day	0.1	(-0.9, 1.0)
				O_3	Previous day	-0.6	(-1.8, 0.5)
Pönkä 1996[32]	Helsinki, Finland	Any stroke		NO_2	6-day lag	96	(21, 175)
		Ischemic stroke		TSP	3-day lag	23	(3, 46)
Sunyer 2003[33]	7 European cities	Any stroke		SO_2	2-day	0.0	(-0.2, 0.2)
Turin 2012[34]	Takashima, Japan	Any stroke		PM_{10}	Same day	0.5	(-2.1, 3.2)
				NO_2	Same day	-1.0	(-5.8, 3.8)
				SO_2	Same day	0.0	(-23, 27)
				O_3	Same day	0.0	(-3.4, 3.4)
		Ischemic stroke		PM_{10}	Same day	-2.1	(-5.3, 1.1)
				NO_2	Same day	-1.0	(-6.7, 4.8)
				SO_2	Same day	-23	(-50, 9.1)
				O_3	Same day	-0.6	(-4.6, 4.0)
		Intracerebral hemorrhage		PM_{10}	Same day	1.6	(-4.3, 8.5)
				NO_2	Same day	2.9	(-7.7, 15)
				SO_2	Same day	59	(0.0, 132)
				O_3	Same day	0.6	(-6.9, 8.6)
		Subarachnoidal hemorrhage		PM_{10}	Same day	3.2	(-5.3, 14)
				NO_2	Same day	5.8	(-11, 25)
				SO_2	Same day	36	(-46, 141)
				O_3	Same day	1.1	(-9.2, 14)
Villeneuve 2006[35]	Edmonton, Canada	Any stroke		PM_{10}	NS		
				$PM_{2.5}$	NS		
				CO	NS		
				NO_2	NS		
				SO_2	NS		
				O_3	NS		
		Ischemic stroke		PM_{10}	3-day	-0.6	(-4.4, 3.1)
				$PM_{2.5}$	3-day	1.6	(-6.3, 9.5)
				CO	3-day	0.2	(-1.2, 1.6)
				NO_2	3-day	3.7	(-2.2, 10)
				SO_2	3-day	20	(-10, 50)
				O_3	3-day	0.0	(-6.1, 6.7)
		TIA		PM_{10}	3-day	-3.8	(-8.1, 0.6)
				$PM_{2.5}$	3-day	-6.4	(-16, 4.8)
				CO	3-day	-0.8	(-1.8, 0.4)
				NO_2	3-day	-3.7	(-8.9, 2.2)
				SO_2	3-day	17	(-10, 50)
				O_3	3-day	-1.1	(-6.7, 5.0)
		Hemorrhagic stroke		PM_{10}	3-day	8.1	(-1.2, 19)
				$PM_{2.5}$	3-day	7.9	(-11, 30)
				CO	3-day	-0.6	(-2.0, 1.0)
				NO_2	3-day	3.7	(-3.7, 13)
				SO_2	3-day	13	(27, 57)
				O_3	3-day	1.1	(-6.7, 10)
Villeneuve 2012[36]	Edmonton, Canada	Any stroke		$PM_{2.5}$	Previous day	1.7	(-4.5, 6.9)
				CO	Previous day	0.5	(-2.0-2.5)
				NO_2	Previous day	0.0	(-5.3, 6.4)
				SO_2	Previous day	8.3	(-17, 33)
				O_3	Previous day	0.0	(-3.7, 4.3)
		Ischemic stroke		$PM_{2.5}$	Previous day	5.2	(-3.5, 16)

				CO	Previous day	0.5	(-3.0, 3.5)
				NO_2	Previous day	0.0	(-8.5, 8.5)
				SO_2	Previous day	25	(-8.3, 67)
				O_3	Previous day	1.8	(-1.2, 5.5)
		Hemorrhagic stroke		$PM_{2.5}$	Previous day	1.7	(-16, 17)
				CO	Previous day	2.0	(-3.5, 8.0)
				NO_2	Previous day	3.2	(-11, 19)
				SO_2	Previous day	42	(-25, 108)
				O_3	Previous day	-1.2	(-9.8, 8.5)
		Any stroke	Warm season	$PM_{2.5}$	Previous day	8.6	(-3.5, 22)
				CO	Previous day	7.0	(0.0, 14)
				NO_2	Previous day	15	(-2.1, 35)
				SO_2	Previous day	17	(-17, 50)
				O_3	Previous day	3.0	(-1.2, 7.9)
		Ischemic stroke	Warm season	$PM_{2.5}$	Previous day	24	(5.2, 45)
				CO	Previous day	11	(1.0, 23)
				NO_2	Previous day	40	(11, 76)
				SO_2	Previous day	33	(-17, 92)
				O_3	Previous day	8.5	(1.8, 16)
		Hemorrhagic stroke	Warm season	$PM_{2.5}$	Previous day	-5.2	(-33, 29)
				CO	Previous day	7.0	(-8.0, 27)
				NO_2	Previous day	8.5	(-27, 60)
				SO_2	Previous day	67	(-25, 167)
				O_3	Previous day	9.1	(-3.7, 25)
Wong 1999[37]	Hong Kong, China	Any stroke		PM_{10}	2-day lag	0.3	(-0.5, 1.0)
				NO_2	2-day	0.4	(-0.1, 1.0)
				SO_2	3-day lag	-0.4	(-0.8, 0.1)
				O_3	Same day	-0.4	(-0.8, 0.05)
Wordley 1997[38]		Any stroke		PM_{10}	Same day	1.4	(0.02, 2.8)
Xiang 2013[39]	Wuhan, China	Any stroke		PM_{10}	3-day	-0.5	(-1.5, 0.6)
				NO_2	3-day	0.2	(-1.2, 1.6)
				SO_2	3-day	-0.3	(-1.0, 0.4)
		Ischemic stroke		PM_{10}	3-day	0.5	(-1, 0.7)
				NO_2	3-day	0.2	(-1.4, 1.0)
				SO_2	3-day	-0.3	(-0.9, 0.3)
		Hemorrhagic stroke		PM_{10}	3-day	-0.5	(-1.7, 0.8)
				NO_2	3-day	0.0	(-1.9, 1.9)
				SO_2	3-day	-0.2	(-1.1, 0.7)
		Any stroke	Cold season	PM_{10}	3-day	0.9	(0.1, 1.6)
				NO_2	3-day	1.6	(0.6, 2.8)
				SO_2	3-day	-0.1	(-0.6, 0.4)
			Warm season	PM_{10}	3-day	-0.6	(-1.5, 0.2)
				NO_2	3-day	-0.5	(-1.8, 0.7)
				SO_2	3-day	-0.5	(-1.1, 0.1)
Xu 2013[40]	Allegheny, USA	Any stroke		O_3	Same day	0.2	(0.0, 0.3)
		Ishemic stroke		O_3	Same day	0.2	(0.0, 0.3)
		Hemorrhagic stroke		O_3	Same day	0.0	(0.0, 0.0)
Yang 2005[41]	Taipei, Taiwan	Any stroke		ADS	3-day lag post ADS	5†	(-1, 705)
		Ischemic		ADS		4†	(-3, 698)
		Intracerebral hemorrhage		ADS		15†	(1, 910)
		Subarachnoidal hemorrhage		ADS		-19†	(-40, 478)
Tsai 2003[42]	Kaoshiung, Taiwan	Ischemic stroke	≥20°C	PM_{10}	3-day	6.9	(4.8, 9.2)
				CO	3-day	7.2	(4.8, 9.7)
				NO_2	3-day	32.2	(23, 42)
				SO_2	3-day	9.7	(0.0, 21)
				O_3	3-day	7.1	(3.3, 11)
		Hemorrhagic stroke	≥20°C	PM_{10}	3-day	8.1	(4.7, 12)
				CO	3-day	7.2	(3.1, 12)
				NO_2	3-day	32	(19, 49)
				SO_2	3-day	9.7	(-8.1, 29)
				O_3	3-day	9.4	(2.8, 17)
		Ischemic stroke	<20°C	PM_{10}	3-day	-0.5	(-5.3, 6.6)
				CO	3-day	27	(11, 48)
				NO_2	3-day	9.4	(-11, 40)

				SO_2	3-day	18	(-28, 78)
				O_3	3-day	-5.7	(-24, 25)
		Hemorrhagic stroke	<20°C	PM_{10}	3-day	-2.7	(-7.8, 6.0)
				CO	3-day	6.2	(-6.9, 25
				NO_2	3-day	-11	(-29, 18)
				SO_2	3-day	-24	(-68, 42)
				O_3	3-day	-20	(-36, 16)
Wellenius 2005[43]	9 US cities	Ischemic stroke		PM_{10}	Same day	0.5	(0.02, 0.9)
				CO	Same day	0.4	(0.2, 0.6)
				NO_2	Same day	2.5	(1.5, 3.5)
				SO_2	Same day	2.0	(0.6, 3.4)
		Hemorrhagic stroke		PM_{10}	Same day	-0.3	(-2.4, 2,0)
				CO	Same day	-0.2	(-0.7, 0.2)
				NO_2	Same day	0.3	(-2.2, 2.9)
				SO_2	Same day	1.0	(-2.6, 4.8)
Lisabeth 2008[44]	Corpus Christi, USA	Ischemic stroke		$PM_{2.5}$	Previous day	5.9	(0.0, 14)
				O_3	Previous day	2.5	(-0.6, 5.7)
O'Donnell 2011[45]	8 Canadian cities	Ischemic	All	$PM_{2.5}$	2-day	-0.7	(-6.3, 5.1)
			Diabetes	$PM_{2.5}$	2-day	11	(0.8, 22)
			No diabetes	$PM_{2.5}$	2-day	-1.8	(-7.4, 4.1)
Wellenius 2012[46]	Boston, USA	Ischemic stroke		$PM_{2.5}$	Same day	17	(4.7, 31)
				CO	Same day	2.3	(-1.3, 6.3)
				NO_2	Same day	15	(3.7, 27)
				O_3	Same day	-2.0	(-8.6, 5.9)
				BC	Same day	10	(2.0, 19)
				SO_4	Same day	6.0	(-1.0, 13)
		Large vessel stroke		$PM_{2.5}$	Same day	38	(6.3, 75)
		Small vessel stroke		$PM_{2.5}$	Same day	30	(3.1, 58)
		Cardioembolic stroke		$PM_{2.5}$	Same day	14	(-11, 42)
Henrotin 2007[47]	Dijon, France	Ischemic stroke		PM_{10}	Previous day	1.1	(-0.2, 9.4)
				CO	Previous day	-1.8	(-2.6, 0.9)
				SO_2	Previous day	-0.8	(-5.1, 4.0)
				O_3	Previous day	3.6	(1.1, 6.3)
		Hemorrhagic stroke		PM_{10}	Previous day	-9.9	(-27, 11)
				CO	Previous day	0.9	(-2.6, 4.4)
				SO_2	Previous day	0.5	(-9.4, 14)
				O_3	Previous day	-1.2	(-1.1, 5.9)
		Large vessel stroke		PM_{10}	Previous day	-6.2	(-23, 14)
				CO	Previous day	-1.8	(-5.2, 2.6)
				SO_2	Previous day	3.3	(-8.0, 19)
				O_3	Previous day	6.7	(0.6, 14)
		Lacunar stroke		PM_{10}	Previous day	-12	(-30, 11)
				CO	Previous day	-2.6	(-7.0, 0.9)
				SO_2	Previous day	-6.3	(-15, 15)
				O_3	Previous day	3.7	(-3.3, 12)
		Cardioembolic stroke		PM_{10}	Previous day	10	(-11, 35)
				CO	Previous day	-0.9	(-4.4, 3.5)
				SO_2	Previous day	-1.0	(-11, 13)
				O_3	Previous day	5.4	(-1.4, 13)
		TIA		PM_{10}	Previous day	9.5	(-17, 43)
				CO	Previous day	-0.9	(-4.4, 3.5)
				SO_2	Previous day	-1.3	(-13, 15)
				O_3	Previous day	9.9	(1.8, 19)
Henrotin 2010[48]	Dijon, France	Ischemic stroke	Incident	O_3	3-day lag	-0.2	(-2.3, 1.9)
			Recurrent	O_3	3-day lag	5.5	(1.3, 10)
Yamazaki 2007[49]	Japan	Ischemic stroke	Warm season	PM_7	Same day	0.9	(-0.2, 2.1)
				NO_2	Same day	-0.5	(-2.9, 1.9)
				O_3	Same day	-2.5	(-4.5, -0.4)
			Cold season	PM_7	Same day	0.2	(-0.9, 1.3)
				NO_2	Same day	0.0	(-2.9, 1.9)
				O_3	Same day	0.6	(-3.0, 4.4)
		Hemorrhagic stroke	Warm season	PM_7	Same day	1.4	(-0.5, 3.4)
				NO_2	Same day	-0.5	(-4.5, 3.7)
				O_3	Same day	-0.4	(-3.9, 3.3)

			Cold season	PM_7	Same day	0.2	(-1.6, 2.0)
				NO_2	Same day	2.5	(-2.4, 7.7)
				O_3	Same day	1.0	(-5.0, 3.3)
Bedada 2012[50]	Manchester, UK	Minor stroke/ TIA		PM_{10}	3-day lag	13	(-1.1, 29)
				CO	3-day lag	4.7	(0.6, 11)
				NO_2	3-day lag	4.1	(-2.4, 12)
				SO_2	3-day lag	3.7	(-14, 23)
				O_3	3-day lag	-2.9	(-6.5, 1.6)
	Liverpool, UK	Minor stroke/TIA		PM_{10}	3-day lag	-5.9	(-20, 9.4)
				CO	3-day lag	-8.7	(1.5, 3.5)
				NO_2	3-day lag	-3.3	(-9.2, 4.0)
				SO_2	3-day lag	-1.9	(-16, 11)
				O_3	3-day lag	3.5	(-1.0, 9.2)

*Percent differences per: 10μg/cm^3 for BS, PM_{10}, $PM_{2.5}$, PM_{coarse},; 10 ppb for NO_2, SO_2, and O_3; 0.1ppm for CO; 1 μg/cm^3 for TSP; 0.5 μg/cm^3 for BC.
† Comparing risk of stroke admission on third day after an Asian dust storm with the risk of stroke admission on non-Asian dust storm days.
Abbreviatons: ADS, Asian dust storm episodes. BC, Black carbon. BS, Black smoke. CO, Carbon monoxide. NO_2, Nitrogen dioxide. NS, Non-significant associations but estimates not provided in publication. O_3, Ozone. PM_{10}, Particles with aerodynamic diameter ≤ 10μm. $PM_{2.5}$, Fine particles with aerodynamic diameter≤ 2.5μm. PM_{coarse}, Coarse particles with aerodynamic diameter between 2.5 and 10 μm in aerodynamic diameter. $PM_{0.1}$, Ultrafine particles with less than 0.1 μm aerodynamic diameter. SO_2, Sulfur dioxide. SO_4, Sulfate. TSP, Total suspended particles.

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