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HEALTHY CHOICES FOR MIND AND BODY

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Herb/Spice of the Month: Cinnamon
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Bottom line at the top: Cinnamon lowers blood sugar (glucose), cholesterol and triglyceride levels in Type II diabetics. It also contains naturally occurring chemicals that have antioxidant and anti-bacterial effects, at least in rats and test tubes. The optimal dose is unknown, but is probably less than 1 gram per day, and high doses have adverse side effects. If you had dreams of treating diabetes with cinnamon rolls, forget it.

Cinnamon - medicine for diabetics: A study published in Diabetes Care found a distinct improvement in diabetics' levels of blood sugar, cholesterol and triglycerides (circulating fat globules in blood) after taking cinnamon capsules daily for 40 days. This improvement occurred in Type II diabetics - people who make insulin, but their bodies can't respond well to its blood sugar-lowering effects.

Effective Capsule Dose: Since all three daily doses (1, 3, and 6 grams) used in the study similarly improved glucose levels, the lowest effective dose was not identified. Perhaps ½ gram or even ¼ gram would work just as well. Those 'doses' are getting closer to the levels that one might actually consume in food. High doses cause side effects, so the 'more is better' philosophy doesn't apply.

Twenty days after the cinnamon was stopped, the good effects persisted to some degree. Therefore the effect is relatively long-lasting, and one needn't take cinnamon every day to experience benefit. On the other hand, blood sugar, cholesterol and triglycerides were returning to the pre-cinnamon levels, so cinnamon doesn't 'cure' diabetes, it just helps to control it. Hopefully the next study will address this lowest-effective-dose question. Stay tuned....

Cinnamon Roll Dose: Cinnamon weighs ~ 2.4 grams per teaspoon. Cinnamon rolls come in all sizes and degrees of gooey-ness and cinnamon pungency. Based on five different recipes, my best estimate of the cinnamon content range in individual rolls is one tenth to six tenths of a gram per roll. The usual calorie content of a 4 inch cinnamon roll is ~290 calories. It would take between 1.67 - 10 cinnamon rolls (484 - 2900 calories) per day to get a 1 gram dose of cinnamon per day.

Eating 484-2900 extra calories each day would cause weight gain, which would make the diabetes worse. Not a good outcome. **Cinnamon makes lentils taste good**, and lentils are actually good for diabetics - Perhaps that would be a better choice.

How it works: Cinnamon appears to work by improving sensitivity of the body's cells to its own insulin. Cells which are sensitive to insulin will take up glucose, thus lowering blood levels. As the fat cells take up glucose more effectively, though, that glucose will get turned into fat in the cell. Without limiting the number of consumed calories to those necessary for energy needs, the diabetic will gain weight.

Other medicinal effects: Certain cinnamon extracts and oils block some bacterial toxins and inhibit infections caused by fungi and yeast (by interfering with their protein metabolism). Cinnamon extract seems to have antioxidant effects in animals.

Toxic effects: Certain components of cinnamon are skin irritants, with repeated exposure frequently leading to rash. The skin of some sensitive individuals may blister and redden after cinnamon oil-containing mud baths. Cinnamon mints, gum and toothpaste have caused mouth and lip sores and rarely pre-cancerous lesions. Workers in a cinnamon spice processing facility frequently suffer from asthma, skin and eye irritation, hair loss and unhealthy weight loss. A Pittsburgh, PA group of adolescents, after sucking on cinnamon oil-soaked toothpicks, ended up in the ER with flushing, nausea, and abdominal pain. All these adverse effects are reversible.

Some people may react to one cinnamon product but not another because cinnamon spice and oil come from different trees. The spice comes from *Cinnamomum zeylanicum* tree bark. Industry obtains the cinnamon oil used in toothpaste, lipstick, chewing gum, perfumes and essential oils from *Cinnamomum cassia*. Cinnamon oil contains the aldehyde and other natural derivatives of cinnamic acid; all with more anti-infectious activity, but also more toxicity. Natural degradation or laboratory conversion of cinnamic acid may turn it into compounds with blood-thinning activity or similar to styrene, with definite toxicity.

Other sources: Cinnamic acid and related compounds are very common in plants, fungi and yeast and may contribute to the reputed herbal effects of basil, *Melaleuca bracteata*, Balsam of Peru and cocoa leaves. Chlorogenic acid (a current fad supplement) is a cinnamic acid derivative found in many plants.