1. Research

“Feasibility study for micro-scale modelling of UV exposure”: This project revealed that it is possible to model the erythema effective UV irradiance in microscale areas. Based on this, software is to be developed that will allow architects to take UV irradiance into account when designing outdoor areas, e.g., kindergartens or schools.

“Survey about structural prevention measures against UV-induced diseases in child-care facilities and schools in Germany”: a representative quantitative online survey is conducted in which at least 1% and a maximum of 10% of all daycare centers and schools in Germany will be interviewed (results at the end of 2021).

Laser misuse: glare and eye damage: In 2020, a workshop was held on this topic. Subjects were amongst others - retina damages induced by laser pointers, laser strikes, product safety, market surveillance and legal regulations. In addition, a research project is currently underway with the aim of improving the database regarding laser attacks on pilots and vehicle drivers and eye damage caused by laser pointers.

Temporal Light Artifacts (TLA): In March 2021 a workshop was held on temporal light artifacts (flicker, stroboscopic effects and phantom array). Subjects included the biological effects of TLA, relevant scenarios as well as measurement and evaluation methods. More research is needed especially concerning the topics perception thresholds vs. acceptance, sensitive groups and appropriate measurement and evaluation procedures.

2. Legislation

Sunbeds: The legal regulations on sunbeds (Act on Protection against Non-Ionising Radiation When Applying to Humans (NiSG); Ordinance on Protection against Harmful Effects of Artificial Ultraviolet Radiation (UV Protection Ordinance)), including a ban on minors, are still not fully put into practice. On the basis of the scientific findings regarding the health and economic consequences of using a sunbed, Germany works together with other EU member states on an EU-wide solution of the sunbed issue.

Radiation protection in cosmetic and other non-medical applications: The Ordinance on Protection against the Harmful Effects of Non-Ionizing Radiation When Applying to Humans (NiSV) largely came into force on December 31, 2020. This ordinance lays down general rules for proper operation of NIR devices and obligations with regard to safe use. Anyone who uses NIR devices on humans for cosmetic or other non-medical purposes requires sound specialist knowledge and expertise. Concerning optical radiation, the focus is on applications such as tattoo removal with laser devices and permanent hair removal (epilation) with lasers or IPL devices. Certain applications, which are considered to be particularly risky and complex, may only be performed by physicians, e.g. tattoo removal with laser devices. Other applications with lasers or IPL, e.g. for permanent hair removal, may still be carried out by non-physicians, but they have to be qualified for the application of non-ionizing radiation after the respective provisions regulating the necessary expertise to apply NIR to humans come into effect in the future. A Guideline to substantiate certain provisions of the NiSV was published, containing the requirements for training courses and the relevant learning contents and objectives.

3. UV Monitoring
The BfS publishes on its website the UV index measured at the individual stations of the UV monitoring network (https://www.bfs.de/DE/themen/opt/uv/uv-index/uv-messnetz_node.html) as the daily maximum value (https://www.bfs.de/DE/themen/opt/uv/uv-index/tagesspitzenwerte/tagesspitzenwerte_node.html), the sunburn-effective UV irradiance changing over the day as the daily course of the UV index (https://www.bfs.de/DE/themen/opt/uv/uv-index/aktuelle-tagesverlaeufe/aktuell_node.html) and 3-day forecasts of the UV index (daily maximum value; https://www.bfs.de/DE/themen/opt/uv/uv-index/prognose/prognose_node.html). The forecast can also be obtained via newsletter (https://www.bfs.de/DE/aktuell/newsletter/uv-newsletter/newsletter-bestellen_node.html).

4. Skin Cancer Prevention
The updated oncological S3 Guideline: “Skin Cancer Prevention”, developed within the scope of the German Guideline Program in Oncology (GGPO), was published in April 2021: https://www.leitlinienprogramm-onkologie.de/leitlinien/hautkrebs-praevention/ (English version available soon). The new topic "Climate change and UV radiation" was included with consideration of the impact of climate change on UVR exposure and the evolution of morbidity and mortality in society with increasing UVR exposure, arctic ozone holes and low ozone events, the influence of climate change-related behavioral patterns on skin cancer incidence and the status quo on climate change and urban development.

5. Climate Change and UV radiation - The Federal Climate Impact and Risk Assessment (KWRA)
UV-related health damage has now been included as a new topic in the federal government’s current climate impact and risk analysis. Climate change influences UV radiation in Germany in several ways. Late winter "low ozone events" with significantly increased UV index values over Germany as a result of winter ozone depletion over the Arctic have been occurring more frequently in recent decades. Number of sunshine hours per year in Germany is increasing - in years with high number of sunshine hours, the measured annual UV radiation is increased. More days in a year with comfortable temperatures can occur in Germany, so that people spend more time outdoors than usual and are thus also exposed to more UV radiation.