

# Yogurt may be the next go-to garlic breath remedy

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Credit: AI-generated image ([disclaimer](#))

It turns out yogurt may have a previously unknown benefit: eliminating garlic odors.

A new study conducted in a lab—with follow-up human breath tests being planned—showed that whole milk plain yogurt prevented almost

all of the volatile compounds responsible for [garlic](#)'s pungent scent from escaping into the air.

Researchers tested the garlic deodorizing capacity of yogurt and its individual components of water, fat and [protein](#) to see how each stood up to the stink. Both fat and protein were effective at trapping garlic odors, leading the scientists to suggest high-protein foods may one day be formulated specifically to fight garlic breath.

"High protein is a very hot thing right now—generally, people want to eat more protein," said senior study author Sheryl Barringer, professor of food science and technology at The Ohio State University.

"An unintended side benefit may be a high-protein formulation that could be advertised as a breath deodorizer in addition to its nutritional claims," she said. "I was more excited about the protein's effectiveness because consumer advice to eat a [high-fat food](#) is not going to go over well."

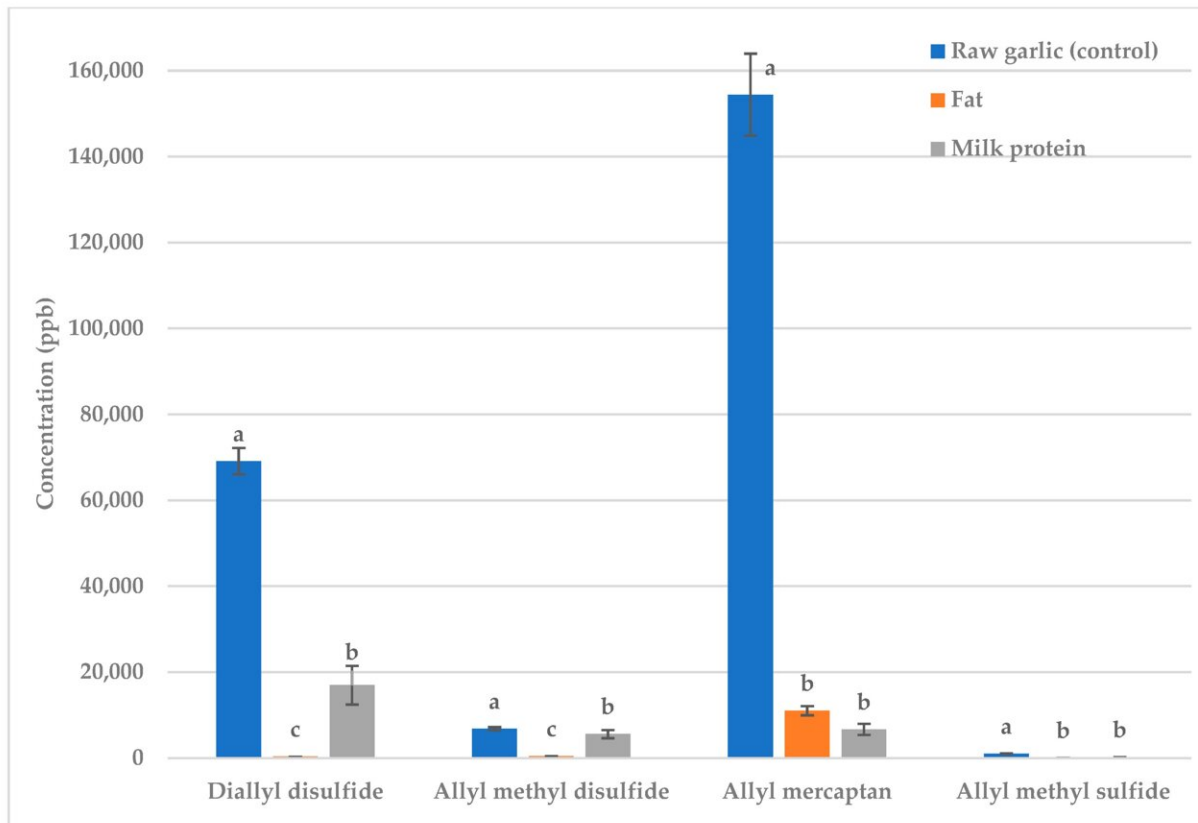
The study was published recently in the journal [Molecules](#).

Barringer has a history of identifying foods that can combat garlic breath, among them [apples, mint and lettuce](#) and [milk](#), thanks to their enzymes and fat, respectively, that snuff out the sulfur-based compounds that cause garlic's persistent smell.

After encountering speculation that yogurt might have a deodorizing effect, Barringer and first author Manpreet Kaur, a Ph.D. student in her lab, decided to check it out.

For each treatment experiment, the researchers placed equal amounts of raw garlic in glass bottles and confirmed the cluster of offending sulfur-based volatiles were released in concentrations that would be detected by

the human nose. They used [mass spectrometry](#) to measure levels of the volatile molecules in gaseous form present before and after each treatment.



Raw garlic: effect of fat vs. protein on key sulfur volatiles. Treatments within the same volatile with different letters are significantly different (p Molecules (2023). DOI: 10.3390/molecules28155714

Results showed that yogurt alone reduced 99% of the major odor-producing raw garlic volatiles. When introduced separately, the fat, water and protein components of yogurt also had a deodorizing effect on raw garlic, but fat and protein performed better than water.

In the case of fat, a higher quantity of butter fat was more effective at deodorization. The proteins studied included different forms of whey, casein and milk proteins, all of which were effective at deodorizing garlic—likely because of their ability to trap the volatile molecules before they were emitted into the air. A casein micelle-whey protein complex performed the best.

"We know proteins bind flavor—a lot of times that's considered a negative, especially if a food with high protein has less flavor. In this case, it could be a positive," Barringer said.

Additional experiments involving changing the pH of the yogurt to make it less acidic—from 4.4 pH to 7 pH—reduced the yogurt's deodorization effect on the garlic. Changing the pH of water, on the other hand, did not make any difference in water's deodorization effect.

"That's telling me it goes back to those proteins, because as you change pH you change the configuration of proteins and their ability to bind. That said we definitely should be looking at these proteins," Barringer said. "It probably depends on the protein, as well, because different proteins react differently to pH. So that may be an important thing as we look at other proteins for their garlic deodorization effect."

Barringer and Kaur tested the deodorizing effect of yogurt and its separate components on fried garlic as well, and in the process, they discovered that frying garlic alone significantly reduces most of garlic's odor-causing volatile compounds. Yogurt and its individual ingredients neutralized a lower percentage of [volatile compounds](#) of fried garlic compared to raw garlic, presumably because there were fewer volatiles to trap than were present in the raw cloves, the researchers theorized.

The findings are a good foundation for future studies analyzing a variety of proteins that might be formulated into the perfect garlic-breath-

reducing product and seeking to verify yogurt's ability to curb actual garlic breath in people.

In the meantime, Barringer predicts that Greek yogurt, with a higher-protein profile than the [whole milk](#) plain yogurt used in the study, may be particularly effective at getting rid of garlic breath. Fruit-flavored yogurts will probably work, too, she said—and whatever is used, it must quickly follow ingestion of raw garlic.

"With apples, we have always said to eat them immediately," she said. "The same with yogurt is presumed to be the case—have your garlic and eat the [yogurt](#) right away."

**More information:** Manpreet Kaur et al, Effect of Yogurt and Its Components on the Deodorization of Raw and Fried Garlic Volatiles, *Molecules* (2023). [DOI: 10.3390/molecules28155714](https://doi.org/10.3390/molecules28155714)

Provided by The Ohio State University

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