

# TEA FOR ANTIOXIDANTS?

BY SHARON SALOMON, M.S., R.D.

I'm no different from you: I'm looking for the magic potion that will keep me healthy and strong. I'm willing to eat my fruits and vegetables and whole grains but I sure would like a little extra insurance to back me up on days when French fries are the only veggie I eat and my fruit is covered in whipped cream!

Judging from all the products at the supermarket touting green tea as an ingredient, I was wondering if I should start drinking tea—or at least eating green tea ice cream.

So is it hype or is it true? I guess it depends on how you view the evidence. Do you like lots of hard science to back up your dietary changes? Or are you willing to go along with testimonials and some positive information? So far, the scientific evidence for tea is shaky although growing.

Even though tea is the oldest and most popular beverage in the world, most Americans know very little about tea beyond the flavored iced varieties or the tea served at Asian restaurants. As information about the seemingly remarkable health of habitual tea drinkers emerges, more and more Americans are turning to tea as their preferred beverage. The media have linked tea to the promise of stronger teeth, quicker weight loss, healthier blood vessels and protection from cancer, heart disease, diabetes and cognitive decline. These potential health benefits have helped to fuel the double-digit growth of loose tea sales in the United States.

I grew up thinking that tea was a medicinal drink because the only time we drank tea at our house was to soothe sore throats or upset stomachs. My sister and I so loved the taste and grown-up feeling of drinking something from a “coffee” cup that we often feigned painful swallowing just to get a cup of hot, sweet tea. I guess my mother was ahead of her time because she regarded tea as a cure-all and it seems that nowadays so does everyone else.

My mother brewed our get-well tea from the same tea bags our local Chinese restaurant used; in those days, there wasn't much variety or choice.

The tea my mother made from the popular brand of the



day was a black tea. I never knew there was any other kind until my Aunt Mary visited us from London, bringing a bag of her own tea leaves (as well as her own teapot, since she knew we Americans didn't know how to brew a proper cup of tea). Although her tea was also a black tea, it didn't taste at all like the tea from our supermarket tea bags.

Most people use the term *tea* rather loosely. Infusions

of herbs and flowers are not true teas, rather they are more correctly known as tisanes. Chamomile, for instance, is not a tea but a tisane. Rooibos (“red tea”) is not an actual tea, either, although it is labeled as Red Tea.

There isn't just one kind of tea but there is just one plant that supplies the leaves for all the varieties of tea. All tea comes from the *Camilla sinensis* plant. White tea, green tea, oolong tea, black tea—they all start out as leaves from the same plant. How the leaf is treated after it is picked determines what kind of tea it will become. So the leaves of one plant can end up with many “flavors” depending on factors like when the leaf is picked and how it is handled after it is picked. White, green and oolong produce milder-tasting teas. Black tea is the strongest-tasting tea.

- White tea is made from immature leaves and buds. The leaves are air dried and lightly steamed. It is slightly oxidized.
- Green tea is made by withering the leaves in hot air, then steaming or pan-frying them.
- Oolong tea is partially oxidized.
- Black tea is fully oxidized. It goes through several processes to produce its unique color and flavor.
- Yellow and pu-erh teas are less well known in the United States.

What is it about tea that has manufacturers adding it to just about every product from skin cream to ice cream? Teas, when processed and brewed carefully, contain antioxidants.

Green tea is a good source of catechins (ECG, EGC and EGCG), a group of antioxidants that are purported to prevent damage to cells from both normal body functions and exposure

to environmental pollutants. In fact, green tea is the darling of the food industry right now with claims that it can rev up metabolism so you will lose weight, lower cholesterol and slow the cognitive decline that comes with aging. A pretty amazing assortment of benefits!

Black tea, the kind most commonly found in tea bags, is a source of different antioxidants formed during the fermenting process—theaflavins and thearubigens. These antioxidants are supposed to help fight infection as well as reduce cholesterol.

Less is known about white tea and its effects on health, although it is believed that white tea has antiviral and antibiotic properties. There is speculation that white tea, because it is the least processed, may offer the most benefits.

How does tea compare to other beverages that claim to be good sources of antioxidants? Per cup, green tea contains about 965 mg of antioxidants; black tea about 840 mg; red wine about 434 mg; red grape juice about 363 mg. That makes green tea the winner in the antioxidant category, which is why there is so much interest in green tea.

The flavor of a tea as well its degree of healthy properties depends not only on how the tea leaves were processed but also in what part of the world the plant grew, the time of year the leaves were harvested, the soil conditions, the altitude as well as climactic variables like wind, rain and temperature. So the leaves from a plant grown in China may have a different health profile and flavor qualities than the leaves from a Japanese plant even though they are from the same kind of plant. Cultivation, harvesting and processing as well as storing also affect the health attributes of the leaves and resulting teas.

This may explain why researchers have had so much trouble devising studies that duplicate the health benefits of tea drinking that they see in populations where tea, especially green tea, is the usual beverage. Much of the evidence to

support health claims from drinking tea comes from epidemiological data (observing populations and groups of people) or studies done in test tubes or with animals. Human studies have often resulted in inconsistent or even negative outcomes.

In a study where men were given an extract of green tea plus caffeine equivalent to three cups of green tea, the men burned 80 more calories per day. Theoretically, all things being equal, that might translate into a loss of about eight pounds in one year. Not exactly an exciting weight loss on its own but combined with dietary changes and exercise, green tea may indeed offer an edge.

In a study in which subjects took a daily capsule of concentrated theaflavins, the antioxidant in black tea, there was a marked reduction in LDL (the “bad” kind) cholesterol and an increase in HDL (the “good” kind) cholesterol. Studies with drinking actual tea have not been as successful in showing significant changes in cholesterol.

Why do some studies show good results while others show inconsistent results? Confounding issues like how many cups of tea it takes to promote good health and/or alleviate symptoms of disease, the variability of intake across populations (from one to 10 cups of tea per day) and the effects of the brewing method on the concentration of healthful substances in the tea may all affect the outcome of a human intervention study. To add to the confusion, some researchers don't use tea at all—to ensure that each subject gets a consistent dose of antioxidants they use a concentrated form of the antioxidant administered by a pill.

How does all of this translate to drinking tea? That's one of the issues—no one knows exactly.

As with all foods, the substance isolated and being studied may not be the only one responsible for the health attributes. Antioxidants are probably not the only active ingredient in tea.

#### HOW TO BREW A GOOD CUP OF TEA THAT PRESERVES THE ANTIOXIDANT PROPERTIES

1. Use fresh water. Boil water just one time. Avoid tap water if it is chlorinated.
2. Remove water from the heat. Wait until bubbles subside.
3. Pour a small amount of water into the teapot or teacup. Swirl to heat it. Discard the water.
4. Pour water over tea leaves:

**Green tea:** Steep 1 teaspoon to 1 tablespoon per cup for 3–5 minutes

**Oolong tea:** Steep 1 teaspoon for ball-rolled or 1 tablespoon for strip-style for 3–5 minutes

**Black tea:** Steep 1 teaspoon for 3–4 minutes

**White tea:** Steep 1 tablespoon for 2–4 minutes

Don't judge brew by color because some teas brew light while others brew dark. Taste to make sure the tea has brewed enough. Tea expert Mary Lou Hess recommends starting with a 2 minute steep and then tasting every 30 seconds until you reach the desired strength. As a rule, green and white teas are steeped in water that is less than 180° Fahrenheit.

Longer brewing times may result in an astringent, bitter tea. Tea leaves and tea bags may be reused but each steep will result in fewer antioxidants in the resulting beverage.

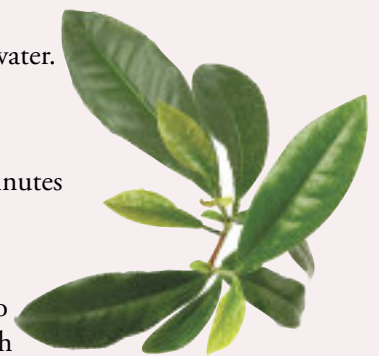


Photo by James Steidl

Tea is also a source of caffeine and caffeine has been shown to offer health benefits as well. So researchers are trying to separate the effects of caffeine from tea antioxidants, which is why some of the studies use a purified pill instead of the drink.

For people who are trying to avoid caffeine, however, tea may be a safer beverage than coffee. Tea as a source of caffeine averages 40 mg per 5-ounce cup. Coffee averages 80 mg per 5-ounce cup. How the tea is brewed affects the caffeine as well as the antioxidant contents of the beverage. To reduce the caffeine, brew the tea for about 30 seconds, discard the brew and steep again. Most of the caffeine (up to 80 percent) is leached with the first steeping but the short steeping time shouldn't remove too many antioxidants. Unfortunately, the commercial process of decaffeinating tea using ethyl acetate destroys about 70 percent of the tea's antioxidant power. A method utilizing carbon dioxide is gentler, leaving most of the antioxidants.

Despite its caffeine content, tea seems to calm and relax most people. In fact, tea can have both a calming and an energizing effect. There are substances in tea, nonprotein amino acids, which relax people while the small amount of caffeine can make them more alert.

What about bottled varieties of prepared tea? The consensus is that there are far fewer antioxidants in bottled brewed tea. In fact, one study showed that bottled green teas contained from 10 to 100 times *less* antioxidants than freshly brewed tea.

Green tea ice cream? Eat it because you like it, not for the

potential health benefits. According to Cindy Hartman, RD, a holistic chef/nutritionist in San Antonio, the antioxidants in tea are most easily absorbed when the tea is at 104° Fahrenheit. As the tea cools, the healthful properties are less well absorbed by the body so it's best to drink the tea as soon after brewing as possible.

Tea has been imbued by many with almost magical medicinal properties. Drinking tea may clear your arteries or prevent cancer or reduce the pain of arthritis or protect the liver from toxins or ward off cavities or strengthen bones or make you more alert or reduce the risk of cancer or fight infection or help you lose weight. Or maybe not. It may just be

that tea drinkers have healthier lifestyles.

One thing we know for sure: Drinking a cup of well-brewed tea is a pleasurable experience and that's enough for most people. Mary Lou Hess, tea expert and co-author of *The Story of Tea: A Cultural History and Drinking Guide*, says, "Whatever healthful benefits tea has should be considered a bonus for tea drinkers, not the reason that the drink is being consumed in the first place."

*Sharon Salomon, MS, RD, is a registered dietitian, freelance writer and dedicated eater who hopes that someday she can meet the challenge of balancing all the calories she consumes in the interest of research with enough exercise to keep her weight stable. She can be reached at [rdfoodie@gmail.com](mailto:rdfoodie@gmail.com).*

#### PREPARATION OF ICED TEA FOR BEST FLAVOR

- For 1 gallon of iced tea, place 15 tea bags in a clean 1-gallon container
  - Pour 2 quarts of boiling water over the tea bags.
  - Steep 3–5 minutes.
- Remove teabags. Add 2 additional quarts of cold water.
  - Refrigerate.

#### WHERE TO DRINK AND BUY TEA

According to Hess, the best place to buy tea depends on what kind of tea the buyer wants. "Buying tea is a lot like buying distinctive wines: The more a shop specializes in certain styles of wine, the more selective and distinctive the choices in that shop will be. The world's best teas do not come in teabags."

**Abbey Gardens:** 1837 West Guadalupe Rd., Mesa

**Christine Moss & Allison Barta:** 1090 S. Gilbert Rd., Gilbert

**English Rose:** 201 East St., Carefree

**Gooseberries Tea Room:** 13216 N. Seventh St., Phoenix

**Mandala Tea Room:** 7025 E. Fifth Ave., Scottsdale

**Souvia Tea:** 4320 N. Miller Rd., Scottsdale and 15414 N. Seventh St., Phoenix

**Tea Court at The Phoenician:** 6000 E. Camelback Rd., Scottsdale

**Tea Infusion:** 2000 E. Rio Salado Parkway, Tempe

**Tesa's Tea and Treasures:** 4700 N. Central Ave., Phoenix

**The Tea Shoppe:** 7005 N. 58th Ave., Glendale

**The Teeter House Tea Room:** 622 E. Adams St., Phoenix

**The Urban Tea Loft:** 11 W. Boston St., Chandler

