

Dr John L Straughan

MB ChB, BSc Hons (Pharmacology),
Dip Clin Pharmacology

We are all likely to be familiar with the common household flavourant and aromatic known as cinnamon, which comes from the bark of a tree and is available as 'bark cinnamon' or in ground/powdered form. Well, in these times of pandemic cardiovascular diseases, this spice presents itself as a spice for life!

Cinnamon improves glucose and lipids in patients with type 2 diabetes

A recently reported placebo-controlled clinical study published in *Diabetes Care*¹ examined the effects of a daily intake of ground cinnamon on serum glucose and lipids in persons with type 2 diabetes mellitus, and found that this common household spice had dramatic benefits in terms of reducing fasting glucose and favourably modifying the lipogram. While high-density lipoprotein (HDL) levels were not improved, total cholesterol, low-density lipoprotein (LDL), and triglyceride-lowering effects were comparable with those obtained by the commonly prescribed lower dosages of the statin drugs. Moreover this spice also significantly lowered the fasting blood glucose levels of these patients.

Doses of the order of 1, 3 and 6 g per day were compared with placebo in the type 2 diabetics over a 40-day period, and these remarkable results were accomplished without adverse effects, and with full compliance with the doses used. By day 40 of the dosage schedule, all three dosages provided very similar benefits. Furthermore there was a prolonged carry-over benefit of the cinnamon even after the intake of the spice had been discontinued.

A further study should be undertaken using daily cinnamon intake of less than 1 g/day over a longer period, because if the same efficacy emerges at lower dosages, the benefits of this 'natural' therapy may then be easily recommended to all persons at risk of cardiovascular/diabetes-related disasters (and this constitutes a very large proportion of the population!).

What may underlie cinnamon's efficacy?

Various studies as reported in the *Diabetes Care* article¹ have provided some indication of the mechanisms by which cinnamon may accomplish the benefits described above.

- Upregulation of glucose uptake by adipocytes (fat cells)
- Increased insulin receptor activity in skeletal muscle
- Inhibition of hepatic HMG-CoA reductase activity (enzymes that assist in the manufacture of cholesterol and its precursors, and the chief mechanism by which the stains modulate blood lipids)
- Broad-spectrum antioxidant activity
- COX-2 inhibition (anti-inflammatory enzymes of the COX-2 type).

Extracts of cinnamon have demonstrated promotion of wound-healing, antibacterial and antifungal activity.

Is cinnamon unique in providing such benefits?

The answer is an emphatic no! Many spices and herbs have demonstrated a fascinating repertoire of beneficial activities; the spice-and-herb world is to be regarded at a treasure trove of potential remedies awaiting more extensive clinical investigation.

Reference

1. Khan A, Safdar M, Ali Khan MM, Khattak KN, Anderson RA, Cinnamon improves glucose and lipids of people with type 2 diabetes. *Diabetes Care* 2003; **26**: 3215-3218

Dr John L Straughan is a medical advisor for Pfizer and a lecturer/consultant for the Department of Pharmacology at the University of Cape Town. He is an elected fellow of the South African Pharmaceutical Society and an elected member of the Faculty of Pharmaceutical Medicine of the Royal College of Physicians (United Kingdom). He had been involved in six editions of the *South African Medicines Formulary* and has written some 50 article (chiefly of the continual professional development type) in various journals.

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