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Kombucha

Modern-day Snake Oil or the Future of Health and Fitness?

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Growing up, the cold glow of my refrigerator always seemed to reflect off the multiple shining bottles of kombucha that my mom would neatly place on the bottom rack. My mom always made sure to drink at least once a day, but I could never understand her affinity for these colorfully labeled vinegar drinks. Each bottle advertises weight loss and a cure-all for the body's woes, marketing itself as a type of modern-day snake-oil to; but, according to a study by Jeffery Gordon, my mom's belief in the curative powers of kombucha has more legitimacy than I once thought.

Kombucha gets its uniquely pungent flavor and proposed health benefits from the careful mix of yeast and bacteria that form its characteristic brown membrane called a Symbiotic Culture of Bacteria and Yeast, or SCOBY. The blend of yeast and bacteria, specifically lactobacillus, acetobacter, and gluconacetobacter, convert the tea's natural sugars into lactic acid. The company Health-Ade, a Kombucha giant, advertises these "positive bacteria" as key to their drink's overall fat-burning abilities. While bacteria tend to get a bad rap in the world of health, they are what give Kombucha its legitimacy within the world of health and fitness. It turns out that these little single-celled organisms keep our bodies healthy by aiding in digestion and regulating our immune system. Microbiologists have found that the 10-100 trillion microbes living inside of our gut can help us digest food and communicate with immune cells.

Most recently, scientists have discovered the game-changing way that these microbes impact weight loss. Knowing

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that bacteria directly impacts digestion, Jeffery Gordon sought to explore bacteria's ability to alter one's metabolism. To do so, Gordon experimented on two mice that exhibited wildly different metabolic features. The first mouse was obese, while the other was lean. However, both mice shared the exact same DNA, thus, Gordon was able to rule out any genetic factors such as hormone production that could have impacted each mouse's metabolism. Gordon then implanted the gut bacteria of both twins into two

separate communities of lean mice. The results found that the lean mice who had received the gut bacteria from the obese mouse began to gain weight and exhibit obese metabolic features.

To see if he could reverse the effects of obesity, Gordon co-housed mice that had received the obese twins' bacteria with mice that had received the lean twins' gut microbiota. Gordon found that the presence of the lean microbiota caused the obese mice to lose weight and develop the metabolic features of the lean mouse. To make the experiment more applicable for humans, Gordon fed the obese mice two very different mainstream diets. Diet A was strictly fruits and vegetables, while diet B was high in saturated fat and low in nutrients. When the obese mice were fed the diet A, the lean microbiota had no problem invading their guts. However, when fed diet B, the lean bacteria had a significantly harder time colonizing the guts of the obese mice. Gordon's experiment shows that bacteria can affect a person's metabolic features, but only when a high fiber diet is in place.

That brings us to the question: what exactly is this fat-blasting 'lean bacteria,' and is that the bacteria that makes Kombucha seemingly healthy? Unfortunately, Gordon found that there is no one specific species of bacteria that can increase a person's metabolism. Instead, he concluded that the marker of a 'lean' gut community is one that has a high diversification of bacteria. The type of bacteria that colonize our gut is contingent on the foods that we eat. If we eat a low fiber and unwholesome diet, then our guts end up fostering a homogeneous gut community that is without key bacteria need to carry out vital functions in our bodies. Conversely, if we eat a high fiber and nutrient dense diet, we create a diverse community of bacteria in our gut that insures that every niche type of bacteria is present.

The concept of Kombucha is not necessarily false. Gordon's study proved that a highly diverse gut community directly correlates to an increase in positive metabolic features. However, Kombucha only offers consumers a very small boost of lactobacillus, acetobacter, and gluconacetobacter, bacteria that is naturally found in western staples like yogurt, fruits, and coffee. Eating a nutritious, or even a relatively well-rounded diet insures these three species of bacteria naturally thrive in abundance inside of one's gut, rendering the health benefits of Kombucha moot. These fizzy drinks will most definitely not lead to a significant alteration of one's microbiome, and in excess, the average two-eight grams of sugar per bottle can actually lead to weight gain. While the science behind Kombucha's marketing remains accurate, this journalist will just stick to water. ● ● ●