Introduction We are exposed to solar ultraviolet radiation (UVR) every day, during work and leisure time. To date, there is only little knowledge about the level of irradiance. Already in 1992, UVR has been graded a group 1 carcinogen by the International Agency for Research on Cancer (IARC). In an ageing society, along with an ideal of a brown skin, non-melanoma skin cancer (NMSC) incidence rates rapidly increase.

Methods For risk assessment and deduction of protective measures, real measured data serve best. Regarding solar UVR exposure, long-term personal dosimetry measurements is required. With GENESIS-UV, we designed a suitable system. With only little impairment, each test person measures autonomously. Data are transferred via mobile service or internet to a data server once a week automatically. GENESIS-UV has proven to be feasible in collaborations in the whole world without any changes in the system.

Results Since 2014, about 800 test persons delivered data points representing about 80000 days of measurement – in Germany. We derived the annual irradiance for more than 100 occupations, and far more occupational activities as well. Interestingly, the irradiance values for the occupations cover a very wide range (www.dguv.de/genesis). Going deeper into the occupational activities, prevention-relevant information could be obtained. The measurements have been expanded onto an European level since 2016.

Discussion Outdoor workers have to be protected from UVR exposure. During working hours, their exposure can be up to 4.5 times the leisure dose. Our approach from occupations to occupational activities enables us to suggest very distinct preventive and therapeutic measures, including workers education, early diagnosis and medical screening are crucial to minimise the risks and to reduce morbidity.

Conclusions Even if photoaging is determined by a dose-dependent anatomical damage, considering it as an occupational disease would be not appropriate. Clinical features of photoaged skin can be useful to characterise the cumulative exposure level in working populations, while in the individual cases skin photoaging represents a NMSC risk factor which must be taken into account for possible preventive and therapeutic measures.

REFERENCE