

# Supplemental Materials

## Long-term exposure to ozone increases neurological disability after stroke: findings from a nationwide longitudinal study in China

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Supplemental Table S1 **(a)** Distribution of different quantiles of O<sub>3</sub> peak season concentration for lag 1,2,3 year (µg/m<sup>3</sup>) **(b)** Distribution of different quantiles of O<sub>3</sub> annual mean concentration for lag 1,2,3 year (µg/m<sup>3</sup>)

**(a)**

	10%	25%	50%	75%	90%	min	max	mean	n	visit
lag1O <sub>3</sub>	86.70	99.07	112.57	127.68	140.63	31.41	158.71	113.18	28056	65778
lag2O <sub>3</sub>	85.77	97.19	110.19	124.80	136.78	33.23	154.26	110.57	26084	58245
lag3O <sub>3</sub>	84.35	95.30	108.36	121.21	128.65	38.81	154.57	107.55	19229	39751

**(b)**

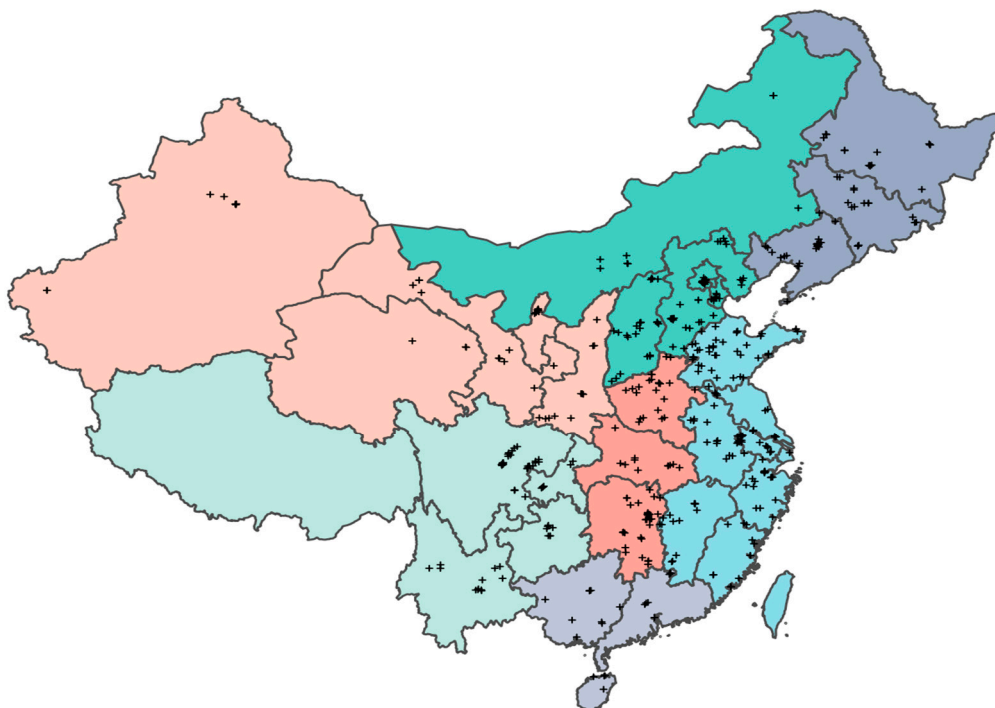
	10%	25%	50%	75%	90%	min	max	mean	n	visit
lag1O <sub>3</sub>	70.40	78.35	87.46	95.22	104.23	26.72	115.63	86.49	28056	65778
lag2O <sub>3</sub>	68.17	77.21	84.58	92.63	100.60	26.58	112.40	84.32	26084	58245
lag3O <sub>3</sub>	68.05	75.88	82.60	90.63	95.04	31.84	109.75	82.05	19229	39751

Supplemental Table S2 Descriptive characteristics of study participants at baseline by annual averaged O<sub>3</sub> concentration quartile

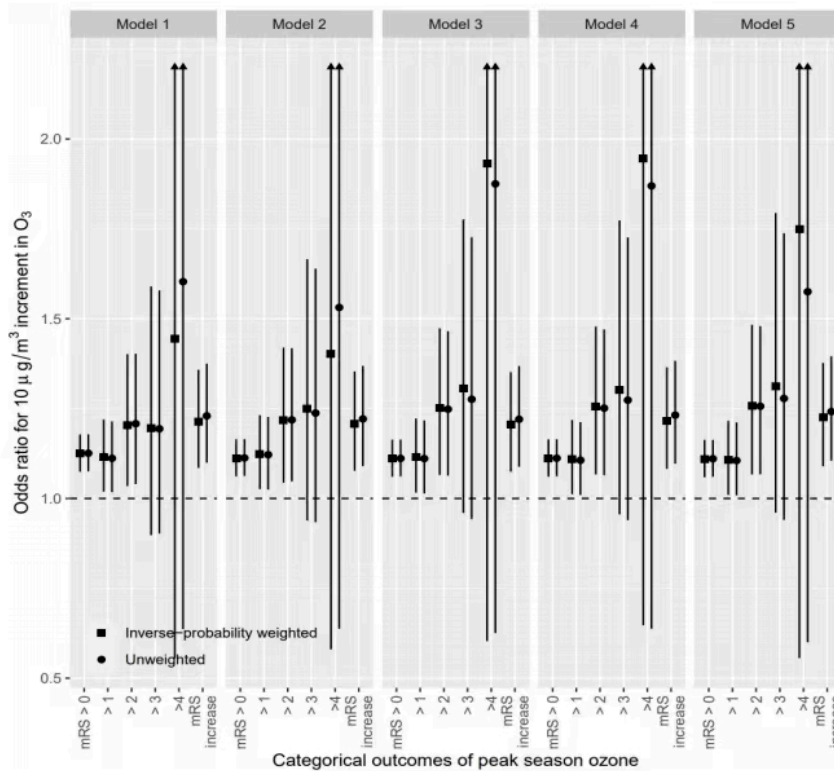
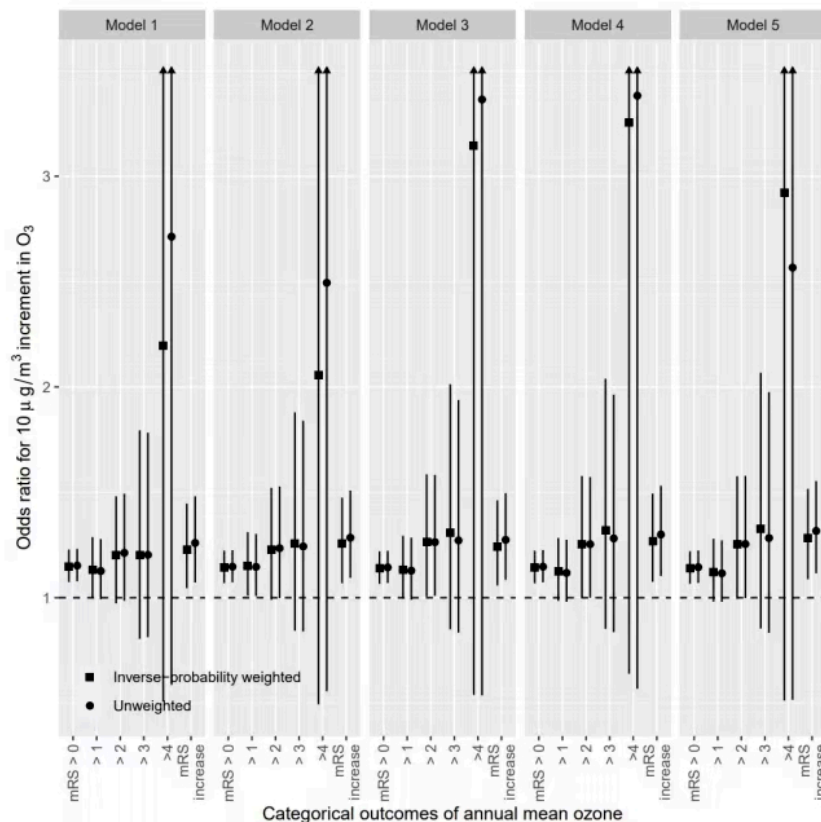
	Overall	O <sub>3</sub> First quartile (≤75.03µg/m <sup>3</sup> )	O <sub>3</sub> Second quartile (75.03-82.75µg/m <sup>3</sup> )	O <sub>3</sub> Third quartile (82.75-90.49µg/m <sup>3</sup> )	O <sub>3</sub> Fourth quartile (>90.49µg/m <sup>3</sup> )	p-Value
Age Group						<0.01
≤45	585(2.09)	201(2.87)	137(1.95)	136(1.94)	111(0.16)	—
45-55	4288(15.28)	1154(16.45)	1043(14.86)	1060(15.12)	1031(1.47)	—
55-65	9857(35.13)	2408(34.33)	2539(36.18)	2414(34.43)	2496(3.56)	—
65-75	9681(34.51)	2349(33.49)	2338(33.31)	2489(35.50)	2505(3.57)	—
75-85	3388(12.08)	831(11.85)	886(12.62)	858(12.24)	813(1.16)	—
>85	257(0.92)	72(1.03)	75(1.07)	54(0.77)	56(0.08)	—
Sex						<0.01
Female	13094(46.67)	3337(47.57)	3419(48.72)	3138(44.76)	3200(45.64)	—
Male	14842(52.90)	3670(52.32)	3534(50.36)	3826(54.57)	3812(54.36)	—
Missing	120(0.43)	8(0.11)	65(0.93)	47(0.67)	0(0.00)	—
AF						<0.01
No	26649(94.99)	6688(95.34)	6633(94.51)	6542(93.31)	6786(96.78)	—
Yes	1401(4.99)	327(4.66)	385(5.49)	463(6.6)	226(3.22)	—
Missing	6(0.02)	0(0.00)	0(0.00)	6(0.09)	0(0.00)	—
Dyslipidemia						<0.01
No	15179(54.1)	3381(48.2)	4043(57.61)	3868(55.17)	3887(55.43)	—
Yes	9715(34.63)	2003(28.55)	2453(34.95)	2459(35.07)	2800(39.93)	—
Missing	3162(11.27)	1631(23.25)	522(7.44)	684(9.76)	325(4.63)	—
Hypertension						<0.01
No	9021(32.15)	2457(35.02)	2198(31.32)	2236(31.89)	2130(30.38)	—
Yes	19029(67.83)	4558(64.98)	4820(68.68)	4769(68.02)	4882(69.62)	—
Missing	6(0.02)	0(0.00)	0(0.00)	6(0.09)	0(0.00)	—
Diabetes Mellitus						<0.01
No	20847(74.3)	4692(66.89)	5523(78.7)	5234(74.65)	5398(76.98)	—
Yes	5272(18.79)	1163(16.58)	1331(18.97)	1359(19.38)	1419(20.24)	—

Missing	1937(6.9)	1160(16.54)	164(2.34)	418(5.96)	195(2.78)	—
Smoke						<0.01
No	18217(64.93)	4083(58.2)	4749(67.67)	4759(67.88)	4626(65.97)	—
Yes	7133(25.42)	1732(24.69)	1888(26.9)	1667(23.78)	1846(26.33)	—
Missing	2706(9.64)	1200(17.11)	381(5.43)	585(8.34)	540(7.7)	—
Drink						<0.01
No	23133(82.45)	5854(83.45)	5795(82.57)	5816(82.96)	5668(80.83)	—
Yes	4910(17.5)	1156(16.48)	1223(17.43)	1188(16.94)	1343(19.15)	—
Missing	13(0.05)	5(0.07)	0(0.00)	7(0.1)	1(0.01)	—
Sport						<0.01
No	11147(39.73)	2845(40.56)	2670(38.05)	2788(39.77)	2844(40.56)	—
Yes	16901(60.24)	4168(59.42)	4348(61.95)	4217(60.15)	4168(59.44)	—
Missing	8(0.03)	2(0.03)	0(0.00)	6(0.09)	0(0.00)	—
Milk						<0.01
No	17073(60.85)	3604(51.38)	4330(61.7)	4288(61.16)	4851(69.18)	—
Yes	4449(15.86)	1153(16.44)	1094(15.59)	1164(16.6)	1038(14.8)	—
Missing	6534(23.29)	2258(32.19)	1594(22.71)	1559(22.24)	1123(16.02)	—
BMI						<0.01
(-Inf,18.5]	545(1.94)	150(2.14)	150(2.14)	151(2.15)	94(1.34)	—
(18.5,24]	10580(37.71)	2964(42.25)	2748(39.16)	2591(36.96)	2277(32.47)	—
(24,28]	11849(42.23)	2875(40.98)	2916(41.55)	2997(42.75)	3061(43.65)	—
(28, Inf]	5055(18.02)	1008(14.37)	1203(17.14)	1270(18.11)	1574(22.45)	—
Missing	18(0.26)	1(0.01)	2(0.03)	6(0.09)	0(0.00)	—

■ Central 
 ■ North 
 ■ Northwest 
 ■ Southwest  
■ East 
 ■ Northeast 
 ■ South



Supplementary Figure S1. Locations of surveyed counties of CNSSS from 2014 to 2019. (+) represents the locations of the surveyed counties.

**a****b**

Supplemental Figure S2. Associations of  $\text{O}_3$  exposure with different categorical mRS score outcomes for per 10  $\mu\text{g}/\text{m}^3$  increment of  $\text{O}_3$ . a: Peak season  $\text{O}_3$ . b: Annual mean  $\text{O}_3$ . Model 1 was only adjusted for the interaction of follow-up period with age at baseline, and the interaction of follow-up period with years after stroke at baseline. Model 2 was additionally adjusted for season. Model 3 was additionally adjusted for smoking, drinking, physical activity, milk intake, and body mass index. Model 4 was additionally adjusted for  $\text{PM}_{2.5}$ .

Model 5 was additionally adjusted for hypertension, diabetes, dyslipidemia and atrial fibrillation. mRS, modified Rankin Scale.