



## Formulation and Evaluation of Cinnamon Herbal Tablet for Management of Blood Pressure

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### ABSTRACT :-

The effect of cinnamon on blood pressure remains controversial. The current pilot study examined the effect of cinnamon on blood pressure, as well as the metabolic profile of patients with phase 1 hypertension (S1HTN). High blood pressure (BP) or high blood pressure is an important public health challenge for people in both developed and developing economies. By starting a few new eating habits, which include calculating calories and looking at body sizes, individuals can lower their BP and measure controlled drugs to better control high BP. Additionally, some prescription drugs may be able to lower BP. Centuries ago, cinnamon was used as a traditional medicine in China. Cinnamon, a perennial tropical tree, belongs to the Lauraceae family. In fact, cinnamon is one of the most popular spices eaten daily by people around the world. Accessible in vitro and preclinical data suggest that cinnamon has anti-antioxidant, anti-inflammatory, antitumor, antimicrobial, cholesterol-downing, cardiovascular protection, and immuno-modulatory effects. Similarly, many studies have shown beneficial effects on BP.

**Keywords :-**Cinnamon , hypertension , cholesterol , Ceylon cinnamon , High blood pressure.

### INTRODUCTION :-

When considering high blood pressure, it is important to focus on the steps that are known to be effective and practical. Lifestyle factors that improve blood pressure control include sodium restriction, healthy eating, regular exercise, and smoking cessation. Most people need additional treatment with one or more antihypertensive drugs. And while data supporting the use of traditional remedies are uncertain, some studies have suggested that cinnamon may lower blood pressure. Blood pressure (BP) is controlled, moment by moment, by the balance between cardiac output against total peripheral resistance and changes depending on the condition, function, mood, and health / related health conditions. It is controlled by the brain by both endocrine and nervous systems . On the other hand, BP is unstable and automatic variations in BP exist . BP control disorders include; Low BP, high BP and BP showing excessive or abnormal fluctuations . In 1987, Paratiet al provided the first organizational data between the 24-hour BP (BPV) variance and the severity of an organ injury . Finally, it has been found that high blood pressure is associated with lower limb damage than in patients with high blood pressure . During the past 20 years dietary fiber has been shown to be a major dietary influence in the prevention and treatment of chronic diseases. . High fiber consumption is associated with, reduced risk of certain types of cancer, lower risk of heart disease, lowering cholesterol levels in serum, lowering BP, better glycemic control, increased weight control and recovery of gastrointestinal function . In fact, herbal medicines with high levels of phytochemicals have been shown to have beneficial effects on BP, anthropometric measures and endothelial function . In various parts of the world, cinnamon has been used in various cultures since ancient times. The genus Cinnamon, with about 250 species, contains 10-17 tall trees that grow in South America, Southeast Asia, and Australia (Mousavi et al. 2019a). Cinnamon is also traditionally used in cuisine as a flavor / color ingredient (IM et al. 2014; Ranasinghe et al. 2013). Two main types of Cinnamomum, Cinnamomum zylanicum and Cinnamomum cassia, use antitumoral and antioxidant properties (Kawatra and Rajagopalan 2015). These two types are very different in terms of coumarin level (1, 2-benzopyrone) (Archer 1988). However, both types of plants contain phytochemicals such as eugenol, cinnamaldehyde, and camphor (Gruenwald et al. 2010). Typically, the major chemicals reported to be present in cinnamon include coumarin, cinnamic acid, eugenol, and cinnamaldehyde which have an effect on its medicinal properties (e.g. anti-inflammatory, anti-oxidant, anti-diabetic, and anti-obesity). ) (Jayaprakasha and Rao 2011; Khan et al. 2003; Mousavi et al. 2019b). With respect to blood lipid profile, cinnamon can lower LDL-c but improve HDL-c (Allen et al. 2013; Askari et al. 2014; Khan et al. 2003)

(1,8,9,10,11,12,13)

## MATERIALS AND METHODS :-

Many reports have spread as well as many properties of cinnamon in the form of essential oils, bark, bark powder, flavonoids, phenolic compounds, and unique ingredients. Each of these attributes plays an important role in improving human health. In fact, Akilen et al found that the cinnamon type decreased both systolic and diastolic BP in T2DM from 132.6 to 129.2 mm Hg and 85.2 to 80.2 mm Hg, one ton. Despite this, the process of lowering cinnamon BP is unknown and new studies are needed to address this issue. (21,22,23)

### Preparation of cinnamon :

Dried cinnamon from *Cinnamomum zeylanicum* was purchased at a local market in Mashhad, Iran in June 2019. Cinnamon tablets (containing 500 mg of dried cinnamon powder) and placebo tablets (containing 500 mg lactose powder) were prepared at the School of Pharmacy, Mashhad University of Medical Science. The capsules were similar in appearance.(1)

### Example of cinnamon herbal medicine used for treatment of blood pressure :

Marketed preparation of Ceylon cinnamon example:- Striction BP (24)

Sr . No .	Feature	Ingredients
1	Product Name	Striction BP
2	Category	Blood pressure control
3	Main ingredient	Ceylon cinnamon, magnesium and vitamin B6.
4	Consumption route	Oral capsules
5	Side effects	No adverse effects

### COMPOSITION OF STRICTION BP FORMULA :

The manufacturer of the Striction BP supplement has developed a formula with a supernatural combination of ingredients that have been proven to maintain healthy blood pressure levels. The formula is made free of chemicals or additives that can produce results without side effects. Outputs are added in an accurate measure that can work together to improve the results you want.

#### Ceylon Cinnamon :-

It can lower systolic and diastolic blood pressure and blood sugar levels. It protects your heart health from heart problems and prevents the formation of plaque.

#### Magnesium:

This important mineral can enhance the effects of Cinnamon. When combined with this mineral, Cinnamon can raise blood pressure by lowering it by 25 points.

#### Vitamin B6:

Increases the level of Magnesium absorption and improves the effects of Cinnamon to lower blood pressure levels.

#### Other Ingredients:

The three main ingredients for BP striction are listed above. These include the main ingredients. Other ingredients in the capsule include gelatin, vegetable magnesium stearate, and silicon dioxide. (25)

#### Mechanism of Ceylon cinnamon :

All kinds of cinnamon contain cinnamic acid. It has anti-inflammatory effects. Anti-inflammatory properties help blood flow to the body and put less pressure on the heart.

Ceylon cinnamon research dates back to 1975 Trusted Source. Studies have concluded that Ceylon cinnamon can help lower blood pressure. Heart failure due to problems in the cardiovascular system often causes heart disease. Ceylon cinnamon supports heart function and contributes to healthy heart function.(27)

#### Advantages of Striction BP supplement:

1. The supplement helps to control blood pressure levels in the normal range.
2. It also contains blood cholesterol and blood sugar levels.
3. You can overcome problems such as heart attack, diabetes, and obesity issues.
4. It helps you to lose unwanted weight and improve your body.
5. The supplement is made as simple and easy capsules.
6. Made safe, natural, and works well with zero chemicals.
7. There are a few good user reviews reported with no side effects.
8. It boosts your self-esteem to live a healthier, happier, and younger life.
9. Capsules expand blood vessels and promote healthy blood flow.
10. It strengthens you by promoting healthy physical activity.

11. You must not include limited diets or exercise.
12. It helps you to avoid dangerous medicines, treat and visit your doctor regularly.
13. Prevents high blood pressure, heart attacks, and painful symptoms.
14. A 60-day money back guarantee makes you feel safe.(24)

#### **Disadvantages:**

1. You can buy the Stricion BP supplement only on the official website and not at any store.
2. It is recommended that you consult your doctor before using the supplement if you are already on medication or pregnant. (24)

#### **Striction BP Side Effects :-**

Are there any side effects to taking StricionBP As you know, it is a formula for natural blood pressure. This means that if you have any concerns about StricionBP allergies, it is highly recommended that you stop taking them. If you have any medical concerns or are taking any prescription medication, it is best to consult a doctor before taking it.

Remember that if you notice any concerns, you can always return StricionBP with your full refund, but that within 30 days. Lastly, the good news is that no side effects have been reported with the StricionBP formula, and that means you are safe if you follow the Striction BP dosage and guidelines.(25)

#### **Striction BP Benefits :**

Some of the benefits that users will receive from Low BP Extension include:

- Lower blood pressure: Three key components will give users the desired blood pressure level. Its effects are long-lasting because it regulates both diastolic and systolic blood pressure.
- Controlling blood sugar levels: Strong BP components are known to improve glucose digestion, thereby lowering blood sugar levels. In this way, it prevents the risk of type 2 diabetes.
- Lower blood cholesterol: Stricion BP helps lower bad cholesterol levels. It also prevents plaque formation and supports cardiovascular functions.
- Safely formulated: Stricion BP contains natural ingredients in appropriate dosages, making it safe to use. It contains no harmful fillers or chemicals and is not GMO. It is governed by quality, and its ingredients are approved by the FDA. The product undergoes several tests to ensure its safety.
- Improves heart rate: When the level of bad cholesterol decreases, the heart condition improves. It will help the heartbeat better, increase oxygen supply to the body.
- Anti-oxidant properties: Stricion BP improves the immune system due to its antioxidant properties.(26)

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#### **EVOLUTION OF CEYLON :-**

Some doctors claim that many medicinal properties are related to cinnamon, especially Ceylon cinnamon. Among the conditions that cinnamon is believed to cure are:

- Diabetes
- Hypertension (hypertension)
- Metabolic syndrome
- Irritable bowel syndrome (IBS)
- Yeast infection (candidiasis)
- Oral diseases
- The common cold
- Hay fever (allergic rhinitis)

The flavor of the Cinnamon element and the aroma come from a conference on essential oils called cinnamaldehyde. Cinnamaldehyde is known for its anti-bacterial and anti-inflammatory properties that can help treat certain metabolic, infectious, digestive, or respiratory disorders.<sup>1</sup> Here are some of the present evidence. (28)

#### **Metabolic :**

Studies have shown that taking cinnamon can help lower blood sugar. Studies have shown that it can be helpful for people with diabetes or prediabetes. A 2003 study published in Diabetes Care examined the benefits of a daily dose of cinnamon for 60 people with type 2 diabetes. Divided into 20 groups, groups were given, respectively, 1-, 3-, and 6-grams doses. . cinnamon in the form of a tablet (approximately equal to a quarter of a teaspoon and 1 teaspoon).

After 40 days, all three groups experienced a decrease in blood glucose (18% to 29%), triglycerides (23% to 30%), and LDL cholesterol (7% to 27%), and total cholesterol (12% to 26). %). In contrast, hemoglobin A1C (HbA1C) remained unchanged in all participants.<sup>2</sup>

Reduction of this level may be strong enough to treat metabolic syndrome. A review of a 2016 study concluded that cinnamon, taken with the drug,

could improve all important stages of metabolic syndrome, including body mass index (BMI), waist-to-hip ratio, blood lipid profile, and pressure of blood. This is not to say that the metabolic benefits of cinnamon are undeniable. There are a few well-managed courses currently available (including those listed above). (28)

## CONCLUSION :

The current review provides further evidence of Cinnamon Respect, as a spice in daily life and Without any side effects, can be taken as a remedy To lower BP levels especially in patients with T2DM, Although, to date, its methods work. it is not clear.

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