Cocoa does not appear to reduce exercise-related digestive distress, study finds

March 2 2022

Credit: CC0 Public Domain

Impressive athleticism was on display during the Winter Olympics, but being at the top of one's game doesn't necessarily protect against digestive distress resulting from exercise. Surprisingly, some people are adding cocoa to their diets to reduce these symptoms. Now, researchers in ACS' *Journal of Agricultural and Food Chemistry* report that long-term daily consumption of cocoa doesn't appear to improve exercise-

related digestive issues in male athletes and induces only minimal changes to their gut microbiomes.

Performing vigorous or intense exercise can cause digestive upset for some people. The symptoms can include nausea, heartburn, abdominal cramps and diarrhea. In the worst cases, symptoms are so bad that athletes stop what they're doing and drop out of competitions. Previous studies have suggested that long-term cocoa consumption could alleviate these issues because of the tasty substance's high level of flavonoids. These compounds can enhance antioxidant and anti-inflammatory activity and have been shown to have prebiotic effects on beneficial gut microbes in animal studies. However, chronic consumption of cocoa powder by humans to reduce exercise-related digestive problems hasn't been investigated in a standardized way. So, François Fenaille, Mar Larrosa, and colleagues wanted to develop a highly controlled but also realistic human trial to assess whether cocoa could help.

Using the gold standard format for human trials, the researchers conducted a randomized, placebo-controlled study of 54 physically fit male athletes who followed a strict training routine over 10 weeks. During that time, participants supplemented their regular diets with either flavonoid-rich cocoa or a placebo starch powder mixed into semi-skim milk, which they drank daily at breakfast. At the beginning and the end of the training period, the athletes underwent a high-endurance running test. The participants' gastrointestinal symptoms did not change in either supplementation group, indicating the cocoa did not improve exercise-induced digestive complaints. Finally, the researchers found only slight effects on the composition of the gut microbiome and plasma and fecal metabolites. Although the athletes' diets, which included a high amount of fruits and vegetables, could have masked a small effect of the cocoa, the researchers conclude that cocoa is not an effective exercise supplement for suppressing gastrointestinal problems or changing the overall gut microbiome of endurance athletes.

More information: Mariangela Tabone et al, Chronic Consumption of Cocoa Rich in Procyanidins Has a Marginal Impact on Gut Microbiota and on Serum and Fecal Metabolomes in Male Endurance Athletes, *Journal of Agricultural and Food Chemistry* (2022). DOI: 10.1021/acs.jafc.1c07547

Provided by American Chemical Society