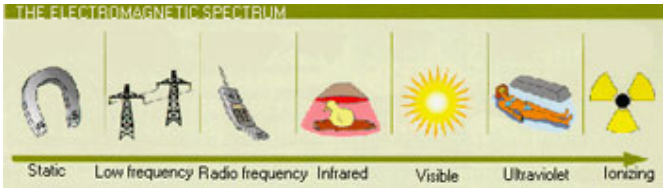
Ultraviolet radiation and health

Fuente: WHO (WHO, Ultraviolet radiation site)



What is UV radiation?

Everyone is exposed to UV radiation from the sun and an increasing number of people are exposed to artificial sources used in industry, commerce and recreation. Emissions from the sun include visible light, heat and UV radiation.

The UV region covers the wavelength range 100-400 nm and is divided into three bands:

- UVA (315-400 nm)
- UVB (280-315 nm)
- UVC (100-280 nm).

As sunlight passes through the atmosphere, all UVC and approximately 90% of UVB radiation is absorbed by ozone, water vapour, oxygen and carbon dioxide. UVA radiation is less affected by the atmosphere. Therefore, the UV radiation reaching the Earth's surface is largely composed of UVA with a small UVB component.

La radiación ultravioleta y la salud

Fuente .- OMS (OMS, sitio de la radiación ultravioleta)

¿Qué es la radiación UV?

Todos estamos expuestos a la radiación UV del sol y de un número creciente de personas están expuestos a fuentes artificiales utilizados en la industria, el comercio y la recreación. Las emisiones procedentes del sol incluyen la luz visible, el calor y la radiación UV.

La región UV abarca el rango de longitud de onda de 100-400 nm y se divide en tres grupos:

• UVA (315-400 nm)

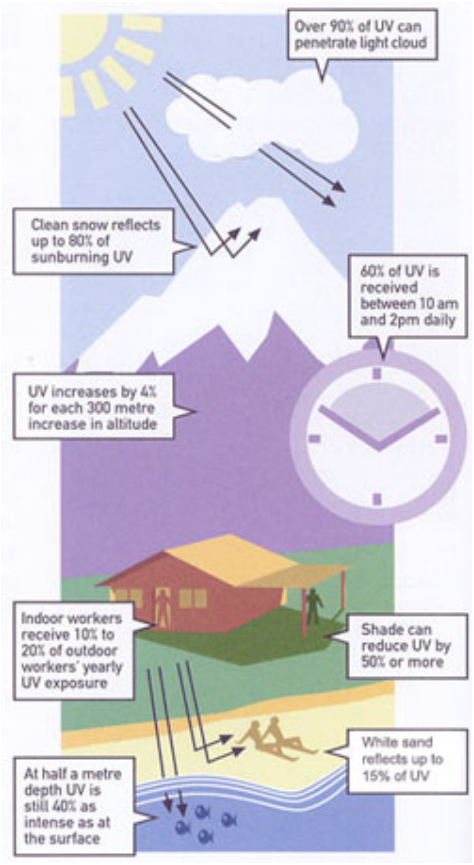
• UVB (280-315 nm)

• UVC (100-280 nm).

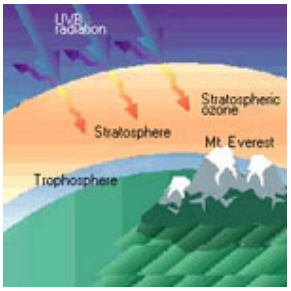
Cuando la luz solar atraviesa la atmósfera, todos los UVC y aproximadamente el 90% de la radiación UVB es absorbida por el ozono, el vapor de agua, oxígeno y dióxido de carbono. La radiación UVA es menos afectado por la atmósfera. Por lo tanto, la radiación UV que llega a la superficie de la Tierra está compuesta en gran parte de los rayos UVA UVB, con un componente pequeño.

Environmental factors that influence the UV level

- Sun height—the higher the sun in the sky, the higher the UV radiation level. Thus UV radiation varies with time of day and time of year, with maximum levels occurring when the sun is at its maximum elevation, at around midday (solar noon) during the summer months.
- Latitude—the closer the equator, the higher the UV radiation levels.
- Cloud cover— UV radiation levels are highest under cloudless skies. Even with cloud cover, UV radiation levels can be high due to the scattering of UV radiation by water molecules and fine particles in the atmosphere.
- Altitude—at higher altitudes, a thinner atmosphere filters less UV radiation. With every 1000 metres increase in altitude, UV levels increase by 10% to 12%.
- Ozone—ozone absorbs some of the UV radiation that would otherwise reach the Earth's surface. Ozone levels vary over the year and even across the day.
- Ground reflection—UV radiation is reflected or scattered to varying extents by different surfaces, e.g. snow can reflect as much as 80% of UV radiation, dry beach sand about 15%, and sea foam about 25%.



Ozone depletion and UV-related health effects



Depletion of the ozone layer is likely to aggravate existing health effects caused by exposure to UV radiation, as stratospheric ozone is a particularly effective UV radiation absorber. As the ozone layer becomes thinner, the protective filter provided by the atmosphere is progressively reduced. Consequently, human beings and the environment are exposed to higher UV radiation levels, and especially higher UVB levels that have the greatest impact on human health, animals, marine organisms and plant life.

Computational models predict that a 10% decrease in stratospheric ozone could cause an additional 300,000 non-melanoma and 4500 melanoma skin cancers and between 1.6 and 1.75 million more cases of cataracts worldwide every year.