

Sex ratio and reported health of the offspring of New Zealand phenoxy herbicide producers exposed to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin

SUPPLEMENTAL MATERIALS

Table S1. Effect of adjustment for potential confounders on the association between estimated paternal serum TCDD concentration at time of birth and the probability of a male offspring.

TCDD ¹ (pg/g)	girls	boys	crude		father's current BMI		smoking		age father at birth		age mother at birth		year birth child	
			OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
<4	59	88	1.0	ref	1.0	ref	1.0	ref	1.0	ref	1.0	ref	1.0	ref
4-20	15	24	1.1	0.5-2.2	1.0	0.5-2.0	1.1	0.5-2.2	1.1	0.5-2.2	1.1	0.6-2.3	1.1	0.5-2.5
20-100	30	27	0.6	0.4-1.0	0.5	0.3-0.9	0.6	0.4-1.0	0.6	0.3-1.0	0.6	0.4-1.0	0.6	0.3-1.0
≥100	33	28	0.6	0.3-1.1	0.5	0.2-0.9	0.6	0.3-1.1	0.6	0.3-1.1	0.6	0.3-1.1	0.7	0.4-1.4
ORs associated with categories (see footnote) of the potential confounders: (adjusted for paternal TCDD at birth)					1.0	(BMI<25)	1.0	(never)	1.0	(age<25)	1.0	(age<25)	1.0	(<1970)
					1.5	0.9-2.7	1.1	0.7-1.8	1.2	0.6-2.5	0.8	0.4-1.4	1.9	0.8-4.2
					2.3	1.1-4.9	1.1	0.5-2.4	1.2	0.6-2.5	0.9	0.5-1.7	2.2	0.9-5.1
									0.8	0.3-2.2	0.2	0.0-2.0	2.0	0.8-5.1

1) serum TCDD of father at time of birth.

OR: crude Odds Ratio

OR1 adjusted for BMI: 4 categories: <25; 25-30; ≥30; missing (for missing BMI the OR is not reported)

OR2 adjusted for Smoking: 3 categories: never; ex; current

OR3 adjusted for Age father at birth: 4 categories: <25; 25-30; 30-40; ≥40

OR4 adjusted for Age mother at birth: 5 categories: <25; 25-30; 30-40; ≥40; missing (for missing mother's age at birth the OR is not reported)

OR5 adjusted for the year of birth of the child: 4 categories: <1970, 1970-80, 1980-90, >1990

Table S2. Association between the estimated serum TCDD concentration of the father at time of birth and the probability of a male birth outcome, by age of the father at birth.

<i>fathers employed at plant (n=127)</i>								
Age father at birth	girls (n)	boys (n)	sex ratio (boys/all)	Crude OR	95% confidence interval	OR ¹⁾	95% confidence interval	
<i><30</i>								
<4 pg/g lipid	24	40	0.63	1.00	ref	1.00	ref	
4-20 pg/g lipid	4	6	0.60	0.89	0.25-3.22	1.27	0.22-7.20	
20-100 pg/g lipid	17	15	0.47	0.48	0.22-1.06	0.61	0.29-1.26	
≥100 pg/g lipid	21	15	0.42	0.40	0.18-0.89	0.63	0.27-1.50	
				<i>p-trend</i>	<i>0.014</i>	<i>p-trend</i>	<i>0.190</i>	
<i>≥30</i>								
<4 pg/g lipid	35	48	0.58	1.00	ref	1.00	ref	
4-20 pg/g lipid	11	18	0.62	1.20	0.47-3.06	1.08	0.41-2.88	
20-100 pg/g lipid	13	12	0.48	0.68	0.30-1.53	0.46	0.21-1.01	
≥100 pg/g lipid	12	13	0.52	0.79	0.29-2.14	0.44	0.18-1.08	
				<i>p-trend</i>	<i>0.482</i>	<i>p-trend</i>	<i>0.035</i>	

1) OR= Odds Ratio (modelling the probability of a male birth), adjusted for: current BMI parent, smoking status parent.

Table S3. Association between the estimated serum TCDD concentration of the father at time of birth and the probability of a male birth outcome, by father's BMI at time of phlebotomy.

<i>fathers employed at plant (n=127)</i>							
BMI father at time of phlebotomy	girls (n)	boys (n)	sex ratio (boys/all)	Crude OR	95% confidence interval	OR¹⁾	95% confidence interval
<i>BMI <25</i>							
<4 pg/g lipid	15	21	0.58	1.00	ref	1.00	
4-20 pg/g lipid	2	4	0.67	1.33	0.19-9.33	1.40	0.09-20.8
20-100 pg/g lipid	6	2	0.25	0.24	0.08-0.75	0.59	0.09-3.90
≥100 pg/g lipid	10	2	0.17	0.14	0.04-0.53	0.18	0.04-0.80
				<i>p-trend</i>	<i>0.001</i>	<i>p-trend</i>	<i>0.019</i>
<i>BMI 25-30</i>							
<4 pg/g lipid	33	49	0.60	1.00	ref	1.00	ref
4-20 pg/g lipid	10	14	0.58	1.47	0.70-3.07	1.74	0.81-3.77
20-100 pg/g lipid	15	14	0.48	0.62	0.33-1.20	0.61	0.33-1.11
≥100 pg/g lipid	5	8	0.62	1.00	0.43-2.36	1.06	0.44-2.57
				<i>p-trend</i>	<i>0.413</i>	<i>p-trend</i>	<i>0.504</i>
<i>BMI ≥30</i>							
<4 pg/g lipid	3	9	0.75	1.00	ref	1.00	ref
4-20 pg/g lipid	2	4	0.67	0.65	0.07-6.04	0.29	0.04-2.08
20-100 pg/g lipid	6	8	0.57	0.49	0.07-3.28	0.24	0.05-1.19
≥100 pg/g lipid	16	18	0.53	0.36	0.06-2.14	0.50	0.13-1.95
				<i>p-trend</i>	<i>0.222</i>	<i>p-trend</i>	<i>0.453</i>

1) OR= Odds Ratio (modelling the probability of a male birth), adjusted for: age of parent at year of birth, smoking status parent.

Table S4. Association between the estimated serum TCDD concentration of the father at time of birth and the probability of a male birth outcome, by year of birth of the child.

<i>fathers employed at plant (n=127)</i>							
year birth of child	girls (n)	boys (n)	sex ratio (boys/all)	Crude OR	95% confidence interval	OR ¹⁾	95% confidence interval
<i>Born < 1980</i>							
<4 pg/g lipid	24	22	0.48	1.00	ref	1.00	Ref
4-20 pg/g lipid	7	11	0.61	1.74	0.67-4.51	2.53	1.04-6.14
20-100 pg/g lipid	15	17	0.53	1.24	0.53-2.89	1.81	0.74-4.42
≥100 pg/g lipid	29	25	0.46	0.94	0.43-2.10	1.38	0.57-3.33
				<i>p-trend</i>	<i>0.795</i>	<i>p-trend</i>	<i>0.605</i>
<i>Born ≥ 1980</i>							
<4 pg/g lipid	35	66	0.65	1.00	ref	1.00	ref
4-20 pg/g lipid	8	13	0.62	0.85	0.30-2.39	0.79	0.27-2.30
20-100 pg/g lipid	15	10	0.40	0.32	0.18-0.59	0.22	0.11-0.42
≥100 pg/g lipid	4	3	0.43	0.37	0.08-1.60	0.15	0.02-1.06
				<i>p-trend</i>	<i>0.002</i>	<i>p-trend</i>	<i><0.001</i>

1) OR= Odds Ratio (modelling the probability of a male birth), adjusted for: age of parent at year of birth, current BMI parent, smoking status parent.