AMERICAN CONTACT DERMATITIS SOCIETY NAMES
MIXED DIALKYL THIOUREAS CONTACT ALLERGEN OF THE YEAR

Chemical mixture found in neoprene rubber products linked to allergic reactions to shoes, athletic braces, wetsuits, and computer mouse pads

PALM COAST, FLA. (March 20, 2009) – Mixed dialkyl thioureas (MDTU), a mixture of two thiourea chemicals from a class of chemicals used for rubber acceleration and as antioxidants in the manufacturing of neoprene, has earned the dubious distinction of “Contact Allergen of the Year.” The American Contact Dermatitis Society (ACDS) made the announcement March 5, 2009, during its 20th Annual Meeting in San Francisco.

An article entitled “Allergen of the Year” published in the January/February 2009 issue of Dermatitis outlines the most common cases of allergic contact dermatitis stemming from the MDTU allergens in neoprene, a versatile synthetic rubber used in a wide variety of products – from athletic shoes to computer wrist rests.

“This is a long-deserved recognition for an allergen mixture that has one of the highest relevancy rates in the North American Contact Dermatitis Group (NACDG) database,” said Bryan E. Anderson, MD, associate professor of dermatology at Penn State University College of Medicine, Hershey Medical Center, in Hershey Pa., and author of the “Allergen of the Year” article. “MDTU is a common allergen when investigating rubber allergy, especially neoprene, and standard screening series for allergic contact dermatitis would benefit from including it.”

Dr. Anderson noted that many cases of allergic contact dermatitis from the allergens in neoprene have been reported, including cases caused by rubber orthopedic braces, prostheses, splints, and foot supports; athletic shoes; rubber masks; swim goggles; wet suits; a slimming suit; a computer wrist rest; a sleep apnea mask; neoprene gloves; and rubber-based materials in automobiles. He added that experiments have shown that large quantities of thioureas are leached from rubber compounds, and the level of the leached thiourea compounds was found to be sufficient to elicit allergic contact dermatitis.
Patch testing with MDTU conducted by the NACDG from 1994 to 2004 of 21,898 patients found a high number of relevant reactions, with footwear products cited as the most frequently found cause of relevant MDTU reactions. From an occupational standpoint, gloves were the most frequently cited cause of allergic contact dermatitis from MDTU.

When MDTU allergen-containing products touch the skin, a susceptible person will experience a reaction that includes a combination of red, scaly, itchy patches to blistering. In the case of footwear, Dr. Anderson pointed out that socks will not protect an individual because sweat will cause leaching of the allergen out of the shoe or product and onto the skin.

“The most important therapy in treating an allergic reaction from MDTU is avoidance, which is why properly identifying the allergen is critical,” said Dr. Anderson. “After that, we will use a number of topical cortisone creams and in severe cases short courses of oral prednisone.”

Founded in 1989, the objectives of the American Contact Dermatitis Society (ACDS) are to promote, support, develop and stimulate information about contact dermatitis and occupational skin disease for improved patient care; to provide a forum for the exchanging of this information; to promote the education of physicians by encouraging courses in contact dermatitis, occupational dermatology and other related topics at scientific meetings and dermatology training centers, and to promote investigative research into these fields. Most members are dermatologists who specialize in contact and occupational dermatology.

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