Author's response to reviews

Title: Impact of UVA exposure on psychological parameters and circulating serotonin and melatonin

Authors:

Thilo Gambichler (t.gambichler@derma.de)
Armin Bader (a.bader@derma.de)
Mirjana Vojvodic (m.vojvodic@derma.de)
Falk G Bechara (f.bechara@derma.de)
Kirsten Sauermann (k.sauermann@derma.de)
Peter Altmeyer (p.altmeyer@derma.de)
Klaus Hoffmann (k.hoffmann@derma.de)

Version: 3 Date: 22 Mar 2002

PDF covering letter
General informations for the reviewers:

We would like to thank Dr Wintzen and Dr Partonen for their constructive comments on our manuscript. Inadvertently, we did not uploaded the finally updated file of our manuscript. Therefore, the submitted manuscript included some shortcomings and mistakes. The resubmitted manuscript has been shortened, in particular the introduction and discussion. Further, the methods has been described more in detail, in particular the assays. In the present form, we consider the writing transparent. In addition, the manuscript has been revised by a native speaker (American).

Reply to Dr Wintzen:

1) The title has been changed.

2) We used validated questionnaires in our study – we have include two citations of the questionnaires in the reference list.

3) UVA doses and frequency of exposure have been mentioned in the abstract.

4) The section “Subjects and study protocol” (p. 5) has been rewritten in order to make the timing of the interventions clearer for the reader. UVA doses and details of the irradiation regimen have been given in section “UV sources and dosimetry” (p. 6). We don’t assume that there is a correlation between skin color and serotonin or melatonin, but between skin color and well-being (Diffey 1986; ref. 7). Diffey reported that psychological benefits that occurred after sunbed exposures were closely related to the resultant degree of tan. Therefore, we considered chromometric assessment of skin color rather important (see also p. 9 last paragraph).

5) To improve clarity the term “UVA” has been consequently used when referring to our experiments. The UVA doses for skin type II and skin type III were used in accordance with the recommendations of the sunbed manufacturer provided for tanning salons (p. 6 first paragraph).

6) In order to improve standardization of the study protocol blood collection was performed after an overnight fast. Certain foods contain substantial amounts of serotonin (e.g., bananas, coffee, plums, walnuts)!

7) This paragraph has been rephrased and shortened. Plasma half-lives are given (p. 3 last paragraph).

8) To improve clarity this paragraph (Since serotonin ….plasma level) has been deleted. UVA-exposed volunteers were more satisfied than non-exposed volunteers. We have cited the study of Polderman et al.

9) The conclusion section has been rewritten.
Reply to Dr Partonen:

Discretionary revisions have been done (point 1-4).

Compulsory revisions

1. The volunteers were subsequently recruited. Randomized allocation of the two groups was performed by asking the volunteers to throw dice without knowing the underlying allocation criteria (nos 1-4: UVA-exposed; 5 and 6: non-exposed). Unbalanced randomization was performed as we intended to have a greater number of exposed subjects in order to keep the variances as small as possible in the UVA-exposed subjects. We think that it was adequate to recruit only 11 controls, as they had no treatment and therefore no effect was expected. However, the number of controls was large enough to carry out sufficient statistical evaluation. The volunteers were paid for participation in the study – as mentioned in the method section, no usual sunbed users were included into the trial. Hence, the motivation for participating in the study was rather money than tan.

2. Irradiation time has been given: skin type II 15 min; skin type III 20 min.

3. Citations of the questionnaires were included in the reference list.

4. The questionnaires were not administered at T2, as the results of the questionnaires would probably have been biased by preceding vein puncture and recall of the replies of the first questionnaire that was given to the subjects only a short time before. Blood collection after the completion of the questionnaires would have caused a considerable delay for determining serotonin and melatonin levels (half-lives!).

5. The intra- and inter-assay coefficients of variation have been included.

6. This sentence has been rewritten.

7. This sentence has been deleted.

8. The numbers of skin types of the controls were changed by mistake. Table 1 has been revised.

9. The numbers of exposed and non-exposed have been included.

10. Language revision has been performed for the whole text.