

Antimicrobial from soaps promotes bacteria buildup in human noses

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An antimicrobial agent found in common household soaps, shampoos and toothpastes may be finding its way inside human noses where it promotes the colonization of *Staphylococcus aureus* bacteria and could predispose some people to infection. Researchers at the University of Michigan report their findings this week in a study published in *mBio*, the online open-access journal of the American Society for Microbiology.

Triclosan, a man-made compound used in a range of antibacterial personal care products such as soaps, toothpastes, kitchen surfaces, clothes and [medical equipment](#), was found in nasal passages of 41% of adults sampled. A higher proportion of subjects with triclosan also had *S. aureus* colonization. *S. aureus* could promote infection in some populations such as people undergoing surgery.

Triclosan has been around for the past 40 years, says senior study author Blaise Boles, PhD, an assistant professor of molecular, cellular and developmental biology at the university, and has been incorporated into many antibacterial [household products](#) within the past decade. Other studies have found traces of triclosan in human fluids including serum, urine and milk, and studies in mammals have found that high concentrations of triclosan can disrupt the endocrine system and decrease heart and skeletal muscle function.

"It's really common in hand soaps, toothpastes and mouthwashes but there's no evidence it does a better job than regular soap," Boles says. "This agent may have unintended consequences in our bodies. It could promote *S. aureus* nasal colonization, putting some people at increased risk for infection."

Additional experiments found that *S. aureus* grown in the presence of triclosan was better able to attach to human proteins, and that rats exposed to triclosan were more susceptible to *S. aureus* nasal

colonization.

"In light of the significant use of triclosan in consumer products and its widespread environmental contamination, our data combined with previous studies showing impacts of triclosan on the endocrine system and muscle function suggest that a reevaluation of triclosan in consumer products is urgently needed," the authors wrote.

Boles says he would like to conduct a more broad survey to determine if triclosan is influencing microbial colonization at additional human body sites.

Provided by American Society for Microbiology

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