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Yes, MSG, the Secret Behind the Savor

By [JULIA MOSKIN](#)

IN 1968 a Chinese-American physician wrote a rather lighthearted letter to The [New England Journal of Medicine](#). He had experienced numbness, [palpitations](#) and weakness after eating in Chinese restaurants in the United States, and wondered whether the monosodium glutamate used by cooks here (and then rarely used by cooks in China) might be to blame.

The consequences for the restaurant business, the food industry and American consumers were immediate and enormous. MSG, a common flavor enhancer and preservative used since the 1950s, was tagged as a toxin, removed from commercial baby food and generally driven underground by a new movement toward natural, whole foods.

“It was a nightmare for my family,” said Jennifer Hsu, a graphic designer whose parents owned several Chinese restaurants in New York City in the 1970s. “Not because we used that much MSG — although of course we used some — but because it meant that Americans came into the restaurant with these suspicious, hostile feelings.”

Even now, after “[Chinese restaurant syndrome](#)” has been thoroughly debunked (virtually all studies since then confirm that monosodium glutamate in normal concentrations has no effect on the overwhelming majority of people), the ingredient has a stigma that will not go away.

But then, neither will MSG.

Cooks around the world have remained dedicated to MSG, even though they may not know it by that name. As hydrolyzed soy protein or autolyzed yeast, it adds flavor to the canned chicken broth and to the packs of onion soup mix used by American home cooks, and to the cheese Goldfish crackers and the low-fat yogurts in many lunchboxes.

It is the taste of Marmite in the United Kingdom, of Golden Mountain sauce in Thailand, of Goya Sazón on the Latin islands of the Caribbean, of Salsa Lizano in Costa Rica and of Kewpie mayonnaise in Japan.

“It’s all the same thing: glutamate,” said Dr. Nuripa Chaudhari of the [University of Miami](#), who was part of the first research team to identify human glutamate receptors.

In September Dr. Chaudhari will take part in the University of Tokyo's centenary celebrations honoring Prof. Kikunae Ikeda's 1908 discovery of glutamate flavor. The Japanese company Ajinomoto turned that discovery into crystalline powder form, MSG, and patented it in 1909.

"Just like salt and sugar, it exists in nature, it tastes good at normal levels, but large amounts at high concentrations taste strange and aren't that good for you," Dr. Chaudhari said.

If you live in the United States and like spicy tuna rolls, Puerto Rican roast pork or Thai noodles, there is a good chance you are eating, and enjoying, MSG. And if you are the kind of cook who likes to keep a globe-trotting kitchen, well, then, some of these MSG-laden ingredients may deserve a place in your cupboard.

"I don't cook with MSG because that's not my training, but it definitely has its place," said Zak Pelaccio, a New York chef whose ride to fame has been greased with Kewpie mayonnaise. One of the dishes that put him on the map was a sandwich of roasted salmon on pumpernickel bread slathered with wasabi aioli: wasabi from a tube and the mayonnaise.

In regions where meat and meaty flavors have been out of reach for most cooks, MSG has long filled the gap.

"My father called Maggi sauce la segunda venida, the second coming, because he was not a very good cook and it saved him," said Irma Cecilia Sanchez, a home health aide from Puebla, Mexico, who was waiting in line at a taco truck on the Upper West Side. Maggi sauce is a 19th-century Swiss creation, a general flavor enhancer now made with MSG, sweeteners and extracts.

Her mother died when she was young, she said, and her father was a reluctant cook, making scrambled eggs most nights. "Huevos revueltos with Maggi sauce is still one of my favorite things, with tortillas and pico de gallo," she added.

Maggi sauce (there are various other Maggi products, not all of which contain MSG) is extremely popular in regions as far-flung as India, Mexico, the Philippines and the Ivory Coast. One of Thailand's favorite late-night street foods, pad kee mao, or drunkard's noodles, relies on its sweet-salty-meaty taste; the Malaysian version is called Maggi goreng.

"It's the kind of thing people crave late at night," said Bee Yinn Low, who is from Penang but lives in Irvine, Calif., and writes a blog about Malaysian food at rasamalaysia.com. Maggi has a faintly similar flavor to Indonesian kecap manis, a salty-sweet-savory condiment that is one ancestor of modern tomato ketchup.

"Asia wouldn't survive without MSG," said Mike Crewe-Brown, a cooking teacher who recently spent three months producing a food documentary in Southeast Asia.

Even after “No MSG” signs began appearing across the United States, “most Chinese restaurants, honestly, kept right on using it,” Ms. Hsu said. “And at home most Chinese cooks will sprinkle in a little bit at the end, especially if the ingredients they had to cook with were not that great.”

Meat and MSG work beautifully together. Throughout Latin America and the Caribbean, the fallback rub for pork shoulder or flank steak is Goya Sazón: MSG and salt, cut with garlic, cumin and annatto. Accent, which is mostly MSG, was introduced in 1947 and quickly became a staple for American home cooks.

But it is in Japan that MSG has been most thoroughly integrated into popular food, through two main delivery systems: instant ramen noodle soup and mayonnaise, now popular on pizza, omelets and sushi. (Mayonnaise Kitchen, a food stall in Tokyo, serves only mayonnaise-friendly foods and lets patrons store their own bottles of Kewpie, the most popular brand.)

Japanese mayonnaise is flavored with MSG and rice vinegar, giving it an addictive roundness and tang. It is the main ingredient in dynamite sauce, a mix of mayonnaise and chili sauce that has become a staple of sushi bars here and in Japan. At Ginza in Boston, a dish called hotate hokkaiyaki — baked shellfish with dynamite sauce — has had a passionate following for more than 10 years.

If you have ever wondered what makes spicy tuna rolls so much tastier than plain tekka maki, dynamite sauce, or perhaps the MSG in it, is the answer.

In upscale restaurants, whether by tradition or by inclination, chefs are unlikely to use monosodium glutamate. “We don’t need to use Ajinomoto because we can get the ingredients that have natural umami: shiitake mushrooms, egg yolks, shellfish, masago,” said Sotohiro Kosugi, the chef of Soto in New York.

Although umami is only a bit player in Japanese cuisine, reams of breathless prose have been produced here on this elusive fifth taste, which is supposedly linked to the profoundly pure, deep-sea flavors of kelp and dried tuna.

Umami “is delicious,” Katsuhiko Utada told *The New York Times* in 1983, and a food-lovers’ swoon began. Mr. Utada, not coincidentally, was the president of the Ajinomoto Company — then, and now, the world’s largest producer of monosodium glutamate.

Whether umami is the fifth taste or the 50th — there is little agreement among neuroscientists — it has been positively identified as the flavor of glutamic acid, an amino acid naturally present in many savory foods, from seaweed to soppressata. Food writers lost no time adding umami to their mental glossaries. But this same crowd rarely mentions MSG, a cheap, synthetic route to the flavor of glutamate.

I keep kecap and (umami-rich) ketchup on hand, but MSG is not normally present in my kitchen. The spice drawer has never seen Accent, the canned chicken broth has a big “No MSG” stamp on the label and the hoisin, soy and fish sauces on hand are the food-writer-approved brands. Again, no MSG.

So the food I produced at home using Maggi sauce, MSG-laden bouillon cubes and Japanese mayonnaise tasted ... different.

I made two versions of pad kee mao, with and without Maggi, and while both were good, the one with MSG had the kind of round flavor I’d normally associate with homemade chicken stock or some form of professional expertise.

Tasted straight, though, the sauces had the chemical, tangy aftertaste common to many processed foods.

“Too much MSG and you get that harsh, acrid taste,” said Mr. Pelaccio, who uses an empty barrel of Ajinomoto-brand MSG he found on the street as a plant stand in his Chinatown apartment. “But get it just right and that dish will sing.”

The role of MSG in food, and its effects on health, remain controversial. Linda Bartoshuk, a director of the [University of Florida](#)’s Center for Smell and Taste, who has studied the sensory effects of MSG for years, believes not only that MSG is harmful to health, but also that it has virtually no effect on the taste of food. “All this umami stuff is just marketing,” she said.

In 1995 the [Food and Drug Administration](#) issued a large-scale review by the Federation of American Societies for Experimental Biology, clearing glutamates as a health risk for the vast majority of consumers.

An international research review in 1987 by the [World Health Organization](#) and the Food and Agriculture Organization of the [United Nations](#) had come to the same conclusion.

“There was simply no clinical evidence for any of it,” said Marion Nestle, a professor of [nutrition](#) at [New York University](#).

She did not even mention MSG in her recent book “What to Eat,” much of which is devoted to health concerns over [food additives](#). “I thought the issue was settled, though I know a lot of people will never believe that,” she said.

MSG is blamed by some groups for a range of serious neurological and physiological disorders. Some studies have identified both MSG and aspartame (another Ajinomoto product) as excitotoxins, substances that overstimulate the neurotransmitters to the point of cell damage. But no large-scale clinical research has been done since the F.D.A.’s 1995 review.

Since the 1970s, MSG has sidled back onto American supermarket shelves, under assumed names: hydrolyzed proteins, yeast extracts, protein concentrates and other additives that are not labeled as MSG but, according to nutritionists and the [United States Department of Agriculture](#), are essentially the same thing: synthetically produced glutamates.

The whey protein concentrate and liquid aminos that many Americans buy at health food stores are also, essentially, pure glutamate, Dr. Chaudhari said.

According to U.S.D.A. guidelines, “labeling is required when MSG is added as a direct ingredient.” But other glutamates — the hydrolyzed proteins, the autolyzed yeasts and the protein concentrates, which the U.S.D.A. acknowledges are related to MSG — must be identified under their own names.

Alternatively, they may also be included under certain terms, like vegetable broth or chicken broth. Thus, these ingredients are now routinely found in products like canned tuna (vegetable broth is listed as an ingredient; it contains hydrolyzed soy protein), canned soup, low-fat yogurts and ice creams, chips and virtually everything ranch-flavored or cheese-flavored.

Thus, the richest source of umami remains your local convenience store. Grab a tube of Pringles or a bologna sandwich, and glutamic acid is most likely lurking there somewhere.

Nacho-cheese-flavor Doritos, which contain five separate forms of glutamate, may be even richer in umami than the finest kombu dashi (kelp stock) in Japan.

No wonder they taste so good.

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