

## ***Interactive comment on “Estimated UV doses to psoriasis patients during climate therapy at Gran Canaria in March 2006” by L. T. N. Nilsen et al.***

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Comments to Estimated UV doses to psoriasis patients during climate therapy at Gran Canaria in March 2006 by L. T. N. Nilsen, E. Søyland, and A. L. Krogstad.

No uncertainties are given in the report for the UV doses. A scientific report should include uncertainties in the stated values. I do not have good information on the level of the uncertainty, but an assessment may be 10 % ( $k=2$  or 95 % confidence level) for the primary CIE-weighted UV irradiances from the sun and 30 % ( $k=2$ ) for the UV dose estimates. A paragraph explaining the uncertainty will meet the needs for understanding of the UV dose. The notation for the mean UV dose on page 7 line 20 will be  $\bar{D}$ ; If sunscreen use the first day was included, the mean dose was 170 SED for all subjects combined. You may also give the uncertainty in the text as 170  $\pm$

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50 SED. Table should be changed according to this and the uncertainty should also be given in the figures.

The UV dose is a combination of the primary irradiation from the sun and the scattered radiation; especially near the ocean the scattered contribution is pronounced. The part of the body perpendicular to the sun will have both the primary and scattered dose, while the sides will have the scattered dose, and less primary dose. The scattered UV dose will contribute equally to an half cylinder of the body facing the sun. This fact should be taken into account in the UV dosimetry. The psoriasis wounds are situated at the sides of the body, while one usually lie in the sun either on the back or lie flat on the stomach.

The dose rate, fractionation, total dose and irradiation time will affect the healing of the psoriasis wounds. These factors are different in the two treatment situations; treatment outside in the sun and giving artificial UV light in a clinic. In the clinic the treatment time is starting at 20 seconds and ends at 6 minutes for not sensitive skin. Usual treatment times are 2 to 4 minutes. The dose rate is much higher than in the sun and the UV spectre is very different. In the clinic whole body radiation are given inside a cylinder, and thus irradiating every part of the body at the same time. Treatment is given every second day in the clinic and daily for the sunbath. In the sun the treatment time is hours and only a part of the body is irradiated at the time. The dose rate in the sun is much less than in the clinic, but the sunbath is taken every day.

The result of these two healing regimes for psoriasis is giving the same outcome; the psoriasis wound will stay good for a couple of weeks and up to several months, but the psoriasis plaque will then be back at the same place of the body after that, if not treatment is given continuously. The function of the healing process is not jet known. The optimization of the treatment is therefore not easy. More information from the UV dose given to the patient is of importance and the commented paper contributes to the understanding of psoriasis.

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