

SELF-REPORTED SUN EXPOSURE BEHAVIOUR AND SKIN REDNESS

Triguero-Mas, Margarita, *Centre for Research in Environmental Epidemiology (CREAL), Spain*

Dadvand, Payam, *Centre for Research in Environmental Epidemiology (CREAL), Spain*

Nieuwenhuijsen, Mark J, *Centre for Research in Environmental Epidemiology (CREAL), Spain*

Background and Aims: Previous studies have shown that up to one-fourth of annual personal UVR exposure amongst European population can occur during sun holidays. Skin redness during sun holidays has been linked to higher risk of skin cancers. The study aim was to study sun exposure behaviour patterns during sun holidays and their effects on redness from received UVR.

Methods: A semi-experimental study was conducted with twenty sun worshipping Spanish volunteers taking part in a one-week holiday in Canary Islands (Spain) during March 2010. They were asked to fill in a personal diary every thirty minutes about their location, clothing and sunscreen application. Their redness was objectively measured twice a day by a UV-Optimizer (Chromolight Co.).

Results: The median age of participants was 33 years with 70% of participants being female. Amongst study subjects, 30% had skin type II, 45%, III and 25%, IV. Median of days with sunscreen application was 3.5 (range 0 and 7 days). The median of number of sunscreen application during the high-risk hours (two hours around solar noon) was 0.7 times a day that was higher amongst women ($p=0.012$). On average, the study subjects exposed their arms for 95% of the days. The last day arms redness was correlated with the redness before exposure (Spearman correlation coefficient (ρ) of 0.54 and $p=0.013$), number of days with clothes leaving arm exposed ($\rho=0.49$ and $p=0.029$) and was inversely associated with number of sunscreen applications during high-risk hours ($\rho=-0.49$ and $p=0.029$). However, it was neither correlated with number of hours out during whole day ($p=0.144$) nor during high-risk hours ($p=0.465$).

Conclusions: Skin redness during sun holidays is associated with redness before exposure, number of days with arm exposed and inversely associated with sunscreen use. Further work will include construction of models to explain redness after sun exposure.