Interpretative Document
(of the Commission Services)

Interpretation of the
EU Strategic Framework On Occupational Health And Safety,
especially with regard to solar ultraviolet radiation

Background

Solar UVR and Skin Cancer

Ultraviolet radiation (UVR) causes skin cancer. It has been classified as a Group1-carcinogen by the International Agency for Research on Cancer (IARC) already in 1992 [1].

During the last two decades skin cancer incidence rates, already accounting for the vast majority of all cancers in the fair-skinned population across the world, have more than doubled in most EU member states [2]. In 2007, the incidence for squamous cell carcinoma (SCC) in central Europe has been quoted to be 20 to 30 per 100,000 people, or even higher. With respect to a growing impact of the steadily increasing percentage of ageing population in Europe, environmental challenges such as the alternating reduction of the ozone layer, leading to an overexposure to UVR, skin cancer has been identified as one of the big unmet challenges to modern medicine by health care providers, policymakers, and patients alike.

There is a growing body of research demonstrating that occupational exposure to UVR of outdoor workers is a highly relevant occupational hazard in Europe [3]. Outdoor workers are at a markedly increased risk for basal cell carcinoma [4], and at a doubled risk for squamous cell carcinoma [5, 6, 7, 8] compared to indoor workers and the general population. Skin cancer is the most common and already one of the most costly cancers in Europe [9, 10].

Regarding the ubiquity of solar UVR, it has to be clearly stated that outdoor workers have a strikingly higher UVR exposure than the average population.
Also, the critical window of maximum UVR exposure from 11.00 – 14.00 is rather in the job period than in the leisure period. Meticulous perennial UVR dosimetric measurements in a small subgroup of workers, including leisure activities, have clearly demonstrated unexpectedly high daily UVR doses for outdoor workers compared to indoor workers [11], showing a more than 500% increased occupational UVR exposure. Current research is conducted to explore these findings in more detail. Occupational activity-related measurements will also allow a scientific relation to global irradiance and thus to stationary measurement systems e.g. of the WHO [12].

In some member states (e.g. Austria, Croatia, Denmark, Portugal and most recently Germany) sun exposure at workplaces has been recognized as a highly relevant occupational hazard and consequently incorporated into specific national legislation.

**EU Strategic Framework**

“Investment in OSH contributes to the well-being of workers and is cost-effective. According to recent estimates, investments in this area can produce high ratios of return, averaging 2.2 [13], and in a range between 1.29 and 2.89 [14].”

In the above-cited Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the EU Strategic Framework on Health and Safety at Work 2014 – 2020, the progress and outstanding problems in health and safety at work have been described [15]. It is stated that most of the legislative and non-legislative initiatives set out in the 2007 – 2012 EU OSH Strategy were delivered.

The EU Strategic Framework focuses on three main challenges. Whereas the first challenge is “improving the implementation record of member states”, the second one, “improving the prevention of work-related diseases by tackling existing, new and emerging risks”, aims at the prevention to avoid occupational ill-health. This includes diseases caused or aggravated by adverse working conditions. While occupational cancers and the wide spectrum of skin diseases have been explicitly named, UVR and skin cancer alone and in combination have not yet been recognized as an emerging risk. The third challenge targets the “demographic change”. The working population aged between 55 and 64 in
The EU-27 is expected to increase by about 16% between 2010 and 2030. Paralleling this development, an exponential increase in the incidence of work-related cancers, such as UVR-related skin cancer, is expected.

In the context of the EU Strategic Framework, protection of workers against harm from solar UVR is one of the main challenges to be addressed. Developing primary and secondary prevention strategies has to focus on emerging new risks and prevention of work-related and occupational diseases.

**Directive 2006/25/EC**

The directive 2006/25/EC [16] deals with the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents, namely artificial optical radiation. It is the 19\textsuperscript{th} individual directive within the framework directive 89/391/EEC [17].

Initially planned to be valid for artificial and solar sources of optical radiation, formal objections of the member states lead the European legislator as a first step to concentrate solely on artificial UVR sources within the directive 2006/25/EC. Although the member states reserved the right to pass an appropriate law including solar optical radiation, only few countries (e.g. Austria) did so far.

At this stage, protection of workers against harm from solar optical radiation, and especially UVR, is not sufficiently ensured by legal rules and regulations.

**Requirements for the protection of workers from solar UVR**

1. **Determination of exposure and assessment of risks**

Firstly, the risk assessment carried out should be in accordance with Article 9(1)a of the Directive 89/391/EEC and shall identify which measures must be taken. Suitable recording, according to law and practice, and regular updating are taken for granted.
In trying to protect workers from solar UVR according to the provisions of Directive 89/391/EEC the employer shall carry out a suitable risk assessment, i.e. assessing and, if necessary, measuring and/or calculating the levels of exposure to optical radiation. If information on the assessment of levels of exposure is not available, a variety of state-of-the-art procedures as well as European standards for the measurement and/or calculation of solar UVR exposure should be employed.

If data on exposure of workers are already present in member states of the EU, those data might also be used for the risk assessment in other member states. If necessary, supporting measurements should be performed. Persons dealing with assessment, measurement, and/or calculations of exposures against artificial UVR may be competent to do so for exposures against solar UVR at the same time, as the physics behind it is the same.

In the course of a risk assessment, particular attention should be paid to any effects concerning the health and safety of workers belonging to particularly sensitive risk groups, as well as any possible effects on workers’ health and safety resulting from workplace interactions between solar UVR and photosensitizing chemical substances, such as furocoumarines and various phototoxic and/or photoallergic medications.

One further major point in risk assessment is the inclusion of appropriate information obtained from health surveillance and published data. At this stage, a determination e.g. of skin type [18] and the concomitant risk of evolving skin diseases may be carried out as a prevention measure. Health surveillance in terms of regular skin screenings will be discussed later.

2. Avoiding or reducing risks

Currently, exposure limit values for solar (UV) radiation do not exist; the European Union will support the current WHO initiative to define UVR work place exposure limits.

So far, the work-related exposure against solar UVR should be kept as low as reasonably achievable. The employer shall devise and implement an action plan comprising technical and/or organizational measures designed to prevent the
exposure from exceeding reasonable levels. In particular, this could be achieved by:

- A proper design and layout of workplaces, e.g. housing of outdoor construction sites
- Limitation of the duration and level of the exposure, e.g. scheduling outdoor work when sunlight exposure is the lowest
- Providing shaded or indoor break areas
- Supply of appropriate personal protective equipment, e.g. hats, shirts

3. Worker information and training

The employer shall ensure that workers who are exposed to risks from solar UVR receive any and all necessary information and training relating to the outcome of the risk assessment. This includes in particular:

- The risk associated with exposure to solar UVR
- The signs and symptoms of overexposure, how to detect them and how to report them
- The results of the risk assessment together with an explanation of their significance and potential risks
- The circumstances in which workers are entitled to health surveillance
- Safe working practices to reduce risks from exposure
- Proper use of appropriate personal protective equipment

Appropriate information for workers to promote self-protection should be provided by health care and prevention specialists, e.g. social accident insurances and/or public authorities. That information may include recommendations for proper usage of appropriate clothing, glasses and sunscreen, along with behavioral manners in occupational and private life.

4. Health surveillance

With the objectives of the prevention and timely detection of any adverse health effects, as well as the prevention of any long-term health risks and any risk of chronic diseases resulting from exposure to solar UVR, provisions to ensure appropriate health surveillance of workers shall be adopted.
Health surveillance should be carried out by a board certified physician, preferably by a dermatologist; alternatively a specifically trained occupational health professional or a medical authority responsible for health surveillance in accordance with national law and practice. The availability of dermatological referrals should be opted for.

If the initial, voluntary skin check during the risk assessment has been carried out, a basis to perceive future skin changes has been set. Arrangements should be established that individual health records are made and kept up to date. Health records shall contain a summary of the results of the health surveillance carried out. They shall be kept in a suitable form so as to permit consultation at a later date. Individual workers shall, at their request, have access to their own personal health records. The employer shall ensure that the doctor, the occupational health professional or the medical authority responsible for the health surveillance has access to the results of the risk assessment, where such results may be relevant to the health surveillance.

A medical examination should be carried out on a regular basis to prevent skin diseases. This should be accompanied by regular teaching and training of exposed workers in the context of continuous risk assessments.

Reports
The practical implementation of prevention measures as well as numbers of incidences should be reported to the EC on a regular basis.

In line with the rules provided for by other EC Directives, every five years the Commission will inform the European Parliament, the Council, the European Economic and Social Committee, and the Advisory Committee on Safety and Health at Work of the content of these reports, of its assessment of these reports, of developments in the field in question and of any action that may be warranted in the light of new scientific knowledge.

References

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Authors
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Dr. Marc Wittlich
Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA), Alte Heerstraße 111, 53757 Sankt Augustin, Germany e-mail: Marc.Wittlich@dguv.de

PD Dr. Claas Ulrich, MD, PhD
Arbeitsgemeinschaft Dermatologische Onkologie (ADO) der Deutschen Krebsgesellschaft (DKG)
Skin Cancer Centre/HTCC
Hautklinik der Charité, Campus Mitte, Charitéplatz 1, 10117 Berlin, Germany e-mail: claas.ulrich@charite.de

Prof. Dr. Swen Malte John, MD, PhD
Chair
EU Horizon2020 COST Action "Development and Implementation of European Standards on Prevention of Occupational Skin Diseases (StanDerm)"(TD1206)
EADV Task Force on Occupational Skin Diseases
ICOH Scientific Committee "Occupational and Environmental Dermatoses" (SC-OED)

Dept. Dermatology, Environmental Medicine, Health Theory
Lower-Saxonian Institute of Occupational Dermatology (NIB)
University of Osnabrucek
Sedanstrasse 115 (D1), 49069 Osnabrucek, Germany e-mail: sjohn@uos.de