The evidence examining the effect of dietary supplements on blood glucose regulation are mixed; therefore the ADA does not endorse the use of routine vitamin or mineral supplementation in people with diabetes (compared with the general population) who do not have underlying deficiencies (ADA, 2018).
Effect of aloe was better than the effect of glimperide.

One review, published in 2013, looked at the use of aloe vera to treat symptoms of diabetes in rats. Findings suggested that aloe vera might help protect and repair the beta cells in the pancreas that produce insulin. The researchers believed this might be due to aloe’s antioxidant effects.

Efficacy of Aloe Vera Supplementation on Prediabetes and Early Non-Treated Diabetic Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Abstract

The aim of this study was to evaluate evidence for the efficacy of aloe vera on managing prediabetes and early non-treated diabetes mellitus. We performed a systematic search of PubMed, Embase, and Cochrane Central Register of Controlled Trials until 28 January 2016. A total of five randomized controlled trials (RCTs) involving 415 participants were included. Compared with the controls, aloe vera supplementation significantly reduced the concentrations of fasting blood glucose (FBG) (p = 0.02; weighted mean difference [WMD] -30.05 mg/dL; 95% confidence interval [CI] -54.87 to -5.23 mg/dL), glycosylated hemoglobin A1c (HbA1c) (p < 0.0001; WMD -0.41%; 95% CI -0.55% to -0.27%), triglyceride (p = 0.0001), total cholesterol (TC) (p < 0.0001), and low density lipoprotein-cholesterol (LDL-C) (p < 0.0001). Aloe vera was superior to placebo in increasing serum high density lipoprotein-cholesterol (HDL-C) levels (p = 0.03). Only one adverse event was reported. The evidence from RCTs showed that aloe vera might effectively reduce the levels of FBG, HbA1c, triglyceride, TC and LDL-C, and increase the levels of HDL-C on prediabetics and early non-treated diabetic patients. Limited evidence exists about the safety of aloe vera. Given the small sample and poor quality of RCTs included in the meta-analysis, these results are inconclusive. A large-scale, well-designed RCT is needed to further address this issue.

Results and discussion: Eight trials involving 470 patients (235 each for prediabetes and type 2 diabetes) were included. In prediabetes, Aloe vera significantly improved FPG (mean difference -0.22 mmol/L, 95% CI -0.32 mmol/L to -0.12 mmol/L, P < 0.0001), with no effect on Hba1c (mean difference -2.2 mmol/mol to 1 mmol/mol). Aloe vera may improve glycaemic control in type 2 diabetes, with a marginal improvement in FPG (mean differences -1.17 mmol/L, 95% CI -2.35 to 0.00 mmol/L, P = 0.05) and a significant improvement in Hba1c (mean difference -1.11 mmol/mol, 95% CI -19 mmol/mol to -2 mmol/mol, P = 0.01).

What is new and conclusions: The current evidence suggests some potential benefit of Aloe vera in improving glycaemic control in prediabetes and type 2 diabetes. However, given the limitations of the available evidence and the high heterogeneity in study results, high-quality, well-powered randomized controlled trials using standardized preparations are needed to quantify any beneficial effects of Aloe vera on glycaemic control.

Keywords: Aloe vera; diabetes mellitus; glycaemic control; prediabetes; systematic review.
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Cinnamon
A 2013 systematic review and meta-analysis found that cinnamon doses of 120 mg/day to 6 g/day for 4 to 18 weeks reduced levels of FPG, total cholesterol (−15.60 mg/dL), LDL cholesterol (−9.42 mg/dL), and triglycerides (−29.59 mg/dL) while increasing levels of HDL cholesterol (1.66 mg/dL). However, despite the reductions observed in FBG, no significant effect on hemoglobin A1C (HbA1C) levels (−0.16%) was seen (Krause, 2021).

A narrative review published in the Journal of the Academy of Nutrition and Dietetics had similar findings. The review analyzed 11 RCTs and found that all the studies reported some reductions in FPG during the cinnamon intervention. Of the studies measuring A1C, very modest decreases were also apparent with cinnamon, whereas changes in the placebo groups were minimal (Costello et al, 2016).

It is important to use caution when combining cinnamon (in pill form) with other blood glucose-lowering herbs and supplements, as taking cinnamon with some antidiabetes drugs may cause hypoglycemic effects.
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Berberine
In one clinical study, berberine significantly lowered FBG, A1C, triglyceride, and insulin levels in patients with T2DM. The FBG and A1C-lowering effects of berberine were similar to those of metformin and rosiglitazone. Liver function was improved greatly in these patients by showing reduction of liver enzymes (krause, 2021).

In another study, 36 adults with newly diagnosed T2DM were randomly assigned to treatment with berberine or metformin (0.5 g three times per day). After the 3 months, the hypoglycemic effect of berberine was similar to that of metformin. Significant decreases in A1C (9.5% to 7.5%), FBG (10.6 mmol/L to 6.9 mmol/L), postprandial blood glucose (19.8 mmol/L to 11.1 mmol/L), and triglycerides (1.13 mmol/L to 0.89 mmol/L) were observed in the berberine group (krause, 2021).

that berberine may be contraindicated during lactation and pregnancy, and in children. Additionally, it can cause hypoglycemia in individuals on blood sugar-lowering medications (insulin, Amaryl, etc.) and may potentially lower blood pressure. Therefore it should be used with caution in people with low blood pressure or in people on blood sugar-lowering medications. Berberine can also inhibit activity of enzymes that break down certain drugs (Neoral, Sandimmune), which can lead to increased blood levels and increased risk of adverse effects. Other potential adverse effects include nausea, bloating, constipation, diarrhea, hypertension, respiratory failure, headache, bradycardia, jaundice, and paresthesias.
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