Sunlight and vitamin D: Evidence behind messages for dermatology patients and the public

Citation for published version (APA):

Citing this paper
Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights
Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy
If you believe that this document breaches copyright please refer to the University of Manchester’s Takedown Procedures [http://man.ac.uk/04Y6Bo] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.

Open Access

Download date: 02. Nov. 2019
Sunlight and Vitamin D: Evidence behind Messages for Dermatology Patients and the Public

LE Rhodes1,2, MD Farrar1,2, R Kift1, SJ Felton2, J Osman1,2, JL Berry1, KD Cashman3 and AR Webb1

1University of Manchester, Manchester, UK
2Salford Royal Hospital, Manchester Academic Health Science Centre, Manchester, UK
3University College Cork, Ireland

Cutaneous vitamin D synthesis following sunlight exposure is the main source of this nutrient, which is essential for musculoskeletal health and associated with reduced incidence of a range of systemic disorders. However, excessive sunlight exposure is the major external cause of the majority of skin cancers. Recommendations on sunlight-vitamin D are largely based on assumptions made from small studies performed under non-realistic conditions of skin site, area and UVR emission, while the special situation of dermatology patients is not fully appreciated. Low vitamin D status is prevalent in winter at northerly latitudes; hence patient groups require study against a healthy comparator. Photosensitive patients in particular reduce sun exposure to avoid triggering their symptoms and on medical advice to photoprotect. We performed a longitudinal prospective study examining seasonal vitamin D status in patients with moderate-severe photo-dermatoses (n = 53) and healthy people (n = 109) at the same latitude, assessing behavioural and demographic contributors. Photosensitive patients showed a seasonal 25(OH)D pattern, but insufficient (<50 nmol/l) and deficient (<25 nmol/l) status in summer in 47% and 9% patients resp., increasing to 73% and 32% in winter. Mean values were lower than in healthy volunteers by 18-25% across the year (P < 0.05). Oral vitamin D intake was low (mean <3 µg/day), and both supplementation and summer surface area exposed predicted 25(OH)D, with 1 µg/day increment in supplement elevating summer and winter 25(OH)D by 5% and 9%, resp. (both P < 0.001). Without supplement, photosensitive patients are at high risk of year-round low vitamin D status, contrasting with seasonal lows in healthy adults, with potentially enhanced risk of adverse health impact. It is widely stated that exposure of limited skin areas (hands and face) avoids vitamin D deficiency, but this has never been directly tested and little is documented of the impact of skin surface area exposed on vitamin D production. We therefore performed a study (n = 40, using lamp emission close to sunlight) to determine impact of wearing a range of clothing coverage, down to just exposure of hands and face, on vitamin D status following low level simulated summer sunlight exposures. Data presently under collection will be compared with our other datasets employing an identical low level exposure protocol but with subjects casually dressed to expose a greater skin area, for presentation at this conference. This study addresses an important knowledge gap in the Influence of clothing style and skin area exposure on vitamin D status, and specifically determines the impact of exposing the minimal skin surface area of hands and face. Findings provide underpinning information to assist national guidance on sunlight exposure and vitamin D acquisition. This talk will examine strategies to achieve target vitamin D status with particular consideration to the 2016 recommendations of NICE and DoH

Published: Br J Dermatol 2016;175 (Supp 2):60