

## Latex Gloves and Latex Sensitivity (11/04)

Lopes RA, Benatti MC, Zollner Rde L. A review of latex sensitivity related to the use of latex gloves in hospitals. AORN Journal 2004;80:64–71.

Health-care personnel (HCP) are susceptible to skin and respiratory occupational problems. Powdered latex gloves have been identified as a major source of occupational allergenic exposure because they contain water-soluble proteins responsible for antigenic sensitization. While latex gloves have proven to be effective in preventing the transmission of infectious diseases to HCP, increased use of latex gloves since the 1980's has corresponded to an increase in the number of reported cases of latex sensitivity. Reactions to latex range from contact dermatitis to anaphylactic shock. **Low-powder, powder-free, and non-latex gloves provide alternatives to protect HCP from occupational latex exposure and are an important mechanism for establishing a latex-safe environment.**



**DIS Comment:** The following is from the *Guidelines for Infection Control in Dental Health-Care Settings—2003* which also provides an excellent review of contact dermatitis and latex allergy. The American Dental Association (ADA) began investigating the prevalence of type I latex hypersensitivity among dental health-care personnel (DHCP) at the ADA annual meeting in 1994. In 1994 and 1995, approximately 2,000 dentists, hygienists, and assistants volunteered for skin-prick testing. Data demonstrated that 6.2% of those tested were positive for type I latex hypersensitivity.<sup>1</sup> Data from the subsequent 5 years of this ongoing cross-sectional study indicated a decline in prevalence from 8.5% to 4.3%.<sup>2</sup> This downward trend is similar to that reported by other studies and might be related to use of latex gloves with lower allergen content.<sup>3-5</sup>

Natural rubber latex proteins responsible for latex allergy are attached to glove powder. When powdered latex gloves are worn, more latex protein reaches the skin. In addition, when powdered latex gloves are donned or removed, latex protein/powder particles become aerosolized and can be inhaled, contacting mucous membranes.<sup>6</sup> As a result, allergic patients and DHCP can experience cutaneous, respiratory, and conjunctival symptoms related to latex protein exposure. DHCP can become sensitized to latex protein with repeated exposure.<sup>7-11</sup> Work areas where only powder-free, low-allergen latex gloves are used demonstrate low or undetectable amounts of latex allergy-causing proteins<sup>12-14</sup> and fewer symptoms among HCP related to natural rubber latex allergy. Because of the role of glove powder in exposure to latex protein, the National Institute for Occupational Safety and Health (NIOSH) recommends that if latex gloves are chosen, HCP should be provided with reduced protein, powder-free gloves.<sup>15</sup> Nonlatex (e.g., nitrile or vinyl) powder-free and low-protein gloves are also available.<sup>16,17</sup>

**Irritant contact dermatitis:** the development of dry, itchy, irritated areas on the skin, which can result from frequent handwashing and gloving as well as exposure to chemicals. This condition is not an allergic reaction.

**Allergic contact dermatitis:** a type IV or delayed-hypersensitivity reaction resulting from contact with a chemical allergen (e.g., poison ivy, certain components of patient care gloves, methacrylates, glutaraldehydes), generally localized to the contact area. Reactions occur slowly over 12-48 hours.

**Latex allergy:** a type I or immediate anaphylactic hypersensitivity reaction to the proteins found in natural rubber latex, usually a more serious systemic allergic reaction, usually beginning within minutes of exposure but sometimes occurring hours later and producing varied symptoms.

## References

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