

Supplementary Material

Prenatal Dioxin Exposure and Neuropsychological Functioning in the Seveso Second Generation Health Study

Ames Jennifer^a, Warner Marcella^a, Siracusa Claudia^b, Signorini Stefano^b, Brambilla Paolo^b, Mocarelli Paolo^b, Eskenazi Brenda^a

^a Center for Environmental Research & Children's Health (CERCH), School of Public Health, University of California, Berkeley, California, USA

^b Department of Laboratory Medicine, University of Milano-Bicocca, School of Medicine, Hospital of Desio, Desio-Milano, Italy

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Supplementary Tables

Supplementary Table 1: Distributions of maternal TCDD concentrations (ppt, lipid-adjusted) in serum collected near 1976 and estimated to the time of the pregnancy, Seveso Second Generation Health Study, 2014-2016

	n	Geometric mean	95%CI	min	25th	50th	75th	max
<i>All children</i>								
1976 maternal concentration	161	99.0	(161.5, 127.7)	5.5	40.4	74.6	214.0	9140.0
Estimated concentrations in pregnancy	161	4.6	(3.9, 5.5)	0.3	2.7	4.5	9.0	620.5
<i>Male</i>								
1976 maternal concentration	82	94.3	(64.1, 138.6)	5.5	40.6	73.9	211.0	9140.0
Estimated concentrations in pregnancy	82	3.8	(3.0, 4.8)	0.3	2.0	3.9	7.1	130.5
<i>Female</i>								
1976 maternal concentration	79	103.6	(73.4, 146.3)	9.9	35.0	75.2	244.0	2820.0
Estimated concentrations in pregnancy	79	5.7	(4.4, 7.4)	0.3	2.9	5.6	10.1	620.5

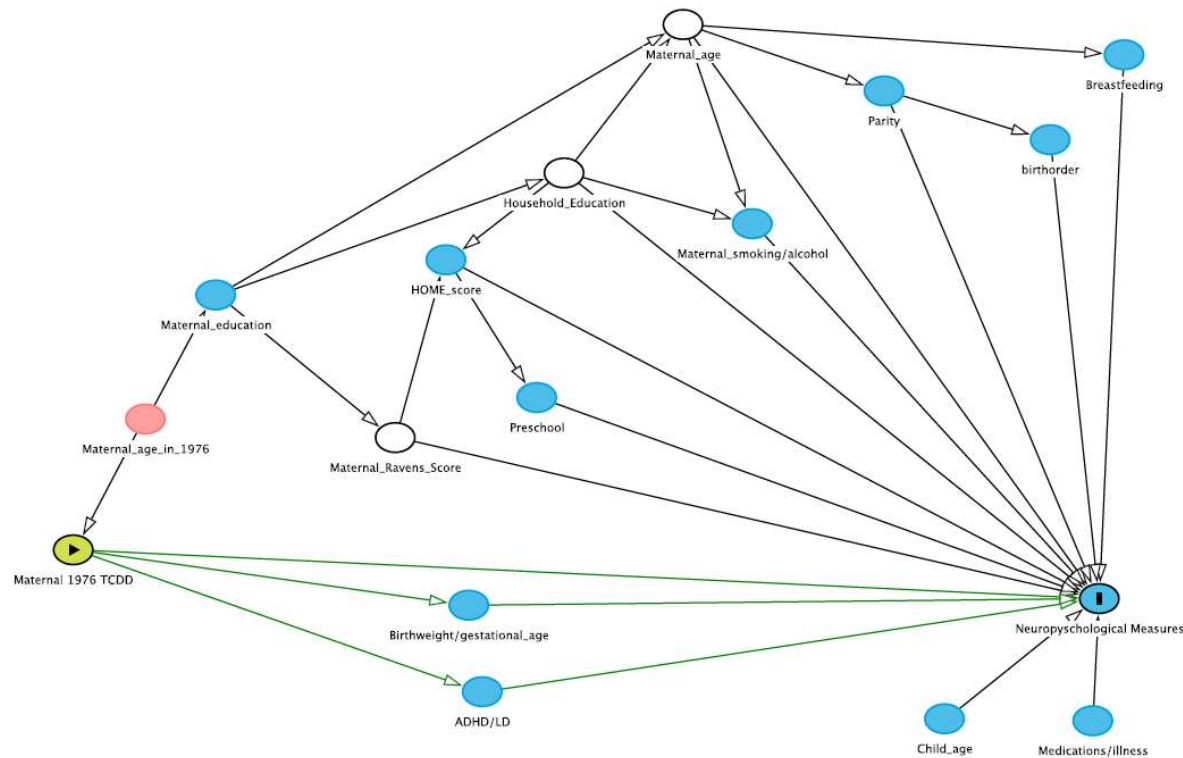
Supplementary Table 2: Distributions of neuropsychological test scores for all children and stratified by child sex, Seveso Second Generation Health Study, 2014-2016

Outcome	All children (n=161) Mean (\pmsd)	Male (n=82) Mean (\pmsd)	Female (n=79) Mean (\pmsd)
Wisconsin Card Sorting Test (WCST)			
Total errors T-score	49.6 (12.1)	48.1 (12.3)	51.2 (11.8)
Trials to complete first set	18.7 (15.6)	19.6 (16.6)	17.7 (14.5)
Perseverative errors T-score	52.1 (16.2)	50.5 (16.7)	53.7 (15.7)
Non-perseverative errors T-score	50.5 (11.8)	49.7 (12.3)	51.3 (11.3)
Connor's Continuous Performance Test (CPT)^a			
Commission errors T-score	48.8 (11.4)	47.0 (11.8)	50.7 (10.8)
Omission errors T-score	47.4 (7.6)	47.9 (8.)	46.9 (7.2)
Hit rate SE overall T-score	47.2 (9.9)	48.4 (10.4)	45.9 (9.3)
Hit rate SE between sets T-score	48.6 (9.8)	49.3 (10.)	47.9 (9.6)
ADHD confidence index	44.6 (17.2)	51.8 (16.1)	37.0 (15.1)
Rey's Auditory and Verbal Learning Test (RAVLT)			
Immediate recall	27.2 (5.5)	27.1 (5.3)	27.3 (5.7)
Delayed recall	10.2 (2.5)	10.0 (2.6)	10.4 (2.3)
Ravens Progressive Matrices (RPM)			
Total correct	41.7 (9.3)	41.6 (9.4)	41.7 (9.2)

^a Excluding one child with apparent non-effort or computer malfunction during assessment

Supplementary Figures

Supplementary Figure 1: Example directed acyclic graph (DAG) of the association between maternal 1976 TCDD levels and neuropsychological functioning in children. The endogenous variables in this system are denoted by the treatment (▶, dioxin exposure), the outcome, I (i.e. performance on neuropsychological test), our a priori confounders, (pink and white), and adjustment set (white). Exogenous, unmeasured variables in the system that may potentially confound the relationship of interest are omitted:



Supplementary Figure 2: Example directed acyclic graph (DAG) of the association between maternal TCDD levels estimated to pregnancy and neuropsychological functioning in children. The endogenous variables in this system are denoted by the treatment (▶, dioxin exposure), the outcome, I (i.e. performance on neuropsychological test), our a priori confounders, (pink and white), and adjustment set (white). Exogenous, unmeasured variables in the system that may potentially confound the relationship of interest are omitted:

