

What is ultraviolet radiation?

How was ultraviolet light discovered?

What is ultraviolet radiation used for?

Ultraviolet Radiation

What is the main source of UV radiation on Earth?

What environmental factors affect the amount of UV exposure you get outdoors?

Scientists separate ultraviolet rays into three categories—known as UVA, UVB, and UVC—according to wavelength. Describe each category.

UVA

UVB

UVC

What are the harmful effects of UV rays?

What are the main ways to protect yourself from UV radiation?

What are ultraviolet rays?

UV rays are an invisible form of light. They lie just beyond the violet end of the visible spectrum. The UV rays have shorter wavelengths than visible light. They are invisible to the human eye but the presence of UV radiation can be detected as it causes certain substances to fluoresce. Source: [NASA](#)

How was ultraviolet light discovered?

In 1801, Johann Ritter conducted an experiment that proved the existence of UV light. In his experiment, he found that silver chloride, which decomposes in the presence of light, is more rapidly decomposed when exposed to radiation beyond the violet end of the light spectrum. Source: [Britannica](#)

What is ultraviolet radiation used for?

- Short wavelengths are used to kill bacteria and to sterilize surgical instruments.
- Food and drug companies use germicidal lamps (UVC light) to disinfect various types of products and their containers.
- Direct exposure to ultraviolet rays with wavelengths shorter than 320 nm produces vitamin D in the body.
- To treat some skin disorders, such as acne and psoriasis.
- Some instruments use ultraviolet rays to identify the chemical composition of unknown materials.

Source: [World Book Online Article](#)

Teacher Reference

Ultraviolet Radiation

What is the main source of UV radiation on Earth?

The sun is the major natural source of ultraviolet rays. The rays can be produced artificially by passing an electric current through a gas or vapor, such as mercury vapor. Source: [World Book Online article](#)

What environmental factors affect the amount of UV exposure you get outdoors?

Sun height, latitude, cloud cover, altitude, the ozone layer, and ground reflection.
Source: [WHO](#) website

Scientists separate ultraviolet rays into three categories—known as UVA, UVB, and UVC—according to wavelength. Describe each category.

UVA (315–400 nm): **UVA** makes up most of the UV that reaches the Earth surface. It reaches the deeper layer of the skin causing skin ageing, eye damage and skin cancer.

UVB (280–315 nm): Medium-wavelength UVB is very biologically active but cannot penetrate beyond the superficial skin layers. It is responsible for delayed tanning and burning. Most solar UVB is filtered by the atmosphere.

UVC (100–280 nm): Short-wavelength UVC is the most damaging type of UV radiation. However, it is completely filtered by the atmosphere and does not reach the earth's surface. Source: [WHO](#)

What are the harmful effects of UV rays?

Being exposed to too much UV radiation causes sunburn, tanned skin, skin ageing, premature wrinkles and eye damage.

Source: [Irish Cancer Society](#)

Exposure to the sun's ultraviolet rays over a long period can cause skin cancer and other changes in human cells. Such exposure also can damage or kill plants.

Source: [World Book Online](#)

What are the main ways to protect yourself from UV radiation?

1. Be aware of the UV Index level.
2. Protect your skin from UV damage with the SunSmart Code. Seek shade from direct and indirect UV rays. Cover skin with clothes and hat. Wear sunglasses. Use sunscreen.
3. Do not use Sunbeds.

Source: [Irish Cancer Society](#)