

Triclosan: An Update on Safety

To the Editor:

We read Campbell and Zirwas' recent article "Triclosan"¹ with great interest, particularly as it relates to safety. Campbell and Zirwas elegantly summarize previous research findings establishing that pure triclosan and free chlorine readily react to form by-products such as chloroform and 2-(2,4-dichlorophenoxy) phenol, deemed by the United States Environmental Protection Agency as probable human carcinogens.² Taken alone, this has seemingly little significance to dermatologists who do not utilize undiluted triclosan. However, when these findings were first reported by Dr. Vikesland's group at Virginia Polytechnic Institute and State University in 2005, a handful of companies immediately responded. The British department store chain Marks & Spencer³ announced a plan to remove all triclosan-containing products from its shelves, and many stores in China pulled toothpastes with triclosan from their stock. In response, Dr. Vikesland was quoted by the *Roanoke Times* as saying, "I think people are jumping to conclusions, there isn't a huge need to worry at the present."⁴

However, more recently, Vikesland and colleagues evaluated the more clinically relevant question, "Do triclosan-containing products interact with chlorine to form the same probable carcinogens?"⁵ Utilizing a double-blinded model, they studied 16 solutions, including lotions, soaps, and body washes with and without triclosan, and exposed them to free chlorine at pH 7. They found that all of the household products with triclosan produced some level of either chloroform or other chlorinated by-products. In fact, they estimated that under certain conditions, triclosan may increase a person's overall annual exposure to chloroform by 15 to 40% above background tap water levels. This has implications for exposures not only to tap water but also to chlorinated swimming pools. Although Vikesland and colleagues emphasized that their study is a "model simulation based on a limited number of laboratory studies and needs to be verified at full scale..." since the publication of this study

in April 2007, the city of Palo Alto, California, has banned all soaps with triclosan from city facilities.

So how do we, as dermatologists, respond to these study results? Should we no longer recommend Lever 2000 (JohnsonDiversey Inc., Racine, WI) for our patients with chronic folliculitis? As Vikesland and colleagues emphasized, the study is a model simulation and may not accurately reflect real-life conditions. For example, in their study, the amount of water and soap was held constant for 1 minute, rather than for the 10 to 20 seconds people usually take to wash their hands. In addition, the effectiveness of triclosan at providing additional antibacterial protection beyond that of regular soaps is unclear. The Food and Drug Administration released a statement in 2005 that antibacterial soaps were no more likely to control the growth and spread of bacteria than were regular soap and water. Alastair Wood, MB, ChB, chairman of the Nonprescription Drugs Advisory Committee, said, "There is no evidence they are a good value."⁶ Some scientists have argued for the use of plain soap in lieu of triclosan-containing soaps.^{7,8} Bacterial resistance is also a concern. There is a need for rigorous scientific evaluation of the efficacy of triclosan in preventing common local skin infections.

Until both the clinical effectiveness of triclosan for treating cutaneous infections and the clinical relevance of chlorinated by-products are further elucidated, dermatologists should be aware of the issues surrounding the safety of triclosan. Use, especially in children, should be recommended only when potential benefit clearly outweighs potential risks.

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