

# Triclosan Promotes *Staphylococcus aureus* Nasal Colonization

## Triclosan

- a biocide
- used for over 40 years
- manufacture of toothpaste, soaps, clothing & medical equipment
- found as an environmental pollutant, & in serum, urine & milk

## **Potential Impact of triclosan on Health (mediated via microbiome)**

- *S. aureus* is an opportunistic pathogen,
- Known to colonises noses & throats 30% of the population
- increases risk to several types of infections
- triclosan found in nasal secretions of healthy adults & it's presence correlates to nasal colonisation by *S. aureus*

## **Mechanism:**

- promotes binding of *S. aureus* to host proteins (collagen, fibronectin & keratin) as well to innate objects (glass & plastic).
- Increases susceptibility to *S. aureus* nasal colonisation in triclosan-exposed rats

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## **Importance:**

- influences the ability of *S. aureus* to bind surfaces and alters *S. aureus* nasal colonization.
- Significant findings because *S. aureus* colonization is a known risk factor for the development of several types of infections.
- Unintended consequences of unregulated triclosan use
- Study contributed to the growing body of research demonstrating inadvertent effects of triclosan on the environment and human health.

## **Reference:**

Syed AK, Ghosh S, Love NG, Boles BR. 2014. Triclosan promotes *Staphylococcus aureus* nasal colonization. *mBio* 5(2):e01015-13. doi:10.1128/mBio.01015-13.