

Drinking affects mouth bacteria linked to diseases

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"Our study offers clear evidence that drinking is bad for maintaining a healthy balance of microbes in the mouth and could help explain why drinking, like smoking, leads to bacterial changes already tied to cancer and chronic disease," says study senior investigator and epidemiologist Jiyoung Ahn, PhD.

According to Ahn, associate director of population sciences at NYU Langone Health's Perlmutter Cancer Center, her team's study offers evidence that rebalancing some of the 700 types of bacteria in the mouth, or oral microbiome, could potentially reverse or prevent some health problems tied to drinking. Ahn says roughly 10 percent of American adults are estimated to be heavy drinkers, which experts define as consumption of one or more drinks per day for women, and two or more drinks per day for men.

Doctoral student and study first author Xiaozhou Fan, MS, says previous studies have examined alcohol consumption and its broad links to disease and some changes in the microbiome, but the new report is the first to directly compare drinking levels and their effects on all oral bacteria. Previous work at NYU Langone and elsewhere has tied the risk for head and neck

cancers, and for gastrointestinal cancers, to microbial changes in the mouth.

Specifically, drinkers had more of the potentially harmful Bacteroidales, Actinomyces, and Neisseria species, and fewer Lactobacillales, bacteria commonly used in probiotic food supplements meant to prevent sickness.

Possible explanations for drinking-related microbiome imbalances, Ahn says, could be that acids in alcoholic beverages make the oral environment hostile for certain bacteria to grow. Another reason, she says, could be the buildup of harmful byproducts from alcohol's breakdown, including chemicals called acetaldehydes, which along with the harmful toxins in the mouth from tobacco smoke, are produced by certain bacteria, such as Neisseria.