

## Latex glove allergies

Safe Science: Be Protected!

By Dr. Ken Roy\*

Are you being too rash!

Have you or a student put on a latex glove as part of your personal protective equipment in preparation for doing a science laboratory experiment and suddenly develop a red rash on the back of the hand? Chances are the rash may indicate an allergy to latex! The number of serious allergic reactions to latex has increased significantly over the past few years. In some cases though rare, these allergies can be fatal. So, what is the problem and how can you protect yourself and students?

Why the change in behavior?

Natural rubber latex is derived primarily from the milky fluid of a tree *Hevea brasiliensis* found in Africa and South-east Asia. With the increase in the need for latex over the last decade resulting from the AIDS and hepatitis B epidemics, shortages were experienced. This led to the procurement of low-quality latex gloves with high levels of allergen.

What should be watched out for?

Hypersensitivity to latex occurs when the body's immune system reacts to proteins which are found in natural rubber latex. The body senses an invader and launches a defense strategy that effects a wide range of symptoms including dermatitis, eczema, and asthma. The most serious is anaphylaxis. These symptoms usually include a drop in blood pressure, flushed skin, difficulty breathing, swelling of the throat, tongue and nose, and loss of consciousness. This is similar to bee sting or food-type allergies.

Interestingly enough, powdered gloves can contribute to the response. The powder absorbs the allergens and can be



Latex gloves may cause allergic reactions.

transferred to the air. People breathe this in and it contributes to the allergic response. The dust containing allergens can also land on laboratory tables, desk tops, equipment, etc. Touching this equipment can lead to allergy symptoms. In addition, during use of gloves, sweat dissolves and absorbs some proteins. This transfers it to the skin and again, can lead to allergy symptoms.

Is there a the dual personality trait?

Does any product labeled as containing latex elicit an allergic response? No! Although it is called latex, butyl- or petroleum-based synthetic rubbers found in such products as latex house paints, have not been shown to pose any allergy type reactions in latex-sensitive individuals. Natural plant derived latex is found in many products in addition to laboratory gloves. The following products may contain latex: balloons, athletic shoe soles, tires, condoms, rubber toys, pacifiers and underwear leg and waist bands. However, there usually is little or no problem, save the most hypersensitive individuals in these cases.

Users should also be aware of the fact that skin problems resulting from use of gloves—both latex and non-latex may not be allergy based. Frequent hand washing and drying can cause dermatitis which is only exacerbated by used of gloves.

Just how many are at risk?

Since 1988, approximately 1,000 cases of allergic or anaphylactic reactions to latex-containing products have been reported to the U.S. Food and Drug Administration. However, it is felt that many go unreported. Some research has suggested over 100,000 health care workers alone are at risk for developing latex allergies. Science laboratory workers are also listed as an occupational group which may develop latex allergies resulting from repeated exposure.

What about seeing a specialist?

An allergy specialist should determine if the allergy to latex exists. This is done via a skin prick test and/or blood test to confirm the presence of IgE anti-latex antibodies.

Proactive makes perfect!

If an individual is at risk, all laboratory gloves should be reviewed for latex content. Don't assume that a product labeled 'hypoallergenic' means it is latex-free! Look for alternatives such as neoprene, nitrile or polyethylene gloves, depending on the level of protection required for a laboratory activity. If latex gloves are chosen, remember to use powder-free gloves with reduced protein content (hypoallergenic). Hypoallergenic latex gloves do not necessarily reduce the risk of latex allergy, but may reduce reactions to chemical additives in the latex. Employers are required under the United States Occupational Safety and Health Administration (OSHA) standards to provide employees with alternatives for

gloves in cases of latex allergies. Science teachers in other countries should check with their health authorities for requirements on this issue.

Appropriate work practices recommended include:

- > When wearing latex gloves, do not use oil-based hand creams or lotions (cause glove deterioration)

- > After removing latex gloves, wash hands with a mild soap and dry thoroughly

- > Practice good housekeeping: frequently clean areas and equipment contaminated with latex containing dust

- > Learn to recognize the symptoms of latex allergy: skin rash, hives, itching, nasal, eye, or sinus symptoms, asthma and shock.

Precautions for individuals with latex allergies recommended include:

- > Avoid contact with latex gloves and products

- > Avoid areas where you might inhale the powder from latex gloves worn by other workers

- > Tell your employer and health care providers that you have latex allergy

- > Wear a medical alert bracelet

Given that there is no cure at this point, prudent avoidance is the order of the day!

### Resources:

American College of Allergy, Asthma & Immunology website: HYPERLINK <http://www.aaaai.org> <[www.aaaai.org](http://www.aaaai.org)>

American Latex Allergy Association website: HYPERLINK: <http://www.latexallergyresources.org> <[www.latexallergyresources.org](http://www.latexallergyresources.org)>

National Institute for Occupational Safety and Health website: HYPERLINK: <http://www.cdc.gov/niosh/homepage.html> <[www.cdc.gov/niosh/homepage.html](http://www.cdc.gov/niosh/homepage.html)>

Occupational Safety and Health Administration website: HYPERLINK: <http://www.osha.gov> <[www.osha.gov](http://www.osha.gov)>

Department of Health - UK Website: HYPERLINK: <http://www.doh.gov.uk> <[www.doh.gov.uk](http://www.doh.gov.uk)>

Health Canada Website: HYPERLINK: <http://www.hc-sc.gc.ca> <[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)>

*Looking Out for Latex*; Sandra A. Holmes, *Science and Children*, February 1999

Potential for Allergy to natural Rubber latex Gloves and Other Natural Rubber Products; OSHA Technical Information Bulletin, April 12, 1999

Preventing Allergic Reactions to Natural Rubber Latex in the Workplace; NIOSH Publication No. 97-135, free of charge; phone: 1-800-35-NIOSH.

### LIVE LONG AND PROSPER SAFELY!

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