Identifying and preventing latex allergies in health care workers
The latest on examining latex allergy risks in hospitals

While other hospital safety topics may grab the headlines today, natural rubber latex allergies in health care workers have been among the more enduring concerns when it comes to the well-being of employees.

When the idea of universal precautions mandated greater use of latex barriers such as gloves, workers faced an increased chance to develop sensitivities to latex while on the job. Our report focuses on educating employees about the risks and advice on developing latex-safe zones in your hospital.

The information we present was primarily gathered at last year’s Frontline Workers Safety Foundation conference in Washington, DC, though parts of this package—including the latex questionnaire—were researched in early 2001.

Among those interviewed or otherwise quoted in our articles are the following people:

- **Lee Petsonk, MD**, the senior medical officer in the division of respiratory studies for the National Institute for Occupational Safety and Health (NIOSH). Petsonk is one of the authors of NIOSH’s alert, Preventing Allergic Reactions to Natural Rubber Latex in the Workplace.
- **Michael Hodgson, MD, MPH**, the director of the occupational health program for the Veterans Health Administration, the health services arm of the Department of Veterans Affairs.
- **Lauren Charous, MD**, an allergy specialist at the Milwaukee (WI) Medical Clinic and former chairperson of the American College of Allergy, Asthma & Immunology’s Latex Hypersensitivity Committee.

We welcome comments, criticisms, or suggestions about this special report or latex allergies. If anyone has a related policy they’d like to share with other readers, feel free to contact me.

Sincerely,

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<table>
<thead>
<tr>
<th>Table of contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latex-safe zones can help allergy sufferers cope</td>
</tr>
<tr>
<td>Establishing a latex-safe zone? Check out these pointers</td>
</tr>
<tr>
<td>Latex allergy questionnaire</td>
</tr>
<tr>
<td>Legal wrangling over latex gloves muddles the issues</td>
</tr>
<tr>
<td>Educate your colleagues about latex alternatives</td>
</tr>
<tr>
<td>Seven ways to protect yourself from latex allergies</td>
</tr>
</tbody>
</table>
Amid shrinking budgets and personnel shortages, hospitals cannot afford to let an employee resign because of a latex glove allergy. Organizations should consider latex alternatives and latex-safe zones to help employees deal with related allergies.

“There is no reason why a latex-allergic, even anaphylactic, worker has to leave,” says Michael Hodgson, MD, MPH.

If you truly can’t help a worker with latex allergies in a certain setting, you should consider relocating that person. Hodgson says that managers in the Department of Veterans Affairs strive to place employees with strong latex sensitivities in alternative jobs, such as the workers’ compensation office or a community outpatient clinic—both areas where you can limit latex use.

Natural rubber latex (NRL) is manufactured from a variety of plants. The milky fluid from the plants contains variable amounts of proteins that health care workers can absorb through the skin or inhale, sometimes causing allergic reactions. Also, these proteins bind to materials present in glove powder. The powder aids people in putting on and taking off the gloves, but the residue can go into the air when someone snaps the gloves.

Who is allergic?
Exactly how many health care workers are allergic to NRL is unclear since there are various figures debated.

Anywhere from 0.7–7.9% of the general population are allergic to NRL and health care workers are two to three times more likely than that to be allergic, says Lee Petsonk, MD.

Meanwhile, Charles Jeffress, former head of the Occupational Safety and Health Administration, says that an estimated 8–12% of health care workers are allergic to latex or develop allergies. There are about eight million health care workers in the United States.

Increased risk from the workplace
Regardless of what figures you go with, health care workers are at a higher risk of becoming allergic to NRL because they are around latex so much during their work shifts. Studies indicate that the higher the overall exposure to NRL, the more likely someone will become sensitized, according to the National Institute of Occupational Safety and Health (NIOSH).

Petsonk says that employers should monitor NRL glove use in the health care setting since it is such a high-risk occupation for latex allergies. Managers should make sure that workers who are around latex know the symptoms of NRL allergies and seek early medical attention if those symptoms show up.

Latex allergies result in different reactions, from redness and rashes to asthmatic symptoms, including coughing, wheezing, shortness of breath, and chest tightness. Glove use may also result in blistering, itching, crusting, and oozing lesions. In rare cases, it may prove life-threatening.

Progressive allergies
Remember that a simple skin rash may be the first sign that an employee has become allergic to latex and that more serious reactions could occur with continued exposure.

In one example noted by NIOSH, a laboratory technician developed asthma symptoms after wearing latex gloves while performing blood tests. Initially, the symptoms occurred only when the skin contacted the gloves, but later on the symptoms showed up when the worker was exposed only to latex particles in the air.

Aside from employee training, hospitals should conduct periodic screenings of workers to determine NRL sensitivity. Petsonk says at...
the very least, managers should develop a questionnaire designed to detect whether workers are becoming sensitized.

Using the questionnaire
An example of such a questionnaire is on p. 5 of this report and comes from the American College of Allergy, Asthma & Immunology.

The form asks workers about a variety of risk factors and symptoms, including their use of latex products, skin conditions, and food allergies.

The questionnaire should not be used to formally determine an allergy, says Lauren Charous, MD, who developed the form.

“It’s only a guide,” he says. “It tells you signals about a latex allergy. It’s not diagnostic.”

Nonetheless, circling yes on one or more of the questions may be reason to investigate a potential latex sensitivity. “Even one yes could mean something,” Charous adds.

Allergies to certain foods may be a harbinger of problems with latex. Enzymes in these foods are also found in natural latex, so there is a connection between the two in some cases, Charous says.

Being latex-safe
Workers who have strong latex allergies are good candidates for latex-safe zones, where you limit or abolish the use of latex products.

Such zones usually entail separate ventilation systems and specified training, such as knowing what code teams use latex items or whether cafeteria workers have latex gloves for food handling.

Aside from finding latex alternatives, there are some other issues you should

Establishing a latex-safe zone? Check out these pointers . . .

In establishing a latex-safe area in your hospital, the first step is to limit the use of common latex products such as gloves and offer nonlatex alternatives.

However, even if you succeed on that level, there may still be latex-related problems if you aren’t careful, says Michael Hodgson, MD, MPH.

Hodgson recommends that you initially watch latex-sensitive employees after you limit the use of latex products in an area to see whether they still show signs of allergies. If symptoms persist, there may be latex powder remnants left in ductwork that you should clean out. There may also be cross-contamination between various areas of the facility through the heating, ventilation, and air conditioning units.

Also consider “rogue” causes, Hodgson says.

“Latex allergies can be triggered in unsuspected ways by other nonclinical workers, such as food services [employees] or cleaning folks who don’t need latex gloves,” he says. If that situation occurs, work with administrators to provide these employees with alternative gloves.

Furthermore, remember that even if people take their latex gloves off before entering a latex-safe area, they could still cause problems if the gloves are hidden away in clothing.

“People may visit the latex-free units or zones with powdered latex gloves in their pockets and leave a trail of exposure,” Hodgson says. “Identifying the true cause of [latex problems] may require careful observation and tracking.”
Identifying and preventing latex allergies in health care workers

Latex allergy questionnaire

This questionnaire will help health care workers determine whether they are at risk of natural rubber latex allergies. Answering yes to one or more questions may indicate potential problems to investigate further. This questionnaire should not be used as a diagnosis of a latex allergy.

I. Risk factor assessment

Do you wear latex gloves regularly or are you otherwise exposed to latex regularly?  Y  N
Do you have a history of eczema or other rashes on your hands?  Y  N
Do you have a medical history of frequent surgeries or invasive medical procedures?  Y  N
Did these take place when you were an infant?  Y  N
Do you have a history of hay fever or other common allergies?  Y  N
Do your fellow workers wear latex gloves regularly?  Y  N
Do you take a beta-blocker medication?  Y  N

Circle any foods below that cause hives, itching of the lips or throat, or more severe symptoms when you eat or handle them:

Avocado  Carrot  Peach  Melon  Passion fruit  Banana
Apple  Hazelnut  Cherry  Chestnut  Tomato  Fig
Pear  Kiwi  Plum  Nectarine  Potato  Pineapple
Celery  Papaya  Apricot  Grape

II. Contact dermatitis assessment (for people who wear latex gloves frequently)

Do you have rash, itching, cracking, chapping, scaling, or weeping of the skin from latex glove use?  Y  N
Have these symptoms recently changed or worsened?  Y  N
Have you used different brands of latex gloves?  Y  N
If so, have your symptoms persisted?  Y  N
Have you used nonlatex gloves?  Y  N
If so, have you had the same or similar symptoms as with latex gloves?  Y  N
Do these symptoms persist when you stop wearing all gloves?  Y  N

III. Contact urticaria/hives assessment (for people who wear latex gloves frequently)

When you wear or are around others wearing latex gloves, do you get hives; red, itchy, swollen hands within 30 minutes; or “water blisters” on your hands within a day?  Y  N

IV. Aerosol reaction assessment

When you wear or are around others wearing latex gloves, have you noted any of the following conditions:

Itchy, red eyes; fits of sneezing; runny or stuffy nose; itching of the nose or palate?  Y  N
Shortness of breath, wheezing, chest tightness, or difficulty breathing?  Y  N
Other acute reactions, including generalized or severe swelling or shock?  Y  N

V. History of reactions suggestive of latex allergy

Do you have a history of anaphylaxis or of intraoperative shock?  Y  N
Have you had itching, swelling, or other symptoms following dental, rectal, or pelvic exams?  Y  N
Have you experienced swelling or difficulty breathing after blowing up a balloon?  Y  N
Do condoms, diaphragms, or latex sexual aids cause itching or swelling?  Y  N
Do rubber handles, rubber bands, or elastic bands or clothing cause any discomfort?  Y  N

Source: American College of Allergy, Asthma & Immunology, Guidelines for the Management of Latex Allergies and Safe Latex Use in Health Care Facilities. Reprinted with permission.
Latex-safe zones  
continued from p. 4

consider with these zones (see the related story on p. 4 for some tips to help you).

One risk of developing latex-safe zones is that in certain situations you could upset surgeons, many of whom prefer to use latex gloves during procedures. An unhappy surgeon group can threaten stability at a hospital, says Hodgson.

If surgeons resist a change to a latex-safe environment, it will be hard to enforce such a zone in the operating room (OR), but that doesn’t mean other areas of the hospital have to follow the OR’s lead.

Disability concerns
In interpreting the Americans with Disabilities Act, the U.S. Equal Employment Opportunity Commission states that under certain circumstances, employers can remove workers who are a threat to themselves.

“If no accommodation exists that would either eliminate or reduce the risk, the employer may refuse to hire an applicant or may discharge an employee who poses a direct threat,” the EEOC states in its Interpretive Guidance on Title I of the Americans with Disabilities Act.

Petsonk believes workers with NRL allergies may fall under this provision in some cases, particularly if their allergies are serious. Hodgson feels a better way to handle such a situation is to develop a latex-safe zone if possible, while at the same time educating administrators.

Legal wrangling over latex gloves muddles the issues

Latex glove allergies and their legal implications are making news across the country. Consider these cases:

**January 2001:** A California appeals court issues a stay of all latex-glove-liability trial proceedings involving the “consumer expectations test” pending an appeal alleging that this test doesn’t apply to latex litigation. The consumer expectations test basically revolves around what a user would be expecting from a product.

In November 2000, a trial court judge stops plaintiffs from using the test in latex lawsuits, feeling that the allergenic properties of natural rubber latex go beyond the understanding of health care workers, according to Mealey’s Litigation Report. In arguing against the trial court ruling, the plaintiffs say latex glove users reasonably expect not to develop allergies from simply wearing the gloves.

**December 2000:** A Pennsylvania court rules that a nursing assistant at McKeesport (PA) Hospital did not sufficiently prove she developed a latex allergy while on the job. The court says the plaintiff had other, nonoccupational allergies with symptoms similar to what she attributed to work-related latex sensitivity, Pennsylvania Law Weekly reported. The court also rules that the National Institute of Occupational Safety and Health’s report on latex allergies does not support the nursing assistant’s arguments that health care workers are more susceptible than the general public to latex allergies.

**October 2000:** The Equal Employment Opportunity Commission (EEOC) files a lawsuit against Greater Baltimore (MD) Medical Center for allegedly unfairly overlooking a respiratory therapist candidate because she is allergic to latex gloves, according to the Associated Press. The therapist applied to the hospital, but her employment was turned down after a screening showed she had latex allergies the hospital felt would be dangerous to her. The EEOC says the therapist offered to bring in her own non-latex gloves but was still denied a job.

**August 2000:** A state appeals court upholds a $1 million verdict against glove
Educate your colleagues about latex alternatives

As federal officials review proposals that would toughen medical device standards for latex gloves, experts advise managers to learn about latex alternatives for allergic employees.

“Avoiding latex once you become allergic is really not easy,” says Lee Petsonk, MD. “What you want is a low-allergen glove.”

Petsonk adds that the Food and Drug Administration (FDA) has approved labeling of gloves for low protein, but that is not the same as low allergen. Low-protein gloves can still cause reactions in workers because of high allergen content.

Petsonk says health care workers should definitely avoid high-protein gloves. But either way, if the gloves are “just reduced protein, still a lot of people are going to have reactions to them,” he says.

He adds that health care workers should use gloves when necessary for safety or clinical reasons and strive for powder-free gloves with reduced protein content. You should ask your glove manufacturers about the contents of their products.

The FDA continues to review public comments on its proposed rule to increase the regulation of gloves as medical devices. The proposed changes include the following:

- Designate medical gloves as Class I medical devices, which would toughen safety standards for gloves
- Regulate medical gloves into four categories: powdered surgeons' gloves, powder-free surgeons' gloves, powdered patient-examination gloves, and powder-free patient-examination gloves
- Set powder limits for powdered and powder-free gloves
- Require labeling of gloves to indicate powder content and the new FDA recommendations on powder limits
  - Require expiration dating for these gloves
- Vinyl not definitive
  Some manufacturers tout vinyl gloves as a good alternative to latex gloves. The FDA has previously said that synthetic gloves such as vinyl may not be superior to latex gloves in barrier protection.

“Vinyls are very variable,” Petsonk says, adding that there are some characteristics of vinyl gloves that make them useful in surgical settings. He adds that using vinyl gloves is better than handling specimens with bare hands.

He also says that nitrile gloves may be comparable to latex gloves as far as allergies go.

Tips for allergy sufferers
If you have employees who are allergic to latex, consider the following recommendations from Petsonk:

- Since sensitized people should not use latex products, take an inventory of items in your hospital that contain latex
- Sensitized people should only work in areas where colleagues use powder-free, low-allergen gloves
- Employers should create latex-safe areas if other measures are unsuccessful (see the related story on p. 4 for more details)

Additionally, the National Institute of Occupational Safety and Health offers a list of ways for health care workers to prevent and manage exposures to latex on p. 8.
Seven ways to protect yourself from latex allergies

In its publication Preventing Allergic Reactions to Natural Rubber Latex in the Workplace, the National Institute for Occupational Safety and Health recommends the following seven steps that health care workers should take to protect themselves against natural rubber latex exposure and allergies:

1. Use nonlatex gloves for activities that won’t involve contact with infectious materials. Such activities include food preparation, routine housekeeping, and maintenance work.

2. When handling infectious materials, use appropriate barrier protection, such as latex gloves. However, you should choose powder-free gloves with reduced protein content because such gloves reduce exposures to latex proteins and thus reduce the risk of related allergies. It is important to note that so-called hypoallergenic gloves do not usually reduce the risk of latex sensitivity.

3. When wearing latex gloves, do not use oil-based hand creams or lotions unless they specifically reduce latex problems and maintain glove barrier protection.

4. After removing latex gloves, wash your hands with soap and dry them thoroughly.

5. Frequently clean work areas that are contaminated with latex, such as carpets, ventilation ducts, plenums, and upholstery. Also, frequently change ventilation filters and vacuum bags in latex-contaminated areas.

6. Learn to recognize the symptoms of latex allergies, such as skin rashes, hives, itching, nasal reactions, asthma, and anaphylactic shock. If you develop symptoms of latex allergies, avoid direct contact with latex gloves and other latex products until you see a physician. Also tell your manager about the symptoms.

7. Wear a medical alert bracelet that details your sensitivity to latex.

Legal wrangling continued from p. 6

manufacturer Smith & Nephew following a lawsuit by a health care worker who became allergic to latex at St. Joseph’s Hospital in New Berlin, WI, the Milwaukee Journal Sentinel reports.

July 2000: A California jury awards $800,000 to a respiratory therapist who suffered debilitating allergic reactions after wearing latex gloves for years at work, according to The Legal Intelligencer. The jury finds Baxter Health Care, the glove manufacturer, to be 70% negligent. The plaintiff and her employer, St. Joseph’s Hospital of Stockton, CA, are found to be 30% negligent but aren’t required to pay any damages. The decision is currently being appealed.