Phthalates worsen skin allergies in newborn mice exposed through their mothers.

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Newborn male mice exposed to a common phthalate plasticizer (DEHP) through their mothers developed more severe allergic skin reactions to allergens than unexposed mice.

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Research with mice reveals that the phthalate DEHP can increase the severity of allergic reactions in young animals when they are exposed neonatally to the contaminant via their mother's milk.

Rates of allergic skin conditions -- called dermitits -- are increasing in people. Generally, the skin becomes swollen, red and itchy after being exposed to an allergen. These new results may shed light on one of the drivers of this trend.

This study suggests that environmental chemicals like DEHP may increase the potency of reactions to allergens and thereby play a role in the development and/or enhancement of allergic diseases. According to the authors: "Our results support the novel hypothesis that maternal exposure to DEHP during neonatal periods via breast milk and/or infant formula may be responsible, at least in part, for the recent increase in atopic dermatitis in offspring."

DEHP is added to plastics, usually to make them flexible. Because of its widespread use in polyvinyl plastics, it is found almost everywhere in the environment. The compound is present in some food packaging, many household products, soft plastic toys, auto upholstery and medical tubing/bags. Exposure occurs through food, water, air and medical procedures in which DEHP-containing products are used. DEHP is a common contaminant of household dust, because it is commonly used in vinyl flooring and in the backing of carpets.

The chemical's link to reproductive effects in lab animals -- specifically infertility and male reproductive defects -- has led the European Union, Canada and the state of California to ban DEHP in toys and infant products.

To expose the developing mice, researchers gave pregnant dams DEHP at 0.8, 4, 20 or 100 micrograms on days 0, 7 and 14 of pregnancy. To expose newborns, a different set of mothers was injected with DEHP at the same doses on days 1, 8 and 15 after birth. The researchers then injected mite allergen into the pups on treatment days 0, 2, 4, 7, 9, 11, 14 and 16. They measured ear thickness, determined disease symptoms (dryness and wounding) and evaluated tissues for signs and severity of a type of skin allergy that resembles eczema.
Dermatitis-like skin problems were worse in newborn mice exposed to 100 micrograms of DEHP through their mothers but not in any of the mice that were exposed while in the womb. The scientist who carried out the research proposed this unexpected pattern could result from the fact that fetal immunity is largely dependent upon the mother's immune system. After birth, the newborn is increasingly dependent upon proper development of its own immune system. These results suggest that this development is adversely affected by DEHP.

25 May Push to ban plastic toy chemicals linked to health issues in baby boys. Boutique sex toy retailers are warning customers that some of their products contain plastic-softening chemicals being subject to bans in Europe and some US states. Melbourne Age, Australia.

9 May More problems with plastics. Human exposure to hormone-disrupting synthetic chemicals, which can leach from a slew of consumer products, is continuous and widespread. US News & World Report.

7 April Time to update environmental regulations. Should public health standards for endocrine-disrupting compounds be based upon sixteenth century dogma or modern endocrinology? San Francisco Medicine.

8 September Plastic may not be so fantastic for kids. More and more consumers -- new mothers are leading the pack -- are expressing concern about potentially toxic chemicals in plastic products. Los Angeles Times, California.

30 April Does 'the dose make the poison?' Extensive results from studies of endocrine-disrupting compounds indicate that toxicological testing can no longer assume high dose results predict the effect of low doses. Environmental Health News.

9 November Danger: chemical hazards. This week, two scientists called for curbs on the use of 200 chemicals - to protect very young children. They were accused of scaremongering, but anyone who dismisses worries about contaminants, should remember what happened to the Romans. London Guardian, England.

18 October DEHP enhances allergic responses in mice The phthalate DEHP increases allergic reaction to a mite allergen in mice at levels within the range deemed safe by current EPA standards. OurStolenFuture.org.

27 July Time for safer alternatives. With the TURI study completed and ample data from the Department of Environmental Protection and other agencies that prove the feasibility of alternatives for many toxins, it is now time to take the next step toward a greener, safer Massachusetts. Arlington Advocate, Massachusetts.

27 July Time for safer alternatives. Scientific evidence is increasingly showing that toxic chemicals play a significant role in causing or exacerbating many of today's most prevalent chronic diseases and disorders. Arlington Advocate, Massachusetts.

21 July Alternatives available to toxic chemicals. Scientific evidence is increasingly showing that toxic chemicals play a significant role in causing or exacerbating many of today's most prevalent chronic diseases and disorders. Woburn Advocate, Massachusetts.