

WMA STATEMENT ON SOLAR RADIATION AND PHOTOPROTECTION

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PREAMBLE

The sun is a great source of health benefits, but it is important to know its harmful consequences as well. The prevention of the harmful effects of the sun on our skin is advisable at all ages, especially in children and adolescents. Solar radiation generates a series of biological and physiological effects in the body that depend on the proportion and intensity of the radiation and that have beneficial effects, such as stimulating the synthesis of vitamin D, favoring the formation of hemoglobin and improving the mood, while other effects are harmful and aggressive to the skin, such as erythema, photoaging of the skin and precancerous or cancerous lesions. Dermatoses produced or aggravated by sun exposure are a health problem that healthcare professionals face most frequently.

Solar light is composed of a continuous spectrum of electromagnetic radiation divided into three major groups: ultraviolet (UV), visible and infrared. UV radiation is classified as UV-A, UV-B and UV-C.

The intensity of UV radiation can be measured by international standardized instruments such as the UV index which measures the strength of sunburn-producing solar UV radiation at a particular place and time.

Solar UV radiation, especially through UV-B, is an extremely important, yet neglected causative factor for skin cancers, both melanoma and non-melanoma, for ocular pathologies (e.g., cataracts, and age-related macular degeneration), and harmful effects on the immune system [3]. Recurrent and severe sunburns are a risk factor for non-melanoma skin cancer.

Solar radiation can also induce the onset and exacerbation of chronic actinic dermatitis (CAD) and melasma. Blue light plays an important role as well in the pathogenesis of melasma, therefore broad-spectrum photoprotection should be advocated and the intake of photosensitive foods and drugs should be reduced.

Risk of skin cancer differs according to skin type as well as the duration and intensity of solar light exposure. Chronic, long-term, cumulative UV exposure is associated with actinic keratosis and squamous cell carcinomas, while high-intensity, intermittent UV exposure, especially at a young age, is associated with basal cell carcinomas and melanomas. Therefore, photoprotection is important in young ages.

The World Health Organization (WHO), through the International Agency for Research on Cancer has raised the issue of solar UV radiation being a carcinogen since 1992 and since 2012 has classified solar UV radiation as a group 1 carcinogen (carcinogen to humans). Other well-known group 1 carcinogens are plutonium, asbestos and ionizing radiation.

Furthermore, current climate changes and the depletion of the ozone layer by approximately 4% per decade since the 1970s has led to a diminished filtration of UV-A and UV-B radiation and to increased UV radiation that reaches sea-level.

As a consequence, the incidence of melanoma and non-melanoma skin cancer is increasing worldwide.

WHO evidence indicates that four out of five cases of skin cancer can be prevented and simple preventive measures, such as limiting UV exposure in the midday sun, wearing UV protective clothing and hats or using mineral-based sunscreens, are recommended.

Photoprotection also includes make-up products, sunglasses, and windshields.

The WHO recognizes that while protection against UV exposure is recommended globally, there is concern that lack of UV exposure may reduce beneficial effects of vitamin D, including its potential to reduce the risk of some types of cancer.

RECOMMENDATIONS

1. Photoprotection is a key preventative health strategy as most skin cancers are a result of UV solar exposure.

National Governments should:

2. Inform health professionals and the public about the characteristics that sunscreen should meet (one that provides balanced, safe and easy-to-use protection) in order to avoid variability between the products supplied by laboratories, as well as improve safety and the labelling of the sunscreen.
3. Recognize solar UV exposure as an important risk factor for developing skin cancer. UV exposure also is a prime cause of some ocular diseases and immune system dysfunctions.
4. Work together to develop a Global Action Plan for the Prevention of Skin Cancer based on Photoprotective measures. This should include action against climate change to help reduce damage from ultra-violet radiation.
5. Support skin cancer screening campaigns.
6. Recognize prevention of skin cancer as a national health priority.
7. Improve skin cancer's screening, diagnosis and management.
8. Include all forms of skin cancer in all National Cancer Registries and improve the reporting of UV induced skin cancers and legislative frameworks to protect outdoor workers (recognition as occupational disease).
9. Work with relevant stakeholders to liaise, engage and organize online and offline skin cancer prevention campaigns and educational programs on sun protection, with a primary focus on ages 0 – 18, in order to raise awareness of this health hazard and to encourage sun safety (use of protective clothing and hats, adequate sunscreen use, avoidance of excessive exposure) and healthy lifestyle choices among the young.
10. Promote policies to fight climate change and air pollution.
11. Consider the environmental impact of sunscreen.

WMA and its members should:

12. Interact with healthcare providers and medical practitioners who have a significant role in empowering and educating their patients in the promotion of skin cancer awareness, sun-protective measures and encouraging patient access to screening, diagnosis and treatment.
13. Educate primary care physicians and occupational physicians to recognise and refer patients with suspect lesions to dermatologists.
14. Support the development of national guidelines on photoprotective measures and continued scientific research in this field to derive the risk-benefit balance of UV exposure.
15. Support continued research and development of adequate protective clothing.
16. Promote campaigns to encourage the measurement of UV exposure within each nation.
17. Support media campaigns and educational programs that explain the harmful effects of UV exposure and optimal photoprotective measures targeting the most vulnerable, such as children and teenagers, fair skinned people, outdoor workers (e.g. agriculture, fishery, construction, forestry, athletes, swimming pool attendants).
18. Promote health education and information on sunscreens and the most recommended and healthy habits for the skin, establishing correct sun protection habits that make it possible to enjoy the beneficial effects of the sun and avoid sun damage.

Individual physicians should:

19. Counsel patients about the major health risks associated with excessive solar UV radiation exposure, inform patients about appropriate sun protective measures (e.g. skin coverage, sunscreen, and sunglasses) and encourage patients to undergo regular medical check-ups and to participate in skin cancer screening campaigns, where available.
20. Counsel patients to self-examine their skin.
21. Counsel those patients at risk (for example, patients on certain anti-cancer drugs) to understand the extra importance of protective measures.
22. Counsel employers on UV light as a work-related health risk.