

Diet in dermatology

Part II. Melanoma, chronic urticaria, and psoriasis

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1. Reading of the CME Information (delineated below)
2. Reading of the Source Article
3. Achievement of a 70% or higher on the online Case-based Post Test
4. Completion of the Journal CME Evaluation

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Learning objectives

After completing this learning activity, participants should be able to describe the relationship between diet and the following conditions: atopic dermatitis, skin cancer, and vitamin D deficiency.

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The roles of dietary factors in aggravating, preventing, or treating skin diseases are common questions encountered in dermatology practice. Part II of this two-part series reviews dietary modifications that can potentially be utilized in the management of melanoma, chronic urticaria, and psoriasis patients. Specifically, we examine the effect of alcohol consumption and supplementation with vitamins D and E, polyunsaturated fatty acids, selenium, green tea, resveratrol, and lycopene on melanoma risk. The relationships between chronic urticaria symptoms and dietary pseudoallergens, gluten, and vitamin D are analyzed. We explore weight loss, reduced alcohol consumption, and gluten avoidance as means of reducing psoriasis-associated morbidity, as well as the possible utility of supplementation with polyunsaturated fatty acids, folic acid, vitamin D, and antioxidants. With proper knowledge of the role of diet in these cutaneous disease processes, dermatologists can better answer patient inquiries and consider implementation of dietary modifications as adjuncts to other treatments and preventative measures. (J Am Acad Dermatol 2014;71:1053.e1-16.)

Key words: chronic urticaria; diet; melanoma; nutrition; psoriasis.

The role of dietary factors in dermatologic disease is a frequent source of patient inquiry and physician uncertainty. In part I of this continuing medical education article, we analyzed the effects of dietary modifications on atopic dermatitis, acne, and nonmelanoma skin cancer pathogenesis, risk modification, and treatment. In part II, we review the dietary factors that can potentially be used in the management of patients with melanoma, chronic urticaria, and psoriasis. [Tables I through IV](#) summarize the key dietary factors relating to melanoma, chronic urticaria, and psoriasis.

MELANOMA

Key points

- **Insufficient evidence exists to recommend supplementation with polyunsaturated fats, vitamins D and E, selenium, green tea, resveratrol, and lycopene to prevent the development or progression of melanoma in the general population**
- **Decreased alcohol intake and vitamin D supplementation may lower melanoma risk in high-risk patients**

Polyunsaturated fatty acids

Polyunsaturated omega-3 fatty acids (PUFAs) are antiinflammatory molecules that protect against ultraviolet (UV) damage.^{1,2} PUFA supplementation decreases skin sensitivity to UV irradiation and cutaneous expression of p53 in animal and human studies.³⁻⁵ Additionally, in animal and in vitro studies, PUFAs were shown to increase apoptosis,^{6,7}

Abbreviations used:

DLQI:	Dermatology Life Quality Index
EGCG:	epigallocatechin-3-gallate
IgE:	immunoglobulin E
PASI:	Psoriasis Area and Severity Index
PUFA:	polyunsaturated omega-3 fatty acid
RCT:	randomized, controlled trial
UV:	ultraviolet

promote cell cycle arrest,⁷ and decrease tumor growth.^{3,8,9} PUFAs can inhibit metastatic melanoma,¹⁰⁻¹² and when used as an adjunct to surgery they promote recurrence-free survival.¹² Some animal studies of PUFA supplementation found increased tumor growth and immunosuppression.¹³⁻¹⁵ These conflicting results of in vitro and animal studies do not elucidate a protective role of PUFAs against melanomagenesis.

Clinical data are also conflicting. Three studies, including 2 case control trials and 1 prospective cohort study, reported an increased risk of melanoma in patients with higher dietary PUFA intake.¹⁶⁻¹⁸ In contrast, the incidence of melanoma is low in populations with PUFA-rich diets, including Inuits¹⁹ and cohorts in both Italy²⁰ and Australia.²¹

Alcohol

The role of alcohol consumption in melanomagenesis is complex and involves the interplay of biologic, behavioral, and epidemiologic factors. From a cellular standpoint, ethanol induces DNA damage, promotes the production of reactive

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