

Latex Allergy Alert—Risks to Health Care Providers and Patients

LYNN H—, a 38-year-old surgical nurse, developed an itchy rash on her hands approximately three years ago. Although the rash improved when she switched to non-powdered latex gloves, she began to experience runny nose, sneezing, itchy and watery eyes, wheezing, and shortness of breath while at work. At first thinking it was hayfever, she later noticed that her symptoms improved within hours of removing the gloves and leaving the hospital. Her allergist took a thorough history, including occupational history, and ordered a RAST test, which was positive for latex allergy. The bottom line: returning to a work environment where latex products are abundant could be hazardous—even life-threatening. Lynn H— is currently not working and is trying to cope with a variety of interrelated problems. She faces a difficult challenge in today's world—avoidance of latex. Her dentist and health care providers, for example, must wear vinyl gloves during her routine visits. Commonplace activities such as blowing up balloons for birthday parties, wearing clothing with elastic, or going to restaurants where food servers wear latex gloves, are now fraught with danger. She wears a medical alert bracelet and carries auto-injectable epinephrine, but fears being caught in an emergency medical situation where EMTs may not be aware that she is allergic to their gloves....

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Latex allergy is a growing problem, that needs to command attention now. While there is increasing concern, the potentially deadly consequences of latex allergy are widely underappreciated. What may look like a hand dermatitis may evolve into a potentially life-threatening allergic response. The purpose of this article is to alert health care providers to the symptoms of latex allergy, and to provide information on creating latex-safe

environments for health care providers and patients.

Health care workers are at particular risk because they use gloves—most often made of natural latex rubber—so frequently. Since the advent of “universal precautions” in 1987 and OSHA’s 1992 bloodborne pathogens regulation, glove usage has increased from an estimated 12 billion pairs per year in 1987 to more than 200 billion pairs in 1998.¹ That’s a lot of rubber! By one estimate, up to 12 percent of health care workers who are regularly exposed to latex are sensitized and suffer some form of allergic reactions, including skin rashes; hives; flushing; itching; nasal, eye, or sinus symptoms; asthma; and—in rare instances—anaphylaxis.²

BLAME IT ON THE HEVEA BRASILIENSIS

Natural latex used for commercial purposes is a milky fluid obtained from the rubber tree, *Hevea brasiliensis*. Latex is processed to increase its strength, elasticity, and durability for use in over 40,000 products, including hundreds of medical and dental devices such as gloves, catheters, blood pressure cuffs, tubing, drains, IV ports, and anesthesia equipment. Consumer products containing latex include balloons, condoms, clothing, band-aids, rubber bands, computer mouse pads, and sports equipment. In the late 1980s, an increasing demand led to the harvesting of immature rubber trees, shortened curing and drying times, and an increase in chemical usage in the manufacturing process (e.g. accelerants, carbamates, and thiurams).

Type I latex allergy is an IgE mediated immune system reaction to proteins found in natural latex rubber products. A skin rash (type IV hypersensitivity) can also be caused by the chemicals in the gloves. Latex proteins can be inhaled or absorbed directly through the skin. The proteins often become airborne when

they adhere to the powder often used in gloves to make them easier to don. Numerous glove changes during the day exacerbate the problem. Although life-threatening reactions are seldom the first sign of latex allergy, reactions can become progressively worse with frequent and repeated exposure. Once sensitized, individuals may react to very small exposures. In sensitized persons, symptoms usually begin within minutes of exposure; but they can occur hours later and can be mild to very severe. Mild reactions include erythema where gloves contact the skin, hives, or itching. More severe reactions may involve respiratory symptoms such as runny nose, sneezing, itchy eyes, scratchy throat, and asthma. The worst case scenario, of course, is anaphylaxis.

Mucosal exposure may result in more severe reactions than cutaneous exposure, making it particularly important to identify sensitized patients prior to surgery or

QUESTIONS FOR YOUR PATIENTS

1. Have you ever been told that you have an allergy to natural latex rubber?
2. Have you ever reacted to latex products?
3. Have you ever had an unexplained allergic reaction during a dental or medical procedure?
4. Have you had any unexplained anaphylactic reaction after surgery?
5. Do you have spina bifida?
6. Have you undergone frequent urinary catheterization procedures?
7. Do you have a history of hand dermatitis?
8. Do you have asthma, hay fever, or eczema?
9. Are you allergic to foods such as bananas, avocados, kiwis, or chestnuts?
10. Do you have contact with natural latex rubber at work or at home?

dental, pelvic, or rectal exams. Individuals at high risk for latex allergy include anyone whose medical history, occupation, or avocation translates into a more-than-usual cumulative exposure risk: persons with spina bifida, health care workers, rubber industry workers; persons with a history of atopy, genitourinary tract anomalies, or multiple surgical procedures; many food handlers, janitors, housekeepers, hairdressers, morticians, child care workers, policemen, and firefighters. In other words, many people. Sensitized persons can develop cross-reactions to bananas, avocados, kiwis, and chestnuts, which have latex-similar proteins.

PREVENTION IN THE WORKPLACE

Health care providers need to be proactive in providing non-latex alternatives: a gram of prevention is worth a kilo of cure.[†] Hospitals and health systems across the U.S. are currently exploring ways to reduce or eliminate the use of powdered latex gloves. In April 1998, three of the Portland-area hospitals in the Providence Health System switched to powder-free gloves; OHSU, Kaiser, and Legacy Health Systems are currently working on latex policies. Workers not at risk of exposure to infectious agents should be using latex alternatives.

Physicians can play a key role in latex allergy prevention. The most basic tenet of the Hippocratic Oath—"do no harm"—can be honored if each and every health care provider protects themselves, their co-workers, and their patients by incorporating latex allergy awareness,

exposure control, and prevention in their practice.

Here are some suggestions for creating latex-safe environments:

- Use reduced-protein, powder-free gloves when latex is used. [Note: "hypoallergenic" latex gloves do not reduce the risk of latex allergy.]
- Use non-latex gloves (e.g. nitrile, vinyl, neoprene) when there is little potential for contact with infectious materials.
- Make alternative products available in all work areas.
- Develop a comprehensive latex policy.
- Include latex exposure control information in new employee orientation and in-services.
- Periodically screen high-risk workers for latex allergy symptoms.
- Schedule latex sensitive or allergic patients early in the day when contaminants should be at lowest levels.
- Cover latex portions of equipment.
- Maintain well-functioning ventilation systems with fresh air supply.
- Identify areas where latex-containing dust has settled and clean frequently.

- Change ventilation filters and vacuum bags (use HEPA filters) frequently in latex-contaminated areas.

REFERENCES

1. American College of Allergy, Asthma, and Immunology. <http://allergy.mcg.edu/physicians/ltxhome.html>.
2. NIOSH Alert Preventing Allergic Reactions to Natural Rubber Latex in the Workplace, DHHS (NIOSH) Publication No. 97-135.

Recommended web sites

NIOSH (<http://www.anesth.com/lair/lair.htm>, http://www.familyvillage.wisc.edu/lib_latx.htm)
 Amer. College of Allergy, Asthma, and Immunol.: (<http://allergy.mcg.edu/physicians/ltxhome.html>)
 Education for Latex Allergy/Support Team & Information Coalition (ELASTIC) (<http://www.netcom.com/~ecbdmd/elastic.html>)
 How to Manage a Latex Allergy Patient (<http://www.anes.ccf.org:8080/pilot/latex/manage.htm>); <http://www.latexallergyhelp.com/>)

Corrigendum: School Vaccination Requirements

DUE TO AN UNFORTUNATE confluence of events, the table that appeared in the August 18 issue indicated that 2nd dose measles would not kick in before 2000. That is incorrect. The new requirement is effective this school year. A corrected table is shown (*infra*).

Additional School/Child Care Vaccine Requirements

<i>If a child will be attending:</i>	<i>Beginning this school year:</i>	<i>He or she needs these additional shots:</i>
Kindergarten	1998/1999	Hepatitis B 2nd dose Measles*
	2000/2001	Varicella
Child Care Facility	1998/1999	Hepatitis B
	2000/2001	Varicella
7th Grade	2000/2001	Hepatitis B 2nd dose Measles* Varicella

*Use any measles vaccine, e.g., MMR

[†]And at 1000:1 a much better investment than the English equivalent.