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## The environment and your health

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Everything around you affects the way that your body works and grows. This includes the sun, water, air, chemicals, and even noise! There are many things in the environment that are good for you, such as clean water and air, vitamin D that comes from the sun, and healthy foods. But there are also some hazards in the environment that can hurt you. These include dirty air or water, too much sun, really loud noises, and chemicals. By learning about hazards in your environment, you can take charge of your health and help clean up the earth at the same time!



This section of girlshealth.gov tells you all about the earth and how it is part of your health. You can learn about:

- [How you can help protect the environment](#)
- [How sun tans work and why they can hurt you](#)
- [Where drinking water comes from and why we need to keep it clean](#)
- [How the air gets dirty and how you can protect yourself from it](#)
- [Chemicals in your home and in products you use](#)
- [How loud noises can hurt your hearing](#)

Remember: it's up to each of us to do our part to keep the earth — and ourselves — healthy. You can start making a difference today by learning about environmental health and helping us get the word out to others!

### What do these words mean?

When talking about the environment, we sometimes have to use words that can be long or hard to understand. Here is a little bit more about some hard words in this section:

**Chemicals.** (Say: KEM-ih-calls). Chemicals can be natural (like iron, silver, or mercury) or can be made by people (like cleaning supplies or bug spray).

**Environment.** (Say: en-VYE-URN-ment). The environment is everything around you. The air you breathe, water you drink, the ground you walk on, and food you eat are all part of your environment. It's important that you know what things in the environment can affect your health and what you can do to help protect yourself and your family.

**Hazard.** (Say: HA-zurd). A hazard is a kind of danger that could hurt you.

**Pesticides.** (Say: PESS-tih-sides). Pesticides are chemicals used to kill pests such as insects, rodents, weeds, mold, and bacteria. Yet, these chemicals can also cause health problems in people.

**Pollution.** (Say: puh-LOO-shun). Pollution is putting something into the environment that makes it dirty.

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### How to protect yourself from the sun

Staying safe from the sun and UV radiation is easy if you follow the steps below every day!

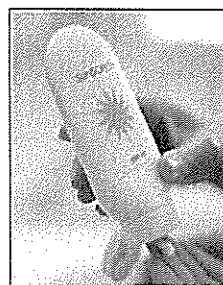
- **Avoid sunburns.** Five or more sunburns double your risk of developing skin cancer.
- **Avoid sun tanning and tanning beds.** UV light from tanning beds and the sun cause skin cancer and make your skin look wrinkled. If you want to look like you've been in the sun, think about using a self-tanning lotion. Remember that you still need to use sunscreen, even if you use a self-tanning lotion!
- **Apply lots of sunscreen.** Use sunscreen on all exposed skin. Your sunscreen should have a sun protection factor (SPF) of at least 15. Your sunscreen should protect you from both ultraviolet A (UVA) and ultraviolet B (UVB) rays. Reapply every two hours, even on cloudy days, and after swimming or sweating. Do not forget to apply sunscreen to your lips, ears, feet, hands, bald spots or a part in your hair, and the back of the neck. Also, apply it under bathing suit straps, necklaces, bracelets, and sunglasses. You should put on one ounce of sunscreen every two hours — one ounce is about the size of a ping pong ball. Use more if you are swimming or sweating. A small tube containing three to five ounces of sunscreen might only be enough for one person during a day at the beach.
- **Wear protective clothing.** Put on a long-sleeved shirt, pants, a wide-brimmed hat, and sunglasses when possible.
- **Wear sunglasses.** Wearing sunglasses protects your eyes from harmful UV rays when outdoors. Choose sunglasses with 99 to 100 percent UVA and UVB protection, to block both forms of ultraviolet rays.
- **Sit in the shade.** Remember that the sun's UV rays are strongest between 10 a.m. and 4 p.m. Try to stay in the shade if you are outside during these times.
- **Be careful near water, snow, and sand.** Water, snow, and sand can reflect the damaging rays of the sun and increase your chance of sunburn.
- **Watch the UV Index.** The UV Index provides important information that can help you plan your outdoor activities to avoid getting too much of the sun's rays. You can learn more about the UV Index in the [Sun section](#) of [girlshealth.gov](http://girlshealth.gov). Also, you can check the UV Index on most weather websites or at the [Environmental Protection Agency](#).
- **Get Vitamin D safely.** Vitamin D is an important vitamin that our bodies make when we are out in the sun. But there are other ways to get vitamin D without being in the sun. You can get vitamin D through fortified milk and orange juice, cheese, butter, cereals, and fish. You can also get vitamin D through vitamin supplements. Talk to your doctor or nurse if you have questions about vitamin D.
- **Avoid tanning oils.** They do not protect you from the sun, and may increase the chances that you will get a sunburn.
- **Tanning does not 'protect' your skin from sunburn.** You may have heard that building up a 'base tan' before going to the beach will protect you from sunburn. But this is not true! A tan is a sign of damaged skin. It does not protect you from getting a sunburn.



### What is SPF?

So what is the sun protection factor (SPF), anyway? You probably hear about it all the time, but never gave much thought to what it means. The SPF tells the relative amount of sun protection that a sunscreen will give you when used the right way. Sunscreens protect your skin by absorbing and/or reflecting UVA and UVB rays.

All sunscreens in the United States must have an SPF label. Sunscreens with an SPF of at least 15 are recommended. You should know that an SPF of 30 is not two times more protective than an SPF of 15. Instead, when used the right way, an SPF of 15



protects the skin from 93 percent of UVB radiation and an SPF of 30 protects you from 97 percent of UVB rays.

Although the SPF rating on sunscreen is for UVB rays only, many kinds of sunscreens also include ingredients that protect from UVA rays as well. These are called "broad-spectrum" sunscreens and they are highly recommended! Check your sunscreen to see if it is broad-spectrum.

### **How can I get tan without the sun?**

Sunless tanners and bronzers can give you a temporary tan without the sun. Sometimes different areas of the skin can color unevenly. Remember to always wash your hands after applying tanning lotion! The lotion can stain your hands.

Bronzers stain the skin temporarily. You can take them off with soap and water. They may streak and stain your clothes. Sunless tanners and bronzers may not contain any sunscreen. Remember to read the label! You don't want to get sunburned accidentally.

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### Health effects of air pollution

Breathing air that is not clean can hurt your health. Sometimes you have control over how clean the air around you is (for example, by choosing not to smoke). Other times, you have to deal with the air around you without having any control (for example, if your parents smoke). In either case, it is important to know about the health effects that air pollution can have on you and others. Once you know the health effects of air pollution, you can start to protect yourself from dirty air!



Dirty air can cause the following health effects:

- **Asthma.** Have you ever run until you were completely out of breath and you had to gasp for air? That is what an asthma (say: AZ-muh) attack feels like. Asthma is a common sickness that causes people to have trouble breathing. Pollution — both indoor and outdoor — can make asthma much worse. Some things that cause asthma are indoors, like animal dander (skin and fur), cockroaches, mice, mold, secondhand smoke, and dust mites. Other things are outdoors, like ground-level ozone. Luckily, there are some things you can do to reduce the triggers that cause asthma.
- **Lung cancer.** You don't have to smoke to get lung cancer. Secondhand smoke or radon can cause lung cancer, too!
- **Coughing, throat irritation, and chest pain.** If you spend a lot of time exercising on a day with bad air quality, you may cough, your throat may feel scratchy, and you may have chest pain. This is because of the particles in the air.
- **Ear infections.** Kids who breathe secondhand smoke and other air pollution on most days get more ear infections.
- **Carbon monoxide (CO) poisoning.** Carbon monoxide cannot be seen and it has no smell. However, it is very dangerous and can cause injury or death. Learn more about CO poisoning.

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### Chemicals

Chemicals (say: KEM-ih-calls) are all around us. They can be solids, liquids, or gases. Water is a chemical. Bleach is also a chemical. Sometimes chemicals come from nature (like lead) and sometimes they are made in a factory (like bug spray).

A poison is anything that could make you sick if you eat, drink, smell, or touch it. Poisons come in all shapes, sizes, and forms. Many things in your house can be poisonous. Poisons can also come from things that are common in the environment, like lead or mercury. Medicines, cosmetics, car products, cleaning supplies, arts and crafts materials, food that is improperly prepared or stored, and plants are just a few things in your home that can cause poisonings.

So what is the difference between a chemical and a poison? Well, not all chemicals are poisonous, and not all poisons are chemicals. For example, mushrooms can be poisonous, but they are not a chemical. Poisons can hurt you, and can cause health problems in a very short amount of time. This can be true of chemicals, too, but chemicals can also have effects that last a very long time (even decades). There are many things (like medicines or mouthwash) that are not poisonous when used the right way. But, when used the wrong way, these things can poison you.

### What kinds of things can be poisons?

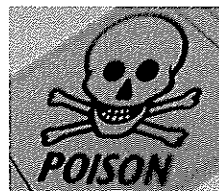
Some poisons come from chemicals that may be found in and around the home. Other poisons in the home may be pills or vitamins. They include:

- Medicines
- Cleaning products
- Laundry products
- Batteries
- Cigarettes
- Mouthwash
- Lighter fluid
- Iron pills and other vitamins
- Bug and weed killers

Some poisons may be found naturally in the environment:

- Lead
- Mercury
- Plants and mushrooms

**All of these things can hurt you, especially in high doses. [Learn more about the health effects of some chemicals.](#)**



#### Poison Emergency Number

If you think someone has been poisoned, call 1-800-222-1222 right away! Do not wait for the person to look or act sick. The Poison Center will tell you what to do.

### Why do babysitters and teens need to know about poison?

Do you babysit? Or do you have younger brothers or sisters? Then you need to learn about poisons.

Poisoning is one of the most common childhood injuries. Most of the time poisoning happens right at home. Children who are between the ages of eight months and six years old are the most likely to be poisoned.



Poisons can look like things that are good to eat and drink. They can come in many colors and forms including solids, liquids, sprays, or gases. Young children are curious. They like to put things in their mouth, especially if they look colorful or smell nice. If you babysit or help with small children, remember to watch them very closely and to keep all poisons locked up and out of reach.

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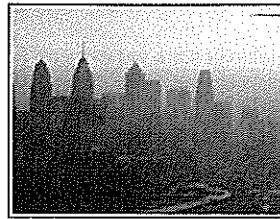
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### Air

While we don't often think about the air we breathe, we should. Clean air is important to all of us. It is important for your health. Thankfully, there are things you can do to protect yourself from dirty air.



### Indoor air pollution and outdoor air pollution

Air can be polluted indoors and it can be polluted outdoors, but it's not the same things that are making the air dirty in both places. Check out this chart to see what things cause indoor air pollution and what things cause outdoor air pollution!

Indoor pollutants	Outdoor pollutants
Animal dander (skin and fur)	Ground-level ozone (smog)
Dust mites	Dust*
Cockroaches	Dirt*
Mold	Smoke*
Secondhand smoke	Liquids*
Pesticides (either tracked in from outside or used in the house)	Industrial emissions (like smoke and chemicals from factories)
Household cleaners (spray cleaners, air fresheners)	Car emissions (like carbon monoxide)

\*All of these things make up "particle pollution." They mostly come from cars, trucks, buses, and power plants.

#### Good ozone versus bad ozone

If you have already read the [Sun](#) section of this module, you are probably thinking, *Wait a second. Isn't ozone good for us? Isn't it what protects us from UV radiation?* You're right! The ozone that is in our upper atmosphere is good ozone that protects us from the sun. **Ground-level ozone** is different, though, even though it sounds the same. Ground-level ozone is a summertime air problem that comes from a chemical reaction between certain chemicals and heat and sunlight. Ground-level ozone is bad for our health, and can make it hard to breathe. People who are active outdoors on hot summer days may be affected by high levels of ozone.

### Air Quality Index (AQI)

How do you know if the air you are breathing is clean? You can check on the Internet for your local Air Quality Index (AQI). The AQI is a guide for reporting daily air quality. It tells you how polluted or clean your air is, and if you need to do anything to protect your health. If the AQI is poor, you may need to stay indoors that day. You can also walk, ride your bike, get a ride from a friend, or take the bus to reduce air pollution from cars on days when the AQI is bad.

### Carbon monoxide

Did you know that one of the biggest dangers that may be in your house is invisible and has no smell? It's called carbon monoxide (CO). CO is a gas that is formed when a fuel like gas, oil, kerosene, wood, or charcoal is burned. Things that you have in your house — like a clothes dryer, stove, or hot water heater — may use these fuels. If the appliance fumes can get out of

the house through a vent, then the amount of CO in your house is probably not dangerous. But if the appliances are **not** vented the right way, CO can become **very** dangerous! CO poisoning can cause serious injury and even death. Here are a few things you can do to prevent CO poisoning:

- Make sure that if you use a gas or kerosene space heater, that the room is well vented. This means that the windows must be opened. Never use these things in a closed off room.
- Ask your parents to have your appliances checked once a year by a professional.
- Have an adult in your house place CO detectors (they look like smoke detectors) in the rooms where you and your family sleep. CO detectors should be placed near the floor.
- Never barbeque inside the house or garage.
- Let the drivers in your house know that running a car or lawnmower in a closed garage is... dangerous.
- Make sure that car and truck tail pipes are not clogged with snow or other things.

### Radon

Radon is a cancer-causing, radioactive gas. It is natural and comes from the earth. You can't see radon. And you can't smell it or taste it. But it may be a problem in your home. Radon levels may be highest in the lowest parts of your home, like the basement.

Radon is thought to cause many thousands of deaths each year. That's because when you breathe air containing radon for many years, you can get lung cancer. In fact, the Surgeon General has warned that radon is the second leading cause of lung cancer in the United States today. Only smoking causes more lung cancer deaths. If you smoke and your home has high radon levels, your risk of lung cancer is especially high.

Radon comes from the natural breakdown of uranium in soil, rock, and water and gets into the air you breathe. Radon can be found all over the U.S. It can get into any type of building — homes, offices, and schools — and result in a high indoor radon level. But you and your family are most likely to get your greatest exposure at home, where you spend most of your time.

Testing is the only way to know if you and your family are at risk from radon. Testing is cheap and easy. Some tests can be done in a few minutes or it can take a couple of days. Radon can be reduced in your home if you find out there are high levels. Talk to your parents or guardian and ask if they have ever tested for radon.

### Secondhand smoke

Most smokers know that smoking is bad for them. But smoke can also hurt the people around the person smoking. This smoke is called "secondhand smoke." It's a mix of the smoke exhaled by smokers and smoke from cigarettes, pipes, and cigars. Babies and young children, especially those with asthma, are most at risk from secondhand smoke. If someone in your house smokes, talk to them about quitting. If you smoke, learn some tips for quitting in the [Drugs, Alcohol, and Smoking section](#) of [girlshealth.gov](http://girlshealth.gov).

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