American Latex Allergy Association

Cotton, Nylon, Spandex and Allergies

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As you know, government organizations, health care providers, and others have raised concerns about latex allergies. Reactions to garments that contain latex can range from mild, localized symptoms to systemic reactions, including anaphylaxis.

Cotton, nylon and Lycra Spandex textile fibers alone do not contain latex. However, finished products may contain latex added to these textiles. In this article, I?ll provide some information that can help you understand various garment fibers, as well as latex sensitization and allergies.

Cotton

A natural cellulose agricultural fiber, cotton is the predominant textile used worldwide to make today?s garments and virtually all hospital garments contain cotton. Cotton is blended with other textiles, such as polyester, rayon, or wool. The cotton absorbs moisture for a more comfortable garment.

But even these garments can cause problems if they use elastic or elastic thread, which is typically rubberized. Rubber is cheaper and sews easier than synthetic elastics. Rubber yarns are used in surgical fabrics, elastic bandages, support hose, underwear, elastic yarns, shoe fabrics, tops of socks and hosiery. Elastic waistbands are used in cotton underwear and leg openings.

What about ?wrinkle-resistant? 100% cotton garments? These garments are treated with a glyoxal resin, which does not contain latex. As long as they do not have elasticized waistbands or leg openings, they should be safe.

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Synthetic Fibers

Unlike cotton, fibers like nylon, polyester and lycra spandex don?t come from agricultural sources. The same distinction is made between natural rubber latex gloves and synthetic ?non-latex? nitrile gloves, which are made from chemical reactions.

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Nylon

Nylon fibers consist of long synthetic polyamide chains. Nylons are known for their strength, flexibility, toughness, elasticity, washability, and ease of drying.

Nylon stockings have caused dermatitis. However, sensitization has been linked to chemicals used to inhibit bacterial growth and to azo and anthraquinone dyes used to dye the stockings brown. These dermatologic reactions were not linked to the actual nylon fiber.

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Spandex

Spandex (now called Lycra or Lycra Spandex) was introduced in 1958. Spandex is a synthetic fiber made of at least 85% of the polymer polyurethane. Spandex is made from several chemicals that are known sensitizers. TDI and MDI (Toluene-2,4-diisocyanate; Methylene bisphenyl-4,4-diiisocyanate) are precursors of the polyurethane used to make spandex. TDI, a toxic chemical, has proved carcinogenic and can cause severe dermatitis. MDI is also toxic. Manufacturers of spandex products must use strict quality control procedures to ensure that no residual unreacted MDI or TDI exists in the final product.

Spandex threads are lighter, but also more durable and supple than conventional elastic threads. Spandex doesn?t suffer deterioration from oxidation like the fine sizes of rubber thread, and it is not damaged by body oils, perspiration, lotions, or detergents. Spandex is never used as 100% of any fabric construction.

Cases of dermatitis to spandex have been traced to rubber or rubber-processing chemicals added to spandex. The spandex polymer itself has not been proven to be a sensitizer.

How do you tell if a spandex garment contains latex? According to one manufacturer, the more sheer a garment is, the less likely it will have latex. Latex threads make a much heavier garment and can?t be woven in the very fine sheer configurations that characterize spandex garments.

Waistbands are the most likely place to find latex thread. Sewn-in waistbands are more likely to contain latex threads than knitted-in waistbands. In contrast, another manufacturer says that you can?t tell whether a waistband is made from rubber yarn or spandex yarn. U.S. garment manufacturers say that cheaper brands of clothing that are made in other countries are more likely to contain latex since latex is cheaper than lycra spandex. Most manufacturers I surveyed say that lycra spandex products are moving away from latex?not because of latex allergies but because newer technology makes all lycra spandex garments more durable.

Usually a latex allergy victim is atopic with multiple allergies. When a reaction to a garment is strictly dermatologic, the individual may react to a chemical dye or some other sensitizing component.

As a hospital purchaser, make sure you understand the fabrics of the garments you purchase. You can help ensure that your staff and patients stay comfortable and safe.

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