SPECIAL REPORT: Coffee, Tea, or Caffeine-Free?

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Americans drink a whopping 500 million cups of coffee every day. That comes to over six billion gallons a year. That's more than any other country in the world. It's been our national drink ever since the Boston Tea Party. Coffee accounts for about 75% of the caffeine we take in and about nine out of ten Americans take caffeine in everyday in one form or another. The average American coffee drinker says they take in about 3 ½ cups per day. **And the surprising good news about coffee is that there is very little bad news.** The coffee bean, like all plants, contains many different naturally occuring compounds and chemicals. Some of those are the good antioxidants that help our body protect itself from damage. As a matter of fact, a recent study found that coffee is the number one source of antioxidants in the U.S; not necessarily because it's such a good source, but simply because Americans just drink so much of it. It you really want lots of antioxidants, instead of drinking more coffee, start eating more fruit. Blueberries, dates, and red grapes are especially high in antioxidants.

Of course the real issue in most peoples minds is the caffeine content of this

beverage. There's no denying that caffeine can improve your mood and help fight fatigue. It can also act as a mild stimulant to improve physical and mental performance especially on monotonous tasks that you do over and over every day. Many university students know that late night coffee may be a big reason that they ultimately graduated from college. By the way, it appears that **frequent small doses of caffeine throughout the day help maintain alertness better than the big morning cup of coffee that most people consume first thing in the morning.** Some research now suggests, too, that caffeine may increase you body's ability to tap into fat stores during exercise, especially on very short, intense types of exercise. It also seems to decrease your perception of pain and can help you last longer in both aerobic and anaerobic exercise. Studies also show that caffeine can help with asthma symptoms and fight headaches too. There's even some preliminary research that caffeine may decrease your risk of developing gallstones, Parkinson's disease, and Alzheimer's. **And contrary to popular opinion, caffeine does not cause dehydration.** Your body retains the same amount of water from caffeinated beverages as it does from water itself. It may become dehydrating, however, at consumption levels around 600 mg per day. Hopefully you're not taking in that much. Consuming caffeine can result in feelings of increased happiness, well-being, and sociability. Obviously, I don't have to sell you on the benefits of coffee and caffeine, most Americans drink the beverage and are sold on it already. On the other hand, **caffeine is also addicting and, if you don't get enough or you get too much, you'll pay the price in either decreased performance or jittery nerves and insomnia. And, oh by the way, coffee does NOT help you sober up.** It seems to make people think they're sobering up, when in fact they're just as intoxicated. Their reaction time and judgment time will still be just as limited. Somebody who thinks they've sobered up might try to get behind the wheel of a car when they shouldn't. One of the problems with energy drinks like Red Bull is that college kids are mixing them with alcohol and the combination of caffeine and alcohol results in more auto accidents than those just drinking alcohol.

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But what about the potential health problems with coffee and, specifically, caffeine? First keep in mind that excessive coffee consumption is often associated with many other truly harmful health practices, including cigarette smoking, drinking too much alcohol, and a high dietary fat intake. So it may not necessarily be the coffee, but what's consumed with it. And speaking of cigarettes, certain compounds in cigarette smoke help metabolize caffeine in your blood. What that means is that **a cigarette smoker will use up his caffeine twice as fast as a nonsmoker.** If you choose to get off of tobacco products and you maintain your caffeine consumption levels, you may experience jitters, irritability and many of the same symptoms that are blamed on nicotine withdrawal. Since you're now off of cigarettes, your caffeine is not processed out of your body as quickly as before. You, therefore, continue to have a longer and more profound effect from caffeine that you normally would have as a tobacco user. To avoid this problem you may want to slowly decrease your caffeine for several months before getting off of cigarettes. Some of what is blamed for nicotine withdrawal may in fact be caffeine overload. Your ability to get off cigarettes once and for all may be helped a little bit by decreasing your caffeine intake first.

Most researchers agree that caffeine is safe at moderate levels; about 300 mg per day. That's the equivalent of two 12oz cups of coffee. The average consumption in this country is between 200-400 mg a day. There are definite potential health problems with caffeine consumption, especially as you increase your intake. High blood pressure can be, at least temporarily, raised if you consume caffeine before an exercise session or during stressful periods in your life. That could be a problem if you already have high blood pressure. Women who are pregnant, or want to become pregnant, may also want to moderate their caffeine consumption. **Some research indicates that women consuming more than 200mg of caffeine a day may increase their chances of having a miscarriage and those taking in over 300 mg a day decrease their chances of becoming pregnant in the first place.** Since

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caffeine does cross the placental barrier, it can cause abnormal heart rhythms in the unborn baby or nervous behavior immediately upon birth. If a woman consumes a lot of caffeine, it may cross through the breast milk and have a negative effect on the baby as well. Here again, the amount seems to be important. If you're pregnant and you must have caffeine, keep it under 300 mg a day. And one more thing, while caffeine can help relieve headaches, daily exposure may also increase the likelihood of migraines in people who are susceptible to them.

In spite of earlier studies that suggested a possible connection, **the best long-term research we have now says that coffee does not seem to increase your risk of heart disease, cancer, or PMS.** Interestingly, coffee drinkers do seem to have less diabetes risk as well, but that's probably due to something yet to be understood in the coffee besides the caffeine. But that protection is only seen in those who are drinking somewhere between three and six cups a day. As we said, at those levels you may be contributing to other health problems from the coffee. So, as of now, don't count on coffee to cut your diabetes risk. Exercise and losing weight, on the other hand, will *definitely* cut your risk of diabetes.

Now if you suffer from heart palpitations or an irregular heartbeat you may also want to try avoiding caffeine to see if that improves the situation. While caffeine does tend to leach calcium from the bones, the effect is so small that the average person could overcome the effect simply by adding two tablespoons of milk for every cup of coffee they drink.

There are also certain drugs that your physician may prescribe that can interfere with your body's ability to get rid of caffeine. As a result, it's as if you are consuming more caffeine than you really are simply because you can't get rid of it. As a result of that you may have trouble sleeping, be irritable, or even have heart palpitations. Drugs themselves can also, in turn, be affected by your caffeine consumption. You may find that your medications will work better if you also decrease your caffeine consumption

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simultaneously. The bottom line is to make sure to ask your physician about your medications and any effect coffee can have on them or how they might affect your sensitivity to coffee.

So where do you find the caffeine in every day consumption? Well, some beverages like coffee are obvious; some others may not be. Keep in mind that **a cup of drip brewed coffee has around 115 milligrams of caffeine in 8 ounces. An 8-ounce cup of instant coffee comes in around 65 milligrams and even decaf has about 3mg in an 8 oz cup. The same amount of brewed tea comes in only at around 50 mg or so. So, as far as caffeine is concerned, you're much better off with tea compared to coffee. Coke and Diet Coke come in around 45 milligrams per can.**

Pepsi and Diet Pepsi come in at a little less at 37 milligrams. A tablet of No-Doze comes in at 100 milligrams. Two tablets of Excedrin come in at 130 mg. A 6oz Hershey's milk chocolate almond bar has 25mg of caffeine. Dark chocolate has three times the caffeine as milk chocolate, but even so, you'd have to eat more than a half pound of chocolate to get the caffeine you'd get in a 12 oz cup of coffee. Did I just hear you say you'd be willing to do that? Remember too, that even though they've got about half the caffeine as coffee does, caffeinated soft drinks when consumed in large quantities can have the same effect. A 20 oz bottle of Coca-Cola has 57 mg, and 8 oz can of Red Bull has 80mg, and a 64 oz Double Big Gulp of Mountain Dew at 7-11 comes in at a whopping 294 mg. 7-Up, Sprite, Diet Sunkist Orange and Hires Root Beer are all caffeine free. Now that doesn't mean they're health foods, but at least they're not contributing to your caffeine consumption. What about some of the specialty coffees that are out there now? Just two ounces of Espresso has 120 milligrams of caffeine. But fortunately, that's about all that you drink when you have Espresso, 2 ounces. On the other hand, a Starbuck's 16oz coffee comes in at 330mg of caffeine. What's interesting is that caffeine content can vary greatly depending on where you get your coffee. Researchers tested 16 ounce cups of Breakfast Blend at one Starbucks store and found that the caffeine content ranged from 260 mg to

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560 mg in the same serving size during a six-day period. On the positive side, one of the best specialty coffees you can drink is the Caffe' Latte. It starts out with a little shot of Espresso at the bottom. The vast majority of the beverage is just steamed milk. Then they put some foamed milk on top of that, so you're actually getting 264 milligrams of calcium in 7 ounces for less than 80 calories, only a half a gram of fat, and about 44 mg of caffeine. A cappuccino has basically the same ingredients as a Caffe' Latte, it just contains more foamed milk, and a little bit less steamed milk.

As we said earlier caffeine consumption can lead to dependency and your body will let you know if you don't give it what it's used to. That dependency can be developed on as little as one cup a day for some people. Many people consistently experience headaches only on weekends and they can't often figure out why. While there may be many causes, the unique fact that these headaches only happen on weekends would suggest that it is a symptom of caffeine withdrawal. They get their regular coffee consumption during the work week; Monday through Friday. A cup in the morning, mid-morning, probably something mid-afternoon, and maybe even some with the evening meal as well. Their body gets used to a routine of caffeine consumption. However, on weekends they may sleep in late, their routine and schedule is probably different, and their caffeine consumption is not the same as normal. The body will respond to that and it can happen within 12-24 hours from the last dose of the caffeine. Symptoms can include headaches, nausea, decreased performance and efficiency, and even flu-like symptoms. The bottom line is that **if you are trying to decrease your caffeine consumption, you may want to slowly decrease it rather than trying to go cold turkey.** To ease off, try mixing equal amounts of regular coffee with decaf for several weeks. Then cut it in half again for several more weeks until you're only drinking caffeine free. You will accomplish your goal and avoid most of the very common side effects of caffeine withdrawal. If you can decrease your dependence upon it over the course of a month or two, your body will probably cooperate with you much better.

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Several studies in the past have found that coffee may increase blood cholesterol levels. When coffee is boiled it releases certain fat substances from the coffee bean. These two compounds: *cafestol* and *kahweol* tend to raise the bad LDL cholesterol in your blood. Fortunately, most of us drink filtered coffee; not boiled. If you have a coffee maker at home, your coffee goes through a paper filter. The good news is that filters trap these undesirable potentially cholesterol-raising substances before you even consume them. Most of the research that showed the negative effects of coffee on cholesterol was done in the Scandinavian countries. In those nations they not only consume a lot more coffee every day than Americans do, but they also boil it and drink it unfiltered. As a result, they end up consuming a lot more of these potentially dangerous fat substances from the coffee bean. Since in this country we consume an average of only two or three cups of coffee per person a day and drink our coffee filtered, the negative health effects seen in the Scandinavian research doesn't apply to us. Now keep in mind that certain specialty coffees like French press and Espresso are not filtered. So, if you consume a lot of these types of coffees, you can have a potential problem with raised cholesterol levels as well. However, as we've said before, if you're drinking Espresso, for example, you're only usually getting two ounces or so of actual coffee. Even if you're having as much as two cups a day, that's probably not going to have any significant impact on your cholesterol levels. Incidentally, permanent metal filters, nylon mesh filters, and gold filters all seem to also very nicely catch these fat substances as well. It appears that even the basket filter of a percolator will trap them too. **The bottom line is that the average American coffee drinker is not raising their blood cholesterol levels because they drink coffee.**

And what about decaf? I hope you see by now that you really don't need to completely avoid caffeine for health reasons. By the way, decaf and regular coffee both have the same amount of those good antioxidants we talked about earlier. But some people are just more sensitive to caffeine than others

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and so they prefer decaf. I'm sure you've heard all kinds of scare stories about what they do to coffee to take the caffeine out. One I keep hearing is that they use formaldehyde, the main ingredient in embalming fluid, to remove the caffeine. Not true, not true. Remember, if you hear something often enough, even if it's wrong, you begin to believe it's true. We can put this one to rest. **They don't use formaldehyde to make decaf coffee. Period.**

Here is what they actually do. Manufacturers all first soak the coffee beans in water to release the caffeine. Then they have several choices to remove it. The first is a process called *swiss water decaffeination* that uses water and a carbon filter. Another option is the use of the effervescence of carbon dioxide gas. And third, they can use the substances methylene chloride or ethyl acetate. Now since ethyl acetate is derived from fruit, decaffeinated coffee made this way if often described as "natural" decaf. On the other hand, the use of the other substance methylene chloride has raised some concerns in the past because some studies had found that it caused cancer when inhaled by laboratory animals. By the way, lab animals did not get cancer if they drank the substance. The FDA allows methylene chloride to be used and in those few companies that still use it, the levels left over on the coffee beans are 100 times lower than what the FDA says is safe. So, there should be no problem. But what if you don't want to take any chances? Well, when a review was done a few years ago here's who was decaffeinating their coffee and how: **Maxwell House, Sanka, and Yuban use the Carbon Dioxide method. Starbucks Decaf Mocca Java uses the Swiss Water process; Chase and Sanborn, Folgers, and Hills Brothers use the Ethyl Acetate method (that's the one derived from fruit), and Chock Full O'Nuts, and the Starbucks line (except for the one we just mentioned) use the methylene chloride method.** Why do a couple of companies still use that method? Simply because a lot of people think decaf made this way tastes better.

By the way, decaffeinated doesn't necessarily mean completely caffeine-

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free. By definition it only has to be 97% caffeine-free to call itself that. Some researchers at the University of Florida recently tested the caffeine content of ten different cups of decaf coffee from various store brands and coffee shops and a dozen decaf drinks from Starbucks and found quite a variability. They found that all of them had some caffeine except for Folger's Instant Crystals. That's the only brand that was really completely caffeine free. The range was from 8.6 mg of caffeine to 13.9 mg in a 16oz serving. The Starbucks decaf options ranged from 3 to 13.4 mg of caffeine. That's still pretty good when you consider that a 16 oz Starbucks Grande coffee has 330 mg. But the lesson here is that decaf still can have some caffeine and if you have a couple of them it can add up, especially if you're sensitive to it.

Here's some news. They're currently working on new coffee plants that naturally have 70% less caffeine. They're growing them now but it will still take a while for these plants to mature and produce beans. Be on the lookout for coffee using those sometime in the future.

Another way to cut back on your caffeine is to switch to tea. We're drinking a lot of it, about $2 Billion worth just from supermarket sales each year. About 83% is black tea and 16% is green tea. And while the British may like a nice cup of hot tea, 85% of the tea in the US is consumed as iced tea. **Fortunately, tea only has about half the caffeine of brewed coffee.** Decaf tea, by the way, does not use that methylene chloride process, but it does lose some of those healthy antioxidants, the flavonoids, when they take out the caffeine. Fortunately it's only about a 10-15% loss. We don't know if decaf tea will have the same long-term health benefits as we've seen in regular tea simply because it hasn't been studied yet. It appears that it's the flavonoids that are providing a lot of the health benefits in tea, but they vary quite a bit between different types of teas. Some decaf teas actually have more flavonoid content than regular teas, just because of the type of tea it is.

Speaking of those different kinds of teas, let's go over some basics first. All

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tea comes from the shrub "Camellia sinensis." **So called, "herbal teas," by the way, come from different plants and are not really true teas.** We'll look at that momentarily. The type of tea you end up with is determined by how the leaves are processed. Green tea is minimally processed and the leaves are light in taste and color. White tea is harvested early in the season and it's also minimally processed. Black tea is exposed to oxygen for two to four hours before it's dried which makes it darker and stronger in taste. Oolong tea is exposed to oxygen for a shorter time.

Again, it's the antioxidant flavonoid components of tea that seem to be good for your health. And how the tea is processed is what effects how much and what kind of flavonoids you end up with. For example, green teas end up with a lot of the powerful antioxidant known as "EGCG;" much more so than black tea. But black tea and oolong and white tea all have other antioxidants than may be beneficial as well. Right now, we simply don't know which flavonoids and how much of them is the ideal intake.

Tea not only appears to be good for you but it makes you feel good too. All varieties contain an amino acid called theanine that can be utilized by the brain to give you that calm and relaxed feeling. By the way, contrary to earlier reports, tea does not interfere with iron absorption.

Much of the research suggests that you need to drink quite a bit of tea to see the health benefits, maybe somewhere between four to eight cups per day. Most of us aren't going to do that. So what if we could concentrate the active ingredients in tea and take them in a pill? It would certainly be more convenient. Well, first of all we don't know exactly what specifically in tea is responsible for all the benefits. Yes, we think it's the flavanoids, but which one? There are a lot of them. And they probably work as a team. Just isolating one or several won't be the same as actually drinking tea. Besides, there are quite a few reports of people getting liver damage from taking supplements with green tea extracts. And in studies in animals, high doses of some of these substances damaged the kidneys and intestines as well.

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As we said earlier, so called "herbal teas" are technically not teas at all; they come from a totally different plant. As a result herbal teas contain little, if any at all, of the healthful flavonoids. Your basic flavored teas like orange, raspberry, and ginger are perfectly fine for a beverage. They won't do you any harm, nor do you much good. A problem with herbal teas, though, is that you never know how much of a particular herb it really contains. What's more, does that herb change when it gets brewed? And what other ingredients are in there, and what do they do? Chamomile tea is supposed to help you with digestion. Echinacea tea is supposed to build your immune system up and St. John's Wort tea is supposed to help with depression. Whether these herbs really do any of these things is questionable to begin with, and whether you end up with any of the active ingredients in your actual cup of tea when you drink it is even more questionable. **Several teas you should absolutely never consume are Comfrey, Chaparral, Sassafras, Licorice, Foxglove, Lily of the Valley, Black Cherry, Blue Cohosh, and any of the so-called "Diet" or "Detox" teas. The flavored herbal teas you can buy in the grocery store are fine but stay away from any of the others.**

And while you're in the grocery store, you can't help but see all those ready to drink bottled teas like Arizona, Nestea, and Snapple. Researchers have found that freshly brewed green or black teas have 10 to 100 times more antioxidants than these bottled teas. They can be loaded with sugar or artificial sweetener too and really are more like flavored water than something that's going to do your health some good. Oh I guess you could say it's better than drinking a soda, but **don't kid yourself in thinking that most of the those bottled teas are going to do you any good.**

So what's the latest on the specific health benefits of drinking tea? Let's look at heart disease first. **Population studies are suggesting that tea drinkers may reduce their risk of cardiovascular disease** because of the flavanoid's ability to decrease inflammation and the bad LDL cholesterol. They may also work against blood clot formation and high blood pressure as

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well. But as always, not all the research agrees.

The flavanoids in tea do seem to help protect against cancer, at least in animals. However, these animals are given the tea extracts that would be the equivalent of drinking lots and lots of tea. In human studies, the results aren't as good. **Drinking five cups or more a day of tea doesn't seem to help humans protect themselves against cancer.** There just hasn't been much research yet on humans using the tea extracts. So as of now at least, tea's effect in reducing cancer in humans doesn't look very good.

Several manufacturers have asked the FDA for permission to promote their tea products as helping decrease heart or cancer risk but they've been turned down.

There also have been some claims that the flavanoids in tea, specifically, EGCG can help you lose weight, too. Coke and Nestle put out a drink called "Enviga" which had 100 mg of caffeine and 90 mg of EGCG added per can. They claimed that you can burn an extra 60 to 100 calories every day from the EGCG. You also burned thru about $4 every day as well. It's no longer available. The bottom line is that the very little research that has been done on EGCG and weight loss has been very short term and not very promising.

Yes, you should probably be drinking some tea. It's not a miracle food but it does contain lots of those good-for-you flavanoids; especially the green tea. But it's not the only food that does. You can get these healthful compounds from fruits, vegetables, red grapes, red wine, and cocoa too. By the way, you may have seen the ads for Hershey's Special Dark chocolate bar that says it has as many antioxidants as two cups of green tea. OK, but it also has ten times the fat, five times the sugar, and one hundred times the calories! It's fine to eat a chocolate bar but the health benefits of chocolate have been blown way out of proportion.

So, which way should you go? **Coffee or tea? I'm going to go with tea.** And if you're going to do that, you should get the biggest bang for your

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buck and start drinking green tea. Yes it looks funny. Yes you won't always be able to get it when you're out. But make it at home and don't bother with those bottled teas in the supermarket. Based on what we know now, you'll probably need to drink four or five cups a day to get the full benefits. By the way, it turns out that a lot of those flavanoids you take in are destroyed during digestion. If you want to make sure those good flavanoids get to where they're supposed to in your body, then add some citrus juice like lemon to your tea. That helps protect the flavanoids. And it won't hurt them either if you add a little milk if you prefer it that way. Since tea is low in caffeine, I don't think you need to bother with the decaf. Don't do the green tea extracts yet, either. We don't know enough about them yet.

Caffeine's our most popular legal drug simply because it helps wake us up and keep us alert. But the reason we need it is because many of us don't get the amount and quality of sleep we need in the first place. And why is that? Often because coffee allows us to break the body's natural signal that tries to get us to sleep when we need it. So if we need to stay up to get something done; coffee and caffeine to the rescue. But that coffee works by interfering with the brain's natural sleep regulator, a chemical called adenosine. Caffeine can make it hard to fall asleep and make the quality of sleep poor. So since we don't get the sleep we need, coffee and caffeine to the rescue again the next day. And the cycle continues day in and day out. Month after month. For many people, over a lifetime.

Personally, I used to drink coffee, but I stopped. I had "the shakes" in the morning till I had my coffee. I didn't like that. I needed my coffee and I didn't like being addicted to anything; whether it's harmful or not. **There's no question that caffeine is not a nutrient, it's an addictive drug that, at the very least, can aggravate heartburn, increase stress and anxiety, and contribute to insomnia. The body quickly gets used to the chemical and requires higher doses to continue to get the same buzz. Physical dependence can happen within three days. The lift that you feel with your morning cup of coffee, for most people, is nothing more than relief**

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from overnight caffeine withdrawal symptoms. As usual, moderation is the key. Let's put things in perspective. Of all the issues you need to consider in terms of improving your health, getting rid of coffee should be placed somewhat toward the bottom of your "to do" list. If you're drinking moderate intakes of two to three cups a day (about 300 mg of caffeine), as the average American does, and you're not experiencing any of the health concerns that we talked about here, then you have no real health reason to stop drinking coffee. It certainly has some very real short-term benefits, it doesn't appear to do you any harm at moderate levels, and it may even have some long-term health benefits.

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