

# Cinnamon Extract with CinSulin®



- CinSulin® is a potent antioxidant that protects cells from free radicals\*
- CinSulin® is a water extract, free from fat soluble harsh impurities found in solvent extracted cinnamons\*
- Non-GMO, Soy Free, Gluten Free, Vegan

## EXTENDED BENEFITS

### CinSulin® helps maintain healthy blood sugar levels within the normal range\*

In the past decades, many in vitro and animal in vivo studies demonstrated that cinnamon may act as an insulin mimetic agent with the potential activity of stimulating cellular glucose metabolism.<sup>2,15,16,17,18</sup> Several human clinical trials have also shown the positive effects of cinnamon on blood sugar levels and Hemoglobin A1c (HbA1c). Glycated hemoglobin ((HbA1c) is a measure of long term (3 months) exposure to high blood sugar levels in people and insulin sensitivity.<sup>10,19,20,21,22,23</sup> Cinnamon has been shown to effectively lower HbA1c.<sup>19</sup> Many animal studies and human trials have supported the growing evidence that cinnamon and in particular polyphenols from cinnamon extracts could play a beneficial role in maintaining healthy blood sugar levels and increasing insulin sensitivity.<sup>24,25,26,27,28</sup>

A randomized, double-blinded clinical trial was conducted to analyze the effect of cinnamon on fasting blood sugar, glycosylated hemoglobin A1c (HbA1c) and oxidative state in 25 subjects. In group A, 12 subjects, under dietary control and medical treatment, were given placebo capsule twice daily for 12 weeks. In group B, 13 subjects

## INGREDIENTS

Cinnamon is a spice produced from the bark of numerous trees from the genus *Cinnamomum*. *Cinnamomum cassia* has been used as a spice in culinary cuisine and as a traditional herbal medicine for centuries.<sup>1</sup> The highly refined sugar and high fat content of US diets and other westernized countries make it difficult to maintain healthy blood sugar levels. For most of the world population, managing blood sugar level is not feasible and alternative options have been evaluated. The recommended use of plant and herb products like cinnamon, in maintaining healthy blood sugar levels, dates back to thousands of years ago, in Ayurvedic and Chinese medicines.<sup>2,3,4</sup>

The medicinal herbs of the genus *Cinnamomum*, *C. zeylanicum* (known as Ceylon cinnamon) and *C. cassia* (known as Chinese cinnamon), have been frequently used for managing blood sugar levels.<sup>5</sup> Cinnamon has been extensively studied in relation to its effects on maintaining healthy blood sugar levels and its pharmacological activities on lipids.<sup>6,7,8</sup> Cinnamon is also known to have antioxidant properties and positive outcomes on cardiovascular health.<sup>9,10,11,12,13</sup> Several species of cinnamon (Ceylon and Chinese) are classified as GRAS (generally regarded as safe).<sup>14</sup>

CinSulin® uses a patented water extraction process to gently separate the unwanted compounds from the beneficial compounds that naturally occur in the cinnamon plant. The beneficial compounds (Type A polymers) are concentrated to 10:1 strength when compared to other cinnamons. As a result only 2 capsules containing 250mg (500mg) CinSulin®, is needed to maintain healthy blood sugar levels\* whereas whole cinnamon powders require 10 capsules containing 500mg to achieved the same beneficial effects.

CinSulin®, a safe and effective dietary supplement, is the only patented water extract of *Cinnamomum cassia* clinically studied to help maintain healthy blood sugar levels within the normal range.\*

## BENEFITS

- CinSulin® helps maintain healthy blood sugar levels within the normal range\*
- CinSulin® helps support cardiovascular health\*

## Cinnamon Extract 120vc

### Supplement Facts

Serving Size 2 veggie capsules  
Servings per container 60 servings

	Amount per serving	% Daily Value
Cinnamon bark extract (as CinSulin®)	500 mg	†

† Daily Value not established.

**Other Ingredients:** Modified cellulose (vegetarian capsule), microcrystalline cellulose, silicon dioxide, magnesium stearate (vegetable source).

**Suggested Adult Use:** Take 2 capsules daily with food, or as recommended by a nutritionally-informed physician.

**Non-GMO / Gluten Free / Soy Free / Vegan**  
Store in a cool dry place.

CinSulin® is a registered trademark of BJTA Nutrition & Healthcare Prods. Co. and is licensed under US Patents 6200569, 8304000, 8329232.

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under the same conditions, received cinnamon capsule 500 mg twice a day. The results showed that subjects in group B had a significant reduction of fasting blood glucose level after 6- and 12-week trial. There was also a reduction of HbA1c, as well as, an improvement in the oxidative stress markers. These results led to the conclusion that cinnamon helps maintain healthy blood sugar levels within the normal range.<sup>29</sup>

A placebo-controlled double-blind study tested the effects of a dried water extract of *Cinnamomum cassia* on circulating glucose, lipids, insulin, and insulin resistance among 137 participants. These participants were randomly assigned to receive either CinSulin®, 250 mg/capsule twice a day, or placebo, for two months. Results from this study demonstrated that supplementation with 500 mg CinSulin® daily enhanced insulin sensitivity, improve total cholesterol and LDL-cholesterol, and reduced fasting glucose compared to placebo. It was suggested that cinnamon may improve cardiovascular health and help maintain a healthy blood sugar level within the normal range.<sup>30</sup>

### CinSulin® may help improve cardiovascular health\*

A healthy diet pattern is a cornerstone for maintaining a healthy cardiovascular system. Strong scientific evidence has demonstrated many health benefits from functional foods that include herbs and spices.<sup>31,32</sup> Cinnamon, the number one spice and functional food used in the world, has been the focus of many scientific works to show its role in improving cardiovascular health while maintaining blood sugar levels within the normal range.<sup>33,34,35,36</sup>

### CinSulin® is a potent antioxidant that protects cells from free radicals\*

Oxidative stress is the loss of the normal balance between pro-oxidants and anti-oxidants and represents an important mechanism in the complication from high blood sugar levels and cardiovascular problems.<sup>37,38,39</sup> Many scientific studies have demonstrated that cinnamon displays strong antioxidant activity preventing and/or stopping cell damage caused by oxidative damage from free radicals.<sup>40,41</sup> The main components in cinnamon extracts that function as antioxidants are water-soluble polyphenols that have a beneficial role in blood sugar tolerance.<sup>3,42,43,44</sup>

## PHARMACOLOGICAL & CLINICAL STUDIES

To evaluate the effects of cinnamon on cardiovascular health, an experiment were conducted using spontaneously hypertensive rats. Treated rats were given various amounts of cinnamon. Results showed that rats treated with cinnamon, had decreased blood pressure and lower insulin concentration.<sup>\*24</sup> Similar results were obtained in another experimental animal study that evaluated the effect of cinnamon in albino rats. The results from this latest experiment showed the positive effects of cinnamon on improving blood sugar levels and lipid plasma levels.<sup>45</sup>

To study the lipid lowering effect of *Cinnamomum cassia* on experimentally induced hypercholesterolemic rats, a complex designed study was conducted in 30 male rats. Results showed that rats treated with cinnamon had lower serum levels of fat (plasma levels of cholesterol, triglycerides, and LDL-C were lowered than in placebo group) indicating the potential positive effect of cinnamon on improving cardiovascular functions.<sup>33</sup>

A study was designed to determine whether cinnamon improves blood glucose, triglyceride, total cholesterol, HDL cholesterol, and LDL cholesterol levels in humans. A total of 60 participants were randomized to either received 1g, 2g, or 3g of cinnamon daily or placebo daily for 40 days. Results from this study showed positive effects of cinnamon intake (1g, 3g, and 6g) compared to placebo suggesting the inclusion of cinnamon in the diet of people to help them maintain healthy blood sugar levels and cardiovascular health.<sup>46</sup>

A randomized clinical trial discovered that cinnamon supplement intake enhanced blood sugar control and moderately supported blood pressure

levels that were already within the normal range. The study involved 22 participants who were supplemented with either a cinnamon extract (500 mg of water-soluble cinnamon extract) or placebo daily for twelve weeks. In addition to helping maintain healthy blood sugar and blood pressure levels, the group consuming a cinnamon extract also exhibited decreased overall body fat.\* The data from this study suggested that naturally-occurring spice cinnamon may improve cardiovascular health and keep maintain healthy blood sugar level.<sup>47</sup>



To show the positive effect of cinnamon on blood sugar level and lipid profile, 79 participants were randomly assigned either to take a placebo or 3g of cinnamon extract powder daily for 4 months. Results from this study suggested that cinnamon may help maintain their blood sugar levels within the normal ranges.<sup>48</sup>

To evaluate whether daily cinnamon supplement intake plus usual care versus usual care alone lowers HbA1c, a randomized-controlled trial was conducted with 109 participants. The cinnamon group received cinnamon capsules, 1g daily for 90 days. Results showed that taking cinnamon is safe and had positive effects on reducing HbA1c in addition to usual care.\* Cinnamon supplementation could improve the overall health of populations that need help to maintain a healthy blood sugar level.<sup>19</sup>

To determine the positive effects of cinnamon on HbA1c, blood pressure and lipid profiles, a randomized, placebo-controlled, double-blind clinical trial was conducted in 58 participants. For 12 weeks, subjects received either placebo daily or 2g of cinnamon daily. Results from this study showed a significant reduction in fasting plasma glucose, in blood pressure levels, in waist circumference, and in body mass index, in the cinnamon group compared to the placebo group. This study concluded that cinnamon supplementation could be considered as an additional dietary supplement option to help maintain healthy blood sugar levels and improve cardiovascular health.<sup>49</sup>

To evaluate the effects of a daily intake of 3g of cinnamon on blood sugar level status and lipid profile, a randomized, double-blind, placebo-controlled clinical trial was conducted in 44 participants. After 8 weeks, the results showed that in the treatment group, levels of fasting blood glucose, HbA1c, triglyceride, and body fat mass decreased significantly compared to the placebo group suggesting a positive effect of cinnamon supplementation for people in need of keeping their blood sugar levels within the normal range.<sup>21</sup>

A study explored the immediate and long term effects of cinnamon supplementation (treated group) on 18 participants relative to the effects generally obtained from dietary modification (control group). For 8 weeks, the control group took a placebo capsule daily, while the treated group took a 1000 mg *Cinnamomum cassia* capsule daily. Results showed that all subjects from the cinnamon group had a statistically significant decrease in their blood sugar levels compared to those using the dietary modification alone. The study concluded that diet alone cannot reduce blood sugar levels as significantly as a combination of diet and cinnamon supplementation.<sup>20</sup>

The effect of ground cinnamon (6 g/day) on postprandial blood sugar concentration was evaluated in a cross-over study. Results from this study showed that cinnamon supplementation may play a positive role in postprandial glucose response in normal-weight and obese individuals.<sup>50</sup>

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A clinical study evaluated the synergistic effect of green tea, cinnamon and ginger combination on enhancing postprandial blood sugar levels. Twenty-two healthy volunteers from both genders were enrolled. The overall results showed a positive potential synergism from the active ingredients of blended herbs compared with each herb alone.<sup>22</sup>

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