

What is exposure?

Exposure means that you have come into contact with a chemical and it has gotten into your body. You may be exposed to a hazardous substance by breathing, touching, eating or drinking it. Many exposures happen quickly. Some happen over a long period of time.



How can exposure happen?

For chemical exposure to happen there has to be a place from where the chemical came. This place is called a source. Common sources can be a spill, drum, dump, landfill, pond, tanker or smokestack. Other sources may be car exhaust, cigarette smoke or cleaning products.

You could contact a chemical at its source, or the chemical could migrate from its source to another place where you could come in contact with it. Chemicals can move through air, surface water, groundwater, and soil.

Sometimes harmful chemicals can get in plants or animals. Exposure can happen from eating contaminated foods. For example, fish caught and eaten from a polluted pond can lead to chemical exposure.

How can a chemical get into your body?

If you come in contact with a chemical, there are three ways it can get into your body by:

1. **Breathing (inhalation) air that has a chemical in it.** Some chemicals come in the form of dusts, mists, or gases. Some of these chemicals may stay your the lungs and damage lung cells. Other chemicals may pass through your lungs and enter your bloodstream. These chemicals can affect other parts of your body.
2. **Eating or drinking (ingestion) something with a chemical in or on it.** Your stomach can absorb chemicals from the foods you eat or the liquids you drink. Chemicals can also be accidentally ingested by swallowing dust or soil. Some chemicals may pass from your stomach and enter your bloodstream.
3. **Touching (contact) a chemical or something that has the chemical in or on it.** Some chemicals can pass through your skin and enter your bloodstream. If these chemicals enter your bloodstream, they can affect other parts of your body.



The Environmental Epidemiology Program is funded through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR is the federal public health agency whose mission is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution in the environment. ATSDR describes environmental public health topics on their Website (www.ATSDR.cdc.gov).

If you are exposed to a chemical, will you get sick?

Whether you will get sick depends on a number of factors about the exposure. It may depend on the way the chemical got into your body. It may also depend on how much of the chemical got into your body. Some chemicals are very harmful and just a small amount will make you sick. Other chemicals are less harmful, and it takes a lot of the chemical to make you sick.

Factors that play a part in whether you will get sick from a chemical exposure are:

- the **type** of chemical;
- the **toxicity** of the chemical (how harmful it is);
- the **amount** (how much of a chemical you were exposed to);
- the **duration** (how long the exposure was);
- the **frequency** (how many times you were exposed).

Also, people respond to chemicals in different ways. Some people may be exposed to a chemical and not get sick. Other people may be more sensitive to a chemical and get sick from an exposure. For example, children can be more sensitive to chemicals and may get sick more easily than adults. Some health effects only happen after exposure to a chemical on a regular basis for a long period of time. Many symptoms such as nausea or headache may go away when exposure stops.

**If you are not
exposed
to a chemical,
it cannot make you sick.**

How can I stop or reduce exposure to a hazardous substance?

Once exposure to a hazardous substance has been identified, several approaches can be used to reduce or stop the exposure. If a chemical is found in your water, then use a water filter or bottled water. If a chemical is in soil, then wash your hands after working in the soil and before eating. When near the contaminated soil, avoid putting your hands near your mouth or creating dust. Clothes and shoes should also be washed. If a chemical is in the air, then an air purifier or air filter may help to clean the air. The Department of Health provides advice for reducing or eliminating exposure at all sites we work on.



**If you have any questions
please contact:**

Environmental Epidemiology Program
Tennessee Department of Health
Communicable and Environmental
Disease Services
1st Floor Cordell Hull Building
425 5th Avenue North
Nashville TN 37243

615-741-7247

or toll-free

1-800-404-3006

during normal business hours

On the Internet at:

<http://health.state.tn.us>



Department of Health.
Authorization No. 343984, 09/08
Website only