



Non-Ionizing Radiation & Children's Health

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POSTER

PLATFORM PRESENTATION

UV And Children's Skin

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There is indicative epidemiological evidence that exposures of children younger than about 10 years are linked with an increased risk the development of malignant melanoma as well as nonmelanocytic skin cancers later in life. However, an important area of uncertainty relates to lack of knowledge of the sun-sensitivity of children's skin both absolutely and relative to that of adult's skin. For example the thickness of children's skin is very similar to that of adults but due to the nature of the anatomical structure of children's skin, there are indications children's skin being adversely exposed on the top of the papilla before a significant exposure manifests itself as visible damage to the skin (for example erythema). This might also affect the induction of heavily UV-damaged cells persisting in the basal layer of the epidermis after UV-exposure which are supposed to be keratinocytic epidermal stem cells and may characterize an initiation step of nonmelanocytic skin cancer. For malignant melanoma the number of nevi recieved in dependence of UV-exposure in childhood is a clear risk factor. Recent data show that the bulge region of hair follicles hosting melanocytic stem cells are located deeper (more protected) in the skin in adults (terminal hair) as compared to pre-pubertal children (vellus hair). This may an explanation for enhanced risk of malignant melanoma due to UV-exposure in pre-pubertal childhood.