The Effect of Antibacterial Toothpaste on the Flora of the Oral Cavity

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Antibacterial toothpastes are widely used, likely due to the perception that less bacteria means better health. Does antibacterial toothpaste negatively affect oral health? There are over 500 species of bacteria native to the oral cavity, associated with diseases such as tooth decay, oral thrush, dental plaques, and periodontal disease. Triclosan, the most common antibiotic agent in toothpaste, has been proven effective at killing oral microflora. The varied strains of oral microflora compete for resources. Stasis, when no one strain is dominant, guards from foreign pathogens and excessive growth of native pathogens. Disruption in the ecology of the oral cavity may allow any one strain to grow to harmful amounts. It is hypothesized that triclosan will target specific species of bacteria, disrupting balance in the ecology of the oral cavity, potentially allowing other species to grow to harmful amounts. 40 participants brushed with regular toothpaste for five days, saliva samples were collected, they brushed with toothpaste containing triclosan for five days, saliva samples were collected, samples were incubated, colonies were counted, and diversity was observed. Triclosan decreased the number of colonies by half, primarily reducing the number of smaller, slower growing colonies, shifting the balance of the flora toward more aggressive, gram positive strains, altering quantity and variety of the flora. This study shows that there is a potential that antibacterial toothpastes increase the likelihood of infection by disrupting the natural stasis of the oral flora. Public health may be negatively affected by the widespread use of antibacterial toothpastes. More study is warranted to test the long term effects of triclosan on the health of the oral cavity.

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