

Best Cinnamon Extract

Cinnulin PF®

Best Cinnamon Extract

60 Veggie Caps

Ingredients per capsule:

Cinnamon bark extract125 mg
(Cinnamomum cassia auct.)

Excipients: modified cellulose (vegetarian capsule), cellulose, magnesium silicate, silicon dioxide, magnesium stearate (vegetable source).

Suggested Adult Use: Take 1 capsule 2 times daily, before or during a meal.

Ingredients

Cinnamon, a staple ingredient in apple pie, has remained one of the world's favorite spices throughout recorded history. The evergreen cinnamon tree (*Cinnamomum verum*), considered to be true cinnamon, is native to Sri Lanka. Chinese cinnamon (*Cinnamomum cassia* or *Cinnamomum aromaticum*), the cinnamon most commonly sold in the U.S., goes by the name "Cassia." Usage of cinnamon in Chinese medicine is said to date back over 4,000 years. Mentioned in the Bible, cinnamon was imported to Egypt and Europe from the Far East by 500 B.C. In addition to its value as culinary spice, cinnamon has traditionally been utilized as a folk medicine for colds and minor digestive complaints. True cinnamon and cassia are very similar; cassia has a more pungent flavor. Cassia buds can be found in potpourri and used as a flavoring agent in sweets and beverages.¹

Recent research has revealed that constituents in cinnamon bark called procyanidin Type-A polymers help maintain the body's ability to metabolize glucose in a healthy way.* Best Cinnamon Extract is Cinnulin PF®, a patented, water extract of Cinnamon that contains Type-A polymers. Cinnulin PF® is a registered trademark of Integrity Nutraceuticals International and is manufactured under US Patent # 6,200,569.

Benefits

Use as Part of Your Diet to Help Maintain a Healthy Blood Sugar Level*

In Vitro and Animal Studies

Research has revealed that a number of herbs and spices have insulin-like activity.² In a study by the U.S. Department of Agriculture (USDA), cinnamon demonstrated the greatest ability to stimulate cellular glucose metabolism among 49 botanicals tested.³

In a 2001 study, researchers at the USDA's Human Nutrition Research Center showed that bioactive compounds in cinnamon trigger an insulin-like response in fat cells.⁴ These compounds stimulated glucose uptake into cells and increased glycogen (stored glucose) production via activation of the enzyme, glycogen synthase.

The bioactive compounds in cinnamon appear to potentiate insulin activity at the level of the cell receptor for insulin. It has been shown that insulin resistance involves down regulation of "insulin signaling" characterized by dephosphorylation of the receptor.⁵ Enzymes called "protein tyrosine kinases" (PTPases) are believed to decrease receptor phosphorylation, and increased PTPase activity has been observed in insulin resistant rats.⁶ Cinnamon compounds have demonstrated the in vitro ability to inhibit PTP-1 and increase autophosphorylation of the insulin receptor.⁷

In a recent animal study, cinnamon (cassia) extract was administered to rats for three weeks. Following this, the rats were infused with insulin and glucose to assess their insulin response. Increased phosphorylation of the insulin receptor was observed in skeletal muscle of these rats, suggesting that cinnamon has the ability to potentiate insulin function by normalizing insulin signaling, leading to improved uptake of glucose into skeletal muscle.⁸

Until recently, the precise molecular structure of the bioactive compounds in cinnamon had not been clearly defined. The USDA has now determined that the bioactive compounds in cinnamon are water-soluble procyanidin Type-A polymers of catechin and epicatechin. In a 2004 study, type-A polymers were isolated from cinnamon and characterized by nuclear magnetic resonance and mass spectroscopy. Type-A polymers were found to increase in vitro insulin activity by a factor of 20. Type-A polymers also exhibited antioxidant activity, as measured by inhibition of free radical production in platelets. These results suggest that, in addition to regulating glucose metabolism, cinnamon may help protect cell membranes by controlling the lipid peroxidation associated with disruptions in insulin function.⁹

HUMAN CLINICAL TRIALS

The effect of cinnamon on glucose and blood lipids levels on people with type 2 diabetes was tested in a recent randomized, placebo-controlled trial. A total of 60 subjects were divided into six groups administered 1, 3, or 6 grams of cinnamon daily, in 500 mg capsules, or equal numbers of placebo capsules.



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The cinnamon or placebo capsules were consumed for two periods of 20 days each. Serum glucose, triglyceride, cholesterol, LDL cholesterol and HDL cholesterol were measured after 20 days, 40 days and again at the end of a 20-day wash-out period, during which neither cinnamon nor placebo was consumed.

In all three cinnamon groups, statistically significant reductions in blood glucose levels occurred, with decreases ranging from 18 to 29 percent. Interestingly, glucose levels remained significantly lower after the 20-day wash-out period (60 days from the study start) only in the group that took the lowest cinnamon dose (1 gram daily). The placebo groups showed no significant changes.

Decreases in triglyceride levels ranging from 23 to 30% were observed in all three cinnamon groups after 40 days. When the study ended at 60 days, triglyceride levels remained lower than at the study start in the 1 and 3 gram cinnamon groups, but not in the group taking 6 grams daily. Cholesterol reductions also occurred with the three cinnamon doses, with decreases ranging from 13 to 25% that were maintained at the study end. For LDL, the 3 and 6 gram cinnamon groups showed significant reductions from 10 to 24%, while in the 1 gram cinnamon group, non-significant reductions occurred after 40 days; LDL levels continued to decrease, reaching statistical significance at 60 days. With respect to HDL, significant increases were seen only in the 3 gram cinnamon group after 20 days; non-significant changes occurred in the 1 and 6 gram groups after 40 days.

The overall results of this trial demonstrate that cinnamon exerts a beneficial effect on blood glucose and lipid levels in people with type 2 diabetes, at daily intakes of 1 gram, and that this low dose is equally efficacious as are the higher doses of 3 and 6 grams.¹⁰

Safety

The various species of cinnamon are classified as GRAS (generally regarded as safe) herbs.¹¹ The Botanical Safety Handbook lists *Cinnamomum cassia* a "Class 2b" herb; not to be used during pregnancy.¹² The water-soluble cinnamon extract is largely free of the lipid-soluble components of cinnamon most likely to be toxic at high dose of cinnamon and long-term consumption of the herb.⁹

*This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

Scientific References

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Cinnamon, one of the world's favorite spices, is a medicinal herb with more than 4,000 years of traditional use. Recent research has revealed that constituents in cinnamon bark called pro-cyanidin Type-A polymers help maintain the body's ability to metabolize glucose in a healthy way.*

Best Cinnamon Extract is Cinnulin PF®, a patent pending, water-soluble extract of Cinnamon (species *Cinnamomum burmannii*) that contains Type-A polymers. Cinnulin PF® is a proprietary product of Integrity Nutraceuticals International.

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Doctor's
BEST®

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Best
Cinnamon
CinnulinPF® Extract

USE AS PART OF YOUR DIET TO HELP
MAINTAIN A HEALTHY BLOOD SUGAR LEVEL*

125 mg / 60 Veggie Caps

Supplement Facts

Serving Size 1 capsule
Servings per container 60 servings

	Amount per serving	% Daily Value
Cinnamon bark extract	125 mg	†

† Daily Value not established.

Other ingredients: Modified cellulose (vegetarian capsule), cellulose, magnesium silicate, silicon dioxide, magnesium stearate (vegetable source).

Suggested Adult Use: One capsule before or during a meal, two times daily.

Suitable for vegetarians

CONTAINS NOTHING OTHER THAN LISTED INGREDIENTS

