NON-MELANOMA SKIN CANCER AS AN OCCUPATIONAL DISEASE

FACT SHEET FOR GENERAL PUBLIC

European Cancer Patient Coalition

UNIVERSITÄT OSNABRÜCK

EADV European Academy of Dermatology and Venereology

Definition:

Non-melanoma skin cancer (NMSC) refers to all types of cancer of the skin that are not melanoma. The vast majority **(95%)** of NMSC cases are basal cell carcinoma (BCC) and cutaneous squamous cell carcinoma (CSCC) and can be diagnosed by visual inspection by a dermatologist (1).

Data:

According to the World Health Organization (WHO), between 2 and 3 million NMSC cases are recorded in the world every year (2). White populations are more susceptible to develop this type of malignancy (3).

AMONG EUROPEAN COUNTRIES

- **Switzerland** (44.4/100.000)
- **Ireland** (43.4/100.000)
- **The Netherlands** (31.3/100.000)
- **Germany** (27.5/100.000)
- **Luxembourg** (23.9/100.000)
- **Belgium** (23.3/100.000)
- **United Kingdom** (22.8/100.000)
- **France** (21.1/100.000)

Rank among the countries with the highest estimated age-standardized incidence rates of NMSC in 2018, both sexes, all ages (4).

Incidence cases of NMSC in both sexes and all ages are expected to rise up to + **43.9%** until **2040** according to Globocan data (4).

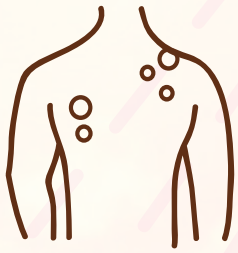
Risk factor:

Exposure to ultraviolet radiation (UVR) is the main risk factor for the development of skin cancer[5] and has been declared as a Group 1 human carcinogen by the International Agency for Research on Cancer (IARC)[6].

High-risk population:

Outdoor workers have an increased risk of developing CSCC and actinic keratosis by **77%**, and for BCC by **43%** respectively, compared with the general population [7,8]. Considering that Europe has more than **14.5 million** active workers who spend at least **75%** of their working time outdoor, special attention should be paid to this kind of occupational exposure. The workers exposed to UV radiation the most are in the agriculture, hunting and construction sectors (9). The level of their exposure vastly exceeds the recommended limits of 1.3 Standard Erythemal Doses (which is sufficient to cause sunburn in fair skinned individuals of skin type 1 (Blond or redhaired, freckles, always burns, never tans) [10]. More recent European studies reveal that the risk for long-time outdoor work for CSCC and BCC is doubled compared to average population (Schmitt et al., 2018a,b, Loney et al. 2020).

NMSC and quality of life:

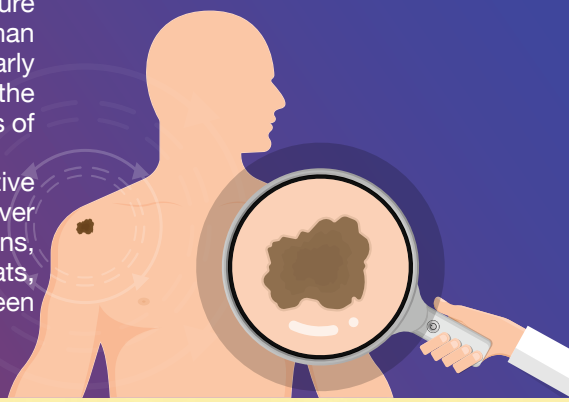


Reduction of quality of life is also an important issue to consider for NMSC patients as they potentially undergo repeated rounds of surgery and, as a result, can suffer significant consequences for their appearance, self-esteem, and well-being. NMSC frequently results in chronic illness due to recurring lesions in sun-exposed skin, requiring almost continuous treatment efforts. In fact, the impact of NMSC on patient's life derives from the cancer itself, from the way that the doctor will choose to intervene and from what follows the intervention. Many NMSCs appear on the face or other visible part of the body [11] and many may be symptomatic causing bleeding, pain, pruritus, functional and cosmetic concerns [12]. In addition, the vast majority of the NMSC cases are treated with surgery and this has an important effect in patients' daily life routine and financial status which is disrupted while repeated treatments or recurrence may prolong this situation. Further, in many cases treatment results on cosmetic and functional abnormalities from scarring which can further affect the psychology of the patients and the course of the treatment and healing [12] Several studies in the past tried to depict the most important factors of NMSC, in terms of the quality of life for the patients. Some of the most frequently identified are physical deformity, cosmetic concerns, and psychosocial function [13-15]. In addition, it has also been shown that BCC and SCC patients experience similar levels of anxiety and depression following diagnosis and treatment [16]. All the above, demonstrate the importance of prevention with regards to NMSC.

Prevention measures:

Prevention measures such as primary prevention, early detection, treatment and regular follow-up, targeting outdoor workers could reduce the costs and be beneficial from a health economic perspective [17-20] and also increased quality-of-life, functional ability and overall health [17]. Health surveillance and skin cancer screening can be important for early detection. Apart from the regular inspection of the skin from a dermatologist or another healthcare professional, raising awareness by providing outdoor workers with information about the risks and available assistance is also important.

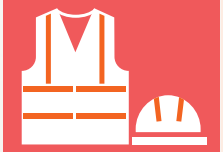
However, scientific data shows that outdoor workers with higher UVR exposure are less likely to have received a skin examination from health care providers than the average (indoor) worker [21,22]. Increasing investment on screening and early detection is indeed a reciprocating strategy, a strategy that pays off both sides, the health system and the patient outcomes [17, 19]. Following the recommendations of the International Commission on Non-Ionizing Radiation Protection,
UVR exposure for the outdoor workers can be reduced by taking sun-protective measures, such as adjusting outdoor working hours or seeking shade whenever possible and using shading structures for lunch and other breaks. In additions, appropriate use of personal sun-protective measures such as wearing hats, protective sunglasses, long-sleeved shirts and trousers, and applying sunscreen are necessary to protect the outdoor workers from UVR exposure [10].



Policy and Legislation:

The latest WHO World Cancer Report also highlights the need for protective measures against hazardous exposure to sunlight, such as avoiding unnecessary sun exposure, using protective measures when in the sun, and avoiding tanning devices [23].

Principle 10



In addition, Europe's Beating Cancer Plan, calls for: ***further legislative and soft measures to reduce exposure to carcinogenic substances in the workplace, in products and in the environment, and to UV and ionising radiations from natural and artificial sources*** [24].

Despite the solid evidence that outdoor workers in various workplaces across Europe are exposed to elevated levels of UVR and are consequently at a significantly increased risk of developing NMSC, this evidence has yet not been translated into a common European regulatory approach [25]. Scientific work from across the EU and worldwide provides solid evidence to put prevention of UVR exposure for outdoor workers as priority to the European agenda and highlights the importance and actions. Healthcare professionals and policy makers should work together to ensure a common European registration for NMSC in cancer registries [26] and improve reporting of occupational NMSC (including actinic keratosis) [27]. Employers should find the most appropriate ways to monitor UVR exposure in the workplaces and implement cost-effective techniques for protective behaviours and skin cancer screenings for outdoor workers. Patient advocacy groups, doctors and other health professionals as well as employers should collaborate to promote skin cancer prevention and protective working practices and to address the unmet needs of retired outdoor workers with chronic persisting NMSC [26]. Outdoor workers should follow the recommendations [10] to protect themselves from unnecessary from solar UVR exposure.

This report is a call for action to increase awareness among outdoor workers, healthcare professionals, employers and patient advocacy groups and protection for those who work outdoors by establishing all the necessary legislation on European level and preventive measures to prevent the numbers of the disease from rapidly growing in the coming years.

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