

# BIOMONITORING

California

Matters

## The CARE Study Is Headed Your Way!

CARE  
Study

California Regional  
Exposure Study

Are there chemicals in your body that could harm your health? The **California Regional Exposure (CARE) Study** can help you find out.

The CARE Study is part of California's efforts to reduce our contact with harmful chemicals. There are chemicals all around us—in the environment, in our food and water, and in the products we use. The CARE Study will help us understand how Californians are exposed to lead, mercury, and other harmful metals by testing their blood and urine samples. The study will also

**Earn \$50 and learn about chemicals in your body!**

For more information about the CARE Study and how to participate, visit [cdph.ca.gov/CARE](http://cdph.ca.gov/CARE).

measure PFASs, which are chemicals used to make things water- or grease-resistant.

The CARE Study will measure chemical levels in people throughout the state, and compare the levels between different regions and over

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## It's a truck... It's a train... It's... diesel exhaust??

You've probably seen (or smelled!) diesel exhaust, which can look like black smoke coming from the exhaust pipes of vehicles and other machinery that run on diesel fuel. This includes some types of trucks, trains, and ships,

as well as heavy-duty equipment like bulldozers and tractors. Even if you don't see or smell the exhaust, you could still be breathing it in.

### What's the concern?

Diesel exhaust can affect people's health in many ways, including making asthma worse and increasing cancer risk. The California Air Resources Board has made progress in reducing diesel air pollution in our state, but there is more to be done. For example, truck drivers and people who live near ports or busy roadways can still have a lot of exposure to diesel exhaust. Jean Kayano of the Center for Community Action and Environmental Justice

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## QUICK TIP

### Clear out those dust bunnies!

It's hard to keep up with household chores, but cleaning up dust and dirt can help remove chemicals from your home. This is because some chemicals can come out of furniture, products you buy, and other things in your home, and collect in dust. The best way to deal with house dust and dirt is to clean your floors regularly using a wet mop or vacuum with a HEPA (high-efficiency particulate air) filter, and use a damp cloth for dusting.

#### *CARE Study, continued from pg. 1*

time. The study started in LA County last year, enrolling 430 people, and will move to a different area of California each year.

The CARE Study is now in Riverside, San Bernardino, Imperial, Mono, and Inyo counties.

We will be in the area through May 2019, enrolling 300 people. Participants will earn \$50 and receive personalized test results.

#### *Diesel Exhaust, continued from pg. 1*

([ccaej.org](http://ccaej.org)) told us about the impact of diesel trucks in San Bernardino and Riverside, commenting that the community of Mira Loma experiences “about 800 trucks an hour during the day.” That’s one truck every five seconds!

#### **How can Biomonitoring California make a difference?**

We know that there is diesel exhaust in our air, but how do we know if diesel exhaust chem-

icals are getting into people’s bodies? That’s where biomonitoring comes in.

The East Bay Diesel Exposure Project (EBDEP) and the California Regional Exposure (CARE) Study are two Biomonitoring California studies that are testing people’s urine for chemicals that come from diesel exhaust, and looking for differences over time and across communities. We also ask participants about their jobs and daily activities to help us better understand how people are exposed to diesel exhaust.

We’re not just measuring diesel exhaust chemicals in people—we’re also looking for ways to support communities in reducing exposures to air pollution. This could include researching air filtration systems for schools and homes, or looking for local sponsors to donate indoor and outdoor plants.

For more information about diesel exhaust, visit [ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health](http://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health) or the EBDEP webpage, [biomonitoring.ca.gov/projects/east-bay-diesel-exposure-project](http://biomonitoring.ca.gov/projects/east-bay-diesel-exposure-project). Find out about joining the CARE Study at [cdph.ca.gov/CARE](http://cdph.ca.gov/CARE).



# Spotlight on Chemicals: PFASs

Do you eat take-out French fries or microwave popcorn? Do you use protective sprays on your favorite shoes, or have stain-resistant carpet in your home? Then you've probably been exposed to chemicals called perfluoroalkyl and polyfluoroalkyl substances (PFASs). There are thousands of PFASs, which are some of the longest-lasting chemicals ever made. PFASs have spread throughout our environment and are found everywhere we look: from house dust in China, to polar bears in the Arctic, to people right here in California.

## What are PFASs used for?

PFASs are used to make products resistant to oil, stains, grease, and water. Everyday items that could contain PFASs include:

- Stain- or water-resistant carpets, furniture, and clothing
- Grease-repellent take-out containers, fast-food wrappers, and microwave popcorn bags
- Protective sprays, polishes, waxes, and cleaning products
- Personal care products, such as skin lotion, eye makeup, and dental floss

## How can PFASs get in your body?

- Eating foods that contain PFASs, such as some meat and fish, vegetables grown with PFAS-contaminated water, or food that comes in certain grease-repellent containers and wrappers.
- Drinking and cooking with water that contains PFASs.
- Getting house dust on your hands and preparing or eating food. Dust can contain PFASs from products in your home.
- Inhaling or swallowing PFASs when using products that contain them, like certain sprays or waxes.

## What are the health concerns for PFASs?

PFASs may harm the growing fetus and child; affect the immune system and liver function;



*PFASs are found in grease-repellent packaging, like some microwave popcorn bags.*

increase the risk of thyroid disease; interfere with the body's natural hormones; and increase cancer risk. Manufacturers are removing some of the older, more toxic PFASs from products, but the replacements are not well studied and may also be harmful.

## What are possible ways to reduce your exposure?

- Include plenty of variety in your diet, and eat less food in grease-repellent packaging.
- Avoid buying carpets, furniture, clothing, and other products labeled as stain resistant or water resistant.
- Check labels on household and personal care products, and avoid those with "fluoro" ingredients. Contact the manufacturer if you can't find the ingredients on the label.
- If you choose to use protective sprays, polishes, waxes, or similar products, make sure you have enough ventilation and follow other safety precautions on the label.
- Wash your and your children's hands often, especially before preparing or eating food.
- Clean your floors regularly, using a wet mop or a vacuum with a HEPA filter if possible, and use a damp cloth to dust.

## How can biomonitoring help?

Biomonitoring is a way to measure how much contact people have had with PFASs and other

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## What is biomonitoring?

Biomonitoring is a way to measure chemicals in a person's body, usually by analyzing blood or urine samples. It's an important tool, because it can tell us how much contact a person has had with a chemical from all kinds of sources, like air, water, dust, food, and consumer products.

## Got metals... in your body?

Did you know that we come into contact with metals, like lead and mercury, all the time? This can happen in lots of ways, from the products we use, at the places we live, or through the jobs we do. Metals exist naturally in the earth and are used by many industries. They can get into the water we drink and the foods we eat, such as rice and fish. Metals can also be in soil and dust in and around our homes, and in everyday items like jewelry, paint, ceramics, batteries, and plumbing fixtures.

Some metals, like cadmium, lead, and mercury, are toxic even at low levels. Other metals, like iron, manganese, and zinc, are good for us in the small amounts that we get from food. But you can get too much of a good thing—for example, if you do a lot of welding, you might end up with high levels of manganese in your body, which can harm your health.

We can learn how much of a particular metal is in a person's body by testing blood or urine samples. For example, doctors routinely

test young children's blood for lead, because it is especially harmful to growing kids. If the results are high, families are given advice on how to reduce their contact with lead.

The CARE Study is testing people across California for metals and other chemicals. CARE Study participants will get test results showing levels of certain metals in their bodies, along with information on possible sources and tips for reducing their exposures in the future. The results from this study can tell us if people come into more contact with metals in one part of the state than another. We will also compare the levels in California to levels in the general U.S. population.

Visit [biomonitoring.ca.gov/chemicals/metals](https://biomonitoring.ca.gov/chemicals/metals) to learn more about metals and find information on studies that measure metals in communities across the state. For more information on the CARE Study and how you can participate, visit [cdph.ca.gov/CARE](https://cdph.ca.gov/CARE).

### *PFAS, continued from pg. 3*

chemicals, by testing samples of their blood. To find out how people might have been exposed to these chemicals, we ask them about their daily activities and habits.

Biomonitoring California is measuring PFASs in the CARE Study. Starting in November 2018, people in Riverside, San Bernardino, Imperial, Mono, and Inyo counties can sign up for the study at [cdph.ca.gov/CARE](https://cdph.ca.gov/CARE).

The CARE Study will help us learn about exposures to PFASs across the state. Our findings can support regulatory policies and other efforts to reduce harmful chemical exposures for everyone.

### For more information

Visit our website, [biomonitoring.ca.gov](https://biomonitoring.ca.gov), to find fact sheets on the chemicals we measure and learn more about biomonitoring.