Ban Chlorpyrifos.

Babies' brains are at stake.

The [UC Davis CHARGE Study](#) (2014) found that for every 100 pounds of chlorpyrifos applied within 1 mile (1.5 kilometers) of a pregnant woman, her child's chances of having Autism Spectrum Disorder (ASD) increase by 14%. That means 200 pounds would increase chances by 28%; 300 pounds by 42%, etc. Over the course of a 9-month pregnancy, the average monthly nearby application is only 11 pounds, correlating with a 14% increase in likelihood of a child with ASD. Employing the same methods for estimating chlorpyrifos use as the CHARGE researchers, we find fourteen schools in Ventura County that had more than 133 pounds of chlorpyrifos within 1 mile in 2016, including three with more than twice the 11 pounds per month average. That would mean a minimum 30% increase in the odds of having a child with autism, according to the correlations found in the UC Davis study.

Chlorpyrifos used in Ventura County/ Prenatal proximity & increased autism in children, 2016—more than 20% increase in chance of autistic child
re: CHARGE (UC Davis)

School	City	Pounds of chlorpyrifos within 1.5 kilometers (0.93 mile)*	*Increase* in chances of having autistic child**	Chances of having autistic boy***
Mesa Elementary	Somis	419	44%	3.89%
Briggs Elementary	Santa Paula	410	43%	3.87%
Academy of Tech. & Leader.	Ventura	296	31%	3.55%
Somis Elementary	Somis	240	25%	3.39%
Sheridan Way Elementary	Ventura	233	24%	3.36%
Santa Clara Elementary	Oxnard	217	23%	3.32%
Rio Mesa High School	Oxnard	193	20%	3.26%

*GIS mapping used at 1.5-kilometer radius from school center. Proportion of the PLS squares covered by the 1.5-kilometer radius circle (with corresponding proportion of poundage) added together to estimate pounds applied.
**Using formula: Chlorpyrifos pounds/133 pounds*(14% increase in ASD chances). Annual figure adjusted to correspond to average monthly applications during 9-month pregnancy: (100 pounds/9 months)* 12 months = 133 pounds.
***Based on most recent data indicating that **autism affects 1 in 37 boys or 2.70%** from https://www.autismspeaks.org/what-autism/facts-about-autism

A [UC Berkeley CHAMACOS Study](#) (2017) found that for every 522 pounds of combined organophosphate pesticides, including chlorpyrifos, applied within 1 kilometer (0.62 mile) of a pregnant woman, her child tended to lose more than 2 IQ points. Eight Ventura County schools had between 515 and 1,523 pounds applied in 2016 within 1 kilometer, which may indicate IQ loss of between 1.6 and 4.8 points. See table below for the alarming details.

Organophosphates (OP) in Ventura County/ Prenatal proximity & IQ loss, 2016— above 500 pounds
re: CHAMACOS (UC Berkeley)

School	City	Pounds of combined organophosphates within 1 kilometer (0.62 mile)*	Amount of OP total that was chlorpyrifos (pounds)	Estimated IQ point loss by time child is 7 years old**
Laguna Vista Elementary	Oxnard	1523	13	-4.8
Rio Mesa High School	Oxnard	697	69	-2.2
Mesa Elementary	Somis	614	182	-1.9
Providence School	Oxnard	561	4	-1.8
Somis Elementary	Somis	559	56	-1.8
Tierra Vista Elementary	Oxnard	542	41	-1.7
Lemonwood Elementary	Oxnard	522	2	-1.7
Rio Plaza Elementary	Oxnard	515	0	-1.6

*GIS mapping used at 1-kilometer radius from school center. Proportion of the PLS squares covered by the 1-kilometer radius circle (with corresponding proportion of poundage) added together to estimate pounds applied.
**Using formula: OP total pounds/696 pounds*(-2.2 IQ points). Annual figure adjusted to correspond to average monthly applications during 9-month pregnancy: (522 pounds/9 months)* 12 months = 696 pounds.

Our community is asking the same question about chlorpyrifos posed by [Kim Harley, a CHAMACOS researcher](#): "At a certain point, you have to say, **'How much proof do we need before we act?'**" (*Sierra*, September/October 2018, emphasis added).