

# Ultraviolet Radiation

## What is ultraviolet radiation?

Ultraviolet (UV) radiation comes mainly from the sun as part of the electromagnetic (light) spectrum. UV rays have wavelengths shorter than visible rays, so we cannot see or feel them. Artificial sources of UV radiation include tanning beds and welding equipment.

## How damaging is UV radiation?

When exposed to UV radiation, your body produces and releases more melanin (a skin pigment) to absorb the UV radiation. This makes your skin darken and is a sign of skin damage.

There are two types of UV radiation, UVA and UVB. Both are a serious health concern as UVA and UVB radiation can affect your skin, eyes, and immune system.

UVA causes immediate tanning (the darkening of the melanin in your skin). Repeated exposure to UVA can lead to premature skin aging, such as wrinkles, age spots, and sagging. It can also lead to some skin cancers.

UVB is more harmful than UVA. It causes delayed tanning by making your skin produce more melanin. UVB is responsible for sunburns and most skin cancers, along with cataracts and eye cancers.

Each tan or sunburn damages your skin cells and DNA. It can take years for the effects of repeated sun exposure to show.

UV radiation can also impact the health of your eyes. For example, UV exposure can contribute to premature aging of your eye lenses. This can lead to clouding (cataracts), non-cancerous growths of tissue (pterygium), loss of vision (macular degeneration), and cancer of the eyelid.

## Who is most at risk from UV radiation?

Children who are frequently in the sun are vulnerable to the effects of UV radiation. Young people who use tanning beds are also at risk.

## When and where am I most at risk?

Direct sunlight is the strongest in summer, with about 80 per cent of the UV radiation occurring between 10 a.m. and 4 p.m. UV radiation is more intense closer to the equator and at higher altitudes. Be aware of that when you travel. Clouds, haze and fog do not protect you from UV radiation. The reflection of sunlight from water, sand, snow and concrete can intensify the amount of UV radiation exposure. For example, reflection off fresh snow nearly doubles UV radiation.

## How can I protect myself and my family?

### Make a plan

Plan your outdoor activity before 10 a.m. or after 4 p.m. Stay in the shade as much as possible and use an umbrella at the beach or park. Do not expose babies under 1 year old to any intense, direct sunlight.

### Wear protective clothing

Wear a light-coloured, long-sleeved shirt and pants, UV-protective sunglasses, and a broad-brimmed hat. Avoid baseball caps that do not shade the ears or back of the neck. If you can see through your clothing, UV radiation can get through. Sun-protective suits specially made for swimming and playing outside are helpful.

### Know your skin type

Your sensitivity to UV radiation depends on the amount of pigment in your skin and your skin's ability to tan. People with fair skin and light-coloured eyes, who usually burn, are at

the highest risk of skin damage. For more information, visit Protecting Yourself from Ultraviolet (UV) Radiation:

[www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/radiation/ultraviolet-uv-radiation/protecting-yourself-from-ultraviolet-uv-radiation](http://www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/radiation/ultraviolet-uv-radiation/protecting-yourself-from-ultraviolet-uv-radiation).

If you have sun sensitivity due to a medical condition or medication, you can develop a skin rash or severe burn even from limited UV exposure.

### **Avoid tanning beds**

Avoid using tanning beds. The World Health Organization has found that UV radiation from tanning beds causes skin cancer. The risk of melanoma (the most serious skin cancer) increases by 75 per cent when tanning bed use starts before 35 years of age. In British Columbia, children under the age of 18 are banned from using tanning beds. For more information, visit Tanning Beds:

[www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/ps-es/mpes/tanning-beds](http://www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/ps-es/mpes/tanning-beds).

### **Will sunscreen protect me against UV radiation?**

The best protection against UV radiation is to stay out of the sun. If you need to be in the sun, sunscreen is your best protection against UV radiation. You can further increase your protection, by also wearing protective clothing.

Sunscreen reduces the amount of UV radiation absorbed by your skin. It will allow you to be in the sun longer than you could without sunscreen.

A sunscreen's Sun Protection Factor (SPF) shows how long you can be exposed to sunlight before sunburn occurs. The Canadian Dermatology Association recommends using sunscreen with a minimum SPF of 30, which blocks 97 per cent of UVB – the “burning” rays. SPF 50 blocks 98 per cent and SPF 100

blocks 99 per cent. Sunscreen should also be “broad spectrum,” which means it screens both UVA and UVB.

Use a minimum SPF 30 lip balm and reapply it every hour.

### **How much sunscreen should I apply?**

To get the best protection, you need to completely cover all of your exposed skin. Apply sunscreen 30 minutes before you go outside so your skin has time to absorb it. Reapply the sunscreen after you have been swimming or sweating to keep it effective. Use a sunscreen approved by the Canadian Dermatology Association.

If your child must be in the sun, you can apply sunscreen to the areas of skin that are not covered by clothing or a hat. Do not use sunscreen on children younger than 6 months.

### **How can I protect my eyes?**

Sunglasses should provide at least 90 per cent protection from UVA and 95 per cent from UVB. Sunglasses for babies and children should provide 99 to 100 per cent of both UVA and UVB protection. Large lenses and a rap-around design can help shield the eyes.

### **What is the UV Index?**

The UV Index reports on the current strength of UV radiation in your area. When it is 3 or higher, make sure you are well protected. To see the daily UV Index Forecast, go to [www.weather.gc.ca/forecast/public\\_bulletins\\_e.html?Bulletin=fpcn48.cwao](http://www.weather.gc.ca/forecast/public_bulletins_e.html?Bulletin=fpcn48.cwao).

### **For More Information**

For more information on sun safety, see [HealthLinkBC File #26 Sun Safety for Children](#).



BC Centre for Disease Control  
Provincial Health Services Authority