

# A Diagnostic Pearl: The School Chair Sign

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*Allergic contact dermatitis (ACD) reactions to nickel have pleomorphic presentations owing to the ubiquity of this allergen in the environment. In children, ACD to nickel classically occurs on the earlobes, neck, wrists, and infraumbilical area. We describe a newly recognized presentation for this common childhood ACD—on the posterior thighs—which we have termed the school chair sign.*

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**A**lthough allergic contact dermatitis (ACD) was once believed to be uncommon in infants and children,<sup>1</sup> some authorities estimate that 5% to 10% of all cases occur in pediatric patients.<sup>2</sup> Sensitization to contact allergens can be induced in term and preterm infants, and case reports have documented ACD in 1-week-old infants.<sup>1</sup> The incidence of pediatric ACD is increasing.<sup>3,4</sup> Excluding plants, nickel is the most common allergen in children<sup>1</sup> and in women in Europe and the United States.<sup>4</sup> Ear piercing in children of young ages is a significant risk factor for nickel ACD and is thought to account for its increased incidence in girls and women.<sup>4</sup>

Careful physical examination and review of the patient's history often yield clues to the diagnosis of ACD.<sup>3</sup> Precipitating factors linked to work or hobbies and the distribution of the dermatitis are important evidence.<sup>2</sup> Nickel ACD in children clas-



**Figure 1.** Nummular eczematous patches on the posterior thighs of patient 1.

sically occurs on the earlobes, neck, wrists, and infraumbilical area.<sup>1</sup> We describe a new site of involvement—the posterior thighs of children—which is most often affected during the spring and fall months.

## Case Reports

**Patient 1**—A 9-year-old girl was seen for a pruritic eruption on her posterior thighs (Figure 1). For 2 to 3 years, she had noticed that the rash cleared during the summer but returned during the school year. Her ears had been pierced on 3 separate occasions, and the piercing was complicated by recurrent “infections.” The eruption on the thighs was

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**Figure 2.** Diffuse eczematous changes on the posterior thighs of patient 2.

initially treated with topical 0.5% hydrocortisone/1% iodoquinol without remission. Results of patch testing (T.R.U.E. Test<sup>®</sup>) were positive for nickel, cobalt, and thimerosal. Subsequent successful treatment included avoidance of nickel sources, including school chairs with metal grommets. The patient experienced a flare after spending the day at an amusement park, where she rode many times on a carousel that had metal seats.

*Patient 2*—A 7-year-old girl presented with a 6-month history of a pruritic eruption, beginning in the fall, characterized by fine papules on her trunk and face. During the next 6 months, the distribution changed into more densely scattered papules confined to the posterior thighs (Figure 2). Her ears had been pierced twice, at the ages of 5 and 6 years; the piercing was complicated by earring intolerance. Results of a single patch test to nickel were positive. Her symptoms were subsequently well controlled with nickel avoidance, including the use of a chair pad at school and intermittent use of topical 0.5% hydrocortisone/1% iodoquinol or mometasone furoate 0.1% ointment.

### Comment

The culprits for ACD of the posterior thighs are the nickel-containing grommets on the seats of school chairs. Sensitization usually presents during the

warmer months, when children wear shorts and are sweating. The *school chair sign* can prompt an accurate diagnosis of nickel ACD, rather than a misdiagnosis of atopic or irritant dermatitis.

An easy initial therapeutic approach for children with the school chair sign is to avoid obvious nickel contact by using a chair pad or a grommet-free chair. Clinicians who treat children with chronic and recurrent dermatitis should not overlook the possibility of ACD. Nickel allergy is a very common childhood problem, and heightened awareness of the sites of predilection in school-aged children, such as the posterior thighs, can help control the symptoms.

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