

**Guideline for
Preventing Sensitivity and
Allergic Reactions to
Natural Rubber Latex
in the Workplace**



Society of Gastroenterology Nurses and Associates, Inc.

Acknowledgements

Copyright © 2007

Society of Gastroenterology Nurses and Associates, Inc. (SGNA).

First published 1998; revised in 2004 and 2007.

This document was prepared and written by the SGNA Practice Committee and adopted by the SGNA Board of Directors. It is published as a service to SGNA members.

SGNA Practice Committee 2006 - 07

Loralee Kelsey, RN, CGRN, Chair

LeaRae Herron-Rice, BSN, RN, CGRN, Co-chair

Phea Anderson, MS, RN, CGRN

Cynthia M. Friis, MEd, RN-BC

Peggy Gauthier, MS, RN, CGRN

Nancy Gondzur, MS, BS, RN

Donna Girard, BSN, RN, CGRN

Carol Kraai, MSN, RN, CGRN

Mary Anne Malone, RN, CGRN

Anne Scroggs, MSN, APRN-BC, FNP-C

Reprints are available for purchase from SGNA Headquarters. To order, contact:

Department of Membership Services

Society of Gastroenterology Nurses and Associates, Inc.

401 N. Michigan Avenue

Chicago, IL 60611-4267

Tel: (800) 245-SGNA or (312) 321-5165

Fax: (312) 673-6694

Online: www.SGNA.org

Email: SGNA@smithbucklin.com

Disclaimer

The Society of Gastroenterology Nurses and Associates, Inc. presents this guideline for use in developing institutional policies, procedures, and/or protocols. Information contained in this guideline is based on published data and current practice.

The Society of Gastroenterology Nurses and Associates, Inc. assumes no responsibility for the practices or recommendations of any member or other practitioner, or for the policies and practices of any practice setting. Nurses and associates function within the limits of state licensure, state nurse practice act, and/or institutional policy.

Table of Contents

<i>Preface</i>	2
<i>Definition of Terms</i>	2
<i>General Principles</i>	2
----- <i>Background</i>	3
----- <i>Products containing latex</i>	3
----- <i>Types of reactions to latex</i>	4
----- <i>Who is at risk for developing latex allergy</i>	4
----- <i>Diagnosis of latex allergy</i>	4
<i>Conclusions & Recommendations</i>	
----- <i>Employers</i>	5
----- <i>Health Care Workers</i>	6
----- <i>Patients</i>	7
<i>Summary</i>	
<i>References</i>	8
<i>Recommended Reading</i>	9
<i>Appendix A: Sample Latex Allergy Screening Tool</i>	12
<i>Appendix B: Latex-Free Product Cart Contents</i>	13

Preface

Workers and patients exposed to latex gloves and other products containing natural rubber latex may develop sensitivity or allergic reactions such as skin rashes; hives; nasal, eye, or sinus symptoms; asthma; and (rarely) shock. Latex allergy is an increasing problem in health care. An estimated 8% to 12% of health care workers are sensitized, compared to 1% to 6% of the general population (National Institute of Occupational Safety and Health [NIOSH], 1997). A recent study of healthcare workers with frequent latex exposures showed asymptomatic persons to have a higher rate of allergy than in those with clinical symptoms (Brown, Schauble, & Hamilton, 1998). Just how much exposure is needed to sensitize individuals to latex is not known, but reduced exposure to latex proteins has been associated with a decrease in sensitization and symptoms.

Occupational latex allergy is one of the top priorities of the U. S. Occupational Safety and Health Administration (OSHA,1999). No regulatory action is planned, but officials are in the process of collecting data for future action.

Definition of Terms

For the purpose of this document, SGNA has adopted the following definitions:

Allergy refers to a state of hypersensitivity induced by exposure to a particular antigen (allergen) resulting in harmful immunologic reactions on subsequent exposures.

Atopy (Atopic) refers to an individual found to have IgE antibodies to one of more common environmental allergies including latex (Taylor & Erkek, 2004).

CDC refers to the Centers for Disease Control and Prevention.

FDA refers to the United States Food and Drug Administration.

Latex refers to natural rubber latex (NRL) and includes products made from dry natural rubber. Natural rubber latex is the product manufactured from a milky fluid derived from the rubber tree *Hevea brasiliensis*.

NIOSH refers to the National Institute for Occupational Safety and Health.

OSHA refers to the Occupational Safety and Health Administration.

Sensitization is the process of developing an immunologic reaction to an antigen (Katz, Holzman Brown, Hamid Hirshman, Kinsella, et al, 2005).

Sensitivity refers to a state of altered reactivity that develops after sensitization.

Urticaria refers to a transient condition of the skin, usually caused by an allergic reaction, characterized by pale or reddened, irregular, elevated patches and severe itching.

General Principles

Background

The emergence and spread of hepatitis B virus and the discovery and spread of HIV prompted the CDC to issue recommendations for universal precautions in 1987. These precautions resulted in a dramatic increase in the use of disposable, natural rubber latex gloves. The increased demand for

gloves may have temporarily changed manufacturing procedures, resulting in a poor-quality, highly allergenic product. Increased awareness of latex allergy has resulted in more numerous reports of this allergy.

Health care workers develop sensitization from regular latex exposure – wearing latex gloves or inhaling aerosolized latex in the workplace. In 2000, there were more than 600 product liability lawsuits pending over latex allergies (Kurtz, 2000). In 1999, the FDA released a proposed guidance document entitled “Medical Glove Guidance Manual,” which recommended protein and glove powder limits.

Products Containing Latex

A wide variety of products contain latex. The following are examples of products that may contain latex.

Emergency Equipment

Blood pressure cuffs
Stethoscopes
Electrode pads
Endotracheal tubes
Tourniquets
Intravenous tubing
Syringes
Oral and nasal airways

Personal Protective Equipment

Gloves
Surgical masks
Goggles
Respirators

Household Objects

Carpeting
Shoe soles
Dishwashing gloves
Baby bottle nipples
Pacifiers
Balloons
Instant lottery tickets
Toy balls
Bathroom throw rugs
Chewing gum
Contraceptive sponges
Condoms
Elastic on diapers
Bicycle helmets
Socks
Computer mouse pads
Calculator/remote control buttons

Hospital Supplies

Anesthesia masks
Adhesive tape
Elastic Bandages
Catheters
Wound drains
Injection ports
Rubber tops of multi-dose vials

Office Supplies

Rubber bands
Art Supplies
Telephone Cords
Erasers

Effective September 1997, all medical devices must be labeled regarding their latex content

This ruling requires that medical devices containing natural rubber latex state, “Caution: This Product Contains Natural Rubber Latex Which May Cause Allergic Reactions” (FDA, 1997, Hamilton, Brown, Veltri, Ferolli, Primeau, Schauble et al., 2005).

Types of Reactions to Latex

Three types of reactions can occur in persons using latex products: Irritant Contact Dermatitis, Allergic Contact Dermatitis, and Latex Allergy.

Irritant Contact Dermatitis (Contact dermatitis)

The most common reaction to latex products is *irritant contact dermatitis*. This is exhibited by the development of dry, itchy, irritated areas on the skin, usually the hands. It may occur on the first exposure and is not life threatening (Hepner & Castells, 2003). Irritant reactions reduce the barrier properties of the skin, allowing latex antigens to enter microabrasions and cracks in the skin surface placing susceptible persons at risk for repeated exposure (Muller, 2003). The alkaline pH of most powdered gloves is the most likely cause of this reaction (Hepner & Castells, 2003). Irritant contact dermatitis symptoms can be improved by thorough washing and drying of hands, use of powdered-

free gloves and frequent changing of gloves to prevent irritation from sweat (Reines & Seifert, 2005). This is not a true allergy.

Allergic Contact Dermatitis (Delayed Hypersensitivity or Type IV)

Delayed hypersensitivity (Type IV) results from exposure to chemicals added during harvesting, processing or manufacturing of latex (Huber & Terezhalmay, 2006; Amado, 2006). These chemicals can cause erythema, pruritus and vesicles. The rash usually begins 24 to 48 hours after contact, and may progress to blisters or spread, but can present as early as 8 hours or as late as 5 days (Muller, 2003). This is not a true allergy.

Latex Allergy (Type I Hypersensitivity)

True latex allergy (Type I) is more serious than either of the two preceding conditions and could lead to anaphylactic reactions. Certain proteins in latex may cause sensitization, with or without symptoms. It is unknown how much exposure is needed to cause sensitization or symptoms. Exposures at even low levels can trigger allergic reactions in some sensitized individuals. Sensitization appears to be permanent, although the normal course of the immune response to latex remains unclear (Burt, 1998). Recent studies show contact desensitization of Type I latex allergic individuals may be possible (Hepner & Castells, 2003).

Reactions usually begin within minutes of exposure to latex, but they can occur hours later. Mild reactions involve skin redness, hives or itching. Angioedema may present from mucosal exposure and is characterized by localized, non-pitting swelling commonly affecting the lips, face, limbs, trunk, and abdominal viscera. Edema to the upper airway or larynx can be severe or life threatening (Huber & Terezhalmay, 2006). Other severe reactions may involve respiratory symptoms such as runny nose, sneezing, itchy eyes, scratchy throat and asthma (NIOSH, 1997) and may be more directly related to airborne latex proteins released from powdered gloves. Rarely, shock may occur.

Who is at Risk for Developing Latex Allergy?

1. Workers with ongoing latex exposure, e.g. those in healthcare who frequently change latex gloves.
2. Atopic individuals (persons with a tendency to have multiple allergic conditions such as urticaria, asthma, allergic rhinitis) (Muller, 2003).
3. Persons with allergies to certain foods: especially avocado, chestnuts, kiwi fruit, and banana. Also, potatoes, tomatoes, papaya, passion fruit, grapes, pineapples, peaches, watermelons, nectarines, mangoes, guavas, strawberries and cherries have also been documented as foods which cause allergic reactions in half the patients who are also latex allergic (ANA, 1997, Taylor and Erkek, 2004).
4. Persons with spina bifida, or a history of multiple surgical procedures.

Diagnosis of Latex Allergy

Diagnosis of latex sensitization should include (NIOSH, 1997; Hamilton et al, 2002; Hepner & Castells, 2003; Huber & Terezhalmay, 2006).

1. **History and physical examination** by a knowledgeable physician. This is the initial step in the diagnostic process, followed by blood and serological testing.
2. **Skin prick test (SPT)**. An in vivo test which involves scratching or pricking the skin through a drop of liquid containing latex proteins. A positive reaction is shown by itching, swelling or redness at the site.

3. **RAST** (radioallergosorbent test) immunoassay. In vitro tests approved by the FDA to detect IgE antibodies in serum of sensitized individuals. This blood test is useful in conjunction with a history and physical when in vivo tests cannot be performed or in cases where antihistamines continue to be used. In vitro testing eliminates the risk of possible systemic reactions (FDA, 2001).
4. **Glove-use test** which involves wearing a finger-cot or whole latex glove, as well as a non-latex finger-cot or glove for control, and observing for the development of rash, erythema, and pruritis.
5. **Patch test** (in vivo provocation test) used to differentiate between irritant contact dermatitis, allergic contact dermatitis and NRL allergies. A positive test is shown by itching, swelling, redness, or blistering where the patch covered the skin.

Treating Latex Allergy

Once an individual becomes allergic to latex, special precautions are needed to prevent exposures during work as well as during medical or dental care. Certain medications may reduce allergy symptoms, but complete latex avoidance is the most effective approach.

Conclusions

Latex allergy in the workplace can result in potentially serious health problems. Such health problems can be minimized by following the recommendations outlined in this document.

Recommendations

The following recommendations for preventing latex allergy in the workplace (NIOSH, 1997; OSHA 1999) are based on current knowledge and a common-sense approach to minimizing latex-related health problems. Evolving manufacturing technology and improvements in measurement methods may lead to changes in these recommendations in the future. For now, adoption of these recommendations, wherever feasible, will contribute to the reduction of exposure and risk for the development of latex allergy.

I. Employers

Latex allergy can be prevented only if employers adopt policies to protect workers from undue latex exposures. SGNA recommends that employers take the following steps to protect workers from latex exposure and allergy in the workplace.

- A. Consider implementing pre-employment screening for latex sensitivity.
- B. Consider designated latex-safe areas in all offices and clinics or convert your entire office, clinic or hospital into a latex-safe environment (Lieberman, 2002; Muller, 2003).
- C. Provide workers with non-latex gloves when there is little potential for contact with blood or body fluids.
- D. Select powder-free, reduced-protein gloves if choosing latex gloves for protection from blood or body fluids. The goal of this recommendation is to reduce exposure to allergy-causing proteins (antigens). Until well accepted standardized tests are available, total protein serves as a useful indicator of the exposure of concern. Protein levels below 50mg/g are considered the least allergenic (Muller, 2003).
- E. Select nitrile, neoprene or polyisoprene gloves as an alternative to latex gloves when needed

for prolonged exposure of blood and body fluids. These gloves are comparable to latex as a barrier protection. Vinyl does not provide adequate protection and is not considered a sufficient barrier against blood and body fluids (Taylor & Erkek, 2004, Reines & Seifert, 2005).

F. Practice good housekeeping methods to remove latex-containing dust from the workplace.

These include:

1. Identify areas contaminated with latex dust for frequent cleaning (upholstery, carpets, ventilation ducts)
2. Ensure that ventilation filters and vacuum bags are changed frequently in latex-contaminated areas.

G. Provide workers with education programs and training materials about latex allergy.

H. Develop policies and procedures for health care workers with latex allergies (Elliott, 2002).

These include:

1. Screen high-risk workers for latex allergy symptoms
2. Remove symptomatic workers from latex exposure.
3. Evaluate current prevention strategies whenever a worker is diagnosed with latex allergy.

Refer to Appendix A for examples of questions for a latex sensitivity screening questionnaire.

II. Health Care Workers

Health care workers should take the following steps to protect themselves from latex exposure and allergy in the workplace:

A. Use *non-latex* gloves for activities that are not likely to involve contact with infectious materials.

1. Select a reduced-powder or powder-free glove with reduced protein content for those activities where contact with blood or body fluids is anticipated and latex gloves are used.
2. Understand that hypoallergenic latex gloves do not reduce the risk of latex allergy. However, they may reduce reactions to chemical additives in the latex.
3. Use appropriate work practices to reduce the chance of reactions to latex:
 - a. When wearing latex gloves, do not use oil-based hand creams or lotions unless they have been shown to reduce latex-related problems.
 - b. After removing latex gloves, wash hands with a mild soap and dry thoroughly.
4. Take advantage of all latex allergy education and training provided by your employer.
5. Use topical barrier products and cotton glove liners to prevent direct contact of latex with the skin if you have irritant reactions to latex gloves (Muller, 2003).
6. Avoid direct contact with latex gloves and other latex-containing products if you develop symptoms of latex allergy. Consult a physician experienced in treating latex allergy.
7. Report allergic events related to latex medical devices to the FDA MedWatch Program (phone 1-800-FDA-1088, Fax 1-800-FDA-0178) (ANA, 1997).

B. If you have a known latex allergy:

1. Avoid contact with latex gloves and other latex-containing products.
2. Avoid areas where you might inhale the powder from latex gloves worn by other workers.

3. Tell your employer and health care providers that you have latex allergy.
4. Wear a medical alert bracelet.
5. Carefully follow your physician's instructions for dealing with allergic reactions to latex. **This may include carrying auto-injectable epinephrine at all times** (Muller, 2003).

Patients

Healthcare workers should take the following steps to protect patients.

A. Screen all patients for allergies. Those being identified as sensitive or allergic to latex should be treated in a manner that minimizes the risk of an allergic reaction. Avoidance of latex containing products and a latex-free environment are mandatory in the case of sensitized individuals (Hepner & Castells, 2003).

B. Assess patients for pre-disposition or actual allergy to latex. Whenever possible, prescreen preoperative patients before admission. Pertinent information that might prove helpful includes:

1. Presence of atopy, including hay fever, food allergy (especially avocado, chestnuts, kiwi fruit, and banana) childhood or adult eczema and asthma.
2. Multiple surgeries.
3. Intraoperative urticaria, angioedema, respiratory distress or difficulty with ventilation.
4. History of latex exposure; type of latex device, nature and duration of exposure.
5. Work-related symptoms of possible latex allergy such as cutaneous symptoms (dermatitis, eczema, urticaria), respiratory symptoms (rhinorrhea, pruritus, sneezing, cough, wheeze, and shortness of breath).
6. Spina bifida.
7. Other symptoms such as itchy hands, localized angiodema, possible systemic anaphylactic symptoms with the use of household latex cleaning gloves, balloons, condoms, and diaphragms.

C. *Latex-free* supplies must be available for use on patients with latex allergies. Refer to Appendix B for examples of items to include on a latex-free cart.

D. Remove all sources of latex from the immediate patient environment, especially latex gloves, tourniquets, elastic straps, etc.

E. Remove suspected allergen and provide immediate care as needed and directed by the physician if the patient develops an allergic reaction. This may include IV fluids, airway management, and resuscitation medications (Hepner & Castells, 2003).

F. Follow Institutional policies regarding puncturing of vial stoppers containing latex. Filter needles used to withdraw medications have not been proven to reduce latex the content of the medications. The literature identifies three main approaches to vial closures (Hamilton et al, 2005, El-Atti et al, 2006):

a. **Removal of vial stoppers.** Vial stoppers or closures may contain synthetic rubber or a mixture of synthetic and natural rubber latex. Removal of vial stoppers may lead to microbial contamination and the solution may already contain latex leached during manufacturing and storage.

b. **One-stick-rule.** The stoppers on vials are punctured only once, medications are drawn into a non-latex syringe and the patient is observed following medication administration. Closed-vial system is maintained but does not

address the possibility of leached latex.

c. **Catalog-avoidance approach.** Pharmacy staff review, identify and catalog medications packaged in vials containing latex. This requires time to develop and maintain the catalog and may lead to inaccurate or incomplete information.

Refer to institutional policies and procedures for specific information on the care of patients with latex sensitivities.

References

- Amado, A & Taylor, J. (2006). Women's Occupational Dermatologic Issues. *Dermatologic Clinics*, 24, 259-269.
- American Nurses Association (1997, September). Latex allergy [Position statement]. Originated by Congress on nursing economics. Retrieved on November 30, 2003 from <http://nursingworld.org/readroom/position/workplac/wklatex.htm>
- Brown, R. H., Schauble, J. F. & Hamilton, R. G. (1998). Prevalence of latex allergy among anesthesiologists: Identification of sensitized but asymptomatic individuals. *Anesthesiology*, 89, 292-299.
- Burt, S. (1998). What you need to know about latex allergy. *Nursing98*, 10, 33-39.
- El-Atti, S. A., Martinelli, B., Yourich, B., Wasicek, K. & Weber, R. (2005). Nationwide survey of hospital practices when compounding parenteral nutrition solutions in latex-allergic patients. *Nutrition in Clinical Practice*, 21, 513-517.
- Elliot, B. A. (2002). Latex allergy: The perspective from the surgical suite. *Journal of Allergy and Clinical Immunology*, 110(2), S117-120.
- Filon, F. L., Radman, G., (2006). Latex allergy: a follow up study of 1040 healthcare workers. *Occup Environ Med*, 63, 121-125.
- Hamilton, R. G., Brown, R. H., Veltri, M. A., Ferolli, E. R., Primeau, M. N., Schauble, J. F. & Adkinson, N. M. Jr. (2005). Administering pharmaceuticals to latex-allergic patients from vials containing natural rubber latex closures. *Am J Health-Syst Pharm*. 62, 1822-1827.
- Hamilton, R. G., Peterson, E. L. & Ownby, D. R. (2002). Clinical and laboratory-based methods in the diagnosis of natural rubber latex allergy. *Journal of Allergy and Clinical Immunology*, 110, 47-56.
- Hammer, A. L. & Paulson, P. R. (1997). Latex allergy: Implementation of an agency program. *Gastroenterology Nursing*, 20 (5), 156-161.
- Hepner, D. L. & Castells, M. (2003). Latex allergy: An update. *Anesthesia Analog*, 96, 1219- 1229.
- Huber, M.A. & Terezhalmly, G. T. (2006). Adverse reactions to latex products: preventive and therapeutic strategies. *The Journal of Contemporary Dental Practice*, 7(1), 1-15.
- Katz, J. D., Holzman, R. S., Brown, R. H., Hamid, R., Hirshman, C., Kinsella, S., Petrovich, C., Randel,

- G. & Vassallo, S. (2005). Natural rubber latex allergy: Considerations for anesthesiologists. American Society of Anesthesiologists (ASA). [Practice recommendations]. Retrieved on March 6, 2007 from <http://www.asa-hq.net/publicationsAndServices//latexallergy.pdf>
- Kurtz, S. (2000, June). Making your facility latex-safe. *Outpatient Surgery Magazine*. Retrieved on February 25, 2007 from <http://www.outpatientsurgery.net/2000/os06/os06f3.htm>
- Lieberman, P. (2002). Anaphylactic reactions during surgical and medical procedures. *Journal of Allergy and Clinical Immunology*, 110(2 Suppl), 64-69.
- Muller, B.A. (2003). Minimizing latex exposure and allergy: How to avoid or reduce sensitization in the healthcare setting. *Latex Allergy*, 113(4), 91-96.
- National Institute for Occupational Safety and Health (1997). *Preventing allergic reactions to natural rubber latex in the workplace*. (DHHS Publication No. 97-135). Washington, DC: U.S. Government Printing Office.
- Occupational Safety and Health Administration (1999). *Potential for allergy to natural rubber latex gloves and other natural rubber products*. Retrieved on March 10, 2007 at www.osha-slc.gov
- Reines, D. H., Seifert, P. C. (2005). Patient safety: latex allergy. *Surgical Clinics of North America*, 85, 1329-1340.
- Taylor, J. S. & Erkek, E. (2004). Latex allergy: diagnosis and management. *Dermatological Therapy*, 17, 289-301.
- United States Food and Drug Administration (1997). *Latex labeling required for medical devices*. Retrieved on March 10, 2007 from <http://www.fda.gov/bbs/topics/ANSWERS/ANS00826.html>
- United States Food and Drug Administration (1999). *Medical glove guidance manual*. Retrieved on March 10, 2007 from <http://www.fda.gov/cdrh/manual/glovmanl.pdf>
- United States Food and Drug Administration (2001). Radioallergosorbent Test (RAST) Methods for Allergen-Specific Immunoglobulin E (IgE) 510(k)s; Final Guidance for Industry and FDA. Retrieved on February 25, 2007 from <http://www.fda.gov/cdrh/ode/guidance/800.html>
- United States Department of Labor, Occupational Safety and Health Administration (1999). Potential for allergy to natural rubber latex gloves and other natural rubber products. [Technical Information Bulletin]. Retrieved on January 26, 2007 from http://www.osha.gov/dts/tib/tib_data/tib19990412.html

Recommended Reading

Allergy to Latex Education and Resource Team, Inc. [Resource organization]
Retrieved on March 10 2007 at <http://www.latexallergyresources.org/>

American Operating Room Nurses (2004). Standards, Recommended Practices and Guidelines.
AORN Journal, 79(3), 653-656, 658, 660-664.

McKee, K. (2002). The science of latex allergy. Out patient Surgery. Retrieved on March 10, 2007
from www.outpatientsurgery.net/2002/os03/f5.shtml

Muto, C. A., Siström, M. G., Strain, B. A. & Farr, B. M. (2000, August). Glove leakage rates as a
function of latex content and brand. *Archives of Surgery*. 135(8), 982-985.

National Institute for Occupational Safety and Health. (1998). *Latex allergy a prevention guide*. (DHHS
NIOSH Publication No. 98-113). Washington, DC: US Government Printing Office.

Noble, K. A. (2005). The patient with latex allergy. *Journal of PeriAnesthesia Nursing*, 20(4), 285-288.

Ownby, D. R. (2002, August). A history of latex allergy. *Journal of Allergy and Clinical Immunology*,
110:2, S27-32.

Patriarca, G., Nucera, E., Pollastrini, E., Roncallo, C., Buonomo, A., Bartolozzi, F., Pasuale, T.,
Gasbarrini, G. & Schiavino, D. (2002). Sublingual desensitization: a new approach to latex allergy
problem. *AnesthAnalg*, 95, 956-960.

Patriarca, G., Nucera, A., Buonomo, A., Del Ninno, M., Roncalla, C., et al. (2002). Latex allergy
desensitization by exposure protocol: Five case reports. *Anesthesia Analog*, 94(3), 754-758

Reddy, S. (1998). Latex allergy. *American Family Physician*. Retrieved on Month DD, YYYY from
<http://www.aafp.org/afp/980101ap/reddy.html>

Spina Bifida Association (2006). Latex (Natural Rubber) in the Hospital Environment. Retrieved on
March 10, 2007 from <http://www.sbaa.org>

Toraason, M., Sussman, G., Biagini, R., Meade, J., Beezhold, D. & Germolec, D. (2000). Latex allergy
in the workplace. *Toxicological Sciences*, 58, 5-14.

Trapé, M., Schenck, P. & Warren, A. (2000). Latex gloves use and symptoms in health care workers 1
year after implementation of a policy restricting the use of powdered gloves. *American Journal of
Infection Control*, 28, 352-358.

United States Food and Drug Administration (1997). *Medical glove powder report*. Retrieved on March
10, 2007 at <http://www.fda.gov/cdrh/glvpwd.html>

Wai, D. (2000). Latex allergy and the health care worker. *Gastroenterology Nursing*, 23(5), 226-231.

Zak, H. N., Kaste, L. M., Schwarzenberger, K., Barry, M. J. & Gillian, M. P. (2000). Health-care
workers and latex allergy. *Archives of Environmental Health*. Retrieved on January 14, 2007 at
http://www.findarticles.com/p/articles/mi_m0907is_5_55/ai_67372584.html

Appendix A

This sample is a tool for assessing patients or staff who report latex allergy. Multiple “yes” responses to these questions may suggest latex allergy, and precautions should be implemented.

SAMPLE LATEX ALLERGY SCREENING TOOL

Date _____ Name _____

	Yes	No																																																									
1. Have you ever had an anaphylactic reaction to latex devices/products? If yes, under what circumstances did it occur?	___	___																																																									
2. Have you ever been told by a doctor that you have an allergy to any latex product? If yes, to what specifically did the doctor say you were allergic to?	___	___																																																									
3. Do you have any congenital abnormalities (spina bifida, myeloma, myelodysplasia)?	___	___																																																									
4. Have you had a reaction to the following personal sources of latex?																																																											
<table border="0" style="width: 100%;"> <tr> <td style="width: 45%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 35%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Balloons</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Latex birth control devices</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Rubber gloves</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Erasers</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Hot water bottles</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Face Masks</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Rubber bands, balls</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Elastic bandages</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Foam pillows</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Cuffs, elastic waist bands</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Baby bottles, nipples</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Ostomy bags</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Pacifiers, teething rings</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Shoes or other footwear</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Belts, bras, suspenders</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Other _____</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> </table>		Yes	No		Yes	No	Balloons	___	___	Latex birth control devices	___	___	Rubber gloves	___	___	Erasers	___	___	Hot water bottles	___	___	Face Masks	___	___	Rubber bands, balls	___	___	Elastic bandages	___	___	Foam pillows	___	___	Cuffs, elastic waist bands	___	___	Baby bottles, nipples	___	___	Ostomy bags	___	___	Pacifiers, teething rings	___	___	Shoes or other footwear	___	___	Belts, bras, suspenders	___	___	Other _____	___	___					
	Yes	No		Yes	No																																																						
Balloons	___	___	Latex birth control devices	___	___																																																						
Rubber gloves	___	___	Erasers	___	___																																																						
Hot water bottles	___	___	Face Masks	___	___																																																						
Rubber bands, balls	___	___	Elastic bandages	___	___																																																						
Foam pillows	___	___	Cuffs, elastic waist bands	___	___																																																						
Baby bottles, nipples	___	___	Ostomy bags	___	___																																																						
Pacifiers, teething rings	___	___	Shoes or other footwear	___	___																																																						
Belts, bras, suspenders	___	___	Other _____	___	___																																																						
5. After handling latex products, have you experienced any of the following?																																																											
<table border="0" style="width: 100%;"> <tr> <td style="width: 45%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 35%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Difficulty breathing</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Redness</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Runny nose/congestion</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Cracking or chapping hands</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Itching hands or eyes</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Swelling</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Hives</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Other _____</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> </table>		Yes	No		Yes	No	Difficulty breathing	___	___	Redness	___	___	Runny nose/congestion	___	___	Cracking or chapping hands	___	___	Itching hands or eyes	___	___	Swelling	___	___	Hives	___	___	Other _____	___	___																													
	Yes	No		Yes	No																																																						
Difficulty breathing	___	___	Redness	___	___																																																						
Runny nose/congestion	___	___	Cracking or chapping hands	___	___																																																						
Itching hands or eyes	___	___	Swelling	___	___																																																						
Hives	___	___	Other _____	___	___																																																						
6. Do you have a history of the following?																																																											
<table border="0" style="width: 100%;"> <tr> <td style="width: 45%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 35%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Contact dermatitis</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Eczema</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Asthma</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>Autoimmune disease</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>Hay fever</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>(e.g. Lupus)</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> </table>		Yes	No		Yes	No	Contact dermatitis	___	___	Eczema	___	___	Asthma	___	___	Autoimmune disease	___	___	Hay fever	___	___	(e.g. Lupus)	___	___																																			
	Yes	No		Yes	No																																																						
Contact dermatitis	___	___	Eczema	___	___																																																						
Asthma	___	___	Autoimmune disease	___	___																																																						
Hay fever	___	___	(e.g. Lupus)	___	___																																																						
7. Do you have allergies to any of the following?																																																											
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"></td> <td style="width: 10%; text-align: center;">Recent onset</td> <td style="width: 10%; text-align: center;">Long-standing</td> <td style="width: 30%;"></td> <td style="width: 10%; text-align: center;">Recent onset</td> <td style="width: 10%; text-align: center;">Long-standing</td> </tr> <tr> <td>___ Bananas</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>___ Kiwis</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>___ Avocados</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>___ Chestnuts</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>___ Potatoes</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>___ Peaches</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>___ Tomatoes</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>___ Papaya</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> <tr> <td>___ Poinsettia</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> <td>___ Other</td> <td style="text-align: center;">___</td> <td style="text-align: center;">___</td> </tr> </table>		Recent onset	Long-standing		Recent onset	Long-standing	___ Bananas	___	___	___ Kiwis	___	___	___ Avocados	___	___	___ Chestnuts	___	___	___ Potatoes	___	___	___ Peaches	___	___	___ Tomatoes	___	___	___ Papaya	___	___	___ Poinsettia	___	___	___ Other	___	___																							
	Recent onset	Long-standing		Recent onset	Long-standing																																																						
___ Bananas	___	___	___ Kiwis	___	___																																																						
___ Avocados	___	___	___ Chestnuts	___	___																																																						
___ Potatoes	___	___	___ Peaches	___	___																																																						
___ Tomatoes	___	___	___ Papaya	___	___																																																						
___ Poinsettia	___	___	___ Other	___	___																																																						

If yes, describe the reaction:

Appendix B**Latex-Free Product Cart Contents**

Item	Quantity
For staff use Examination gloves Isolation gowns Isolation masks	1 box each, variety of sizes 2 each 2 each
For perioperative use Isolation masks Nurses' caps Patient gowns Sterile drapes Surgeons' caps Sterile gloves	1 box 4 boxes 2 each 2 each 1 box 4 pair each, variety of sizes
For patient use Airway Angiocath catheters Arm board Blood pressure cuff Blood pressure cuff for Dinamap Drain, cap Dressing, transparent Electrodes Foley catheter Gauze 4 in. x 4 in. Intravenous sets Incontinence underpad Lavage tube Nasal cannula Needles Nasogastric tube Oxygen mask Pulse oximeter finger probe Salem sump drain Sharps container Steri-Strips Stethoscope, disposable Suction catheter Syringes, glass Tape, non-allergenic Tape, Transpore Thermometer probe covers	1 each, variety of sizes 2 each, variety of sizes 1 each, variety of sizes 1 each 1 each 1 each 2 each 1 package 2 each 6 packages 1 set each: adult set, burette, T-connector, extension set, pediatric set 1 package 1 each 1 each 4 each 2 each 1 each: simple, resuscitation, rebreathing 1 each 2 each 1 each 2 packages 1 each 5 each 1 (50 ml), 4 (10 ml), 5 (5 ml), 5 (3 ml) 1 roll 1 roll 1 box each, tympanic and oral/rectal

Reprinted with permission from Hammer & Paulson (1997)