

toward “natural” products, it is important to consider SHMG as a potential allergen in children.

Zebra

Sodium hydroxymethylglycinate is a potential formaldehyde-releasing preservative in products.

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Children's Toys As Potential Sources of Nickel Exposure

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Précis

Children's toys with metal components are potential sources of nickel exposure in young children. Awareness and avoidance of such toys may help prevent allergic contact dermatitis from nickel.

Discussion

Early age at exposure is a well-recognized risk factor for developing nickel allergy. In our patch-tested population of US children between 2001 and 2006, we found clinically relevant nickel sensitization in 17% of patients younger than 18 years.¹ This rate has remained constant in our latest data (unpublished). One aspect we did not speak of previously was the number of patients' parents, trained

with a dimethylglyoxime (DMG) test in hand, who found nickel in their children's toys.

Most cutaneous nickel allergy seen in children is reportedly associated with contact to items such as costume jewelry, eyeglass frames, belt buckles, jean snaps, buttons, keys, and coins.² Heim and McKean evaluated fasteners from children's clothing purchased in the United States as possible sources of releasable nickel ions and concluded that the exposure to nickel that US children potentially receive from clothing fasteners is sufficient to result in cutaneous sensitization reactions.³

We believe clinicians should be aware that children's toys are additional possible sources of significant nickel exposure. At a local Wal-Mart store, we were able to find the toys our patients' parents told us had given positive results when tested with DMG (Fig 1 and Fig 2). Of note, these toys were all specifically marketed toward young children and found in the babies' toys and kids' toys sections of the store. Given that the DMG test is able to detect nickel concentrations greater than 1:10,000 and that only 0.44 $\mu\text{g}/\text{cm}^2$ of nickel is required to elicit reactions in the most nickel-sensitive patients,⁴ it is theoretically possible that, among the pediatric population, frequent exposure to children's toys containing nickel is capable of not only eliciting cutaneous nickel allergy but also prolonging preexisting nickel dermatitis.

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DOI 10.2310/6620.2010.09042

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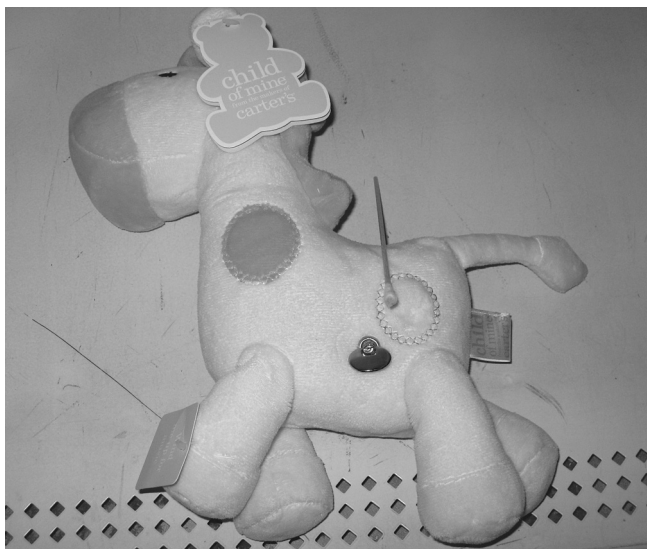


Figure 1. A plush musical giraffe toy with a metal knob found to

Of note, nickel sensitivity has been documented in infants as young as 6 months.² Denmark currently has the lowest rate of nickel sensitivity (8.1%) owing to the fact that it has regulated nickel concentrations in consumer goods since 1992.⁵ A recent Danish study demonstrated that, since regulations were instituted, younger age groups (up to 20 years) have shown the greatest decrease in rates of nickel sensitivity, whereas the prevalence has remained relatively stable in adults.⁶ This suggests that children may benefit the most from regulation of nickel exposure.⁶

Pearl

We call attention to children's toys as alternate potential sources of exposure to nickel in an effort to maximize any opportunity to reduce early exposure and thus prevent cutaneous reactions to an allergen that is difficult to avoid.



Figure 2. A snap on a child's toy purse was found to contain nickel by dimethylglyoxime testing.

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