Dietary advice for the prevention of type 2 diabetes mellitus in adults

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Background
Prevention of type 2 diabetes in adults is a far better option than treatment, to alleviate pressure on health care providers and resources. However, there is no current review of the evidence regarding the efficacy of a diet-only intervention for prevention.

Objectives
To assess the effects of type and frequency of dietary advice for the prevention of type 2 diabetes mellitus.

Source(s)
We carried out a comprehensive search of The Cochrane Library, MEDLINE, EMBASE, CINAHL, AMED, bibliographies and contacted relevant experts.

Studies
All randomised controlled trials, of twelve months or longer, in which dietary advice for the prevention of type 2 diabetes was the only intervention in adults.

Data Extraction
The lead investigator performed all data extraction and quality scoring with duplication being carried out by one of the other four investigators independently with discrepancies resolved by discussion and consensus. Authors were contacted for missing data. Change data are presented.

Data Synthesis
Two trials which randomised 358 people to dietary treatment and control groups were identified. Longest duration of follow-up was six years. In the 6-year Da Qing IGT & Diabetes study, the incidence of type 2 diabetes in the control group was 67.7% (95% confidence interval (CI) 59.8% to 75.2%) which was reduced to 43.8% (95% CI 35.5% to 54.7%) in the diet group. Overall, the dietary intervention group had a 33% reduction in the incidence of diabetes after six years ($P < 0.03$). The Oslo Diet & Exercise Study (ODES) found significant ($P<0.05$) reductions in insulin resistance, fasting insulin (pmol/L), fasting C-peptide (pmol/L), fasting proinsulin (pmol/L), fasting blood glucose (mmol/L), BMI (kg/m²), mBP (mmHg) and fasting triglycerides (mmol/L), and a significant increase in fasting HDL cholesterol (mmol/L) and PAI-1 (U/ml) after 12 months of dietary intervention. Data on mortality, morbidity, health-related quality of life, adverse effects, costs were not reported in either study.

Conclusions
There are no high quality data on the efficacy of dietary intervention for the prevention of type 2 diabetes. More well-designed, long-term studies, providing well-reported, high-quality data are required before proper conclusions can be made into the best dietary advice for the prevention of diabetes mellitus in adults.

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