



Latex Allergies

Safety and Environmental Management System

SEMS 5-28

Latex Allergies

Serious allergic reactions to latex have been increasing in recent years, some with serious or even fatal outcomes. Health care workers and others who use latex gloves or are exposed to other products containing latex should be aware of the potential for developing an allergic reaction. People who exhibit symptoms of the allergy should be alerted to the need to avoid future exposure to latex products.

What is latex?

Natural rubber latex is a processed plant product derived almost exclusively from trees found in Africa and Southeast Asia. Natural rubber latex should not be confused with butyl- or petroleum-based synthetic rubbers. Synthetic products, including latex house paints, have not been shown to pose any hazard to latex-sensitive individuals.

What is latex allergy?

An allergy, or immediate hypersensitivity reaction, occurs when the body's immune system is sensitized to a foreign protein and reacts by forming a type of antibody (called an IgE antibody) specifically directed against this protein. This kind of antibody is responsible for a wide variety of allergic responses which may range from hives (urticaria) to allergic rhinitis (hay fever), asthma, or rarely, life-threatening allergic attacks (anaphylaxis). Latex allergic individuals make allergic antibodies directed against one or more proteins that are found in natural rubber latex. When susceptible individuals come into direct contact with latex, whether from wearing latex gloves or another source, an allergic reaction may follow. Receiving medical or dental care from someone wearing a latex glove, blowing up a balloon or breathing in glove donning powder are other common examples of circumstances where allergic reactions to latex are triggered.

What products contain natural rubber latex?

Although gloves are a common source of latex exposure, there are many others. Latex is found in as many as 40,000 consumer products including condoms, balloons, athletic shoes, tires, underwear leg and waist bands, rubber toys, nipples and pacifiers. Latex is also a common component of many non-glove medical supplies, including airway and intravenous tubing, syringes, stethoscopes, catheters, dressings and bandages.

Latex gloves are frequently implicated in allergic reactions due to the repeated direct exposure of the wearer's hands to latex proteins or due to airborne latex proteins that are absorbed by powders used to lubricate some latex gloves.



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What are the symptoms of latex allergy?

Allergy to latex proteins is a medical problem with symptoms similar to those seen in individuals who are allergic to bee venom or cat dander. Reactions on exposure to the allergen are generally acute and may mimic hay fever or asthma, with symptoms such as nasal congestion, hives or difficulty breathing. The most severe cases can result in anaphylaxis, a potentially fatal reaction that affects many parts of the body at once. Symptoms of anaphylaxis are usually immediate, progress rapidly and may include a dangerous drop in blood pressure, flushed skin, difficulty breathing, swelling of the throat, tongue and nose, and loss of consciousness. Emergency medical attention should be sought at the first sign of an anaphylactic reaction. Non-allergic skin problems resulting from the use of latex and non-latex gloves are frequently confused with latex allergy. Contact dermatitis is a frequent problem in glove wearers which can be caused by frequent hand-washing and drying with irritating soaps, skin abrasions from donning and removing gloves and irritation of skin covered by an impermeable barrier. It can also be caused by contact allergy to one or several of the chemicals used in the production of rubber gloves. These are usually local skin problems but can involve larger areas. Such local skin problems are not life threatening, but may precede the development of latex allergy if latex exposure is continued.

How do latex allergy symptoms develop?

In most cases, latex allergy develops after repeated exposures to latex. It should be noted, however, that direct physical contact with latex-containing products is not needed to trigger the allergic reaction. Cases of anaphylaxis have resulted from inhaling latex proteins, which can be absorbed by the powder that is used to lubricate some latex gloves. When the gloves are snapped on and off, the proteins become airborne and can pose a risk to individuals with latex hypersensitivity.

How common is latex allergy?

It is difficult to say how widespread the problem of latex allergy may be. More than 1,700 cases of latex allergic or anaphylactic reactions, including 17 deaths, have been reported to the U.S. Food and Drug Administration (FDA) since 1988. It is assumed that many other cases go unreported. Known risk groups include:

- Health care workers and others who wear latex gloves.
- Individuals who have a history of latex allergy symptoms or who will be undergoing multiple surgical procedures, such as children with spina bifida.
- Individuals with a history of progressive allergic reactions to foods known to cross-react with natural rubber latex.
- Other risk factors are less defined but appear to include a history of:
- Allergic rhinitis (hay fever) or any other allergy.
- Hand dermatitis, particularly if severe or if changing in severity in those that wear latex gloves.



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Outside of these recognized risk groups, latex allergy is very uncommon, with estimates of less than a one-percent prevalence in the general population.

Why is latex allergy more prevalent now?

The introduction of Universal Precautions in health care settings to prevent the spread of AIDS and hepatitis B resulted in a dramatic increase in glove usage. According to the U.S. Food and Drug Administration, glove use increased by 247 percent from 1991 to 1996 to over 18 billion pairs of gloves annually. Latex gloves are the largest source of direct contact with latex products and the major source of latex aeroallergen in areas where powdered latex gloves are in use.

Who is most at risk of a life-threatening anaphylactic reaction to latex?

The risk of anaphylaxis appears to be greatest in individuals with prior allergic reactions to latex-containing objects or prior, unexplained reactions or anaphylaxis during a medical or surgical procedure. Health care providers with a history of severe or worsening latex-glove-induced eczema, hives or work-related rhinitis or asthma-like symptoms should be especially cautious.

How can latex allergy be prevented?

All products and medical devices that come in contact with individuals at risk should be reviewed for possible latex content.

Respiratory exposure to latex proteins can take place in the absence of skin contact, since latex glove donning powders bind latex proteins in the gloves and carry them into the air. In recognition of this fact and that powdered latex gloves are the major source of latex aeroallergen, the American College of Allergy, Asthma and Immunology has issued a joint statement with the American Academy of Allergy, Asthma and Immunology calling for usage of only non-powdered low-allergen gloves. Synthetic and vinyl gloves may be acceptable alternatives.

How can workers protect themselves from developing latex hypersensitivity?

Workers with a history of latex sensitivity must stop wearing latex gloves, and their co-workers must not use powdered gloves. Care should be exercised in the choice of substitutes, since all synthetic or non-latex products are not equally impermeable to blood-borne pathogens. People with a history of glove-associated skin irritations, or contact dermatitis, should use alternative gloves (which may include latex gloves) and topical treatments to relieve their symptoms. Petroleum-based products have been shown to compromise the barrier function of latex gloves, and care should be taken in the choice of treatments used to relieve contact dermatitis.



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How is a suspected latex allergy confirmed?

A skin prick test may be done to test for latex allergy, but there are currently no licensed reagents commercially available for the test. Recent research has demonstrated latex skin testing with reagent currently available in Canada and Europe has better diagnostic sensitivity than the current available FDA approved blood tests. Because of the potential for a life-threatening anaphylactic reaction to the test itself, skin prick tests for latex allergy should be performed only under the close supervision of an allergy specialist. An allergist-immunologist can also perform a blood test to confirm the presence of IgE anti-latex antibodies. There are currently three FDA approved blood tests: the Alastat, the CAP and the Hycor assay. Skin patch tests are used to evaluate the cause of skin irritations, or contact dermatitis, caused by chemicals inherent in rubber gloves.

How are latex allergies treated?

The best treatment for latex allergy is avoidance. Allergy specialists can provide latex allergic patients with information which will help them identify situations that place them at risk; strategies for avoiding an allergic reaction; and information about sources of natural rubber latex exposure and ways to avoid skin and mucosal contact.

Patients with latex allergy are at risk of asthma on exposure to latex-containing aerosols. Those individuals should avoid areas where powdered latex gloves or their products are used.

Personal measures including warning bracelets and adrenaline syringes, like those commonly used for bee sting allergic patients, should be worn or carried at all times. Unexpected exposures to latex during dental, medical or surgical procedures may be prevented by warning health care providers of latex allergy prior to any scheduled visit and at the time of emergency visits.