

Cancer Risk: Environmental Factors



There may be no single cause of cancer. In fact, cancer can be tied to a wide range of factors. Some of these are lifestyle choices, such as tobacco use, especially smoking. Others can be tied to genetics. And some cancer risk factors have nothing to do with your genes or your habits. For instance, you may increase your risk of cancer by being exposed to substances and chemicals in certain environments. This exposure can happen outside, at work, or in your home.

You likely already know about some of the environmental risk factors for cancer. For instance, the radiation found in sunlight (called UV or ultraviolet radiation) has been linked to skin cancer. This is because UV radiation is powerful enough to alter the DNA in our skin cells. Generally, this is what makes some substances dangerous. They damage DNA, meaning they alter cell reproduction.

We come in contact with many substances and chemicals in our daily lives. Some of these are helpful to us. They may play key roles in keeping our homes clean and making our medicines work. But some are harmful to our health. Those that cause cancer are called carcinogens. A list of known and likely human carcinogens is available on the [American Cancer Society website at www.cancer.org](http://www.cancer.org).

Being exposed to harmful chemicals and substances doesn't mean you are guaranteed to get cancer. It often takes a long time or repeated exposure for them to damage the body. But that doesn't mean you should take them lightly. Take steps to avoid risky environments as much as possible. And talk with your healthcare provider if you have any concerns about harmful exposures.

Air pollution

One of the most common environmental risk factors for cancer is air pollution. This can mean the air in a congested part of town. But it can also mean the air in your home. Some common air pollutants include:

- **Tobacco smoke.** This contains many harmful chemicals. Even secondhand smoke can be dangerous. This is especially the case when indoors.
- **Fumes from vehicles or factories.** These can include toxic chemicals such as sulfur dioxide, nickel, and diesel exhaust.
- **Fumes from coal combustion.** These include arsenic and particulate matter such as soot.
- **Naturally occurring pollutants.** Examples include wood dust and smoke.
- **Other indoor pollutants.** Radon gas and asbestos are especially dangerous.

These pollutants have been linked to lung cancer and cancers of the neck and head.

Water contaminants

Some dangerous substances can enter our water supply that may increase the risk of cancer. These contaminants have been linked with bladder, colon, kidney, stomach, skin, and lung cancers. Industrial waste and agricultural runoff can also contribute to this pollution. Some of these substances and chemicals include:

- Arsenic
- Disinfection byproducts such as chlorine
- Nitrates
- Per-and Polyfluoroalkyl Substances (PFAS)

Work-related risk factors

Unfortunately, some types of jobs have higher risks of cancer. This is due to increased exposure to dangerous substances or chemicals. These substances may include smoke, asbestos, engine exhaust, silica, and pesticides. These higher-risk jobs may include:

- Agricultural work
- Construction and painting
- Manufacturing and mining
- Firefighting

Ultraviolet radiation

Many workplaces have safety steps in place to minimize your exposure. They may also require you to wear personal protective equipment (PPE). It is important to follow all safety procedures. Doing so will help reduce your cancer risk. Discuss any concerns with your employer and healthcare provider. You can also file a complaint with the Occupational Safety and Health Administration if there is a dangerous situation at work.

Radiation

Ionizing radiation can be strong enough to cause cancer, specifically of the lungs and skin. This type of radiation can be found in:

- Radon gas
- X-rays
- Gamma rays

Some of these sources may be uncommon. Others are not harmful at low levels. X-rays, CT scans, and PET scans, for instance, rarely pose a risk to your health. But it is important to take steps to keep your exposure low. Talk with your healthcare provider about whether a procedure is needed. Ask about its risks and benefits.

Tips to prevent or limit your exposure

You may not always be able to stay away from carcinogens in the environment. You may, for instance, work with dangerous chemicals. You may also live in areas with high exposure. Environmental risks of cancer can be high in communities where people of color and Indigenous people live.

But this doesn't mean there is nothing you can do. Here are some helpful tips.

For outside areas

- **Check your local air quality daily.** Your phone's weather app or sites like www.airnow.gov should give air quality alerts. Take extra care when days are listed as having high ozone or as air pollution action days. Stay indoors as much as possible. If you need to be outdoors, try not to do intense activities that require deep breathing, such as running.
- **Don't drive or walk in high-traffic areas.** This may not be completely avoidable. But if you can, try to reduce your time in these environments.
- **Limit or avoid exposure to diesel exhaust.** This may be hard depending on where you live, work, or go to school. Do your best not to spend time near buses and trucks.
- **Protect your skin.** Try to keep your skin covered using long-sleeved clothing and a hat. Use sunscreen on whatever skin isn't covered.

For inside areas

- **Use indoor air filtration systems.** These may help filter out dangerous carcinogens in the air.
- **Get your water tested.** Public water systems are required to monitor chemicals in the water and keep them at a safe level. You can call your local health department or water system to get more information about your public water. If you have a private water source, like a well, consider getting your water tested regularly by a professional as advised. Consider installing a filter on your water faucet at home.
- **Review and research products.** Before you dig into your next DIY home project or use cosmetics or cleaning products, check the chemicals in products you plan to use. These may also contain harmful chemicals. For projects that involve items like paint, solvents, glue, and pressed wood products, wear the correct protective gear to lower your exposure, and work outside when you can. Always keep indoor areas well-ventilated when using any chemicals, too.
- **Follow safety procedures.** This is especially important if your work exposes you to any carcinogens. Wearing a mask, for instance, may help limit your exposure.
- **Don't smoke.** Cigarettes, cigars, pipes, and e-cigarettes contain many harmful chemicals. Smoking is also the leading cause of lung cancer. Even secondhand smoke can be dangerous. The best way to protect yourself is to not smoke. And stay away from areas where others are smoking. Ask your provider for help quitting.
- **Check radon gas levels in your home.** You cannot see or smell radon gas. So the only way to know if levels are high is to conduct a radon gas test. Most hardware stores carry radon gas testing kits. Or you can hire a professional to conduct a radon gas test with more accurate equipment.

If you can't eliminate environmental exposure, there are still things you can do to stay healthy. Talk to your healthcare provider about other steps you can take to keep your cancer risk low.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions

This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.