

Figure S1: Flowchart for the Danish autism study

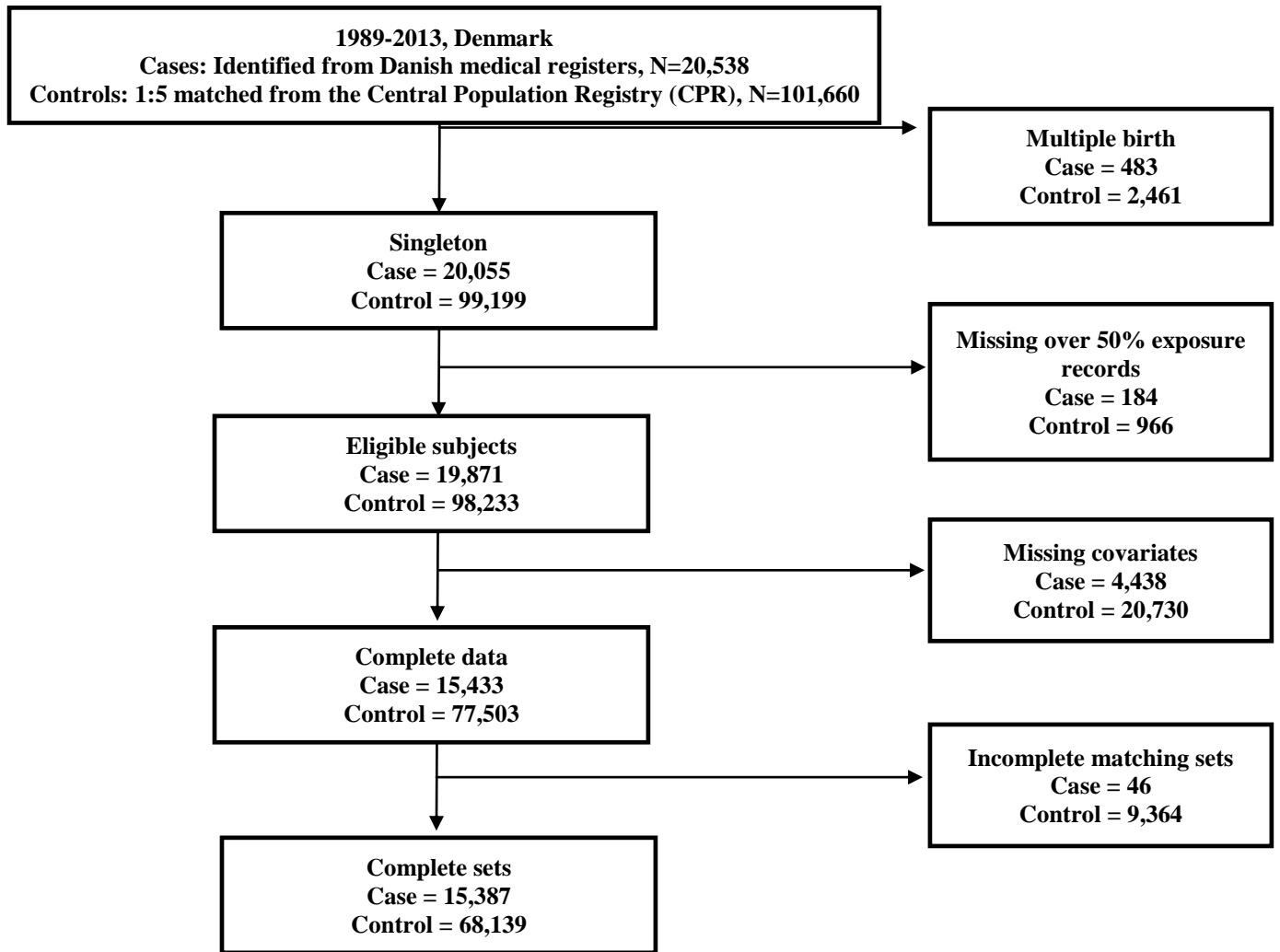


Figure S2

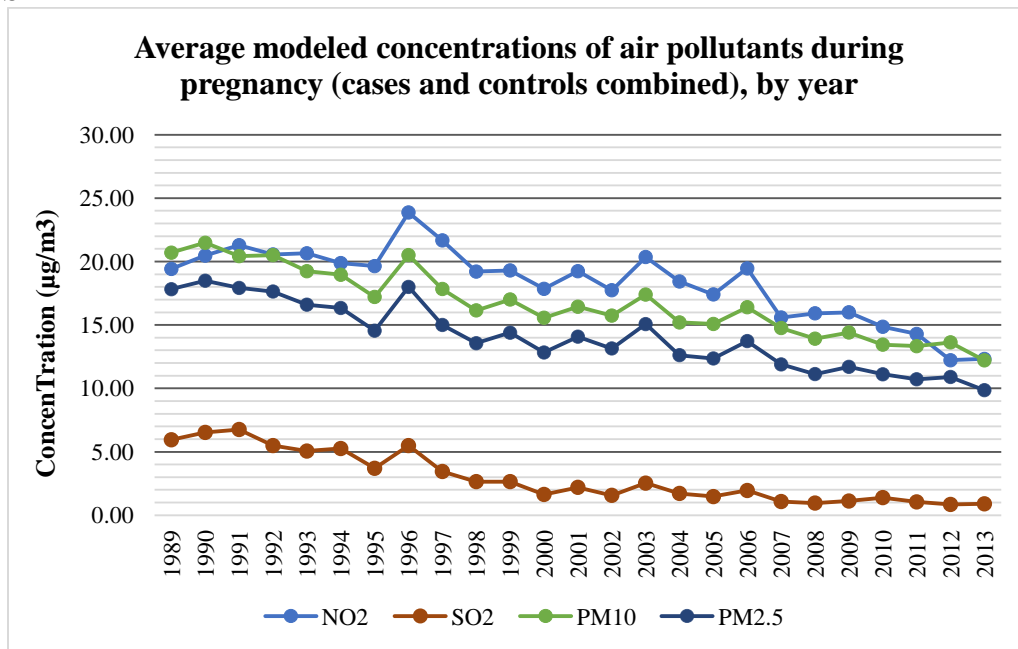


Figure S3: Directed Acyclic Graph (DAG) for associations between air pollution and autism including covariates

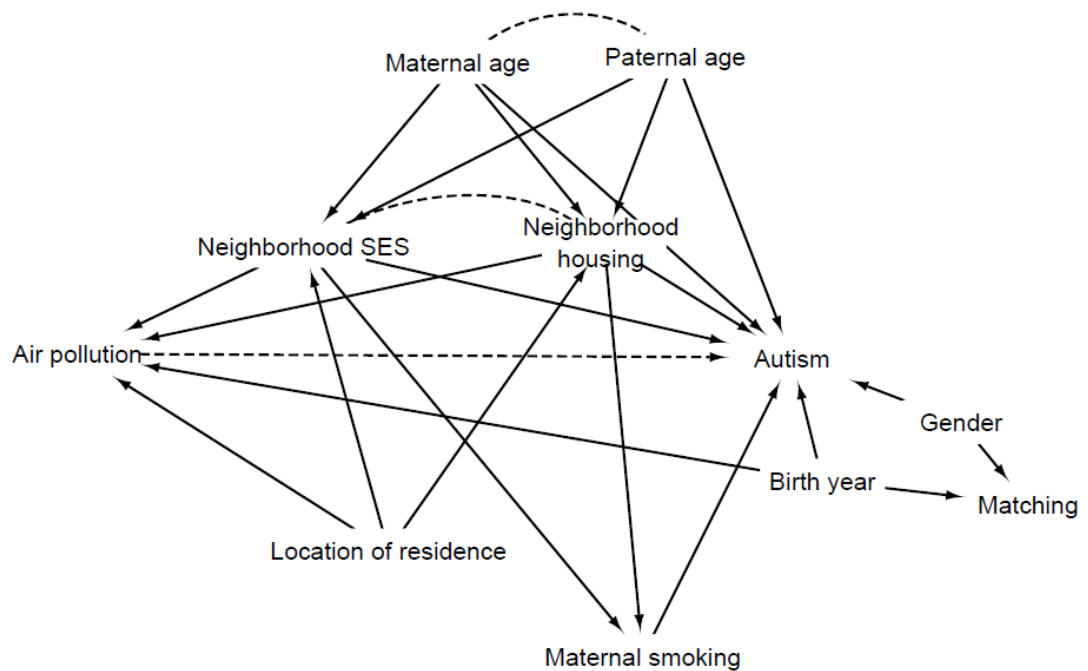


Table S1. Pearson correlations of average air pollutant exposures during three different exposure periods in cases and controls combined

		Pregnancy	Pre-pregnancy	Post-pregnancy
NO2	Pregnancy	1.00		
	Pre-pregnancy	0.90	1.00	
	Post-pregnancy	0.91	0.83	1.00
SO2	Pregnancy	1.00		
	Pre-pregnancy	0.82	1.00	
	Post-pregnancy	0.82	0.74	1.00
PM10	Pregnancy	1.00		
	Pre-pregnancy	0.71	1.00	
	Post-pregnancy	0.70	0.60	1.00
PM2.5	Pre-pregnancy	1.00		
	Pregnancy	0.69	1.00	
	Post-pregnancy	0.68	0.60	1.00

Table S2. Pearson Correlation of air-pollutants among controls across periods

	NO2	SO2	PM10	PM2.5
NO2	1.00			
SO2	0.47	1.00		
PM10	0.50	0.75	1.00	
PM2.5	0.53	0.83	0.97	1.00

Table S3. Median, 25th, 75th percentile and minimum, maximum values for air-pollutants during different periods

Exposure	Pregnancy					9 months after birth				
	Min	25th	median	75th	Max	Min	25th	median	75th	Max
NO2 (µg/m3)	4.43	14.31	19.57	25.83	80.84	4.12	13.98	18.98	25.13	78.67
SO2 (µg/m3)	0.26	1.75	2.80	4.55	16.13	0.27	1.62	2.56	4.14	18.24
PM10 (µg/m3)	10.13	15.51	17.13	19.31	40.28	9.04	15.29	16.83	18.89	41.69
PM2.5 (µg/m3)	7.02	12.83	14.39	16.43	33.15	7.14	12.63	14.09	16.04	34.38

Table S4. ORs (95% CI) from conditional logistic regression models for ASD per IQR^d increase in air-pollutants levels during different trimesters and infancy (Case N=13,999; Control N=57,718).

Exposure	Exposure period	OR (95% CI)		
		Unadjusted ^a	Adjusted ^b	Mutually adjusted ^c
NO2	First Trimester	1.17 (1.14, 1.19)	1.08 (1.05, 1.11)	1.03 (0.97, 1.09)
	Second Trimester	1.16 (1.14, 1.19)	1.08 (1.04, 1.11)	0.99 (0.93, 1.05)
	Third Trimester	1.17 (1.15, 1.20)	1.08 (1.05, 1.12)	1.00 (0.94, 1.07)
	9 months after birth	1.20 (1.17, 1.23)	1.10 (1.06, 1.14)	1.06 (1.00, 1.14)
SO2	First Trimester	1.11 (1.08, 1.14)	1.06 (1.03, 1.09)	1.03 (0.99, 1.09)
	Second Trimester	1.07 (1.04, 1.10)	1.02 (0.99, 1.05)	0.98 (0.95, 1.01)
	Third Trimester	1.08 (1.05, 1.11)	1.02 (0.99, 1.05)	1.00 (0.95, 1.06)
	9 months after birth	1.36 (1.29, 1.43)	1.19 (1.12, 1.26)	1.14 (1.05, 1.23)
PM10	First Trimester	1.01 (0.98, 1.03)	1.00 (0.98, 1.02)	0.99 (0.96, 1.05)
	Second Trimester	0.99 (0.97, 1.01)	0.98 (0.96, 1.01)	0.98 (0.96, 1.00)
	Third Trimester	0.99 (0.97, 1.01)	0.98 (0.96, 1.00)	0.98 (0.95, 1.01)
	9 months after birth	1.02 (0.99, 1.06)	1.00 (0.97, 1.04)	1.03 (0.98, 1.08)
PM2.5	First Trimester	1.04 (1.01, 1.06)	1.02 (0.99, 1.04)	1.00 (0.97, 1.03)
	Second Trimester	1.01 (0.99, 1.04)	0.99 (0.97, 1.02)	0.98 (0.96, 1.01)
	Third Trimester	1.02 (0.99, 1.04)	0.99 (0.97, 1.02)	0.98 (0.95, 1.01)
	9 months after birth	1.11 (1.06, 1.15)	1.04 (1.00, 1.08)	1.05 (1.00, 1.10)

^a note: these are pair matched on gender and birth year

^b adjusted for maternal age, paternal age, location of birth, neighborhood SES-employment, neighborhood SES-housing, and maternal smoking during pregnancy.

^c adjusted for air pollution levels during pre-pregnancy, three trimesters, and post-pregnancy, as well as all other covariates listed above.

^d IQRs in controls: NO2: 11.41 ug/m3; SO2: 2.80 ug/m3; PM10: 3.80 ug/m3; PM2.5: 3.61 ug/m3

Table S5. Mutually co-adjusted^a ORs (95% CI) from conditional logistic regression models per IQR^b increase in air-pollutants in pregnancy and early infancy stratified by ASD subtype

Exposure ^b	Exposure period	AD (Case N =5,512, Control N=24,864)	Asperger (Case N=3,848, Control N =16,640)	PDD-NOS (Case N =5,293, Control N=23,537)
		OR (95% CI)	OR (95% CI)	OR (95% CI)
NO2	Pregnancy	0.95 (0.83, 1.09)	0.99 (0.85, 1.15)	1.00 (0.87, 1.14)
	9 months after birth	1.14 (1.03, 1.27)	1.13 (1.01, 1.27)	1.02 (0.91, 1.13)
SO2	Pregnancy	0.99 (0.86, 1.13)	0.96 (0.85, 1.09)	0.88 (0.77, 0.99)
	9 months after birth	1.39 (1.22, 1.57)	1.29 (1.15, 1.45)	1.13 (1.01, 1.26)
PM10	Pregnancy	0.98 (0.90, 1.06)	0.94 (0.85, 1.03)	0.89 (0.82, 0.97)
	9 months after birth	1.07 (1.00, 1.15)	1.11 (1.02, 1.20)	1.02 (0.94, 1.10)
PM2.5	Pregnancy	1.00 (0.91, 1.09)	0.95 (0.86, 1.05)	0.89 (0.82, 0.98)
	9 months after birth	1.12 (1.04, 1.21)	1.12 (1.03, 1.23)	1.02 (0.94, 1.11)

^a adjusted for all exposure periods, as well maternal age, paternal age, location of birth, neighborhood SES-employment, neighborhood SES-housing, and maternal smoking during pregnancy.

^b IQRs in controls: NO2: 11.41 ug/m3; SO2: 2.80 ug/m3; PM10: 3.80 ug/m3; PM2.5: 3.61 ug/m3