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# **Brief Note on Health Benefits of Cinnamon**

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# Description

Cinnamon (*Cinnamomum zeylanicum*) is a spice mainly derived from the bark and leaves of cinnamon. It is an evergreen tree belonging to the family of Lauraceae. The most well-known (L.) J. Presl, Cinnamomum species are *Cinnamomum cassia* camphora, and *Cinnamomum zeylanicum* . This plant is mainly used for cooking and has been known in multiple cultures for centuries. Cinnamon is popular for its scent. It is incorporated into the aroma composition of the perfume. This spice composition is used in the industry. Supplementing poultry feed with cinnamon essential oil extract affects immunity and microbiological aspects. Cinnamon oil was also discovered in the development of a new active packaging film based on chitosan nanofibers containing protein. The results of Fourier Transform Infrared Spectroscopy (FTIS) and Scanning Electron Eicroscopy (SEM) tests show the uniform distribution of chitosan nanofibers in the film and the effect of chitosan nanofibers on mechanical properties and water vapour permeability. Masu . Cinnamon is composed of many compounds with biologically active formulations that depend on their properties. Extracts obtained from different parts of the plant have very different chemical compositions. This means that they have different properties. Volatile oils extracted from the leaves, bark, and root bark of cinnamon plants contain monoterpene hydrocarbons of the same spectrum. However, the main components are different. Cinnamaldehyde is a basic compound found in cinnamon bark. Leaf oil mainly contains eugenol, and root bark oil is mainly composed of camphor.

## What are the Health Benefits of Cinnamon?

Cinnamon is known to have anti-carcinogenic, antioxidant, anti-inflammatory, anti-diabetic, and antibacterial properties. It has also been reported to have a positive effect on neurological conditions such as Alzheimer's disease and Parkinson's disease.

#### Antioxidant activity

Antioxidants protect against metabolic disorders and agerelated syndrome damage by acting on free radicals. According to a study by Mancini Filho and his colleagues, cinnamon extract has important antioxidant properties. Flavonoids are involved in this antioxidant effect. Through the ability to remove free radicals.

#### Anti-inflammatory activity

Several studies have shown the anti-inflammatory effect of cinnamon. According to a 2005 study published in Biochemical Pharmacology, 2'-hydroxycinnamaldehyde isolated from cinnamon bark suppressed the production of nitric oxide, which plays an important role in the pathogenesis of inflammation. Therefore, cinnamon can be used as an anti-inflammatory agent to treat or prevent inflammation-related conditions.

#### **Anti-cancer activity**

Procyanidins, an important flavonoid in cinnamon, exhibit antivascular endothelial growth factor subtype 2 (VEGFR2) kinase activity. Vascular Endothelial Growth Factor (VEGF) contributes significantly to the formation of blood vessels. Therefore, cinnamon can interfere with angiogenesis, or the overgrowth of blood vessels associated with cancer.

### Anti-diabetic activity

Polyphenols isolated from cinnamon have been shown to act as insulin-like molecules. Many mechanisms have been envisioned for the hypoglycemic effect of cinnamon. Cinnamon has been shown to increase glucose invasion into cells.

Cinnamon has also been hypothesized to increase the expression of Peroxisome Proliferator-Activated Receptors (PPARs), which are associated with hypoglycemic effects. Cinnamon is also known to have the effect of inhibiting enzymes involved in carbohydrate catabolism.

#### **Neurologic disorders**

Cinnamon has been shown to have a positive effect on neurological conditions such as Parkinson's disease and Alzheimer's disease. Cinnamon may protect dopaminergic neurons in patients with Parkinson's disease, according to a study by scientists at Rush University Medical Center. Their study showed that cinnamon is involved in the upregulation of Parkin and DJ1 proteins, leading to the protection of dopaminergic neurons in a mouse model of Parkinson's disease. When these results are reproduced in humans, they may offer new treatment options for patients with this disease. Another study published in the Journal of Alzheimer's Disease showed that cinnamon extract has an inhibitory effect on tau aggregation and filament formation, which are characteristic of Alzheimer's disease.

Vol.8 No.11:e001

### **Antimicrobial activity**

Several studies have shown the antibacterial effect of cinnamon on bacteria, yeast, and fungi. The combination of cinnamon bark extract and honey has been shown to be beneficial against acne-causing bacteria.

### **Cardiovascular diseases**

Two important components of cinnamon, cinnamaldehyde and cinnamon acid, are active against myocardial ischemia.

Another cinnamon component, cinnamonophilin, has shown inhibitory activity against thromboxane-mediated proliferation of vascular smooth muscle cells involved in the formation of atherosclerosis