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## **UV Industry Associations Discourage the use of UV Light on the Human Body to Disinfect Against the Coronavirus**

### **FOR IMMEDIATE RELEASE**

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Chevy Chase, MD (April 24, 2020) Recent reports suggest that ultraviolet (UV) light can be used on the human body to disinfect against the coronavirus. The International Ultraviolet Association (IUVA) and RadTech North America are educational and advocacy organizations consisting of UV equipment vendors, scientists, engineers, consultants, and members of the medical profession. We would like to inform the public that there are no protocols to advise or to permit the safe use of UV light directly on the human body at the wavelengths and exposures proven to efficiently kill viruses such as SARS-CoV-2. UV light under the conditions known to kill such viruses can cause severe skin burns, skin cancer, and eye damage. There is information that a specific type of UV light, sometimes called “far UV-C” (at wavelengths from 200 - 225 nm) can disinfect viruses without damaging skin and eyes, but this information is considered to be preliminary and there are no protocols to ensure that it is applied effectively and safely. We strongly recommend that anyone using UV light to disinfect medical equipment, surfaces, or air in the context of COVID-19, applications that are supported by sound scientific evidence, follow all recommended health and safety precautions and to avoid direct exposure of the body to the UV light.

### **Additional Information on UV Technology for Disinfection**

The ultraviolet spectrum is a band of electromagnetic radiation at higher energies than visible light, split into four major categories: UV-A (400 – 315 nm), UV-B (315 – 280 nm), UV-C (280 – 200 nm), and vacuum-UV (VUV, 100 – 200 nm). UV-A and UV-B are present in sunlight at the earth’s surface; these parts of the ultraviolet spectrum are common causes of sunburn and, with longer-term exposure, melanoma. The risks of human exposure to UV-A and UV-B are well known. Solar UV may be used for disinfection purposes; exposures in the order of several hours to days might be effective at treating surfaces and water. Artificial sources of UV-A and UV-B are not commonly used for disinfection.

UV-C has been used for disinfection for over a century, with applications in water treatment, air systems, and surfaces. The use of UV-C as a disinfectant is supported by decades of scientific research. UV-C radiation is absorbed by DNA and RNA (the genetic code for all lifeforms), changing its structure. This damage inhibits the ability of the affected cells to reproduce,

meaning that they cannot infect and are no longer dangerous. Whereas the UV exposure required to inactivate different microorganisms varies, though there are no known microorganisms that are immune to this treatment and it is regularly used against bacteria, viruses, and protozoa.

In the same way that UV-C can inactivate bacteria and viruses, it can be damaging to human cells too, since our cells also contain DNA. This exposure can cause skin irritation, damage to the cornea, and cell mutations leading to cancer. Exposure to UV-C radiation is regulated globally, with a common agreement on the risk to human health and safe exposure levels. These regulations and standards set limits on allowable daily exposure.

In summary:

- UV-C irradiation of the skin, eyes, or any body part should be avoided wherever possible.
- Always wear appropriate personal protective equipment when handling un-shielded UV-C radiation sources (e.g. long-sleeved clothing, gloves, and a UV-opaque face shield).
- Always use UV-C devices in accordance with the manufacturer's operating instructions to ensure safe operation, and within appropriate enclosures where light leakage has been controlled, and where the risks have been properly managed.
- The case for far UV-C light (200 - 225 nm) is less certain. While evidence in the laboratory suggests that it may be safe under some conditions, based primarily on animal studies and not on longitudinal human studies, there is a lack of protocols to govern the safe construction and operation of such devices.

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