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"Exposición laboral a radiación solar: ¿un riesgo tan evidente como desestimado?"

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Summary

Occupational exposure to Solar Radiation (SR) is a significant risk factor in several occupational activities and the adverse health effects induced in exposed workers, mainly to the skin and to the eye, are relevant, frequent and well documented. Despite this, the occupational SR risk is usually underestimated, when not completely neglected. Optical SR includes infrared and visible bands, constituting respectively the 45% and the 50% of SR. The other component is ultraviolet radiation (UVR), and even if it represents only the 5% of SR, it is the major risk for humans' health, possibly inducing both short and long-term adverse effects. Acute effects are photokeratitis, photoconjunctivitis and solar retinopathy in the eye, sunburns and photodermatoses in the skin. Among long-term effects for the eye there are pterygium, cataract, ocular melanoma and squamous cell carcinomas of cornea and conjunctiva, and possibly age-related macular degeneration. For the skin long term effects are photoaging, solar keratosis, keratinocytes cancers (i.e. basal cell carcinoma and squamous cell carcinomas of the skin) and cutaneous malignant melanoma. Many of these long term effects are cancers, in fact SR is recognized as a carcinogenic agent class 1 IARC and it represents the occupational carcinogenic exposure with the highest numbers of exposed workers based on CAREX data. According to EU-OSHA, in Europe there are about 15 millions of outdoor workers (e.g. farmers, construction workers, lifeguards, etc) exposed to the harmful effects of SR for the 75% of their daily working hours, and often for an entire working life. Published studies investigating thousands of outdoor workers performing different jobs in various parts of Europe and of the world show that these workers receive daily occupational UVR doses during Spring and Summer up to 10-15 Standard Erythemal Doses (SED) per day (where 1 SED is approximately 100 Joules of UV energy per square meter of skin, sufficient to induce an erythema, and it can be considered as an occupational exposure limit, adapting the limit set by the EU Directive 2006/25/CE for artificial UVR exposure), but it should be noted that the doses received can be relevant also in Autumn and, in case of good weather, even in Winter, depending on the latitude and UV index. Considering this, individual cumulative exposure of European outdoor workers can reach levels of hundreds (up to 700-800) of SED per year. Keratinocytes cancers are recognized as related to cumulative SR exposure, i.e. the type of exposure involving outdoor workers, while melanoma is more related to repeated sunburns during childhood. For this reason, basal and squamous cell carcinomas are considered the most frequent forms of occupational cancers affecting workers with fair phototypes (e.g. Fitzpatrick skin phototypes I-III), and very frequent also among workers with Fitzpatrick phototype IV. Despite this, up to day a few European Countries legally recognize occupational skin cancers by SR as "occupational diseases". Moreover, even in Countries where they are recognized, there is an extremely relevant issue of under-reporting to the compensation authorities, resulting in an inadequate recognition of this fundamental occupational risk, with insufficient implementation of appropriate preventive measures, protections' use and compensation for outdoor workers in EU and worldwide.