Latex Allergies: A Growing Risk for Athletic Trainers

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Those who work in the health professions are constantly trying to improve the way in which all health care providers are protected from biohazardous waste encountered on the job. HIV and HBV are two of the biggest risks faced by health care workers every day.

Now it seems that one thing we as health care workers have counted on to protect us could potentially do enough harm to end a career.

Latex, a milky sap from the rubber tree *Hevea Brasiliensis*, is found in approximately 40,000 consumer products including the many used in health care. A list issued in 1996 by the Spina Bifida Association of America cites many of the products commonly used by athletic trainers (Photo 1): Band-Aids, elastic wraps, latex gloves (clean, sterile, and surgical), Moleskin, tape (adhesive, porous, and pink), and various types of tubing. Athletic trainers and the athletes they treat may be at increased risk of developing allergies from repeated exposure to latex.

The exact cause of latex allergy is unknown. Several ingredients in natural latex rubber, including the proteins *havamin* and *hevein* and the enzyme rubber-elongating factor, are known to cause allergic reactions. In 1987 the Centers for Disease Control and Prevention issued the Universal Precautions mandating barriers such as gloves to control the spread of bloodborne pathogens. This drastically increased the exposure to natural latex rubber.

The amount of various proteins in latex products and the method of manufacture are definite factors in the potential of a product to cause allergies. The powder used to coat latex rubber products has been identified as a main contributor to latex sensitivity. It absorbs the proteins from the latex and can transfer them to the environment in which the product is used, including the mucous membranes of patients and health care workers. The powder can also coat any surface and instrument it comes in contact with (Beezhold & Beck, 1992).

**Latex Allergies**

Allergic reaction to rubber products has long been recognized. Type IV hypersensitivity reaction (allergic contact dermatitis) is the usual symptom. Generally it is the additives to the rubber product
that are the culprit. The body’s allergic reaction to these elements and other allergens is caused by the antibody immunoglobulin E (IgE).

In 1979 Nutter reported the first known case of rubber causing contact urticaria, a Type-I, IgE-mediated, immediate hypersensitivity reaction. Type I is a serious reaction that can result in anaphylactic shock and even death. Latex antigen exposure can occur via cutaneous, percutaneous, mucosal, parental, and aerosolized routes, to name a few.

There is no way to predict whether persons with Type I reactions to latex will advance to a more serious reaction with subsequent latex exposures. According to comments by D.H. Beezhold on the Internet (www.mediconsult.com),

“Latex allergy has been fatal. The widely quoted number is 15 deaths reported to the FDC, but there in fact have been several more which haven’t yet been recorded as such because of lawsuits. . . . The workers become sensitized through constant contact with latex gloves, and they tend to have anaphylactic reaction in places with emergency facilities.”

Type IV reactions are less serious but much more common. Symptoms can include skin rash, itching hives, swollen red skin, tears, itching or burning eyes, swollen lips and tongue, difficulty breathing, wheezing, shortness of breath, dizziness, fainting, abdominal pain, nausea, and diarrhea.

According to Beezhold et al. (1996), latex-sensitive people seem to have higher rates of allergic reaction to certain foods including avocado, kiwi, chestnut, banana, tomato, and potato. These food allergies may stem from latex allergies, or vice versa in some cases.

The danger of anaphylactic food reactions is much greater in latex-sensitive people than in the general population. Latex-sensitive people should be tested for possible food allergies.

**Persons at Risk**

The adoption of Universal Precautions to prevent exposure to bloodborne pathogens has greatly increased the use of latex gloves in all areas of the health care field including athletic training. According to some estimates, the use of latex gloves jumped from 12 billion pairs in 1987 to more than 200 billion pairs annually today. This dramatic increase in use has led to an increase in latex sensitivity among health care workers.

Statistics for latex sensitivity prior to Universal Precautions present a much different picture than today. According to an article in *The New York Times* on Jan. 29, 1997, whereas previously 1% of the general population had a latex sensitivity, today it is 8%. Among health care workers including athletic trainers, whereas 3% of the population was sensitive to latex, today 20% is latex-sensitive. The largest increases have come among dental workers, from 7 to 40%, and among spina bifida patients, from 18 to 78%.

Researchers stress that finding good epidemiological data on latex sensitization is difficult at best. High risk groups have been identified, but prevalence in the gen-