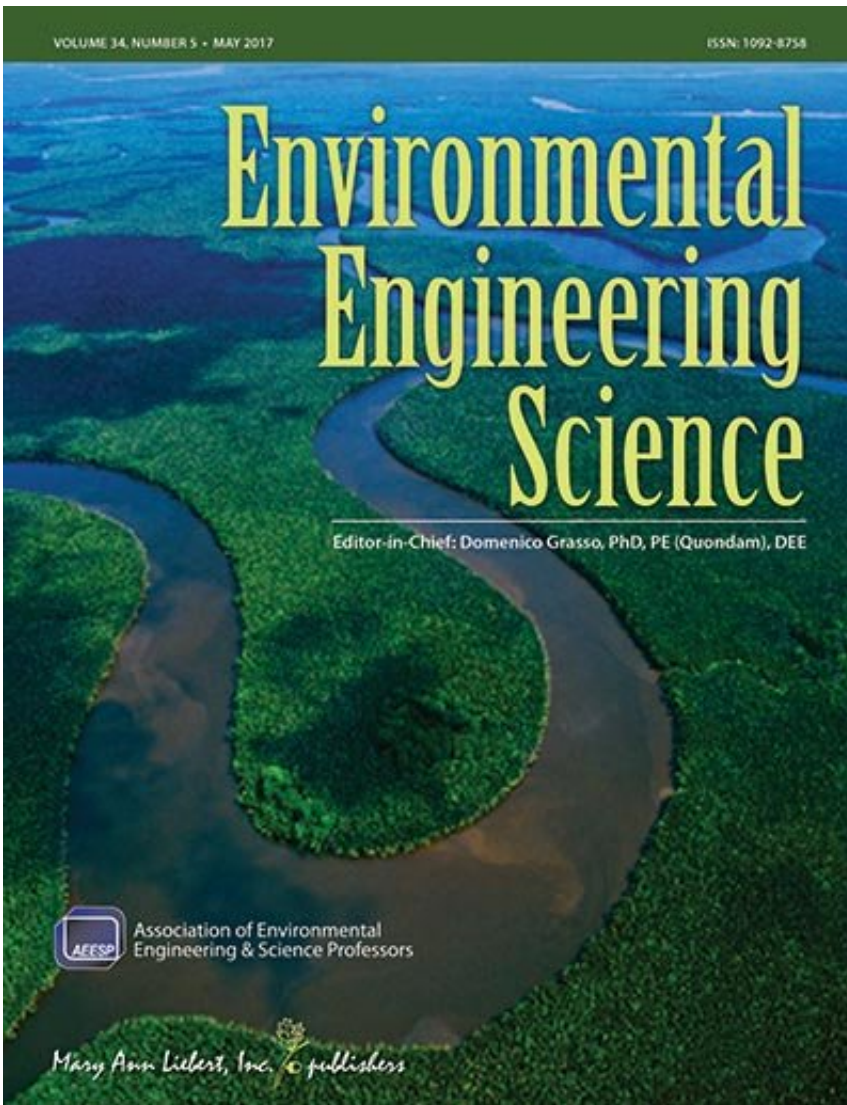


# Does the titanium dioxide in food and nanomaterials affect the gut microbiome?

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Credit: Mary Ann Liebert, Inc., publishers

A new study has shown that the titanium dioxide (TiO<sub>2</sub>) frequently used in foods, coatings, pigments, and paints that is ingested can affect both the types of bacteria present in the human gut and the pH of the colon. The physical and chemical properties of two forms of TiO<sub>2</sub> studied appear to produce different microbial responses, according to an article published in *Environmental Engineering Science*.

In the article entitled "Food and Industrial Grade Titanium Dioxide Impacts Gut Microbiota," coauthors Travis Waller, Chen Chen, and Sharon Walker, University of California, Riverside, report results of studies in which they exposed a laboratory model of the human colon to either food- or industrial-grade TiO<sub>2</sub> particles. The researchers looked for changes in the [human gut microbiota](#) and, in particular, differing affects on the microbial community structure, phenotype, and cellular function as evidenced by the bacteria's ability to degrade various substances.

"As we increasingly use technology to improve our lifestyles, we must consider associated consequences that may not have been foreseen. This important paper explores some of the impacts of widespread use of TiO<sub>2</sub> in food and other engineered products that may find their way into our digestive systems. Waller et al. show that TiO<sub>2</sub> that finds its way into our gut may not be without ramifications," says Domenico Grasso, PhD, Editor-in-Chief of *Environmental Engineering Science* and Provost, University of Delaware, Newark.

**More information:** Travis Waller et al, Food and Industrial Grade Titanium Dioxide Impacts Gut Microbiota, *Environmental Engineering Science* (2017). [DOI: 10.1089/ees.2016.0364](https://doi.org/10.1089/ees.2016.0364)

Provided by Mary Ann Liebert, Inc

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