

Environment, health, & safety

Consumer use of triclosan-containing products

By Holly Carpenter, BSN, RN

Triclosan is a broad-spectrum antimicrobial agent that has been in use for over 25 years. It is also a registered pesticide. Triclosan is used as a material preservative in textiles, mattresses, plastics, toys, mulch, insulation, and many other products. Humans are usually exposed to triclosan through the skin or mucosal lining of the mouth. Since individuals apply it liberally to their hands, mouth, and bodies as an ingredient of hand sanitizers, lotions, toothpastes, and other personal care products, triclosan can enter the human body easily through dermal and oral mucosal absorption. Even vigilant consumers who try to avoid triclosan in products still may come in contact with it through food, water, and dust contamination.

Triclosan is lipophilic, meaning it can attach and accumulate in fatty tissue. It is a suspected endocrine disruptor as shown by several animal studies. Triclosan is a contaminant in breast milk. Some scientists are concerned that triclosan may be increasing antibacterial resistance. During the 2003-2004 National Health and Nutrition Examination Survey conducted by the Centers for Disease Control and Prevention (CDC), 75% of the human subjects tested positive for triclosan in their urine. The CDC reports that the health effects of triclosan in the human population are unknown and that further research is needed to determine triclosan's effects on human health.

The Environmental Protection Agency (EPA) regulates triclosan when it is used as a bacteriostat, fungistat, mildewstat, or deodorizer. Some Food and Drug Administration-registered uses of triclosan are in personal care products, soaps, and detergents. Since U.S. residents bathe with it, wash their dishes with it, and brush their teeth with it, triclosan is flushed down consumer drains into wastewater. This introduces triclosan to the environment at large, including water, soil (through application of sewage sludge), and animals. Unfortunately, triclosan's Material Safety Data Sheet states it is "very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment." In a recent

study, triclosan was found in the bloodstream of dolphins from the southern United States. Of the dolphins tested in two different sites, 23% to 31% showed up as triclosan-positive. In a study conducted during 1999-2000, the U.S. Geological Survey sampled water from 139 streams in 30 different states. These water bodies were selected downstream from areas of increased urbanization and animal production. Triclosan was one of the most frequently found chemicals in the samples. This antimicrobial agent was one of a group of chemicals revealed in over half of the streams surveyed.

Triclosan is an excellent example of why the precautionary principle and the precautionary approach (which is based on the principle) were created. ANA embraces the precautionary approach, which states, "when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Wingspread Conference,

1998). ANA elaborates further by advocating embracing action even when faced with uncertainty and examining the entire life cycle of chemicals, products, and activities in question. Since there exist concerns that triclosan may be an endocrine disruptor and that its widespread use may contribute to antimicrobial resistance, and in light of the fact that safer alternatives are available, do consumers really need plastic chopsticks impregnated with triclosan or to wash their dishes with a broad-spectrum antimicrobial agent?

Consumers can avoid purchasing products for home use that contain triclosan. Read labels and ingredients on products carefully, especially personal care products and children's items. Keep in mind that the method still recommended as effective by the CDC is thorough and frequent hand washing with plain, ordinary soap and warm water. The American Medical Association also advises that, "it may be prudent to avoid the use of antimicrobial agents in consumer products." Even the EPA has moved the registration review process for triclosan up 10 years, to begin in 2013. ANA urges all nurses to apply the cautionary approach to their next purchase. ★

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