



MotherToBaby

Medications & More During Pregnancy & Breastfeeding  
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**

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## Perchloroethylene (PCE)

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to perchloroethylene may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

### ***What is perchloroethylene (PCE)?***

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 tetrachloroethene.

### ***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 water that has been contaminated.

The use of PCE among industries, such as dry-cleaning, has been lowered over the past 30 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.

### ***How can I limit exposure to PCE?***

To lower exposure, use products with PCE outside. If you are using products with PCE inside the house, open doors and windows. Turn on all fans. This will help 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 your workstation's fan is working correctly and is always on. This will help to remove PCE before it enters the air inside your workspace. Wear protective gear (such as chemical protective clothing, gloves and eye protection) as outlined by the product's material safety data sheet (MSDS). Always follow the directions outlined in the MSDS on how to store, use, and clean up the products you use. Your employer should provide the proper safety gear and MSDS.

If you work in the dry cleaning industry, the Occupational Safety & Health Administration (OSHA) has information on how to reduce exposure to PCE at <https://www.osha.gov/dsg/guidance/perc.html>. OSHA also has limits to how much exposure there should be 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). 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/pdf/>) for general tips on safely working with chemicals.

### ***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.

### ***Is there treatment for exposure to PCE?***

There is no treatment that can remove PCE from your body. However, our bodies get rid of PCE when we breathe out and when we go to the bathroom. PCEs can be measured in blood and urine if the tests are done within a few days after the exposure. However, test results cannot determine what health problems might result.

### ***Can exposure to PCE increase the chance for miscarriage?***

Old studies from the 1970s to the 1990s suggested that women who worked with PCE and had long-term exposure to high levels, might be an increased risk for miscarriage. However, not all studies found a greater 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 most work places that follow proper use and storage of PCE. General exposure to background levels would be unlikely to significantly increase the chance for miscarriage.

### ***Will exposure to PCE increase the chance for birth defects or other pregnancy complications?***

Unlikely. Studies have not found a significant increase in birth defects. Studies also found that PCE did not increase the chance for low birth weight or babies being born too early.

### ***I work around PCE, can I breastfeed my baby?***

Yes. Studies show that PCE can get into the breast milk of women who are exposed to high amounts of PCE over long periods of time. Few studies have looked at how PCE in breastmilk would affect nursing infants. There are reports of infants having rashes (including diaper rash), diarrhea and thrush. Be sure to discuss all of your breastfeeding questions with your healthcare team.

### ***What if the baby's father is exposed to PCE?***

There are a few studies looking at a father's exposure to PCE. Some studies have suggested that PCE may cause changes in sperm that could make it harder for a man to get a woman pregnant. More studies are needed to confirm if this is a real concern. 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 and Pregnancy at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

### ***Whom can I contact for more information?***

If you have specific concerns regarding your work site discuss them with your health care 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) and press number 4.

- The Occupational Safety and Health Administration (OSHA): <https://www.osha.gov/dsg/guidance/perc.html>, <https://www.osha.gov/dsg/annotated-pels/tablez-2.html>
- The Centers for Disease Control and Prevention (CDC) and The National Institute for Occupational Safety and Health (NIOSH): <https://www.cdc.gov/niosh/topics/tetrachloro/>
- The American Conference of Governmental Industrial Hygienists (ACGIH®): <http://www.acgih.org/home>

### **References Available Upon Request**

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