

Ultraviolet Radiation

Potential Damage

UV-A Rays

- Can cause skin aging and wrinkles.
- Damage outdoor plastics and paint.

UV-B Rays

- Most damaging to skin.
- Nearly 1000 times stronger than UV-A rays.
- Cause skin cancer and cataracts - a permanent clouding of the eye which reduces vision.
- Reduce the growth of plants, and may affect the health of wildlife and other animals.

UV-C Rays

- Strongest wavelength but never reaches the earth's surface because it is filtered out by the atmosphere.

When you think of summer, what is better than a gorgeous sunny day? Being exposed to too much of the sun's rays can be harmful to both you and your family. This is why it is important to be careful and learn the facts about sun safety!

Safety in the Sun

Energy from the sun sustains all life on earth. However, some forms of the sun's energy can be harmful to us. This includes the sun's ultraviolet (UV) rays. The earth's ozone layer – a thin veil of gas high in the earth's atmosphere – acts as our planet's sunscreen. In the past few years, the ozone layer has become thinner because of the effects of pollution and chemicals. Now, more of the sun's UV rays can reach the earth's surface, which is why we need to be extra careful when we are exposed to the sun!



Skin Cancer

Overexposure to UV radiation is the main cause of skin cancer. UV rays can trigger the development of skin cancer by creating changes in the cells of the skin.

Tans and sunburns are both signs that UV rays have directly damaged the skin. UV rays also cause skin cancer indirectly by weakening the immune mechanisms in the skin and the rest of the body.

There are three types of skin cancer:

1. **Malignant Melanoma:** can be fatal if not treated early.
2. **Basal Cell Carcinoma and Squamous Cell Carcinoma:** these tend to develop later in life on areas of skin that have been exposed repeatedly to the sun, such as the face, neck, or hands. They progress slowly and rarely cause death because they usually do not spread to other parts of the body.

Sunscreen Tips

Use a sunscreen that says "broad spectrum" on the label. It will help block most of the UVA and UVB rays.

Put sunscreen on your skin 20 minutes before you go out in the sun (to allow it proper time to interact with your skin) and 20 minutes after being in the sun (to ensure even application and the best protection).

Don't forget to apply sunscreen or SPF protection to your lips, ears and nose. These areas can burn easily.

Reapply sunscreen when you come out of the water or after you have been sweating if it is not water or sweat proof.



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UV Exposure depends on:

The time of day. UV is greatest at midday, and less in early morning or late afternoon.

The season. UV is greatest in the spring and summer, less in the fall, and least in the winter.

How long you're out in the sun. The longer you are out in the sun, the more UV you receive.

Cloud cover. A thick, heavy layer of cloud blocks UV. However, puffy, fair-weather clouds or layers of thin, light cloud let most of it through. So, the darker the clouds, the less the UV.

The type of surface you are on. You get much more UV on snow, sand or concrete, since these surfaces reflect the sun's rays onto your skin - much like a mirror.

Your elevation. You get more UV on a mountain than at lower elevations, as the air is clearer and thinner.

Where you are on the earth's surface. UV is strongest at the equator, and gets weaker as you move toward the poles.

The state of the ozone layer. The amount of ozone in the stratosphere varies from day to day: the more ozone, the less UV. Ozone depletion may also increase UV levels. The value of the UV Index reflects the state of the ozone layer.

What you're wearing. Summer clothes generally expose more skin to UV.

(Source: Environment Canada)



Higher UV Levels Predicted

Environment Canada predicts that ultraviolet (UV) radiation levels across Canada will be about 4% higher this summer than pre 1980 levels, due to the continued thinning of the ozone layer.

Exposure to UV radiation from the sun increases the risk of sunburn, skin cancers and cataracts and can weaken the immune system.



Environment Canada issues a UV Index forecast, available at: <http://www.weatheroffice.gc.ca> as part of the daily weather forecast - whenever the UV Index reaches 3 or more.

UNDERSTANDING THE UV INDEX		
UV Index	Category	Protection Actions
0-2	Low	Minimal protection for normal activity.
3-5	Moderate	Cover up, wear a hat, sunglasses, and sunscreen if outside for 30 min.
6-7	High	Protection required. Reduce time in sun between 11AM and 4PM.
8-10	Very High	Take full precautions and avoid sun between 11AM and 4PM.
11+	Extreme	Take full precautions and avoid sun between 11AM and 4PM.

Sun Safety Tips!

You can still enjoy your time outdoors, but it is important to take a few simple precautions. To prevent damage from the sun:

- Wear clothes that cover your skin.
- Wear a broad-brimmed hat.
- Wear sunscreen on skin that is not covered (SPF of at least 15).
- Look for Environment Canada's UV Index in your everyday forecast: you can hear it on the radio, on TV, in the newspaper or on the internet.
- Wear sunglasses that provide UVA and UVB protection.
- Try to spend less time in the sun. Seek shade between 11am and 4 pm.



SPF and Sunscreen

SPF stands for the Sun Protection Factor provided by sunscreen. It refers to the ability of the product to stop the skin from burning. The higher the SPF, the longer one can stay in the sun without burning. For example, if it takes about 10 minutes of exposure to the sun to get a sunburn, an SPF of 15 would provide approximately 150 minutes of protection. However, in actual use, protection may be less because sunscreen can be washed off by sweat and water.



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