

NEW FRONTIERS OF RESEARCH ON NUTRITIONAL PREVENTION OF DIABETES

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The low incidence of cardiovascular disease (CVD) and diabetes in Eskimos and American vegetarians suggested that diet could be important in the development of diabetes. Diabetes has been positively associated with animal fat consumption showing increased incidence in beef eating populations.

Plasma glucose levels remain lowered in vegetarians compared to non-vegetarians and similar finding have been noted among persons taking diet rich in polyunsaturated fats compared to those taking saturated fat. Dietary cholesterol may also be a determinant of glucose tolerance and development of diabetes. Since primary prevention of diabetes by nutritional education to public, has not been very successful, we aimed at 600 high risk subjects (25-60 years) to study the role of dietary measures for 1-13 years in the primary and secondary prevention of diabetes mellitus among them. Around half of the participants (Gr. A 302 cases) were randomly given diabetoprotective diet rich in fruits, vegetables, cereals and polyunsaturates and rest (Gr. B 298 cases) were given usual diet. It is interesting that age, sex, risk factors, drug therapy nutritional factors, complications and prevalence of diabetes were similar in both the groups at entry to the study. However after one year, there was a decrease (from 52 to 46) in the proportion of patients with hyperglycemia in group A compared to increase (from 48 to 55) in the proportion of such patients in group B. Although initial mean fasting blood sugar levels had no significant difference in between group A (115.9 mg/dl) and group B (118.5 mg/dl), there was a rise in mean blood sugar after one year in group B (124.5 mg/dl) with increased drug requirement compared to no such changes in group A participants. Group B participants also had a rise in mean serum cholesterol and triglyceride whereas group A showed a fall in these lipids. These changes were consistent with intake of dietary polyunsaturates (33% more), complex carbohydrates (50% more), vitamins and minerals (50% more) in group A participants compared to group B. After 13 years (mean 10.5 years) there were 12 new cases of diabetes in group B compared to only 4 such cases in group A, with similar changes in mean lipids and fasting blood sugar as observed after one year. It is suggested that in countries with increased and increasing prevalence of diabetes, individuals with increased risk should be given more attention because public education approach alone could be a failure in this group of population. Indeed, high risk subjects care and public health strategies both could be used to complement one another for prevention of diabetes.