

Melatonin Used for Tanning Induces and Augments Lentigines and Naevi

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Melatonin peptides bind to melanocortin MC1 receptors, thus increasing eumelanin production and, for MC2 receptors, sexual arousal (1). Thus, they can contribute to "tanning" with an apparently low rate of side-effects (1). Here we report on the possible induction of lentigines and naevi by melatonin used as tanning agent.

CASE REPORT

A 25-year-old man presented to our clinic with many brown spots on his body, especially on his penis, including inside the foreskin. He was very tanned (first visit on November 1, 2009). He reported that he had had approximately 150 injections of melatonin (www.melanotan.org), a drug that is popular among young people wanting to be tanned. Fig. 1a illustrates the changes on his trunk and Fig. 1b a naevus, which was excised. Histological investigations were performed on the naevus (Fig. 2). Another excised lesion was diagnosed as lentigo (pictures not shown). There was no positive clinical and histological evidence of malignant transformation.

DISCUSSION

This is the third case report on the use of melatonin (2, 3). Our patient, and the two previously reported cases, did not have melanoma, although on clinical examination, including dermoscopy, it could not be definitely ruled out.

Melanotan is also used to alleviate jet lag. A Cochrane Review of 9 studies concludes that a 5 mg dose of melatonin can diminish the symptoms of jet lag, especially if travelling east-bound and over five or more time zones (4). However, the Cochrane Review also concludes that: "The pharmacology and toxicology of melatonin needs systematic study, and routine pharmaceutical quality control of melatonin products must be established". In addition, it is possible that the use of melatonin may be of value for sun protection (e.g. for tourists, soldiers sent to high UV-exposed areas, early cases of vitiligo, organ-transplanted patients); however, no data exist on

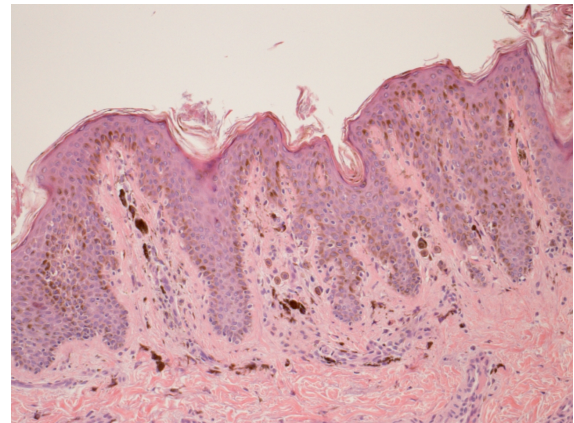


Fig. 2. Histological picture of the naevus. Dermal naevus with a small central collection of melanocytes. No evidence of malignant transformation. (Haematoxylin and eosin staining $\times 250$).

this. Male sexual dysfunction is another area for which the use of melatonin is studied (1).

We report here the case of a man who used melatonin for tanning, and who had no histological signs of melanoma. However, melanoma incidence in his age group is very low. We conclude that, if melatonin is an over-the-counter product, many more freckles, lentigines, naevi, and possibly melanoma, may occur. Thus we currently advise against the use of this treatment for tanning purposes. Of course we do not know if melatonin per se stimulates melanocytes or if it leads to a higher protection against UV-radiation. A detailed review has recently been published discussing mechanisms of melatonin signalling, what diseases or conditions sensitive to UV light may benefit from its use and what side effects could occur (5).

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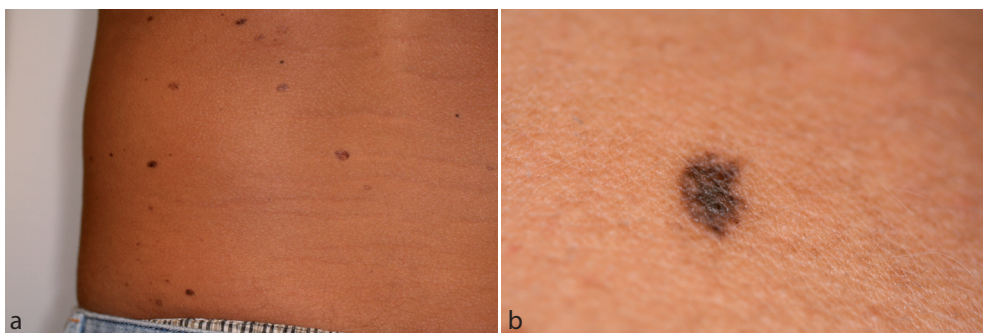


Fig. 1. (a) Lentigines, naevi and hyperpigmented skin. (b) Naevus in the neck, no suspicion on dermoscopy, but excised.

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