Sulfites Kill Beneficial Bacteria According to New Study

The first scientific study to test the effects of food preservatives on beneficial bacteria has been published, and the results do not bode well for our health. Researchers from the University of Hawai‘i Maui College have found that sulfites in food preservatives, generally recognized as safe for consumption at levels of 5000 ppm (parts per million) or less, killed or inhibited the growth of beneficial bacteria at levels of 3780 ppm or less. In the words of lead researcher Dr. Sally V. Irwin,

> *Studies show a significant increase over the past 40 years in food allergies, obesity, and metabolic disorders that have a direct correlation to disbiosis, or changes in the microbiome…In trying to understand what in our environment may be causing this change, the use of many food preservatives and their effects on beneficial bacteria came to mind.”*

What They Found

Sulfites are a food preserver found in dried fruits, wine, beer, bottled lemon and lime juices, processed meats, canned goods, and occur naturally in sauerkraut and its brine. Common sulfites include sulfur dioxide, potassium bisulfite, sodium sulfite, and sodium bisulfite. They are frequently used to stop fermentation, which is why they are most commonly associated with fermented beverages like wine.

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For this study, researchers chose four known beneficial

bacteria, Lactobacillus species casei, plantarum and rhamnosus, and Streptococcus thermophilus, and tested their reactions to two different preservatives, sodium sulfite and sodium bisulfite. The sulfites were in concentrations from 10 to 3780 ppm and exposed to the bacteria for six hours. After only two hours of exposure to sulfites concentrated at 250-500 ppm, all four types of bacteria tested showed no increase or a substantial decrease in cell numbers when compared to the sulfite-free control.

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These results should not be surprising, as this is what sulfites are designed to do. They are added to stop fermentation, the development of bacteria. Many modern innovations do what they are designed to do, but there is often a resistance to believe that what they do could also be harmful. Antibiotic-resistant superbugs are on track to kill more people than cancer by 2050, a result of our indiscriminate love affair with antibiotics, that miracle of modern medicine.

The Implications

This is a preliminary study in that its subjects are lab-grown bacteria and were exposed to the sulfites for a fraction of the time that occurs during real-world digestion. Yet the damage to that beneficial bacteria was clear.

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We depend on our beneficial bacteria. Without it, we are more vulnerable to serious infections, autoimmune disease, obesity, and numerous other damaging health conditions. This study solidly links what is in our food with one of the most serious health issues we face – the decline of our gut microbe diversity. It’s also the only study directly dealing with the effect of food additives on beneficial bacteria.

But there used to be one guy talking about the damage antibiotics do. Now we have a wealth of information confirming just how much damage messing with the gut microbiome can do.

Sources:

- *UHMC Study: Common Food Preservatives Kill Beneficial Bacteria* – Maui Now
- *Sulfites inhibit the growth of four species of beneficial gut bacteria at concentrations regarded as safe for food* – Plos One
- *Gut Bacteria in Health and Disease* – NCBI
- *Probiotics, Bacteria, and Our Health* – Organic Lifestyle Magazine