Despite being quite common in children and well-studied in pediatric populations in Europe, allergic contact dermatitis (ACD) is largely an under-recognized entity in the United States. In North America, 20 percent of children from birth to 14 years of age will react to one or more common allergens. This estimate may be higher when considering both poison oak and poison ivy as allergens. While there are currently no published studies in the US on patch testing in children with presumed contact dermatitis, studies have reported contact sensitization in healthy children, with estimates from 64.2 percent to 68 percent of children having at least one positive patch test.

Given the growing evidence that allergic contact dermatitis is causing significant morbidity in pediatric patients, it is important for both parents and healthcare providers to be cognizant of measures they can take to avoid the common offending allergenic chemicals found in children's environments. Below we describe some dos and don'ts geared towards preventing or recognizing allergic contact dermatitis in pediatric patients. While these tips can be helpful, keep in mind that they will not prevent all contact dermatitis.

Dos

1. **Hold a high index of suspicion in kids presenting with dermatitis of the hands and eyelids.** Beattie, et al. report that kids with hand or eyelid dermatitis are much more likely to have contact dermatitis. Involvement of these areas should be a 'red flag' to the provider to consider patch testing.

2. **Consider allergic contact dermatitis in kids with atopic dermatitis refractory to treatment.** Allergic contact dermatitis is often missed in kids who have underlying eczema. This may be caused by the fact that it is often misdiagnosed as "eczema flares" rather than contact dermatitis. The most common offending allergen is still nickel. However, allergic ingredients used to treat the underlying endogenous dermatitis (e.g., corticosteroids, lanolin, and preservatives) could be involved. Therefore, consideration of patch testing to these agents is important.

3. **Wear socks with shoes.** It is important to remember that shoes may contain ingredients such as thiuram and p-tert-butyl formaldehyde resin. These are common allergens known to cause contact dermatitis of the feet.

By Pamela Chayavichitsilp, BA and Sharon E. Jacob, MD

**The Dos and Don'ts of Pediatric Allergic Contact Dermatitis Management**

Although very common in children, contact dermatitis is often overlooked. These brief tips aid management.

**NEW In Your Practice**

Pretty Ribbons. The holidays are over, but there's still a good use for ribbons, according to P&G Beauty. The company's Olay Ribbons Plus Body Butter wash contains their highest concentration of petrolatum and has been shown in studies to improve visibly dry skin, increase stratum corneum hydration, and improve barrier function compared to control or a regimen including leave-on body lotion. In a trial of adult women with mild to moderate atopic dermatitis, users of Olay Ribbons Plus Body Butter had significantly better improvements in SCORAD scores over four weeks compared to users of a syndet bar.

Tip-Top Shape. Thermage recently announced its new TheraTip DC and Body Shape procedure that they say can help tighten, firm, and shape the body in a single treatment without surgery, injections, and little to no downtime. The Body Shape procedure is designed to deep contour patients’ abdomen, arms, thighs, and buttocks, and it is the latest in a suite of procedures under the Body by Thermage umbrella. Along with the new tip, Body Shape was launched at the World Congress of Dermatology in Buenos Aires this fall.

Mission: Aborted. CuraGen recently announced that its Phase II dose-confirmatory clinical trial (CLN-12) evaluating a single dose of velafermin for the prevention of severe oral mucositis demonstrated that velafermin was safe and well-tolerated but did not meet its primary endpoint. Based on these results, the company is discontinuing the development of velafermin.
Rubber is a complex material that contains para-phenylenediamine derivative (para-phenylenediamine was designated the 2006 allergen of the year), in addition to being 38 percent additives! Therefore, pacifiers made of rubber may contain a number of allergens, such as latex, and additives, such as thiuram. Silicone pacifiers are devoid of these ingredients.

4. Use silicone pacifiers and nipples, not rubber. Rubber is a complex material that contains para-phenylenediamine derivative (para-phenylenediamine was designated the 2006 allergen of the year), in addition to being 38 percent additives! Therefore, pacifiers made of rubber may contain a number of allergens, such as latex, and additives, such as thiuram. Silicone pacifiers are devoid of these ingredients.

5. Use “fragrance-free” products. Avoid products that are labeled “unscented” or “scent-free,” since these products may contain a fragrance that masks (blocks) the original scent or an unpleasant scent of the ingredient chemicals; examples include perfumes, moisturizers, deodorants, diaper wipes, and even diapers.

6. Do everything in moderation. There are over 3,000 chemical allergens known to cause allergic contact dermatitis in humans. Repeat exposure to allergenic chemicals increases the likelihood of contact sensitization to that chemical. We therefore advise heeding the old adage, ‘everything in moderation,’ to minimize repeated exposures.

7. Eat healthy whole foods, not vitamins. Vitamins can contain unwanted contaminants, such as nickel and PABA, or artificial ingredients such as aspartame (caution in patients with Phenylketonuria or formaldehyde allergy). Therefore, to avoid being exposed to unnecessary allergens, patients should be advised to eat healthy whole foods instead of multivitamins and minerals.

Don’ts

1. Don’t allow henna tattoos. Henna tattoos are becoming more popular among adolescents. These tattoos can be ‘laced’ with para-phenylenediamine (PPD), a hair dye that is prohibited by the FDA for application to the skin. This chemical is a significant contact sensitizer and has been associated with serious reactions in children. PPD can also cross-react with similar compounds commonly found in sunscreen with PABA, and certain heart and diabetic medications such as sulfonamides and sulfonylureas. Therefore, it is best to avoid.

2. Don’t use baby wipes. Baby wipes may contain preservatives (such as methylchloroisothiazolinone, quaternium 15 and bronopol) and fragrances that can cause allergic contact dermatitis. In patients previously allergic to baby wipes, it is wise to use paper towels with water and soap instead of baby wipes. Note: Quaternium 15 and bronopol are formaldehyde releasers.

3. Don’t use nail polishes that contain tosylamide formaldehyde resin. Tosylamide formaldehyde is a significant allergen and may cause an “ectopic allergic contact dermatitis” (where eruptions occur at locations distant from the area of application, such as the eyelids or neck rather than the hands or fingertips due to a higher reactivity in thinner more sensitive skin).

4. Don’t eat food products containing aspartame if possibly allergic to formaldehyde. Aspartame is hydrolyzed in the intestine into methanol and subsequently oxidized to formaldehyde in the liver. Systemic contact dermatitis has been reported in formaldehyde allergic patients who have ingested aspartame. Formaldehyde is a common sensitizer for contact dermatitis in both children and adults. As a preventive measure, it’s best to avoid products containing formaldehyde releasers or formaldehyde-releasing preservatives (FRPs).

5. Don’t play with keys and coins. Keys and coins are a significant source of nickel (and other metals). Nickel is undoubtedly one of the most common causes of allergic contact dermatitis in all ages. Therefore, parents should not let their young children play with metal keys and coins to prevent ACD, and reduce the risk of aspiration.

6. Don’t dye hair with products containing para-phenylenediamine when pregnant. Para-phenylenediamine (PPD) is an oxidizing agent that is used on hair dying products. It is a common contact sensitizer and one of the 23 allergens used in the thin-layer rapid use epicutaneous (T.R.U.E.) Test. Fetuses may potentially be
exposed to these antigens in utero and could in turn become sensitized prenatally.  

7. Consider avoiding seafood when pregnant. Besides the obvious mercury exposure (which can be significant), a second reason to not ingest seafood is that ingestion can cause sensitization and in turn manifest as protein contact dermatitis when the skin is exposed to seafood and/or its constituents. Similar to the case of PPD exposure in pregnancy, fetuses may become sensitized in utero when exposed to protein antigens. 

Consider Alternatives

It is important to recognize that each of the thousands of allergens have a list of safe alternative products as well as ways to avoid them, which extends beyond the scope of this article. We strongly recommend paying attention to the key resources for further discussions on this topic. Here are the resources: 

- The American Contact Dermatitis Society (http://www.contactderm.org), and others. 
- That being said, ACD is an important diagnosis often missed in children, and furthermore, it is potentially curable and even potentially preventable.

Root Out Fungus. Successful management of tinea pedis requires eradication of any nail infestation, specialists suggest. According to a presentation by podiatrist Bret Ribotsky at Academy '07 that was recently reported by Ortho-Neutrogena, tinea pedis is an independent predictor of onychomycosis; infection may be transmitted from the skin to nails or vice versa. Dr. Ribotsky reported the case of a 79-year-old man with a 20-year history of chronic recurring tinea pedis and onychomycosis who finally achieved clearance with twice daily application of sertaconazole 2% (Ertaczo, Ortho-Neutrogena) for six weeks.

Time Saver. Rhytec is expanding the use of Portrait Plasma with a new 25mm stand-off attachment for the current hand-piece. With addition of the new attachment, the Portrait Plasma provides a nominal 65 percent of the displayed energy setting. It also covers a larger treatment area per plasma pulse when increasing the distance from the skin's surface, provides shorter procedure time and minimized recovery time at low energy settings, thus making for a more comfortable experience for patients, the company says.