

抹茶

The “Magic” of Matcha

BY LORI ZANTESON

Matcha green tea has transcended its “fledgling trend” status to become an outright movement. Known as a superfood, lifestyle beverage, and energy drink, this vibrant green earthy elixir has its origins in China and Japan, where it was consumed as a tradition for centuries. It has made its way across the Pacific to the United States but didn’t become popular until recently when it fell into the hands of pop culture icons such as Gwyneth Paltrow, Dr. Oz, and New York Fashion Week runway models. Now, matcha tea—and the many drinks made with it—isn’t only on the menus of every coffee and teahouse, it’s also bottled and infused into foods, from ice cream to curry, and is all the rage on social media platforms. It’s so ubiquitous that it’s become a common paint color.

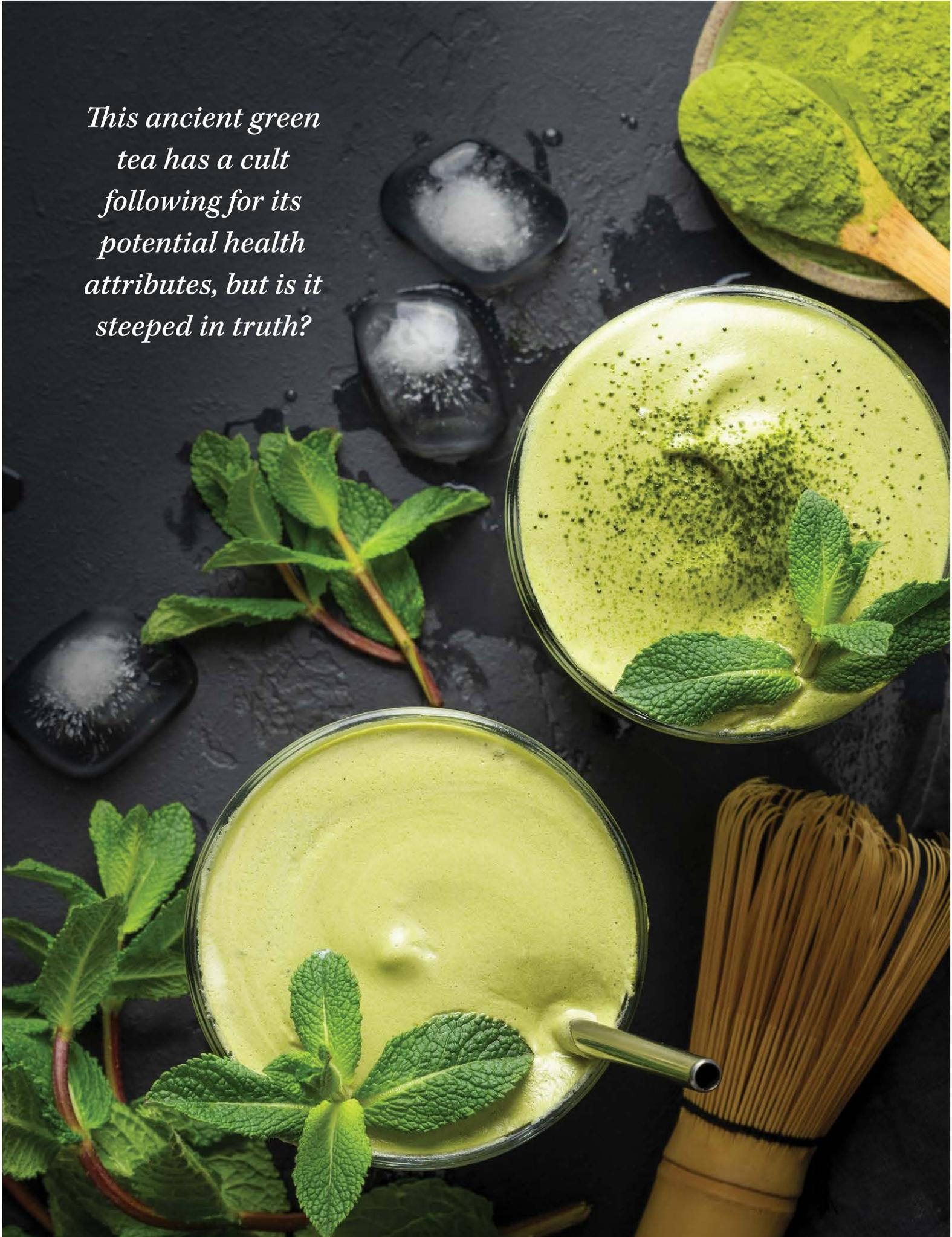
The global matcha tea market was estimated at more than \$1.6 billion in 2018 and is expected to grow by nearly 5% by 2025, according to a market analysis report by Grand View Research.¹ Driven in large part by its popularity as a healthful beverage said to improve concentration, relieve anxiety, and protect against chronic diseases, such as cancer, matcha largely is sought after for its high level of caffeine, which consumers say provides a longer lasting boost compared with coffee’s jittery peak and crash. This article dives into matcha’s history, nutrient content, and health benefits, and offers advice on how to counsel clients on this ancient, yet novel, green tea.

What Is Matcha?

All types of what are known as “true” teas—white, oolong, black, and green—are made from the leaves of the evergreen shrub *Camellia sinensis*. The differences between them are due to the ways in which they’re processed into individual varieties. White tea is the least processed and is made from buds and certain leaves of the tea plant, which are steamed and dried. Green tea is produced from freshly harvested leaves that are immediately steamed to prevent oxidation (exposure to oxygen), which maintains their green color. Oolong tea is allowed to oxidize for a short period, and black tea is completely



*This ancient green
tea has a cult
following for its
potential health
attributes, but is it
steeped in truth?*



oxidized. The results of the varying degrees of oxidation affect the teas' health-promoting properties, making each type unique. Matcha is made from leaves grown in the shade. This increases their chlorophyll (making them bright green) and L-theanine (an amino acid unique to tea) content. After they're briefly steamed and dried, the stems and veins are removed from the leaves before they're ground into a fine powder. Different from green tea, where the leaves are steeped in water and then discarded, matcha tea is prepared by whisking the powder into hot or cold water, resulting in a frothy brew.

History

Long before Hollywood and runway glam, matcha made its debut nearly 1,000 years ago in the days of Chinese dynasties and Japanese Shogun rule. During the Tang Dynasty (the seventh through 10th centuries), tea leaves were steamed into bricks for easy transport and trade. The bricks were then roasted and ground into powder, which was then mixed with water and salt to drink. It wasn't until the Song Dynasty (the 10th through 13th centuries) that this method of preparing tea from powder became popular. A Japanese Buddhist monk used Zen Buddhist methods to prepare the ground tea. When he brought the tea seeds to Japan, they were favored to produce the highest-quality tea in the country. Because the seeds were planted only in small quantities on temple grounds in Kyoto during the Kamakura Shogun, the rare tea, from which matcha was made, became a status symbol reserved largely for royalty.

The word "matcha" comes from the Japanese words *ma*, which means ground, and *cha*, or tea, to describe the fine powder made from steamed and dried green tea leaves. Japanese monks drank it to improve their Zen meditation sessions, as it had the effect of making one calm yet alert. Because of its growing perception as a means of enlightenment, a bowl of matcha was sacrificed to Buddha in daily temple rituals. Eventually, word of matcha's perceived benefits spread, and it became the tea of the Japanese Tea Ceremony, known as *chado*, which translates to "the way of tea." The essence of the ceremony is simple—the meditative joining of minds of host and guests over the spirit of the matcha tea, which is expressed in the concepts of peace, purity, respect, and harmony. Over the centuries, *chado* grew in popularity to include all levels of

society, embedding green tea into Japanese culture to become the most consumed beverage in Japan next to water. Its vast popularity in the West makes it clear that Americans are happy to carry on the tradition.

Nutrient Content and Health Benefits

Because matcha plants are shaded for the majority of their growth, they can produce higher amounts of phytochemicals and amino acids than tea plants grown in the sun. Matcha also is unique in that it's the only tea in which the leaves are consumed as part of the drink rather than infused in hot water. This means the antioxidant content is higher than other teas, says Neva Cochran, MS, RDN, LD, FAND, (nevacochranrd.com) a nutrition communications consultant in Dallas, who's written and spoken extensively on the health benefits of tea over the past eight years. Matcha's antioxidant polyphenol content is mostly in the form of the flavonoids known as catechins. Catechins are potent antioxidants, due to their outstanding ability to neutralize free radicals. Of the six types of catechins in green tea, the primary antioxidant, epicatechin-3-gallate, was found in one lab study to be 137 times greater in matcha, than in China Green Tips green tea, which Cochran notes is a variety of green tea widely available at Starbucks. Researchers also found matcha to be higher in the majority of other catechins found in the China Green Tips green tea. Even when compared with other green teas, matcha's epicatechin-3-gallate levels were dramatically higher.²

According to a recent study in the journal *Foods*, matcha teas have the highest antioxidant potential of any tea type, which can be valuable in the prevention of illness given its free-radical basis.³ It's important to note, however, that laboratory studies don't necessarily reflect the compounds that reach the cells in the body. In addition to catechins, matcha contains the antioxidant quercetin, a phytochemical associated with neuroprotective activity, improved glucose regulation, and anticarcinogenic effects; rutin, also in matcha, has anti-inflammatory properties that may protect against diabetes and neurodegenerative conditions; its immunity-strengthening vitamin C, and chlorophyll, exhibits strong antioxidant and anti-inflammatory activity. According to a review of studies published this year in the journal *Molecules*, research supports matcha's potential in



cancer prevention; protection against anti-inflammatory diseases, heart disease, and cognitive decline; and prevention and regulation of infectious diseases, including COVID-19, as well as regulation of carbohydrate metabolism.⁴

Matcha tea consumption leads to a much higher intake of the green tea compounds L-theanine and caffeine compared with regular green tea. Research published in *Current Pharmaceutical Design* shows that consuming foods and beverages high in L-theanine may promote a feeling of calm and relaxation.⁵ As mentioned, matcha contains a more concentrated amount of caffeine than green tea. One gram (about one teaspoon) contains 19 to 44 mg caffeine, about twice the amount in green tea, while 1 g of coffee beans contains 10 to 12 mg (a brewed cup of coffee contains about 10 g of beans).⁴

The combination of L-theanine and caffeine has been shown to have beneficial effects. A review of studies on the effects of these two compounds on mood and cognitive performance found that L-theanine alone (starting at 200 mg) improved self-reported relaxation, tension, and calmness, while caffeine alone improved performance on long-lasting cognitive tasks and self-reported alertness and vigor. Significant effects starting at 40 mg of the two combined, such as in matcha, improved performance in attention-switching tasks and alertness, and L-theanine was found to promote relaxation by decreasing caffeine-induced arousal. Traditional Japanese diets include higher amounts of green tea than the usual Western diet, and though studies show conflicting evidence on the optimal amount to drink to glean health benefits, consuming as little as one cup per day has provided benefits compared with drinking none at all.⁶ A typical bowl of matcha tea may be



prepared with 0.5 to 4 g of matcha powder, depending on individual preference.

Scientific literature backs the many potential health benefits of green tea, mainly due to the presence of antioxidant polyphenols, which may help protect cells from damaging free radicals that could lead to illnesses such as diabetes, atherosclerosis, cancer, and neurodegenerative diseases. Because matcha is a more concentrated form of green tea, its benefits potentially are stronger. However, it's still a separate tea variety with its own distinct properties. So, despite its long history, matcha is relatively new in the US market, and, though research is emerging, more studies that are larger and of longer duration are needed.³

Counseling Cues

Asako Miyashita, MS, RDN, CDN, (asakonutritionssalon.com) based in New York, says she doesn't recommend clients switch their current coffee or tea habit for the health benefits of matcha because coffee and tea have health benefits, too. "But I do recommend my patients consider matcha over coffee if they want to avoid a caffeine crash," Miyashita says. "L-theanine in matcha slows our caffeine absorption and helps avoid the crash in energy levels and other side effects such as jitteriness and nervousness from caffeine," she says. For clients who are sensitive to caffeine, she recommends they drink a small amount of matcha once a day to see how they feel and make adjustments to their preferences. But, due to its caffeine content, Miyashita doesn't recommend matcha to patients with gastroesophageal reflux disease, gastritis, or migraines, as it might be a potential trigger in these conditions. "I usually tell patients to experiment with matcha to see how their bodies react, and of course after a proper medical nutrition assessment," she says.

Cochran says it may be beneficial to give matcha a try or replace another beverage in their diet with it, but it depends on the beverages they're replacing. "If it's water you're replacing, you will definitely get more antioxidants and L-theanine with matcha. Likewise, replacing a sugary soda with matcha is a more healthful option," she says. And though replacing green or black tea with matcha will increase antioxidant and L-theanine consumption, it should come down to whether clients enjoy the taste of matcha over the others, as there are many plant foods that also are rich sources of antioxidants, Cochran says.

"While tea does have the potential to enhance health and prevent disease, it isn't a magic bullet," Cochran says. "A bad diet with tea is still a bad diet. Eating a balanced variety of foods is one key to overall good health. Drinking tea certainly can be an added benefit to an already nutrient-rich diet."

Culinary Tradition and Beyond

Historically, matcha was reserved for the Japanese tea ceremony and Buddhist temples, and samurai are said to have consumed matcha before battle for alertness, focus, and clarity. Today, it's enjoyed in a healthful way, as matcha powder is whisked into hot water for at least 20 seconds until foamy. But in Western diets it's consumed more often in sweetened drinks such as lattes and frappes that are more like dessert than tea. It's worthwhile to check labels and ask the barista about added sugars and ingredients that may reduce health benefits. Matcha is also a flavor in a myriad of desserts from green tea ice cream and candy to donuts and cheesecake, and it's come into vogue as a spice in a variety of recipes, including matcha sushi rolls, matcha green curry, matcha gnocchi, and matcha wine.

More simply, individuals can add matcha to smoothies, oatmeal, yogurt, salad dressings, granola bars, and other foods for an antioxidant boost and fresh and earthy umami flavor. Tell clients that when they purchase matcha to make sure matcha powder is the only ingredient, since some may contain added sugars and other unwanted ingredients.

The Finer Points

Dietitians also should note that when clients choose matcha, there are several things they should look for in a quality tea. "Color is one of the major things to

look for," says Kyle Stewart, a Specialty Tea Institute Certified Tea Specialist and Tea Mentor, and co-owner of The Cultured Cup (TheCulturedCup.com) near Dallas. "It has to be a very vibrant green color." Avoid those with any hints of yellow or brown. In addition to color, quality matcha will have a fresh, green aroma and flavor." According to Stewart, a good matcha has an umami, brothy flavor, much like a very fresh vegetal or a watercress purée. Because it's whisked and frothy, it also should be creamy. But, unless you're in a tea shop, you likely won't be able to see the matcha's color, or smell or taste it, since it's likely packaged in a tin. In this case, Stewart recommends selecting one that comes from Japan. Quality is more regulated and, he says, the Japanese are the ones who really perfected it.

Still, not all matcha is the same. There are two broad grades of matcha: ceremonial and culinary (these distinctions may or may not appear on package labels), which may not mean much because these terms aren't regulated in the United States. However, they may have more meaning if the matcha is from Japan. Ceremonial should mean the highest-quality tea. Made from younger, shade-grown leaves that are stone-ground into a very fine powder, it's the most expensive of the two, and it will last up to six months if stored refrigerated in an airtight container. Stewart recommends starting out with ½ tsp per 3 oz of hot water. Research shows that preparing matcha with 175° to 195° F water maximizes the antioxidant benefits.⁴ Culinary is lower-grade matcha made from larger, more mature tea leaves that may not have been shade grown, so they tend to be more bitter and strongly flavored, better suited to mix with other ingredients in cooking or add to desserts, smoothies, and lattes.

The matcha movement in the United States may have begun as a health trend, but now that it's peaked in popularity, it often appears in sugar-laden drinks and products hoping to don a matcha health halo. As an energizing drink rich in antioxidant compounds or a calming beverage to be enjoyed, matcha tea prepared simply, mindfully, and traditionally can be a healthful addition to one's diet. ■

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For references, view this article on our website at www.TodaysDietitian.com.