



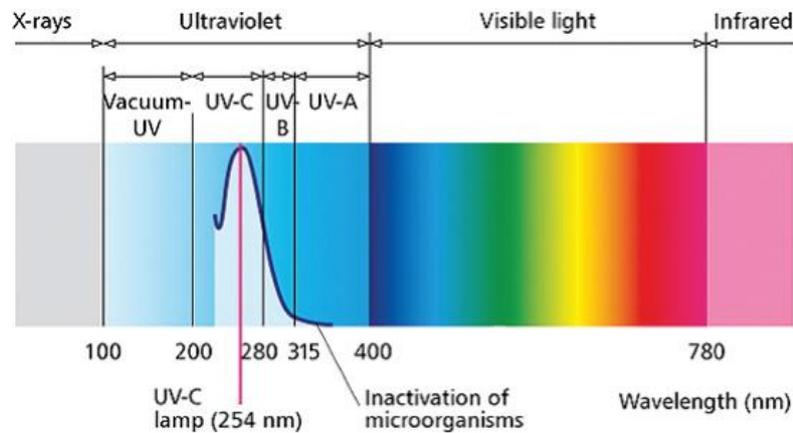
Whitepaper on Ultra-Violet Germicidal Radiation

The COVID-19 pandemic triggered many researches to study the impact of UV-C on viruses, bacteria and fungi. Aisle Rover team digs down on various aspects of UV-C and explores manufacturers at the forefront of developing technologies that will assist in providing a safe environment.

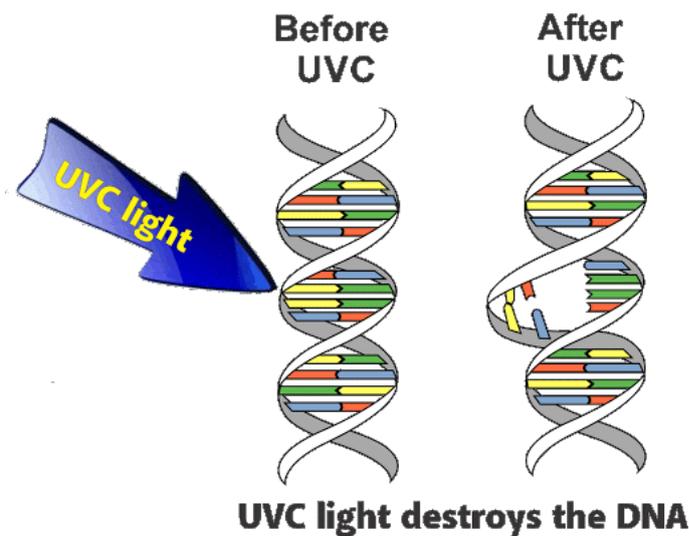
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Effects of UV-C on bacteria and viruses | Latest developments

- UV light is a particularly good option for sanitation because it kills bacteria regardless of drug resistance and without toxic chemicals.



- Studies conducted have shown that Ultraviolet (UV) light destroys the molecular bonds that hold together the DNA of viruses and bacteria.



- A direct approach to limit airborne viral transmissions is to inactivate them within a short time of their production. Germicidal ultraviolet light, or UV-C, typically at 254 nm, is effective in this context but, should be used without being in direct contact. Refer to this study published in Science Daily, a premier science news web sites, featuring latest discoveries from the world's leading universities and research organizations.

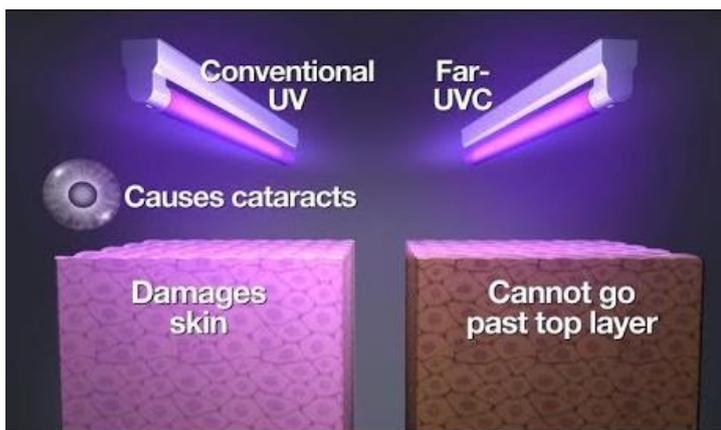
<https://www.sciencedaily.com/releases/2020/06/200624172050.htm>

- Does UV light kill viruses and bacteria? The below article published was medically reviewed by Tania Elliott, MD, who specializes in infectious diseases related to allergies and immunology for internal medicine at NYU Langone Health.

[https://www.insider.com/does-uv-light-kill-germs#:~:text=Ultraviolet%20\(UV\)%20light%20destroys%20the, resistance%20and%20without%20toxic%20chemicals.](https://www.insider.com/does-uv-light-kill-germs#:~:text=Ultraviolet%20(UV)%20light%20destroys%20the, resistance%20and%20without%20toxic%20chemicals.)

- Dr Steven Q. Wang, MD, director of dermatologic surgery and dermatology at Memorial Sloan Kettering Cancer Center in Basking Ridge, New Jersey, says “For decades, devices emitting UVC light have been used by hospitals to kill pathogens on surfaces and in the air. But because the UVC radiation is so dangerous, these devices are only used when rooms are unoccupied,” says Dr. Wang. Refer below article.

<https://www.skincancer.org/blog/can-ultraviolet-light-kill-germs/>



- New York City shut down the subway system this spring each night to thoroughly disinfect trains, and UVC light is one method being used. Cars must be empty to do this safely, and anyone operating UVC devices, on trains and in hospitals, does so from outside of the room or car.



- Defence Research and Development Organisation of India (DRDO) has also endorsed the use of UV-C by coming up with UV based disinfection devices for personal use.

<https://timesofindia.indiatimes.com/gadgets-news/drdo-develops-contactless-sanitiser-dispenser-uv-light-based-disinfection-box-to-fight-covid-19/articleshow/75203330.cms>

- International Air Transport Association (IATA) the body of global standards for airline safety, security, efficiency and sustainability has also acknowledged the use of UVC in their Aircraft Cleaning materials and devices Manual.
- Phillips along with its innovation arm Signify N.V. the world leader in lighting, together with the National Emerging Infectious Diseases Laboratories (NEIDL) at Boston University in the US have conducted research that validates the effectiveness of Signify's UV-C light sources on the inactivation of SARS-CoV-2, the virus that causes COVID-19. Refer below article link.

<https://www.signify.com/global/our-company/news/press-releases/2020/20200616-signify-boston-university-validate-effectiveness-signify-uv-c-light-sources-on-inactivating-virus-that-causes-covid19>

<https://www.signify.com/en-in/innovation/uv-c>