

Appendix E

Confounding Assessment Results

Appendix E. Odds ratios and 95% confidence intervals for associations between NDMA and TCE in maternal drinking water (during the year before birth) and childhood cancer following adjustment for confounding variables.

NDMA	Crude		Adjusted	
	OR ^a	95% CI ^b	OR ^a	95% CI ^b
All Cancers				
<u>Oxygen after Birth (n=77)</u>				
NDMA Low vs. Zero	1.4	(0.3 - 7.7)	1.1	(0.1 - 9.0)
NDMA High vs. Zero	2.9	(0.6 - 15)	3.9	(0.7 - 23)
<u>Incubator at Birth (n=83)</u>				
NDMA Low vs. Zero	1.2	(0.2 - 6.1)	0.9	(0.2 - 4.9)
NDMA High vs. Zero	2.4	(0.5 - 11)	2.5	(0.5 - 11)
<u>Low Birth Weight (n=85)</u>				
NDMA Low vs. Zero	1.2	(0.2 - 6.4)	1.7	(0.3 - 9.6)
NDMA High vs. Zero	2.6	(0.6 - 11)	3.4	(0.7 - 17)
<u>Adverse Birth Event (n=80)</u>				
NDMA Low vs. Zero	1.5	(0.3 - 7.8)	1.0	(0.1 - 7.2)
NDMA High vs. Zero	3.0	(0.6 - 15)	3.6	(0.7 - 20)
<u>Household Plastics/Synth./Resins Exposure (n=90)</u>				
NDMA Low vs. Zero	1.4	(0.3 - 6.6)	1.2	(0.2 - 5.8)
NDMA High vs. Zero	2.9	(0.8 - 10)	3.3 [†]	(0.9 - 12)
<u>Household Metals/Alloys/Solder Exposure (n=91)</u>				
NDMA Low vs. Zero	1.4	(0.3 - 6.7)	1.1	(0.2 - 5.6)
NDMA High vs. Zero	2.9 [†]	(0.8 - 10)	2.8	(0.8 - 9.8)
<u>Household Exhaust Fumes Exposure (n=92)</u>				
NDMA Low vs. Zero	1.3	(0.3 - 6.2)	1.2	(0.3 - 6.1)
NDMA High vs. Zero	3.0 [†]	(0.8 - 11)	2.8	(0.8 - 10)
<u>Household Herbicide Exposure (n=89)</u>				
NDMA Low vs. Zero	1.3	(0.3 - 6.1)	1.2	(0.2 - 5.8)
NDMA High vs. Zero	3.1 [†]	(0.9 - 11)	2.9	(0.8 - 10)
<u>Prenatal Ultrasound (n=85)</u>				
NDMA Low vs. Zero	1.2	(0.2 - 6.0)	1.0	(0.2 - 5.1)
NDMA High vs. Zero	3.3	(0.8 - 13) [†]	2.9	(0.7 - 12)
<u>Childhood Antihistamine Use (n=91)</u>				
NDMA Low vs. Zero	1.3	(0.3 - 6.1)	1.2	(0.2 - 5.9)
NDMA High vs. Zero	2.9	(0.8 - 10) [†]	2.7	(0.7 - 9.5)
<u>Occupational Ionizing Radiation, Maternal (n=91)</u>				
NDMA Low vs. Zero	1.3	(0.3 - 6.0)	1.5	(0.3 - 7.3)
NDMA High vs. Zero	3.0 [†]	(0.8 - 10)	2.7	(0.7 - 9.8)

NDMA	Crude		Adjusted		
	OR ^a	95% CI ^b	OR ^a	95% CI ^b	
Leukemia/Lymphoma					
Oxygen after Birth (n=47)					
NDMA Low vs. Zero	2.0	(0.2 - 17)	1.4	(0.1 - 22)	
NDMA High vs. Zero	11.0	(0.8 - 145) [†]	15.8	(0.7 - 342) [†]	
Incubator at Birth (n=49)					
NDMA Low vs. Zero	1.4	(0.2 - 9.9)	0.5	(0.3 - 6.6)	
NDMA High vs. Zero	5.1	(0.7 - 38)	4.6	(0.5 - 40)	
Low Birth Weight (n=51)					
NDMA Low vs. Zero	1.4	(0.2 - 10)	NC	NC	NC
NDMA High vs. Zero	5.4	(0.8 - 39) [†]	NC	NC	NC
Adverse Birth Event (n=47)					
NDMA Low vs. Zero	2.1	(0.2 - 17)	NC	NC	NC
NDMA High vs. Zero	11.0	(0.8 - 145) [†]	NC	NC	NC
Household Plastics/Synth./Glues Exposure (n=54)					
NDMA Low vs. Zero	1.4	(0.2 - 9.3)	0.8	(0.1 - 7.1)	
NDMA High vs. Zero	4.6	(1.0 - 22) [†]	16.3	(1.7 - 154) [‡]	
Household Metals/Alloys/Solder Exposure (n=55)					
NDMA Low vs. Zero	1.4	(0.2 - 9.5)	NC	NC	NC
NDMA High vs. Zero	4.8	(1.0 - 23) [‡]	NC	NC	NC
Household Exhaust Fumes Exposure (n=56)					
NDMA Low vs. Zero	1.3	(0.2 - 8.7)	1.1	(0.1 - 8.0)	
NDMA High vs. Zero	4.9	(1.0 - 24) [‡]	4.3	(0.9 - 21) [†]	
Household Herbicide Exposure (n=56)					
NDMA Low vs. Zero	1.3	(0.2 - 8.7)	1.0	(0.2 - 5.1)	
NDMA High vs. Zero	4.9	(1.0 - 24) [‡]	2.9	(0.7 - 12) [†]	
Childhood Antihistamine Use (n=55)					
NDMA Low vs. Zero	1.3	(0.2 - 8.5)	1.1	(0.2 - 7.0)	
NDMA High vs. Zero	4.7	(1.0 - 23) [†]	4.8	(1.0 - 24) [†]	
Prenatal Ultrasound (n=51)					
NDMA Low vs. Zero	1.3	(0.2 - 9.2)	NC	NC	NC
NDMA High vs. Zero	7.3	(1.1 - 47) [‡]	NC	NC	NC
Occupational Ionizing Radiation, Maternal (n=55)					
NDMA Low vs. Zero	1.3	(0.2 - 8.3)	1.5	(0.2 - 11)	
NDMA High vs. Zero	4.9	(1.1 - 23) [‡]	4.7	(0.9 - 24) [†]	

*Note: Sample sizes vary between models due to missing covariate data for some children.

^aOR = Matched Odds Ratio

^b95% CI = 95% Confidence Interval

[†]Marginally significant association with the odds of childhood cancer ($p < 0.10$)

[‡]Statistically significant association with the odds of childhood cancer ($p < 0.05$)

NC = Not calculated due to insufficient data (i.e. few discordant pairs)

NDMA	Crude		Adjusted	
	OR ^a	95% CI ^b	OR ^a	95% CI ^b
All Cancers				
		Oxygen after Birth (n=77)		
NDMA Ever vs. Never	2.0	(0.5 - 8.4)	1.1	(0.1 - 9.0)
		Incubator at Birth (n=83)		
NDMA Ever vs. Never	1.7	(0.5 - 6.7)	1.6	(0.4 - 6.1)
		Low Birth Weight (n=85)		
NDMA Ever vs. Never	1.8	(0.5 - 6.8)	2.4	(0.6 - 10)
		Adverse Birth Event (n=80)		
NDMA Ever vs. Never	2.1	(0.5 - 8.7)	2.1	(0.4 - 9.8)
		Household Plastics/Synth./Glues Exposure (n=90)		
NDMA Ever vs. Never	2.2	(0.7 - 6.7)	2.3	(0.7 - 6.9)
		Household Metals/Alloys/Solder Exposure (n=91)		
NDMA Ever vs. Never	2.2	(0.7 - 7.1)	2.0	(0.6 - 6.4)
		Household Exhaust Fumes Exposure (n=92)		
NDMA Ever vs. Never	2.2	(0.7 - 7.0)	2.1	(0.6 - 6.7)
		Household Herbicide Exposure (n=89)		
NDMA Ever vs. Never	2.2	(0.7 - 7.0)	2.0	(0.6 - 6.7)
		Prenatal Ultrasound (n=85)		
NDMA Ever vs. Never	2.1	(0.6 - 7.4)	1.8	(0.5 - 6.7)
		Childhood Antihistamine Use (n=91)		
NDMA Ever vs. Never	2.1	(0.7 - 6.8)	2.0	(0.6 - 6.5)
		Occupational Ionizing Radiation, Maternal (n=91)		
NDMA Ever vs. Never	2.2	(0.7 - 6.8)	2.2	(0.7 - 7.0)
Leukemia/Lymphoma				
		Oxygen after Birth (n=47)		
NDMA Ever vs. Never	3.6	(0.6 - 23)	3.5	(0.4 - 28)
		Incubator at Birth (n=49)		
NDMA Ever vs. Never	2.5	(0.5 - 13)	1.7	(0.3 - 11)
		Low Birth Weight (n=51)		
NDMA Ever vs. Never	2.6	(0.5 - 13)	NC	NC NC
		Adverse Birth Event (n=47)		

NDMA Ever vs. Never	3.6	(0.6 – 23)	1.6	(0.2 – 17)
			Household Plastics/Synth./Glues Exposure (n=54)	
NDMA Ever vs. Never	2.9	(0.8 – 11)	3.7 [†]	(0.9 – 15)
			Household Metals/Alloys/Solder Exposure (n=55)	
NDMA Ever vs. Never	3.0	(0.8 – 11)	NC	NC NC
			Household Exhaust Fumes Exposure (n=56)	
NDMA Ever vs. Never	2.9	(0.6 – 11)	2.5	(0.6 – 10)
			Household Herbicide Exposure (n=56)	
NDMA Ever vs. Never	2.9	(0.8 – 11)	2.6	(0.7 – 10)
			Prenatal Ultrasound (n=51)	
NDMA Ever vs. Never	3.1	(0.7 – 14)	NC	NC NC
			Childhood Antihistamine Use (n=55)	
NDMA Ever vs. Never	2.8	(0.7 – 11)	2.9	(0.7 – 11)
			Occupational Ionizing Radiation, Maternal (n=55)	
NDMA Ever vs. Never	2.8	(0.7 – 11)	3.0	(0.7 – 13)

*Note: Sample sizes vary between models due to missing covariate data for some children.

^aOR = Matched Odds Ratio

^b95% CI = 95% Confidence Interval

[†]Marginally significant association with the odds of childhood cancer ($p < 0.10$)

[‡]Statistically significant association with the odds of childhood cancer ($p < 0.05$)

TCE	Crude		Adjusted	
	OR ^a	95% CI ^b	OR ^a	95% CI ^b
All Cancers				
				Oxygen after Birth (n=)
TCE Ever vs. Never	2.0	(0.3 – 16)	2.0	(0.2 – 22)
				Incubator at Birth (n=)
TCE Ever vs. Never	1.5	(0.2 – 9.4)	1.5	(0.2 – 10)
				Low Birth Weight (n=)
TCE Ever vs. Never	1.7	(0.3 – 9.7)	2.0	(0.3 – 16)
				Adverse Birth Event (n=)
TCE Ever vs. Never	2.0	(0.3 – 16)	2.8	(0.3 – 30)
				Household Plastics/Synth./Glues Exposure (n=)
TCE Ever vs. Never	2.2	(0.4 – 11)	2.2	(0.5 – 11)
				Household Metals/Alloys/Solder Exposure (n=)
TCE Ever vs. Never	2.3	(0.4 – 12)	1.9	(0.4 – 10)
				Household Exhaust Fumes Exposure (n=)

TCE Ever vs. Never	2.3	(0.4 - 12)	1.9	(0.4 - 10)
			Household Herbicide Exposure (n=)	
TCE Ever vs. Never	2.1	(0.4 - 11)	2.0	(0.4 - 11)
			Prenatal Ultrasound (n=)	
TCE Ever vs. Never	2.3	(0.4 - 12)	1.9	(0.4 - 10)
			Childhood Antihistamine Use (n=)	
TCE Ever vs. Never	2.2	(0.4 - 11)	2.2	(0.4 - 12)
			Occupational Ionizing Radiation, Maternal (n=)	
TCE Ever vs. Never	2.3	(0.4 - 12)	2.4	(0.4 - 13)
