



The CHAMACOS Study

The Center for the Health Assessment of Mothers and Children of Salinas



Our Mission

We work to understand and reduce the risk of environmental hazards to pregnant women and children's health in the Salinas Valley, CA, one of the largest agricultural regions in California.

Social Impacts on Health

Our research indicates that having more stress may increase the health effects of some chemical exposures. For example, study participants facing higher stress related to fear of deportation also had higher risk factors for heart disease.

Organophosphates (OPs)

Pesticides are chemicals designed to kill pests. OPs are a common class of insecticides in the US. OPs are banned for home use because of their harmful effects on humans. Use of OPs is declining in Monterey County, but about 200,000 lbs are used each year.



Key Findings from CHAMACOS

Exposure to OPs during pregnancy was associated with:

- Shorter pregnancies
- Poorer development in children
- Increased risk of attention problems in children
- Some people are more likely to experience harmful effects from OPs because of their genes

What is CHAMACOS?

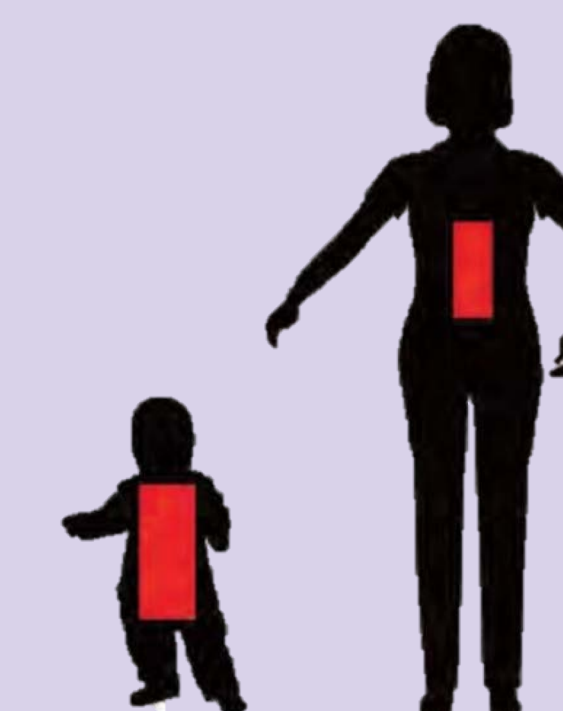
The CHAMACOS study is a long-term study of 600 pregnant women and their children living in the Salinas Valley. We have followed these children since birth and measured their exposures to pesticides and other chemicals. We have monitored how these chemicals may affect physical development, mental development and other health outcomes.



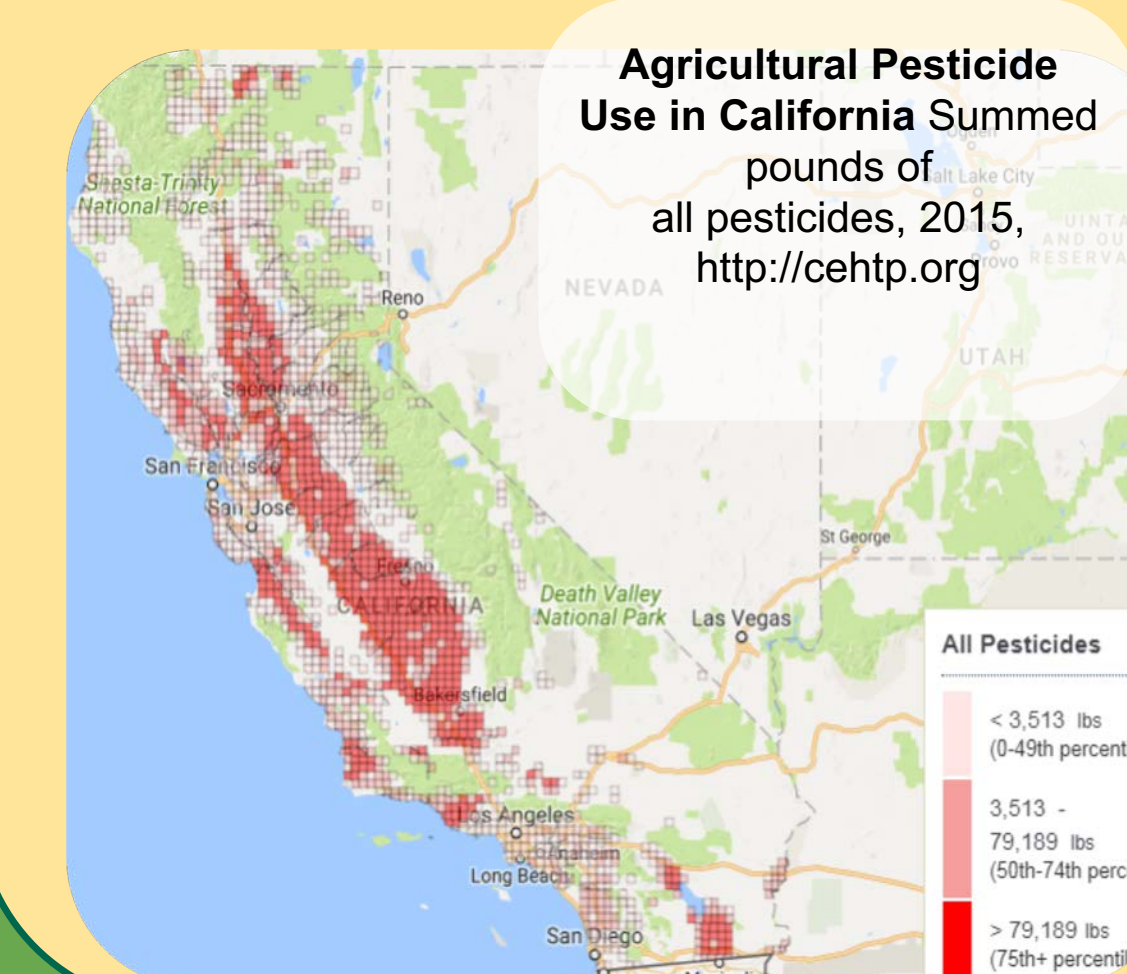
How can the Environment Affect Your Health?

We are all exposed to chemicals everyday. Touching, breathing, eating, or drinking chemicals comes with varying risk. Sometimes exposure to just a tiny bit of a chemical, over a long time period, can have important health impacts.

Life stages when rapid developments happen, such as pregnancy or early infancy are also times when people may be more vulnerable. Extra cautions should be taken!



Pesticide Use in California



- About 200 *million* pounds of pesticides are used in California every year.
- In 2015, about a quarter of these were considered hazardous to health.
- California accounts for about 20% of agricultural pesticide use in the U.S.

Flame Retardants (PBDE's)

PBDEs are used to reduce the flammability of items like furniture, textiles, carpet, etc. However, they can leak into the environment, especially in people's homes and take years to go away. PBDEs have been detected in almost all people in the U.S.



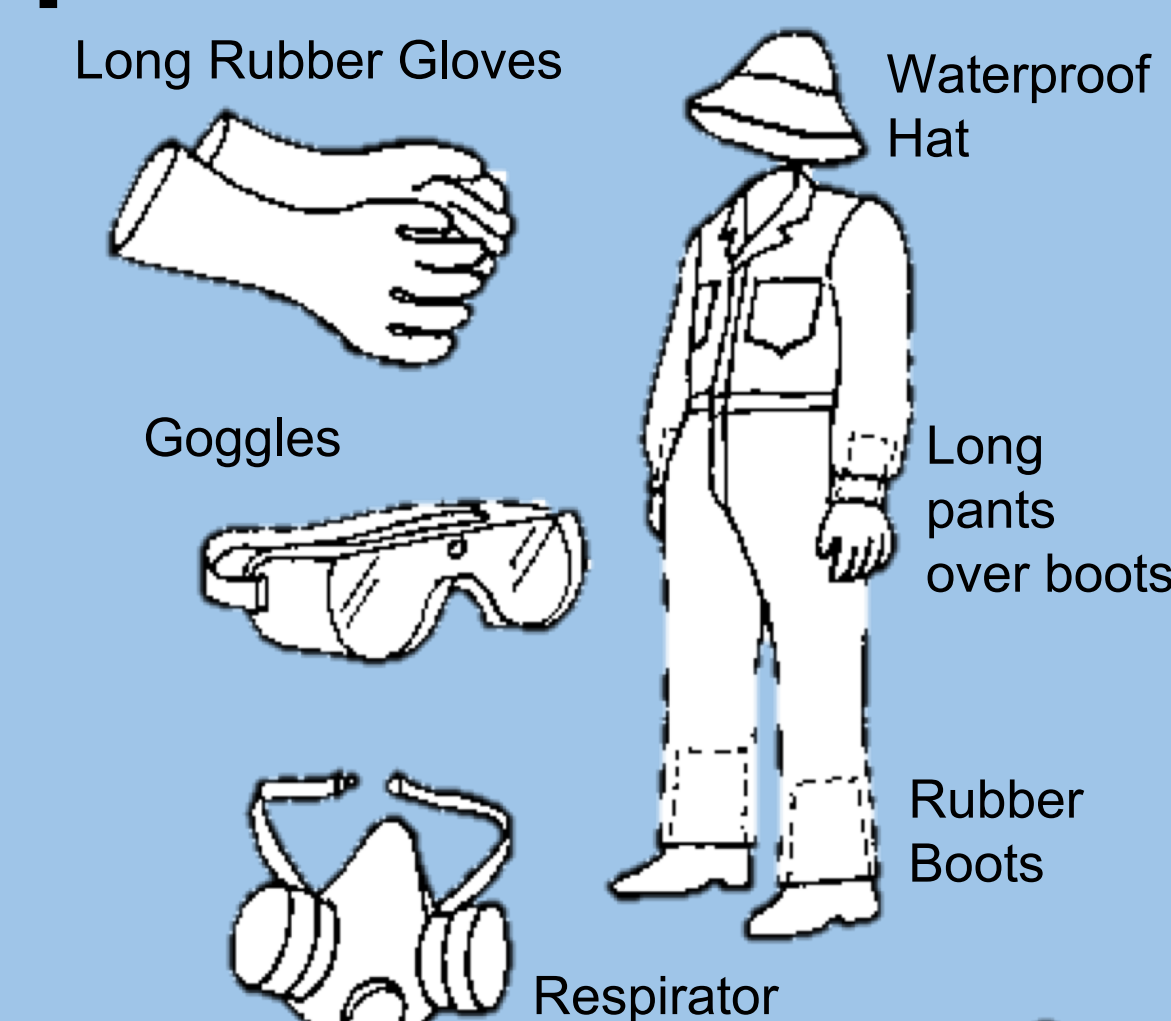
Key Findings from CHAMACOS

- Flame retardants may affect hormones and development in children
- Flame retardants are found in breast milk, which can increase exposure to young children

What Can You Do?

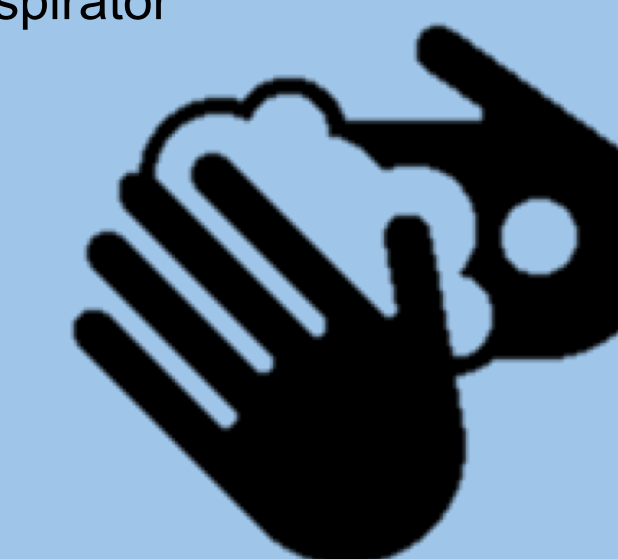
Farmworkers:

- Wear gloves and clothing that protect your full body
- Wash your hands before eating and after work
- Change out of work clothes before coming home
- Shower before playing with your kids



Living Near Agricultural Fields:

- Don't let your children play in fields
- Keep shoes outside or near the door
- Wash your children's hands frequently
- Wash fruits and vegetables
- Keep your house clean using safer "green" products



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