

Supplemental Material

Neurodevelopmental Disorders and Prenatal Residential Proximity to Agricultural Pesticides: The CHARGE Study

Janie F. Shelton, Estella M. Geraghty, Daniel J. Tancredi, Lora D. Delwiche, Rebecca J. Schmidt, Beate Ritz,
Robin L. Hansen, and Irva Hertz-Picciotto

As a supplement to the original manuscript, the following figure has been provided to show further descriptions of the study population and exposure model.

Figure S1. Graphical depiction of exposure model. Aerial image of a residence and 1.5km buffer overlaid onto the meridian township range section (MTRS) grid. The crosses indicate the centroid of the MTRS. The home depicted in this model would have been considered “exposed” only to the pesticides applied in the MTRS sections intersecting the buffer area.



Table S1. Agricultural pesticides applied within 1.5 km of CHARGE study residences (n=970) by proportion of applications within each chemical class.

Pesticide	%
Organophosphates^a	100
CHLORPYRIFOS ^b	20.7
ACEPHATE	15.4
DIAZINON ^b	14.5
BENSULIDE	12.5
DIMETHOATE ^c	10.1
MALATHION ^c	5.1
METHYL PARATHION ^c	4.4
AZINPHOS-METHYL ^c	3.2
PHOSMET	3.1
OXYDEMETON-METHYL	2.9
ETHEPHON	2.6
NALED	2.5
METHIDATHION	1.3
METHAMIDOPHOS	0.5
PHORATE ^b	0.4
DISULFOTON ^b	0.2
FENAMIPHOS	0.2
COUMAPHOS	0.2
PARATHION	0.1
ETHOPROP	0.1
SULFOTEP	0.1
Pyrethroids	100
ESFENVALERATE ^d	24.0
LAMBDA-CYHALOTHRIN ^d	17.3
PERMETHRIN ^e	16.5
CYPERMETHRIN ^d	12.8
TAU-FLUVALINATE ^d	10.5
BIFENTHRIN ^e	6.0
(S)-CYPERMETHRIN ^d	5.4
CYFLUTHRIN ^d	5.4
FENPROPATHRIN ^d	1.6
TRALOMETHRIN ^d	0.3
GAMMA-CYHALOTHRIN ^d	0.2
DELTAMETHRIN ^d	0.0
RESMETHRIN ^e	0.0
Carbamates	100
METHOMYL	59.1
CARBARYL	19.3
OXAMYL	10.8
METHIOCARB	6.2
CARBOFURAN	2.4
FORMETANATE HCL	1.3
FENOXYCARB	0.9

Pesticide	%
Organochlorines	100
DIENOCHLOR	61.4
DICOFOL	28.0
ENDOSULFAN	9.5
ALPHA-CHLOROXYDRIN	0.4
LINDANE	0.4
METHOXYCHLOR	0.4

^aDDVP and tetrachlorvinphos are not listed as they represented less than one tenth of the total number of organophosphate applications. ^bOrganophosphate known to produce diethylalkylphosphate metabolites (DEP). ^cOrganophosphate known to produce dimethylalkylphosphate metabolites (DMP). ^dType 2 pyrethroid. ^eType 1 pyrethroid.