



# Latex Allergy



## Background:

### What is latex?

- Latex is formed from the sap of a Brazilian rubber tree.
- The allergic reactions are from the proteins that are naturally present in the sap.
- There is only 1% protein that makes of the sap (AFP, 1998).
- “During the industrial process of vulcanization proteins may be altered, and at least one allergen has been found in latex gloves that was not present in rubber sap”(JR2, 1999).
- Most of the allergens from the ending product are found in the cornstarch that makes up the powder in the medical gloves.

### What does a latex allergy involve?

- Most cases of this allergy are associated with latex gloves and latex condoms.
- Having latex be exposed through direct contact with the skin, mucous membranes, or bloodstream, and through inhalation of airborne latex particles, can cause serious allergic reactions (AFP, 1998).
- The powder that is used in some latex gloves has been found to be responsible for the allergies because they are fastened with a protein (Immune, 1997).
- When some latex gloves are removed the powder that is in the gloves is released and absorbed into the air, which then involuntarily becomes inhaled and gets in contact with the mucus membranes, that makes the allergic reactions occur (AFP, 1998).
- There are other exposures that can cause a reaction and those are ones that enter the bloodstream directly. This type of exposure can be caused when in surgery and the doctor uses latex gloves or devices to provide treatment to the infected tissue (AFP, 1998).
- It's possible for someone to have a latex allergy if they have had a history of food allergies, allergic symptoms such as itching and hives, any unexplained allergic reaction during medical procedures, glove-induced hand irritation or eczema, and multiple surgeries as an infant (Immune, 1997).

## Symptoms:

- There are three different effects to rubber latex: irritation, delayed hypersensitivity and immediate hypersensitivity (Premiere, 2002).
- If irritation occurs then the skin will be dry and flaky, this reaction will cease when the latex is taken away from the area (Premiere, 2002).
- When delayed hypersensitivity occurs, blisters form and leaves the skin crusty. This result will develop within 48 hours of first initial contact (Premiere, 2002).
- The occurrence of immediate hypersensitivity includes symptoms such as dizziness, abdominal pain, shock, and sometimes death (Premiere, 2002).

**Other Symptoms:**

- Itchy, red, watery eyes
- Sneezing or runny nose
- Coughing
- Chest tightness and shortness of breath
- Bumps, sores, cracks on hands

**Sources of Possible Latex Exposure:****Medical:**

- Gloves
- Urinary Catheters
- Face Masks
- Bandages
- Mattresses on stretchers

**Household:**

- Balloon
- Condoms/Diaphragms
- Toys
- Sports Equipment
- Clothing including elastic underwear
- Diapers, sanitary and incontinence pads
- Computer Mouse Pads

**Statement of the problem Healthy People 2010:**

- Studies indicate that 8-12% of health-care workers regularly exposed to latex are sensitized, compared with 1-6% of the general population, although total numbers of exposed workers are not known. In the health-care industry, workers at risk of latex allergy from ongoing latex exposure include physicians, nurses, aides, dentists, dental hygienists, operating room employees, laboratory technicians, and housekeeping personnel (CDC, 1997).
- At least 7.7 million people are employed in the health-care industry in the U.S. Once sensitized, workers may go on to experience the effects of latex allergy (CDC, 1997).
- The NIOSH Alert reminds health care workers and employers that appropriate protection is necessary when handling infectious materials, as specified in CDC guidelines for preventing exposure of health-care workers to the human immunodeficiency virus and the Hepatitis B virus. If latex gloves are chosen as appropriate protection, they should be reduced-protein, powder-free latex gloves, NIOSH suggests. Powder used as a lubricant in some gloves can increase exposure to the allergy-causing proteins in natural latex through skin contact and inhalation (CDC, 1997).

- **Categories of Glove associated skin reactions from Centers for Disease control and prevention**

	<b>Irritant Contact Dermatitis</b>	<b>Allergic Contact Dermatitis (Type IV [delayed] Hypersensitivity)</b>	<b>Latex Allergy (Type I [immediate] Hypersensitivity or NRL* protein allergy)</b>
<b>Causative Agents</b>	Toxic chemicals (e.g., biocides, detergents); excessive perspiration; irritating chemicals used in hand products and in glove manufacturing	Accelerators and other chemicals used in glove manufacturing; sterilants and disinfectants (e.g., glutaraldehyde); bonding agents (e.g., methacrylates); local anesthetics	Latex proteins from <i>Hevea brasiliensis</i> (rubber tree)
<b>Reactions</b>	Skin reactions usually confined to the area of contact	Skin reactions usually confined to the area of contact	Skin and systemic reactions can occur as soon as 2–3 minutes, or as long as several hours after skin or mucous membrane contact with the protein allergens
	<b>Acute:</b> Red, dry, itchy irritated areas	<b>Acute:</b> Itchy, red rash, small blisters	<b>Acute:</b> Hives, swelling, runny nose, nausea, abdominal cramps, dizziness, low blood pressure, bronchospasm, anaphylaxis (shock)
	<b>Chronic:</b> Dry, thickened skin, crusting, deep painful cracking, scabbing sores, peeling	<b>Chronic:</b> Dry thickened skin, crusting, scabbing sores, vesicles, peeling (appears 4–96 hours after exposure)	<b>Chronic:</b> As above, increased potential for extensive, more severe reaction
<b>Diagnosis</b>	By medical history, symptoms, and exclusion of Type IV and Type I hypersensitivity	By medical history, symptoms, and skin patch test	By medical history, symptoms, and skin-prick or blood test
	Not an allergic reaction		

### **Epidemiological Picture of the Problem:**

- Starting in the 1980s people started to use latex products more often because of the AIDS scare. This resulted in an increase of latex gloves for many health care professionals (Family Doctor, 2001).
- Between 1988 and 1992 out of 1000 cases of latex allergy only fifteen died. Most of those deaths were associated with a latex balloon-tipped barium enema catheter (Family Doctor, 2001).
- Most of the people who receive latex allergies are the ones who work in the medical field (Family Doctor, 2001).
- The first case of a latex allergy was found in 1979, since then the reaction to anything latex has increased (Family Doctor, 2001).
- More than 1000 people were diagnosed with a latex allergy in between 1988 and 1992 (CDC, 1998).
- Health care workers and people that work with rubber are the most at risk
- A health care worker with that has a hay fever is most likely to also develop a latex allergy. It is said that almost 25 percent of health care workers who have hay fever have shown signs of being allergic to latex (CDC, 1998).
- Men and women have the same chance of getting a latex allergy. Latex is everywhere; anyone can be susceptible to developing the allergy (CDC, 1998).

### **Solutions: Preventing and Controlling the Allergy:**

- People with a latex allergy should avoid exposing themselves to latex.
- Use non-latex gloves
- Use reduced latex protein or powder-free gloves
- Good housekeeping, this allows the latex-containing dust to be eliminated from the premises.
- Workers should be trained and educated about the signs of a latex allergy; this includes understanding the signs and symptoms (Premiere, 2002).

### **Responsibility of the employers:**

- Check personnel for symptoms of the latex allergy
- Have high-risk employees get screen tests
- If latex gloves are used, make sure that reduced latex protein gloves are available (Premiere 2002).
- Some employers might give the opportunity for their employees to have colored gloves. This allows employees with allergy problems to accurately identify which ones they can and cannot use. Having colored gloves also allows all other employees to know that he/she has a latex allergy and not to touch them with their latex gloves (Premiere, 2002).
- Some dental employers choose to get their employees with latex allergy flavored gloves they come in grape, mint, and strawberry (Premiere, 2002).

**Responsibility of workers:**

- Use *non-latex* gloves for activities that are not likely to involve contact with infectious materials (food preparation, routine housekeeping, maintenance, etc.) (CDC, 1987)
- Appropriate barrier protection is necessary when handling infectious materials (CDC 1987). If you choose latex gloves, use powder-free gloves with reduced protein content (CDC, 1987).

**Additional Internet Resources:**

American Family Physician. (1998). Latex Allergy. February 2, 2006  
<http://www.aafp.org/afp/980101ap/reddy.html>

Immune.com. (1997). Can Safer Sex Be Latex Safe? February 2, 2006  
<http://www.immune.com/rubber/safesexr.html>

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[http://www.premierinc.com/all/safety/resources/latez\\_allergy/index.jsp](http://www.premierinc.com/all/safety/resources/latez_allergy/index.jsp)

CDC. (1997). Latex Allergy fact sheet. May 1, 2006.  
<http://www.cdc.gov/niosh/latexfs.html>

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<http://www.jr2.ox.ac.uk/bandopubs/NHSSlatex.html>

Premier. (2002). Latex Allergies. February 2, 2006.  
[http://www.premierinc.com/all/safety/resources/latez\\_allergy/index.jsp](http://www.premierinc.com/all/safety/resources/latez_allergy/index.jsp)

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