
Titanium dioxide induces eyelid dermatitis in patients allergic to gold

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CLINICAL CHALLENGE

Dermatologists regularly recommend physical sunscreen blockers, such as titanium dioxide and zinc oxide, over chemical sunscreens to reduce the risk of both allergic and photoallergic contact dermatitis. For patients who are patch tested to uncover possible allergens triggering the contact dermatitis, gold is often incorrectly considered irrelevant when searching for the culprit allergen because, unlike nickel, it is not released from objects by sweat.

SOLUTION

It has been proposed that titanium dioxide, present in cosmetics and physical blocker sunscreens, adsorbs gold released from jewelry. Therefore, although many patients will not exhibit dermatitis at the site of contact with gold jewelry, titanium dioxide may result in chafing and liberation of fine gold particulate that could travel and come into contact with the face and eyelids.¹ Furthermore, the clearing of eyelid dermatitis has been reported with avoidance of gold jewelry. In the North American Contact Dermatitis Group analysis, 445 (8.7%) of 5106 patients had positive patch testing to gold²; gold was the most common allergen to induce eyelid allergen contact dermatitis, despite its general absence in eye cosmetics.¹ As such, the high prevalence of gold allergy and possible interaction with titanium dioxide justifies a trial of avoidance of gold jewelry or titanium dioxide, even when patients do not have dermatitis at the site of primary contact. Although the avoidance of titanium dioxide is an alternative option, its prevalence in many cosmetics makes avoidance more difficult.

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