



## Chocolate and Pregnancy

*This article was originally published in the monthly Ask the Midwife column that appeared from 2003-2007 in the Willy Street Reader in Madison, WI. Ingrid Andersson, CNM, addressed questions related to health and nutrition in the childbearing year.*

**Question: I recently heard a radio program about the good health effects of chocolate. What about in pregnancy? If I follow my cravings and keep eating chocolate, how much is too much?**

Recent research on chocolate has been kind to us chocolate lovers (and I admit up front, I'm one), even to pregnant chocolate lovers.

In April of this year, New Scientist published a report from the University of Helsinki, Finland, showing an association between chocolate-eating mothers and happier babies. Over 300 pregnant women were asked to rate their stress levels and chocolate consumption. Six months after birth, the mothers were asked to rate their infants' behavior in various categories, including fear, sooth-ability, smiling, and laughter. The babies born to women who ate chocolate daily were more "positively reactive," a measure that encompassed smiling and laughter. The babies of stressed women who ate chocolate regularly showed less fear in various situations than babies of stressed mothers who did not consume chocolate.

Of course, nobody can rule out the possibility that the chocolate consumption and baby behavior may both be linked to some other causal factor. Can something bordering on addictive and tasting so delicious really be good for pregnant women and babies?

Chocolate contains over 300 known chemicals, several of which have been shown to promote health and a feeling of well-being. A naturally occurring neurotransmitter, anandamide, is found in chocolate and promotes relaxation, while other chemicals in chocolate may inhibit the natural breakdown of anandamide, causing the relaxed feeling to last longer. Caffeine is present in small amounts in chocolate, and the weak stimulant theobromine, as well as phenylethylamine, a stimulant related to amphetamines are also present. All of these chemicals increase activity of neurotransmitters in parts of the brain that control our ability to pay attention and stay alert. They may explain the immediate "lift" that chocolate eaters experience. Or just thinking about chocolate makes some of us feel good.

In a study about nutrition and pregnancy, French obstetrician Michel Odent found that among 500 pregnant women, chocolate was the most commonly craved food. He began to look into this desirable food and was struck to find it uncommonly rich in magnesium. Magnesium is an important catalyst for fatty acid metabolism and is needed in increased amounts in pregnancy for the development of the fetal brain. Odent also found chocolate to be uncommonly rich in flavonoids. Flavonoids are plant compounds with potent antioxidant properties, which enhance our cardiovascular, immune, and cancer-fighting systems. In terms of pregnancy, high levels of the predominant flavonol, epitechin, are associated with increased concentrations of prostacyclin. One of the most serious diseases of pregnancy, preeclampsia, is associated with low concentrations of prostacyclin.

People who live on an island called Kuna in Panama drink about 5 cups of cocoa every day, include cocoa in many recipes, and recommend cocoa preparations for pregnancy. High blood pressure is so

rare on Kuna that it prompted a Harvard physician to study cocoa and cardiovascular health. He found a link between high flavonoid consumption and increased nitric oxide levels, which helps maintain healthy blood pressure. Other studies show that flavonoid-rich chocolate helps prevent clogging of the arteries, or atherosclerosis. The major form of fat in chocolate is stearic acid, which does not increase cholesterol.

But chocolate is not chocolate is not chocolate – type and amounts are important. Just as with other flavonoid-rich foods – red wine, tea, cranberries, peanuts, strawberries, apples and fruits and vegetables generally – practices in growing and processing determine how much of the original flavonoid content remains in the end product. Dark and bitter chocolate is twice as high in flavonoids as milk chocolate. Unsweetened cocoa powder starts out twice as high in flavonoids as dark chocolate, but when it's diluted with milk or water and sugar the flavonoid total decreases to half of the flavonoid content of milk chocolate.

You'll be happy though to know that only 38 grams or a little over an ounce of dark chocolate produces an immediate positive effect on cardiovascular health (according to a 2002 study at University of California, Davis). While 125 grams or about 4 ½ ounces of dark chocolate produces a continuing positive effect.

As far as I'm concerned, throw in a good handful of nuts on the side for protein, and that's a meal-to-go!

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