Cinnamon

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Cinnamon, from the Greek word meaning 'sweet wood', is a popular spice used in cooking, and comes from the inner bark of several trees belonging to the genus *Cinnamomum*. Since 2000 BC cinnamon has been used to treat a number of ailments, including infections, respiratory and gastrointestinal problems, nausea and loss of appetite. Much of the current research on the health benefits of cinnamon focus on blood glucose lowering.

PREPARATIONS: Cinnamon is available as cane/sticks, teas, essential oil (leaf and bark), ground spice, and extracts, which are available in tablet or capsule form.

COMMON NAMES: Cinnamon bark, Ceylon ('true') cinnamon, cassia/Chinese cinnamon.

LATIN NAME: *Cinnamomum zeylanicum* (also known as *C. verum*) and *C. cassia* (also known as *C. aromaticum*).

ACTIVE CONSTITUENTS: The major constituents of cinnamon water extract include cinnamic acid, cinnamaldehyde, and proanthocyanidins (PA). A-type procyanidins are the main component of cinnamon PA. Cassia cinnamon contains trace amounts of coumarin.

MANUFACTURER CLAIMS: Cinnamon is claimed to protect against free radical damage; reduce blood glucose by facilitating glucose metabolism, stimulating glucose uptake into the cells and increasing insulin activity; reduce lipid levels; stabilise blood pressure; help to maintain a normal weight; have anti-inflammatory properties; and act as a muscle relaxant.

Summary Message

Although some trials suggest cinnamon may have a moderate effect in improving glycaemic status indicators, the literature is conflicting and strong scientific validation is lacking. Adverse effects of cinnamon are minimal; however, large doses over a long time period should be avoided. Cassia cinnamon may harm the liver in high doses and caution should be exercised in those with liver damage, concomitant use with drugs that affect the liver, and possibly blood-thinning medication. Patients should monitor their glucose levels, particularly if taking cinnamon with other medications or herbal supplements that may affect blood glucose.

EVIDENCE FOR EFFICACY: Clinical data is conflicting. Studies make use of various dosage forms of cinnamon in doses ranging from 120 mg/day to 6 g/day, and with a duration of use between four and 18 weeks. Allen et al. conclude through their 2013 systematic review that, while no significant effects were seen on HbA1c, cinnamon is associated with significant decreases in fasting blood glucose levels. A Cochrane review, however, found cinnamon to be no more effective than placebo. These disparities are thought to be due to differing concurrent therapies, degree of diabetes control, and heterogeneity in research trials, which limit the ability to apply the results to patient care.

ADVERSE EFFECTS: Cinnamon is considered safe when used as a food, and doses up to 6 g/day have shown no significant adverse effects. Excessive amounts can initially cause an increase in heart rate, gastric motility, respiration and perspiration, which is followed by sleepiness or depression. Cinnamon oil has been shown to cause contact dermatitis and oral mucosal lesions have been reported with cinnamon-flavoured gum and sweets. Large quantities should be avoided in pregnancy.

DRUG INTERACTIONS: Patients on diabetes medication or using other supplements that may lower glucose levels, such as chromium, garlic, fenugreek, bitter melon, horse chestnut, psyllium, ginseng or devil's claw, are encouraged to monitor their glucose levels closely. Due to the coumarin constituents in cassia cinnamon products, caution should be exercised in patients taking antiplatelet or anticoagulant medication or drugs that may affect the liver. Concomitant use may increase the risk of bleeding and/or cause liver damage.

Key references

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Herbal medicines are a popular health care choice, but few have been tested to contemporary standards. **POTION OR POISON?** summarises the evidence for the potential benefits and possible harms of well-known herbal medicines.

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