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## Ultraviolet Radiation and Its Role in Wound Pattern Documentation

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### Abstract

The history of ultraviolet illumination in photography is discussed. Particular attention is devoted to the forensic aspects of ultraviolet photography as it relates to patterned injury on human skin. The authors discuss the theory underlying ultraviolet illumination of wounds on skin as well as the equipment required for this type of imaging.

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Ultraviolet (UV) is a form of electromagnetic radiation with wavelength from 10 (with a corresponding frequency around 30 PHz) to 400 nm (750 THz), shorter than that of visible light, but longer than X-rays. UV radiation is present in sunlight, and constitutes about 10% of the total electromagnetic radiation output from the Sun. It is also produced by electric arcs and specialized lights, such as mercury-vapor lamps, tanning lamps, and black lights. Although long-wavelength ultraviolet is not The word "ultraviolet" means "beyond violet". Ultraviolet radiation was discovered by the German physicist Johann Wilhelm Ritter in 1801. Ritter noticed invisible light beyond the violet portion of the visible spectrum darkened silver chloride treated paper more quickly than violet light. He called the invisible light "oxidizing rays", referring to the chemical activity of the radiation. Most people used the phrase "chemical rays" until the end of the 19th century, when "heat rays" became known as infrared radiation and "chemical rays" Ultraviolet (UV) radiation is a form of electromagnetic radiation that lies between visible light and x rays in its energy and wavelength. It is a component of the radiation that reaches the Earth from the sun. The broad UV band, having wavelengths between 190 nanometers (nm) and 400 nm, is conventionally divided into three parts: UV-A or near-UV (315 to 400 nm), UVB or mid-UV (280 to 315 nm), and UV-C or far-UV (190 to 280 nm). The sun is a strong emitter of UV radiation but only the near UV reaches the surface of the earth as the ozone layer of the atmosphere absorbs all wavelengths below 290 nm. Ultraviolet radiation is classified in three ranges according to its effect on the skin: UV-A (320–400 nm), UV-B (290–320 nm), and UV-C (230–290 nm).

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