

Chocolate to Live For!

Not only does it taste good, studies show that it improves blood flow to your heart, lowers blood pressure, and other good stuff. What you need to know about a sweet and healthy favorite.

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Just in time for Thanksgiving comes some good news you can use. Two weeks ago researchers reported at the American Heart Association's annual scientific sessions that [++eating dark chocolate may actually improve blood flow to your heart](#). Dr. Yumi Shina and her colleagues at Chiba University in Japan randomly divided healthy adults into two groups. One group was asked to consume a bar of dark chocolate rich in flavonoids containing 550mg of cacao polyphenols each day. The other group was asked to consume a daily bar of no-flavonoid white chocolate containing no polyphenols. (Polyphenols are a group of beneficial chemical substances found in tea, walnuts, grapes, olive oil, and many other fruits and vegetables. Flavonoids are a subgroup of polyphenols.)

After only two weeks blood flow to the heart improved significantly in the group consuming the dark chocolate but not in those eating the white chocolate. These improvements in blood flow were independent of changes in cholesterol levels, blood pressure and oxidative stress.

I've been reading about the health benefits of chocolate for many years, but this study really got my attention. When your heart receives more blood flow, that's a very good thing. These findings were also seen in an [earlier study](#) by researchers at UCSF and Tufts, published in the Journal of the American College of Nutrition. They found that chocolate significantly increased blood flow to the arm in only two weeks in a randomized, double-blind, placebo-controlled study.

Somehow, many people believe that if a food tastes good or if it makes you feel good, then it can't possibly be good for you—"chocolate to die for!" Yet, an increasing number of studies show that some of the most delicious foods may also be among the most healthful.

Research on the effects of dietary polyphenols on human health has evolved considerably in the past 10 years. It strongly supports a role for polyphenols in the prevention of degenerative diseases, particularly cardiovascular diseases and cancers. Cacao polyphenol contains four times as many disease-fighting flavonoids per serving as red wine or tea. The antioxidant properties of polyphenols have been widely studied, but it has become clear that the mechanisms of action of polyphenols go

beyond the modulation of oxidative stress.

A [study](#) published earlier this year in the International Journal of Medical Sciences by Dr. Norman Hollenberg of Harvard Medical School found that those who live in mainland Panama had a relative risk of death from heart disease that was 1,280 percent higher, and a risk of death from cancer that was 630 percent higher, than those living on the island of Kuna, where they drink up to 40 cups per week of flavanol-rich cocoa. While other factors may also be involved, the researchers speculated that chocolate intake may play an important role.

A [study](#) published in the Journal of the American Medical Association in 2003 reported that dark chocolate may also lower your blood pressure. Researchers at the University of Cologne studied men and women who were recently diagnosed with mild high blood pressure. Half were given 100g (about 3.5 ounces) of dark chocolate per day and half were given white chocolate. After only two weeks systolic blood pressure decreased on average by five points and diastolic blood pressure by two points in those consuming dark chocolate, but not those consuming white chocolate.

In a similar [study](#), researchers from Italy reported in the American Heart Association journal Hypertension that 3.5 ounces of dark chocolate for one week lowered systolic blood pressure by 12 points and diastolic blood pressure by 8.5 points when blood pressure was monitored continuously for 24 hours. Insulin sensitivity and LDL cholesterol also improved. No benefits were seen with white chocolate. Another [study](#) published in the Journal of the American College of Cardiology found that chocolate may help repair damage to smokers' blood vessels, at least temporarily.

Why? Chocolate increases your body's production of nitric oxide, a powerful substance that causes your blood vessels to relax and dilate. This, in turn, causes an increase in blood flow and a decrease in blood pressure—like opening a water spigot. A study published in July in the Journal of the American Medical Association reported that just 30 calories per day of dark chocolate lowered blood pressure and increased nitric oxide production after 18 weeks.

Nitric oxide is also stimulated by drugs such as Viagra and Levitra, which increase blood flow to the penis and enhance erections. This may be one of the reasons why chocolate has had a long reputation as an aphrodisiac. Casanova is said to have considered it as his "favorite breakfast dish." Chocolate also contains phenylethylamine, which research suggests is a stimulant that is released when you're interacting with someone intimately.

A [study](#) by Harvard scientists published last year in the Journal of Cardiovascular Pharmacology speculated that your brain may receive more blood flow as well when you eat chocolate. Research at West Virginia's Wheeling Jesuit University suggests that chocolate may boost your memory, attention span, reaction time and problem-solving skills by increasing blood flow to the brain. Other studies report that chocolate may promote growth of new brain cells, a process called neurogenesis.

Chocolate also causes your brain to produce more of a chemical called serotonin. This, in turn, may help reduce depression, elevate mood and help you focus better. Serotonin is increased by antidepressants such as Prozac and Zoloft.

Works for me. Earlier in my life I had a tendency toward depression. It seems to run in my family, so I wouldn't be surprised to find out I have an SNP (a DNA variation) on one of my genes that causes my serotonin levels to be chronically low. A little dark chocolate in small amounts often helps lift me out of those blue moments. When I walk into my favorite store on Union Street in San Francisco that sells high-quality chocolates from around the world, I feel like, well, a kid in a candy store.

Dark chocolate has the highest content of beneficial flavonols—the bitterer the better—whereas milk chocolate and white chocolate have very little. Most chocolate is high in saturated fat and sugar, so too much chocolate—dark or otherwise—is unwise.

Even a small amount of dark chocolate can be exquisitely satisfying if you meditate on it. Meditation is the practice of giving something your full attention and awareness. When I eat a truffle, for example, I focus fully on it and involve as many of my senses as possible. I notice the color and shape with my eyes, I smell it with my nose, I feel the texture with my fingers and when it first enters my mouth. Before I close my mouth and bite into it, I first close my eyes so I can focus fully on the experience.

After the first rush of flavor and sensation, I allow the chocolate to melt in my mouth, and I notice the different flavors and sensations as the texture and temperature of the chocolate begins to change, and how these change as it touches different parts of my hard palate, soft palate and throat. It's a little like listening to a great musical performance and noticing the subtle variations in tone, pitch and volume, along with infinitely varying changes in harmonics and overtones.

It can sometimes take several minutes for me to eat a piece of really good chocolate. The experience can be profoundly sensual and gratifying, yet the amount of fat, sugar and calories is relatively small. The first bite is usually the best; the last bite is the next best—so if you just have a small amount, then you have maximum pleasure with minimum calories. Sometimes I eat more than one piece of chocolate at a time, but most of the time one will do.

For people who have extensive coronary heart disease and are trying to reverse it, even this may be unwise. But for most people, having small indulgences like this brings so much pleasure that it makes it easier to eat more healthfully the rest of the time without feeling deprived or restricted.

In 30 years of conducting research, I've learned what really works to motivate people to make and sustain lasting changes in their ways of eating and living. It comes down to this: joy and pleasure are sustainable; austerity and deprivation are not.

In Woody Allen's 1973 movie "Sleeper," after being preserved in tightly wrapped aluminum foil for 200 years, a 20th century man wakes up to a future in which science has proved deep-fried foods and chocolate to be healthy. The 22nd-century doctors marveled at how previous generations once avoided foods like hot fudge. "Those were thought to be unhealthy," a doctor said. "Precisely the opposite of what we now know to be true."

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