Optimal Health University™

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The Dirty Truth About Antibacterial Soap

When you wash your hands, are you also altering your body's hormone production, fostering the growth of drug-resistant bacteria, creating carcinogens and polluting wetlands? The answer could be yes if you are washing with an antibacterial soap.

Antibacterial products are skyrocketing in popularity as corporations feed our cultural obsession with cleanliness. Soaps, toothpastes, household cleaners, and even baby toys are commonly infused with a chemical called triclosan. Studies reveal this powerful antimicrobial agent has effects far beyond killing the germs on your hands.

Your doctor at Duluth MultiCare delves into the research on triclosan and uncovers the truth about the toxicity of some common household products.

What is Triclosan?

Triclosan is an antibacterial chemical often used in healthcare environments and increasingly in consumer products. It is notable for being especially useful for controlling outbreaks of antibiotic-resistant Staphylococcus aureus (MRSA) in clinical settings (*J Hosp Infect* 2006;63:S1-44).

However, your doctor at Duluth MultiCare is concerned that the value of triclosan in consumer products is unclear. In the United States, the Food and Drug Administration (FDA) recognizes toothpaste containing triclosan as effective in preventing gingivitis, but says that the ingredient has no health benefit in other consumer products.

The European Union bans triclosan in products that come in contact with food, and many major retailers across the continent have removed triclosan-containing products from their shelves.

An Environmental Menace

The uproar over triclosan partially results from its environmental impact. A whopping 96 percent of the triclosan antibacterial soaps and cleaners goes down the drain (*Environ Sci Technol* 2010;44:4545-51).

Analysis of 30-year-old sediment in a Swiss lake revealed detectable levels of triclosan, showing that the chemical degrades slowly once released into the environment.

One recent wastewater study detected triclosan in 43 percent of sampled urban wastewater sites, and a 30-state sampling revealed triclosan contaminating 58 percent of streams (*Sci Total Environ* 2008;405:153-60).

Even more alarming is that triclosan persists in treated wastewater and sewage that fertilizes agricultural fields. One newly published investigation analyzes soybean plants irrigated with water containing a variety of pharmaceutical and personal care products ingredients commonly found in wastewater.

The researchers found triclosan (and its equally toxic cousin, triclocarban) concentrated in the plants' roots as well as in stems and soybeans (*Environ Sci Technol* 2010;44:6157-61).

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Carcinogens: Dioxins & Chloroform

Why be concerned about triclosan's presence in wastewater and in crop irrigation? Triclosan is broken down by exposure to sunlight, producing dioxins, a class of compounds that cause cancer, mutations and birth defects.

Research shows that these dioxins contaminate food crops. And, they have the potential to damage thousands of species of plants, birds and animals.

Environmental scientists theorize that triclosan from wastewater is responsible for the 200 to 300 percent upswing in dioxin levels in the Mississippi River over the past 30 years (*Environ Sci Technol* 2010;44:4545-51).

Another cancer-causing byproduct of triclosan forms before you even rinse the antibacterial soap off your hands. When combined with the chlorine found in municipal tap water, triclosan creates carcinogenic chloroform gas — the anesthetic of times past — now known to also cause cardiac and respiratory arrest (*Environ Sci Technol* 2005;39:3176-85).

Invading Our Bodies

Triclosan is at least as prevalent in our bodies as it is in our environment. After using toothpaste containing triclosan, the chemical is present in the body for several more hours.

Other products also introduce triclosan into the body — antibacterial soap or cleaning products, pass triclosan through the skin and into the bloodstream (*Food Chem Toxicol* 2000;38:361-70).

Evidence of the bodily burden of triclosan is clear in studies by the Centers for Disease Control and Prevention. Researchers estimate that triclosan is measurable in the urine of 75 percent of the population — a 50 percent jump in the past six years. Other studies indicate that it takes several days to fully excrete triclosan once it is in the body (*J Toxicol Environ Health A* 2006;69:1861-73).

Endocrine Disruption

Another inherent danger of triclosan use is its potential as an endocrine interrupter. Endocrine interrupters are a class of chemicals that act like hormones in the body and disrupt normal hormonal activity. Research reveals that triclosan exposure can cause male characteristics to appear in female fish (*Mar Environ Res* 2000;50:153-6).

Later animal studies showed that triclosan mimics a thyroid hormone, obstructing normal thyroid function (*Toxicol Sci* 2009;107:56-64).

Bacterial Resistance

A final health concern regarding widespread use of triclosan-laden antibacterial products is the potential development of resistant bacteria. Studies show that exposure to mild levels of triclosan leads bacteria to become inoculated against disinfectants (*J Hosp Infect* 2007;65 S2:60-72).

Another trial affirmed that low concentrations of triclosan, such as those found in household products, produce cross-resistance to a common tuberculosis drug (*Antimicrob Agents Chemother* 1999;43:711-13).

Besides spawning bacteria with cross-resistance to triclosan and important antibiotics, overuse of these antibacterial products may upset the delicate balance of intestinal bacteria, a key component of the immune system. This imbalance weakens the immune response and boosts the risk of developing allergies and asthma (*Emerg Infect Dis* 2001;7 S3:512-5).

Alternatives to Triclosan

How can you avoid triclosan and safely protect yourself from germs? Fortunately, a research review of 27 studies proclaims that plain soap is as effective as consumer-grade antibacterial soap for reducing bacteria and preventing disease (*Clin Infect Dis* 2007;45:S137-47).

When it comes to hand washing, be gentle and avoid unnecessary washing. (For instance, wear gloves while washing dishes.) Overzealous washing strips skin of its natural oils, making it prone to cracking. Cracks allow in germs that would otherwise stay harmlessly outside the body.

Alcohol-based hand rubs are recommended by the World Health Organization for use by healthcare workers. Alcohol quickly and effectively kills a broad spectrum of microbes on the skin without the harmful side effects of triclosan-based products. Look for triclosan-free alcohol-based hand sanitizers for use on the go.

Finally, check out the many new natural hand sanitizers and household cleaners on the market. These products harness the ancient antimicrobial powers of botanical extracts such as thyme, tea tree and grapefruit seed.

We Focus on Patient Education

We are proud that our chiropractic practice is committed to patient education. That means sharing late-breaking wellness research with patients each week. We know that optimal health means focusing on how to prevent disease by adopting the chiropractic lifestyle. This way of life includes eating well, exercising, limiting stress and getting adjusted regularly. The chiropractic lifestyle also involves avoiding exposure to toxins, like those found in antibacterial soap.