

# MSG: QUESTIONS ANSWERED

QUESTIONS ABOUT MSG? YOU'RE NOT ALONE!  
HERE ARE RESPONSES TO QUESTIONS WE HEAR MOST FREQUENTLY.

## WHAT IS MSG?

Monosodium glutamate (MSG) is a seasoning that combines sodium (like that in table salt) with glutamate, the most abundant amino acid in nature and one that provides umami, a savory taste. In simple terms, it is a seasoning that enhances the flavor of foods by adding umami.

## WHAT'S THE CONNECTION BETWEEN MSG AND UMAMI?

Umami is the taste of glutamate. In 2002, the discovery of the umami taste receptor officially established umami as the fifth basic taste. Umami receptors are found on your tongue - right next to your sweet, salt, sour and bitter taste receptors.

## HOW IS MSG MADE?

MSG is produced by a fermentation process starting with corn in the US.

## IS MSG BAD FOR YOU?

No. Since its discovery over 100 years ago, MSG has been used safely as a food ingredient and seasoning in many different cultures. Extensive scientific research confirms MSG's safety and role in the diet.<sup>1 2 3 4</sup>

## SO WHY DID MSG GET A BAD REPUTATION?

In 1968, a letter to the editor was published in the *New England Journal of Medicine*<sup>5</sup> describing the author's personal account of symptoms he experienced after eating at a Chinese restaurant, including weakness, palpitations and numbness. In the letter, he acknowledged such symptoms may have been due to any number of ingredients in the meal including sodium, alcohol from Chinese cooking wine, or MSG. Subsequent studies in laboratory mice injected large volumes of MSG directly into the brain and abdomen producing ill effects in the animals (much like what is observed with other dietary substances), leading many to question the safety of MSG, despite its use in the food supply for over 50 years.

## WHAT FOODS HAVE MSG IN THEM?

Glutamate is inherently present in foods like tomatoes, mushrooms, aged cheeses and meats. MSG also adds to the flavor of some of America's favorites, like soups, chips and salad dressings.

## ISN'T THERE A DIFFERENCE BETWEEN INHERENT GLUTAMATE IN TOMATOES AND ADDED MSG?

Whether you're eating a tomato or foods with MSG added, our bodies process the glutamate in the same exact way. When MSG is exposed to liquid, for example in broth or saliva, the sodium separates from the glutamate molecule. As such, the body digests glutamate and sodium separately.

## CAN PEOPLE BE SENSITIVE TO MSG?

Some people may have sensitivities to the seasoning in the same way people have sensitivities to a wide array of foods, often depending on how much of a food is consumed and in what context. It's difficult to say how common this is because sensitivities haven't been consistently demonstrated in placebo-controlled, double-blind trials with the general population or even in those who claim to be sensitive.<sup>3</sup> The Australian/New Zealand regulatory agency has previously stated that the percent of the population with a sensitivity "is not really known but is suggested to be between 1 and 2% of the general population."<sup>4</sup>

## WHAT ABOUT HEADACHES? I HEARD SOMEONE SAY MSG GIVES THEM A HEADACHE.

While over the years people have blamed headaches and other symptoms on foods containing MSG, the FDA has never been able to confirm MSG as the cause. In fact, such reports spurred the FDA to work with the Federation of American Societies for Experimental Biology (FASEB) to examine MSG's safety in the 1990s, and they concluded MSG is safe.<sup>3</sup> Also, the International Headache Society removed MSG from its list of causative factors for headaches in January of 2018 due to lack of evidence.<sup>6</sup>

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MORE QUESTIONS

## IF THE SCIENTIFIC EVIDENCE DOESN'T SUPPORT ADVERSE EFFECTS OF MSG, WHY ARE SOME PEOPLE CONVINCED THAT THEY'RE SENSITIVE?

Good question. Behavioral scientists speculate that our relationships with food aren't just driven by physiological mechanisms, but also by psychological influences. Our associations, habits, cultural and social norms, fears and cognitive biases all play a role. For example, people can be quick to infer causation when they notice an apparent correlation, or they perceive it as normal to have food sensitivities so they look for confirmation of sensitivities and ignore disconfirming evidence.

## BUT MSG ISN'T GOOD FOR YOU, RIGHT?

MSG elicits the taste of umami, our 5th basic taste, which enhances the flavor of food much like the other basic tastes. Most importantly, it has 2/3 less sodium than table salt, so it can be used as a sodium reduction tool. When used in the place of some salt, it can reduce sodium in a dish by as much as 40%!<sup>17</sup> The National Academies of Sciences, Engineering, and Medicine recently acknowledged the use of MSG as a strategy to reduce sodium in the food supply,<sup>8</sup> given current sodium intakes of Americans far exceed recommendations, the sodium reduction benefits of MSG are vastly under-appreciated.

## ARE THERE BENEFITS FOR SPECIFIC POPULATIONS?

Indeed. There is indication that enhancing the flavor of foods with MSG can improve the palatability of food, increase salivation and reduce dry mouth in the elderly.<sup>9</sup> MSG may also increase satiety. In one study, participants reported feeling more satiated after eating a soup with MSG than they did after a soup without.<sup>10</sup> These benefits and others are being further studied.

## HOW DO YOU USE MSG?

Lots of ways! One-half teaspoon of MSG is an effective amount to enhance the flavor of a pound of meat or four-to-six servings of vegetables, casseroles or soups. A chef-inspired tip: replace half of the salt in your salt shaker with MSG (which reduces the sodium in the mixture by about 40%), and experiment from there. A sprinkle of MSG is a particularly good way to increase the appeal (by upping the umami) of plant-based foods like grains, and raw or cooked vegetables. Combine it with salt either as seasoning right before serving and/or as it is prepared and cooked. Visit [WhyUseMSG.com/recipes](http://WhyUseMSG.com/recipes) for delicious ideas.

## AND WHERE CAN I BUY MSG?

You can find MSG as Ac'cent® in most seasoning and spice aisles at grocery stores nationwide or in specialty Asian markets under the AJI-NO-MOTO® brand.



## CITATIONS

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<sup>3</sup> Federation of American Societies of Experimental Biology. *Executive summary from the report: analysis of adverse reactions to monosodium glutamate (MSG)*. *J Nutr*. 1995 Nov;125(11):2891S-2906S. <https://www.whyyusemsg.com/wp-content/themes/whyyusemsg/assets/pdfs/FASEB-MSG-1995.pdf>

<sup>4</sup> Food Standards Australia New Zealand. *Monosodium Glutamate: A Safety Assessment*. Canberra, Australia; 2003. <https://www.foodstandards.gov.au/publications/documents/MSG%20Technical%20Report.pdf>

<sup>5</sup> Kwok RH. Chinese-restaurant syndrome [letter]. *N Engl J Med*. 1968 Apr 4;278(14):796.

<sup>6</sup> International Headache Society, Headache Classification Committee. *The International Classification of Headache Disorders*, 3rd edition. Cephalgia. 2018 Jan;38(1):1-211.

<sup>7</sup> dos Santos BA, et al. Monosodium glutamate, disodium inosinate, disodium guanylate, lysine and taurine improve the sensory quality of fermented cooked sausages with 50% and 75% replacement of NaCl with KCl. *Meat Sci*. 2014 Jan;96(1):509-13.

<sup>8</sup> National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium: Knowledge Gaps and Future Directions*. Washington, DC: The National Academies Press; 2019. <https://www.nap.edu/read/25353/chapter/18#410>

<sup>9</sup> Academy of Nutrition and Dietetics. *Umami in Foods: What is Umami and how do I Explain It?* Chicago, IL: Evidence Analysis Library; 2013. [https://www.andean.org/files/files/Umami/Umami\\_in\\_Foods\\_White\\_Paper.pdf](https://www.andean.org/files/files/Umami/Umami_in_Foods_White_Paper.pdf)

<sup>10</sup> Anderson GH, et al. Acute effects of monosodium glutamate addition to whey protein on appetite, food intake, blood glucose, insulin and gut hormones in healthy young men. *Appetite*. 2018 Jan 1;120:92-99.