# 11 proven health benefits of cinnamon

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Cinnamon does far more than flavour your favourite dishes. With its antioxidant, anti-inflammatory and antimicrobial properties, cinnamon is something of a super spice.

To appreciate the full spectrum of cinnamon's health-boosting powers, to talk us through the evidence-based health benefits of cinnamon:

## 11 proven cinnamon health benefits

Cinnamon is derived from an evergreen tree from the Laurel family known as Cinnamomum. ‘The powder is produced from the bark of the cinnamon tree. Strips of bark are removed, dried and rolled into quills, or sticks, which can then be ground into a powder.’

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There are several different species of Cinnamomum tree, as detailed below:

- Cinnamomum zeylanicum, also known as True cinnamon, Ceylon cinnamon, and Mexican cinnamon.
- Cinnamomum burmanni, or Indonesian cinnamon.
- Cinnamomum loureiroi, Vietnamese cinnamon.
- Cinnamomum aromaticum, also known as Cassia cinnamon and Chinese cinnamon.

## 1. Cinnamon is full of powerful antioxidants

Cinnamon contains large amounts of highly potent antioxidants, which are very important for human health. 'These compounds neutralize free radicals – dangerous molecules which are formed every day in the body and are the precursors for many serious medical conditions including heart disease, diabetes, cancer, and dementia.

## 2. Cinnamon has anti-inflammatory properties

Inflammation is a vital part of the immune system's response, but if left unchecked over time – known as chronic inflammation – it can make you unwell. Antioxidants help to prevent inflammatory responses from occurring in the body when they are not required. And since cinnamon contains high levels of flavonoids – 'plant proteins with powerful antioxidant activity, the spice possesses anti-inflammatory effects.

## 3. Cinnamon has antibacterial properties

A number of small observational studies have shown that cinnamon can inhibit the growth of certain bacteria and treat fungi. A review in *BMC Complementary Medicine and Therapies* reported medical improvements from cinnamon supplementation across individual cases of salmonella, cryptosporidium infection, and drug-resistant candida. Its antimicrobial properties may also help prevent tooth decay and reduce bad breath.

## 4. Cinnamon may boost heart function

Cinnamon has been demonstrated to improve cardiac function. 'In an interesting 2014 study, a group of rats were subjected to either; an 8-week intensive training programme, a diet supplemented with cinnamon or a control group. Both the exercise and the cinnamon group showed significant benefits, with lower levels of total and LDL cholesterol, and improved HDL cholesterol.' Cinnamon also showed an independent positive effect on the heart's ability to pump.

## 5. Cinnamon may reduce blood pressure

Similarly, cinnamon has been shown to lower blood pressure 'through a mild diuretic effect that reduces the amount of sodium and fluid in the circulation. Cinnamon extracts also appear to improve blood vessel elasticity and promote blood vessel dilation.

A study involving 28 healthy volunteers with slightly raised blood pressures, assessed the effects of taking Ceylon cinnamon at three different doses: 85mg, 250mg or 500mg cinnamon per day, for three months, all three doses showed a similar result.

The participants' systolic (the amount of pressure in your arteries during the contraction of your heart muscle) and diastolic (your blood pressure when your heart muscle is between beats) blood pressure readings reduced significantly within one month and stayed low throughout the rest of the trial.

## 6. Cinnamon reduces lipid levels

Cinnamon is effective at reducing lipids – fat-like substances found in your blood and body tissues, such as cholesterol. Cinnamon is known to inhibit the enzyme HMG co-A reductase, the key enzyme required in the liver to synthesize cholesterol. It may also increase levels of adiponectin, a protein produced by fat cells, which has a role in sensitizing our cells to insulin and helping counteract insulin resistance.

## 7. Cinnamon can improve insulin resistance

Insulin is a hormone that transports blood sugar (glucose) from your bloodstream to your cells. Insulin resistance occurs when your cells become insensitive to insulin, which means the body produces more and more insulin, in order to maintain glucose levels within the normal range. Eventually, the body cannot cope, and full-blown diabetes sets in.'

Cinnamon extracts are believed to boost insulin-signaling pathways in skeletal muscle and fat cells, so that more glucose is taken up into these cells from the circulation. Several studies suggest that cinnamon extracts can improve glucose tolerance and insulin resistance in people with type 2 diabetes.

## 8. Cinnamon lowers blood sugar levels

As well as its positive impact on insulin resistance, cinnamon reduces blood sugar levels by other means too. 'In a randomized controlled trial in the International Journal of Preventative Medicine, diabetic participants were randomly assigned to either take 3g cinnamon per day or a placebo for eight weeks. At the end of the study period, the cinnamon group showed statistically significant improvements in fasting blood glucose, triglycerides, weight, BMI, and body fat.'

## 9. Cinnamon has neuroprotective effects

Cinnamon may have protective effects on the brain. Cinnamophilin, found in cinnamon, has been shown to protect the rat brain after oxygen deprivation. Cinnamon and sodium benzoate, one of its metabolites, are known to switch on neuroprotective genes in the mouse brain.' Other studies suggest cinnamon may have a role in preventing Alzheimer's disease.

## 10. Cinnamon may help prevent cancer

While controlled human studies are needed, cinnamon has demonstrated a promising anti-cancer effect in animal studies. Cancer is characterized by uncontrolled cell growth, and cinnamon appears to be toxic to these cells. Furthermore, in one mouse study by the Chittaranjan National Cancer Institute in India, cinnamon extracts activated detoxifying enzymes, protecting against further cancer growth.

Cinnamon has been shown to inhibit the growth of tumors. Cinnamon suppresses the activity of tumor necrosis factor-alpha (TNFα), an inflammatory cytokine which stimulates inflammation. It also reduces the production of interleukins, cell-signaling molecules important in cell proliferation and maturation.

### 11. Cinnamon may ease polycystic ovary syndrome

Polycystic ovary syndrome (PCOS) is a common condition that affects how a woman's ovaries work. While the root cause of PCOS is unknown, it's thought to be related to abnormal hormone levels, and is associated with insulin resistance.

'A trial involving 15 women with PCOS compared the effects of cinnamon with placebo over eight weeks. Significant improvements in insulin resistance were seen in those taking cinnamon, but not in the placebo group. More studies are needed to evaluate the effect of cinnamon in women with this condition.'

## Should I take a cinnamon supplement?

If you prefer you can take an oral cinnamon supplement. Regardless of which form you choose, the recommended daily intake of cinnamon for an adult is 0.1 mg/kg body weight per day.

'For an average person weighing around 81kg this equates to 8mg/day – or approximately 1 teaspoon of Cassia cinnamon per day. 'If you decide to take a cinnamon supplement, it's advisable to check with your healthcare provider first if you have any other medical conditions or regular medication.'

Furthermore, it's important to recognize that cinnamon is a form of complementary medicine. Where cinnamon may have useful properties for patients with conditions such as diabetes and heart disease, there is not enough evidence to recommend cinnamon over conventional treatments,' she says. 'It is very important to continue using your prescribed medicines.'