

Perchloroethylene (PCE)

This sheet is about exposure to perchloroethylene in pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

What is perchloroethylene?

Perchloroethylene (PCE) is a chemical that has been used as a degreaser and as a dry-cleaning agent. It has also been in paints, spot removers, printing inks, household cleaners and glues. Other names for PCE include PERC, perchlor and tetrachloroethylene.

How would I be exposed to PCE?

PCE is a liquid that quickly evaporates (turns into a gas). PCE can be released into the air when it is being made and when it is being used. It can get into water and soil when there is an accidental spill or a leak. PCE enters our body mostly through the air we breathe. People could also be exposed from getting it on the skin or from drinking contaminated water.

How can I limit exposure to PCE?

The use of PCE among industries, such as dry-cleaning, has been decreased over the past 35 or so years. Because of this, levels of PCE in air measurements have been dropping. In addition, newer dry-cleaning machines and practices have greatly lowered worker exposure to PCE.

To lower exposure, products with PCE should be used outside. If you are using products with PCE inside the house, open doors and windows and turn on all fans in order to bring in fresh air. Air out dry cleaning before bringing clothes into the house or before you wear them.

If you work with PCE or other chemicals, make sure that you use all recommended protective gear as outlined by the product's safety data sheet (SDS). Employers should provide the proper safety gear and SDS. Always follow the directions outlined in the SDS on how to store, use, and clean up the products you use.

The Occupational Safety & Health Administration (OSHA) has information on how to reduce exposure to PCE and has set limits to exposure for PCE in the workplace. If you are concerned that your workplace is not following these OSHA standards, contact The National Institute for Occupational Safety and Health (NIOSH). They offer a free service called Health Hazard Evaluation (HHE): <https://www.cdc.gov/niosh/hhe/contact.html>. The HHE investigates workplace exposure concerns like this. You can also see our MotherToBaby fact sheet on Reproductive Hazards of the Workplace at <https://mothertobaby.org/fact-sheets/reproductive-hazards-workplace/> for general tips on working with chemicals.

Does the level of exposure (high versus low) to PCE matter?

Like other chemical exposures, the amount (level) and duration (time) is important in thinking about the chance for problems. In general, an ongoing exposure through a work setting would be expected to give a higher total exposure than an occasional household exposure. Smell is not a good measure of the level of exposure for chemicals. If someone becomes very ill from a chemical exposure, this may signal a higher exposure.

What are the side effects of PCE exposure?

The effects of PCE depend on how often and for how long people are exposed. People exposed to high amounts of PCE might have dizziness and nausea. They may also have headaches, confusion, or itching of the eyes, throat and nose. If PCE is on the skin, it could cause redness and/or blistering.

Can exposure to PCE make it harder for me to get pregnant?

It is not known if exposure to PCE alone would make it harder to get pregnant. Old studies from the 1970s to the 1990s do not agree if there would be a longer time to pregnancy from being exposed to PCE by working at a dry cleaner business. Available studies have not measured the persons' actual level of exposure to PCE.

Can exposure to PCE increase the chance for miscarriage?

Miscarriage can occur in any pregnancy. Old studies from the 1970s to the 1990s suggested that long-term exposure to high levels of PCE at work might increase the chance for miscarriage. However, not all studies found a higher chance for miscarriage. Currently, dry-cleaning machines are better at reducing a worker's exposure to PCE. This means high level exposure would be unlikely in workplaces that follow proper use and storage of PCE. General exposure to background levels is unlikely to increase the chance for miscarriage.

Can exposure to PCE increase the chance for birth defects?

Every pregnancy starts out with a 3-5% chance of having a baby with a birth defect. This is called the background risk. Based on the studies reviewed, it is unlikely that PCE would increase the chance for birth defects.

Can exposure to PCE increase the chance for pregnancy complications?

Available studies have not measured the persons' actual level of exposure to PCE so it is difficult to apply study findings. However, most studies do not find an increased chance for babies to have low birth weight (weighing less than 5 pounds, 8 ounces (2500 grams) at birth) or be delivered premature (birth before 37 weeks gestation).

Can exposure to PCE increase the chance of long-term problems in behavior or learning for the baby?

Based on the studies reviewed, it is not known if exposure to PCE would increase the chance of long-term problems in behavior or learning for the baby. Available studies have not measured the level of exposure to PCE and not separated out childhood exposures from pregnancy exposures.

I work around PCE and I am breastfeeding my baby.

PCE can enter breast milk but there are no recent reports looking for side effects related to breastfeeding while exposed to PCE. The Centers for Disease Control and Prevention (CDC) reports that for most persons the benefits of breastfeeding would outweigh possible concerns with environmental chemicals in general. They note that side effects for a nursing infant have been reported with environmental chemicals when the breastfeeding person is clinically ill from the chemical exposure. Be sure to talk to your healthcare provider about all your breastfeeding questions.

If a male works around PCE, can this make it harder get a partner pregnant or increase the chance of birth defects?

Some studies have suggested that PCE might cause changes in sperm that could make it harder to get a partner pregnant. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/>.

Whom can I contact for more information?

If you have specific concerns regarding your work site discuss them with your healthcare provider or call MotherToBaby. In addition you or your employer could contact an industrial hygienist (<https://www.aiha.org/about-ih/Pages/Find-an-Industrial-Hygienist.aspx>) to have your work site evaluated for ways to make your work site as safe as possible. Small businesses can also contact OSHA's on-site consultation services to help determine whether there are hazards at their worksite: 1-800-321-OSHA (6742).

Please click here for references

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at [MotherToBaby.org](https://mothertobaby.org).

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