

iPad—Increasing Nickel Exposure in Children

abstract

We discuss allergic contact dermatitis to the iPad to highlight a potential source of nickel exposure in children. *Pediatrics* 2014;134:e580–e582

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KEY WORDS
allergic contact dermatitis, iPad, nickel

ABBREVIATIONS
ACD—allergic contact dermatitis
AD—atopic dermatitis

Dr Jacob performed the clinical assessments and patch testing and drafted the initial manuscript; Dr Admani assisted with clinical assessments and patch testing and completed all manuscript revisions; and both authors critically reviewed the manuscript and approved the final manuscript as submitted.

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Allergic contact dermatitis (ACD) is becoming increasingly prevalent in the pediatric population, with nickel the allergen most commonly detected.¹ Common sources of nickel exposure in children include nickel-releasing clothing fasteners, ear piercings, and nickel-containing dental work.²⁻⁴ In addition, significant nickel release has also been associated with laptop computers, cell phones, razors, wind-up toys, and video-game controllers.⁵⁻¹⁰

CASE REPORT

An 11-year-old boy with a history of atopic dermatitis (AD) presented for evaluation of generalized dermatitis that had been present for >6 months. This dermatitis was different from the patient's typical pattern of AD and was not responding to standard topical corticosteroid therapy, namely triamcinolone 0.1% ointment (Fig 1). As a result, ACD was suspected, and patch testing was performed by using the thin-layer rapid use epicutaneous patch test (T.R.U.E. Test, SmartPractice, Phoenix, AZ). Readings at 96 hours demonstrated a 1+ reaction to nickel that was accompanied by significant worsening of the patient's dermatitis. At the avoidance counseling session, it was noted that the family had a first-generation iPad (Apple Inc, Cupertino, CA), purchased in 2010, that the patient had used with increasing frequency over the last 6 months. The iPad tested positive for nickel with dimethylglyoxime (Fig 2). The patient was instructed to specifically avoid contact with objects containing nickel and was advised to use the Smart Case, which provides overall coverage of the iPad, as opposed to the Smart Cover, which only provides cov-



FIGURE 1
Generalized dermatitis in an 11-year-old patient.

erage of the screen and leaves the entire back of the iPad exposed. Notably, after covering his iPad and complying with a nickel avoidance regimen (including a reduced nickel diet), the patient's dermatitis significantly improved.

DISCUSSION

ACD to Apple products (laptops and iPhones) has been reported.⁵⁻⁷ The iPad, however, has not previously been reported as a potential source of nickel sensitization in children. Portable electronic devices are becoming increasingly popular among children of all ages and are used both for entertainment/distraction and as educational tools. The significant cost associated with purchasing these items may preclude replacement. Measures may need to be taken to reduce the skin-to-device contact either by using a case or cover or simply applying duct tape to create a barrier. Patients should be instructed to test the case or cover for nickel before purchase and to select one that is nickel-free.

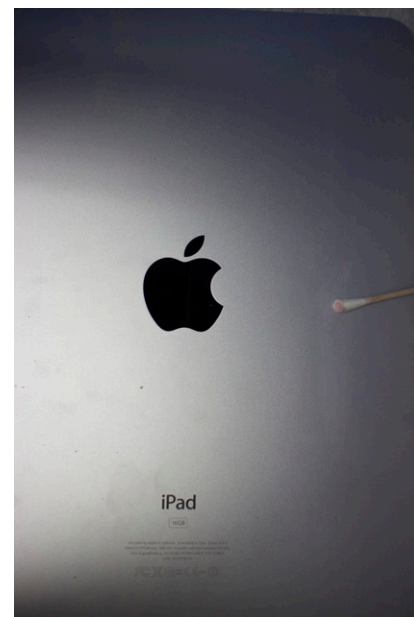


FIGURE 2
Dimethylglyoxime-positive iPad.

Evaluation for contact dermatitis in patients with AD and generalized dermatitis, such as the patient in our case, can be challenging. The exact prevalence of ACD in patients with AD remains unclear, as T helper 2 axis flare inhibition may affect patch test reproducibility.¹¹ As has been reported by other authors,^{12,13} our patient's 1+ reaction to nickel was a significant finding in association with a flare of his generalized dermatitis. By detecting a relevant allergen and controlling his nickel exposure sources, the patient had significant clinical improvement and has remained in remission for 5 months. With the increasing prevalence of nickel allergy in the pediatric population, it is important for clinicians to continue to consider metallic-appearing electronics and personal effects as potential sources of nickel exposure.¹⁴⁻¹⁶

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